1st SUSTAINABLE SUMMER SCHOOL
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DEMATERIALIZE: Create attractive lifestyles that consume fewer resources.

RETHINK existing systems and develop new ones.

CHANGE the cultural attitude – be aware of patterns.

LET your individual choices reshape markets and influence politicians.

SHARE your stuff.

MAKE IT cool to be green.

DEVELOP media partnerships to raise public awareness.

CHERISH cultural diversity, for it is a precious resource.

CONSIDER people’s health.

UNDERSTAND the “real price” of products and services. The use of nature also has its price.
INTRODUCTION

Brigitte Wolf and Christa Liedtke

SUMMER SCHOOL OBJECTIVES
Christa Liedtke and Brigitte Wolf

DESIGN AND SUSTAINABILITY
Brigitte Wolf

PROCESS AND PROGRAMME
Brigitte Wolf
INTRODUCTION

During the summer term of 2008, a group of deeply committed industrial design students at the University of Wuppertal decided they wanted to learn more about sustainability and share their knowledge and create ecological awareness in the minds of their fellow students. After one semester of hard work they organised the two-day workshop “Cool Green”, which was attended by renowned guest speakers such as the Wuppertal Institute’s Christa Liedtke, econcept’s Ursula Tischner, and beeh-innovation’s Martin Beeh.

Considering the great amount of attention the workshop received, Dr. Christa Liedtke and I began discussing the possibility of creating an international summer school. The organisational team was quickly expanded to include the ecosign Academy’s Bernd Draser, Anke Bernotat from Folkwang University Essen, and Nina Gellersen from Lucerne University of Applied Sciences and Arts. A great amount of enthusiasm developed as the mission became clearer, and together we soon organised the First Sustainable Summer School at the Nikolaus Monastery in Jüchen in September 2009. The summer school is an “innovation campus” consisting of workshops in which students, teachers, companies, and system experts develop sustainable and resource efficient product-service systems in an interdisciplinary and, if possible, trans-disciplinary fashion. In the case they turn out to be innovative solutions, these product-service systems will be supervised until they become marketable. By fulfilling all of these criteria, the Sustainable Summer School can most certainly be defined as an innovation campus.

The First Sustainable Summer School was truly international with thirty-three students from thirteen different countries. The students’ diverse backgrounds served as an inspiration for all workshop leaders and specialists, and it was a great pleasure to work with such dedicated and highly motivated participants. Students worked in small teams and presented different concepts that can contribute to a resource-efficient lifestyle. Interestingly enough, the idea of “sharing” was an important concept among all the groups. It seems that a shift in values has already occurred among the younger academic generation. They instead tend to focus on quality services or activities that fulfil their needs instead of actually owning products themselves.

In this series of texts documenting the school’s work, we would like to provide the reader with insight into the inspiring and motivational work atmosphere at the First Sustainable Summer School. At the beginning of the publication we placed the “Manifesto”, which briefly describes the spirit and the values shared by the participating students. Next comes the “Introduction”, which forms the first chapter in this volume. In the second chapter, “Sustainability in Process”, you will find basic articles on sustainability research, methods, and tools written by the specialists who attended the school. The third chapter, “Hands-On Sustainability”, presents the individual workshops, describes the concepts developed therein, and summarises the results. In the last chapter provides a list of our partners, sponsors, and participants.

Finally we would like to cordially invite anyone interested in this project to take part in the next summer school in August 2010 as well as in any future events organised by the participating institutions.
SUMMER SCHOOL OBJECTIVES

A more system-oriented research and design concept should strengthen the participants' competencies in the fields of resources and sustainability. This is true for both teachers as well as students, whose strategies change depending on the situation.

OBJECTIVES:
+ To achieve a “knowledge to action” approach that will create visible teaching and implementation successes.
+ To reach tomorrow’s decision makers and generally strengthen competencies in the fields of resources and sustainability.
+ To develop concrete concepts and ideas for resource-efficient and sustainable product-service systems.
+ To connect international students and teachers with one another in order to generate an active community.
+ To participate in the development of demanding as well as high-quality, system-oriented solutions.
+ To connect with other individuals interested in these topics.

The partners’ vision was to create a high quality program of further education and to shape Germany’s image as both host and initiator in the field of sustainable and resource-efficient design. Furthermore, we intended to create a quality international network based around the concept of sustainable design.

The inclusion of project sponsors should allow us to immediately implement our conclusions, and these concepts should continually progress and be subject to further development.

CREATING BASIC KNOWLEDGE
The Internet platform www.designwalks.org aims to provide designers with teaching and study material as well as examples and concepts related to structural forms of resource efficiency and sustainability. We intend to create a medium for the exchange of information and interaction between interested students, teachers, and companies. The platform should enable participants to develop design concepts in an interactive fashion and locate design and research partners in similar fields.

DESIGN ACTIVITIES
In one to six-week workshops or at summer/winter schools which take place at an innovation campus, students and professionals from the field of design and product development will create innovative and resource-efficient product-service solutions and systems in an interdisciplinary and trans-disciplinary fashion. Teachers, professors, and experts will not only broaden the participants’ perspectives, but they will also gain extremely valuable knowledge by means of this trans-disciplinary approach and their interactions with other experienced participants.

Innovative and eco-intelligent concepts will help in the creation of innovation networks consisting of research institutes, companies, and other organisations responsible for managing projects. These concepts are then further developed in innovation workshops or “living labs” (http://www.livinglabproject.org). The transition from invention to innovation to marketability is accompanied by network actors.

BUNDLING EXCELLENCE
Together with specialists in the field of sustainability and resource efficiency (including energy and energy efficiency), our aim is to create an academic and international network for sustainable design – known as “design walks” – that can conduct interdisciplinary and trans-disciplinary research in the field of resource efficiency, develop research projects, and apply for research funds.
The vision is to create a “virtual design campus” that assists research as well as researchers. In order to create this network, we must first develop a network concept and initiate shared projects for joint implementation. Shared laboratories, project houses and/or innovation workshops, or the implementation of joint innovation campus offerings, for example, are intended to strengthen collective activities and help foster the exchange of researchers as well as the expansion of academic offerings.

ACCELERATING IMPLEMENTATION
Communicative platforms such as the Design Management Forum (www.design-management-forum.de) help to foster cooperation and sponsorship that will allow students to develop great ideas and even launch them on the market. These processes are supported by means of continuous and quality PR activities.
Every day the news media predict new doomsday scenarios involving global warming-induced climate change resulting from our excessive use of resources and energy. Journalists repeatedly reflect upon the fact that we know we have to change and that we have at our disposal the knowledge and the technological capabilities to act. So why do we hesitate? Most likely there are several reasons, including issues such as comfort, habits and rituals (we have always done it this way), lack of awareness, lack of knowledge as to how to begin, lack of tools and methods, and insecurity. On the other hand, a growing number of people are beginning to seek alternative and sustainable products and services. People who share in the idea of a life of health and sustainability are known by the acronym “LOHAS”. LOHAS are neither viewed as a special target group with a questionable image nor are they characterised by a certain age or income. According to a Zukunftsinstitut study, LOHAS represent a movement that is made up of many different parts of the world’s population.

Speaking on the subject, Stefano Marzano, design director at Philips, is certainly not alone in his beliefs. “Designers have aspire to a better world, and deep-down they feel somewhere an urge to create an ideal world – a world of beauty, hope, happiness, advancement, health, well-being, wealth, simplicity, collaboration, and empowerment ... a world in which everything is in harmony and balance, in which everything is as it should be.” In the daily routine of the design business, however, such idealistic notions often take second place to primary economic interests. Nevertheless, designers with experience in varying design professions will shape the future conditions of everyday life. Every single designer has to carry some part of the responsibility. In light of the problems we face today, the design leadership consultant Raymond Turner provides important direction: “The question is not what the future will be like, the question is what the future should be like.” Awareness and attitude always determine the strategic targets, and the defining of the desired sustainable targets is the most important step towards change.

Nowadays, critical consumers are well informed. They express a growing demand for sustainable solutions, and they look for products and services that stand out against mass-produced goods. The eco-social added value of products and services will be a decisive factor in future consumption. Enjoyment and sustainability no longer represent a contradiction in terms. In addition to the ecological factors, esthetical quality is also an important concern. Consumers will seek out products and services that combine eco-intelligence with good design. Design matters! Design can play an important role in shaping the future in an environmentally friendly manner.

The Zukunftsinstitut study points out that new environmentally-aware consumers will contribute to a social value shift. Contrary to the eco-movement of the 1980s, the new “greens” are no longer characterised by Spartan, rustic, and joyless lifestyles. Instead they are connoisseurs and trendsetters who have discovered that quality of life is not related to the amount of material products they own. Their life’s motto could be summed up as “less but better”. They want to achieve a satisfying balance between work and private life and attach great importance to a healthy lifestyle, excellent services, wellness, regional foods, organic production, and protecting the environment by saving energy and resources. Their slogan is taking pleasure in enjoying good quality of products and services that do not pose a threat to the environment. Even celebrities have discovered the new eco-chic, and they now represent an important driving force behind the movement.

Books such as Paul Ray’s The Cultural Creatives – How 50 Million People Are Changing the World or Richard Florida’s The Rise of the Creative Class point out that more and more people today are earning their livings in the creative industries. People with a good education and creative jobs usually make up the spearhead of today’s environmentally-aware movement and form a new elite driven by inner values that combine a demand for new solutions with a desire to act responsibly. Sales of sustainable products and services are growing. Consumption values have
INTRODUCTION: Brigitte Wolf: DESIGN AND SUSTAINABILITY
shifted from mass consumption to quality consumption. For example, sales of organic foods and
eco-fashions are increasing at incomparably high rates.

Nowadays companies pay great attention to what is known as "corporate social
responsibility" (CSR). They take their social responsibility seriously, because they know very well
that consumers consider the company's environmental and moral consciousness when making a
buying decision. New communication technologies are available that can inform customers when
promises are broken. People are prepared to boycott companies that pose a clear threat to the
environment or that produce their products under inhuman conditions. In the long run, it pays for
companies to act in a sustainable manner. In order to establish lasting successes, sustainable
design has to form an integral part of a company's philosophy and business objectives.

Sustainable design does not mean merely saving ten percent in materials here or reducing ener-
gy consumption by five percent there. Nor does it mean simply substituting one material by an-
other material with better recycling qualities. A "green surface" is not enough. Design solutions
have to be completely "green" from "cradle to cradle". Sustainable design therefore must focus
on the complexity of the system as a whole and consider all of the material and energy cycles
that are moved in order to maintain industrial production. One must consider the interaction bet-
ween these varying influential factors. Environmentally friendly products and services are already
economically successful, but shaping the future in a sustainable fashion poses designers both a
great challenge and an even greater opportunity. Let's get started!

1 Zukunftsinstitut, Target Group:
LOHAS: How the green lifestyle captures the markets
2 Marzano, Stefano;
A question of choice. Everything has changed, nothing has changed,
presented at the 10th European International Design Management Conference, Amsterdam 2006
3 Turner, Raymond;
Design Leadership: A Commercial Imperative,
presented at the 10th European International Design Management Conference, Amsterdam 2006
INTRODUCTION:

Brigitte Wolf: PROGRAMME & PROCESS

The 600-year-old Nikolaus Monastery, located in a beautiful green area of Germany’s North Rhine-Westphalia (NRW), provided the perfect location for the First Sustainable Summer School. The summer school’s motto of “value through less” offered students from all over the world a unique possibility to design and shape future lifestyles using sustainable strategies. As an introduction to the First Sustainable Summer School, students participated in the two-day international Innovation Conference “The Future of Sustainable Products and Services”, which took place on 28 and 29 September at the Zeche Zollverein. Renowned experts from the fields of ecology, sustainability, business, and science presented their latest research activities on sustainable issues. In the evening, students had the opportunity to take a walk around the Zeche Zollverein, a world cultural heritage site.

On the following day the students were introduced to the subject and were then grouped into teams of three to six students. Afterwards, the workshop directors explained the methodology and procedure for each of the workshops the students had selected. The participants remained in their teams for the next three days and were guided and coached by their professors. At the end of the first day, students had the possibility to share their ideas and experiences with Prof. Dr. Schmidt-Bleek (President, Factor 10 Institute), an expert in the field of eco-efficiency, and at the end of the second day they could do the same with Michael Radau (CEO, SuperBioMarkt AG), an expert in the field of eco-business.

On the fourth day their teamwork culminated in a presentation of the concepts they had developed as well as a final discussion. The students evaluated all of the concepts in terms of their sustainability. The best concept was honoured with an award sponsored by Prof. Dr. Siegfried Maser (Emeritus of Wuppertal University). Finally, the summer school ended with a great party for the students and teachers.

PROGRAMME & PROCESS

BRIGITTE WOLF UNIVERSITY OF WUPPERTAL

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PROGRAMME OVERVIEW

Day 1: Arrival at Düsseldorf Central Station. Guided tour of Hombroich Museum Island.


Day 4-7: Parallel design workshops with a focus on different subjects (such as rituals, area of needs, etc.) followed by evening discussions with Prof. Dr. Schmidt-Bleek and Michael Radau on the topic of new products and services in a dematerialised world.

Day 7: Group presentations, evaluation and awards ceremony, farewell party.
WINNING THE FUTURE – A SCIENTIFIC VIEW
Friedrich Schmidt-Bleek

FROM GRANOLA TO BOOM SECTOR – AN ENTREPRENEUR’S EXPERIENCES IN THE ORGANIC PRODUCTS BOOM AND HIS SUPERBIOMARKT CHAIN OF ORGANIC SUPERMARKETS
Michael Radau

THE MATERIAL INPUT PER SERVICE UNIT (MIPS) CONCEPT – A BASIS FOR THE DEVELOPMENT OF A PRODUCT-SERVICE SYSTEM
Michael Lettenmeier

HOT SPOT ANALYSIS – A SUSTAINABILITY TOOL FOR DESIGNERS AND COMPANIES
Christa Liedtke
WINNING THE FUTURE
A scientific view

FRIEDRICH SCHMIDT-BLEEK FAKTOR 10 CLUB

“Sustainability means overcoming today’s challenges today and not leaving them for future generations to solve” (Schmidt-Bleek 2007: 220)

PROGNOSIS
The globalisation of the material wealth available to industrialised countries would require several Earths.

The likely consequences of unchanged economic development include:
+ A loss of essential ecosystem services
+ The aggravation of food insecurity for the world’s population
+ An increase in the spread of new and existing epidemics
+ Scarce sustainable supplies of drinking and service water
+ Critical, large-scale loss of topsoil through erosion
+ An increasing risk to coastal megacities and their infrastructures
+ Armed conflicts over natural resources; conflicts over water and fossil fuels have already begun
+ Large-scale migration
+ No guarantee that the Gulf Stream will continue to function

The economy, however, will continue to develop, but it is important to remember that economic activity is embedded in the environmental realities of the near future. This means that long-term development is only possible within the limits of nature.

Source: Wuppertal Institute

RESOURCE PRODUCTIVITY AND DEMATERIALISATION
Using the example of the historical downfall of civilisations,1 Jared Diamond illustrated how rigid adherence to outdated but seemingly incontrovertible habits and forms of leadership leads to the degradation of ecological services that are essential for survival. This bears a strong analogy to our current situation. Over 90% of mechanically-moved natural materials end as waste even before the consumer receives the service or product (such as medical care, a mobile phone, or a car). This calculation does not even take into account the water or other material resources that are consumed when these products are used. In my opinion, this is why we either have to be satisfied with less technology-based consumption, or we instead must develop dematerialised technological processes. Theoretically it is possible to implement drastic dematerialisation without sacrificing either performance or even enjoyment. However, the practical evidence does not yet meet such expectations. The current economic framework is not capable of such adaptation, and present market conditions are in the process of causing the economy’s collapse.

Economic dematerialisation is the indispensable prerequisite that is necessary to create a sustainable economy, but this by no means the only condition. Prosperity implies more than material possessions. It also includes elements such as satisfaction, dignity, education, health, security,
work, leisure, and environmental quality. Above all, it is the quality of life that is most important, and this applies to all of the world’s people.

LACK OF AN OVERVIEW

There is no doubt that our concerns over the consequences of climate change are justified (see IPCC 2007). It is important to remember that current efforts to mitigate climate change represent the continuation of an old environmental policy which, from a systemic point of view, carries a high level of risk. Yet the world’s present efforts are not focused on eliminating the root causes of this environmental crisis. These efforts are instead directed solely towards remedying the symptoms. After more than a decade and billions spent on research, we have finally reached this point of political awareness. However, we still have a long way to go.

Today’s climate policy is not at all focused on actual prevention. Decision makers still hold onto the belief that the economy can be made sustainable for the future mainly by reducing levels of CO$_2$ emissions. Plans are proposed nearly every day that would seek to secure our planet’s future by means of CO$_2$ reductions. These include research programmes worth billions of Euros and propositions for emission certificates that monitor the environmental impact of products and services. All of this falls short of what is truly necessary, for the real cause of our false energy policies is the material intensity of energy supply.

The disproportionate focus on CO$_2$ emissions is questionable, as

(1) climate change is not only caused by CO$_2$,
(2) the environmental impact of products and services is not determined primarily by their energy consumption (cars, for example),
(3) the environmental quality of energy-consuming products also depend on their longevity as well as the amount of water and land they consume (including their infrastructures), and
(4) a product’s potential for environmental degradation must also take into account the degree to which these products contribute to erosion, cause reductions in fish stocks, and pose a threat to biodiversity. Measuring a product’s eco-friendliness in terms of its “carbon footprint” (note that lately gases can also produce footprints) is only meaningful if the product or service is determined primarily by energy consumption across the product or service’s entire life-cycle.

Furthermore, emissions reduction schemes often spark the increased consumption of additional natural resources (for example, as a result of extracting CO$_2$ from industrial emissions and its subsequent disposal). This is a typical effect that arises when attempting to make conventional technology more environmentally friendly by means of additional technology.

As the urgent dematerialisation of the economy leads to a substantial decrease in energy demand, we should begin to analyse and address the effects of lowered energy demand across the entire economy as soon as possible.

CHANGING GENERAL CONDITIONS

To date, neither sufficient economic and political incentives nor other instruments are in place that would allow us to begin with urgently needed dematerialisation of the economy. Conventional environmental policy continues to focus on avoiding the emission of pollutants, whose environmental effects are traditionally described as external effects. Policies that were created as a result of the analysis of individual environmental problems are scientifically and fundamentally questionable. There are hundreds of thousands of emissions and millions of products in existence, and we often have absolutely no idea of how their environmental impacts interact. Even well-known and problematic cases cannot be sufficiently researched, reliably quantified, or even adequately monitored. As a result, solutions are developed that, from a systems point of view, appear both counterproductive and costly. A good example is the material-intensive separation of CO$_2$ from industrial emissions and its subsequent disposal. A systems-based approach would
require taxing carbon in carbon-containing fossils and other natural materials sufficiently so that their use for technical energy generation becomes prohibitive. The income thus generated would be invested in accelerating the development of dematerialised energy systems that move away from fossilised carbon.

Conceptual problems suggest that future environmental policies should preferably focus on resource productivity (dematerialisation), especially in light of the fact that the quantity of emissions is directly related to the amount of resources that were removed from nature. It is important to remember that resource input points in the economy are much smaller in number (one to 1 million) than are sources of emissions, introductions, and waste disposal sites.

THE SEARCH FOR A LONG-TERM OUTLOOK

A focus on the partial regulation of a systematically dysfunctional economy is just as short sighted as focussing solely on individual environmental problems. It makes no sense to merely replace the damaged roof tiles when the entire structure is faulty.

The intent to secure jobs by calling for – or even subsidising product consumption is not only economically disputable, but it also obstructs an approach geared towards environmental stability. Greater consumption entails greater use of natural resources, even if fewer materials are consumed in the usage phase of these new products and there is no rebound effect. From a systems-ecological point of view, it is impracticable to replace fossil fuels with cultivated biomass. In addition to the inherent ethical concerns, the “ecological rucksacks” of these bio-fuels are much larger than conventional fuels. Furthermore, an environmental policy that concentrates on single ecological impacts that are a result of the economy’s high material metabolism – instead of promoting the dematerialisation of wealth creation – is very short-sighted indeed.

In many cases, long-term dangers are ignored for the sake of achieving short-term goals. Short-term thinking must be replaced with long-term strategies. All political decisions should follow the principle of precaution combined with justice.

Information Box:

**CORE THESES FOR APPROACHING SUSTAINABILITY**

- To date, political bodies have taken no precautionary systematic steps towards sustainability.
- Environmentally responsible behaviour must be fair for everyone. This requires a redesigned economic framework, and these can only be created by legislative bodies.
- The prices of raw materials, assets, products, and services must include the costs of environmental usage as well as the subsequent costs.
- Radical technological advances require ten to twenty years to develop before they ready for the market. This is why an efficient dematerialisation of the economy will take decades. Therefore the time to act is now.
- This presents Europe with the historical opportunity of designing a profitable eco-social market economy that can serve as a role model for the rest of the world.
FROM GRANOLA TO BOOM SECTOR
An entrepreneur’s experiences in the organic products boom and his SuperBioMarkt chain of organic supermarkets

MICHAEL RADAU BIOSUPERMARKT

I was already a part of the environmental scene when “green” was still a bad word and purple overalls were just a trendy outfit, but then the world awoke to the nuclear reactor accident in Chernobyl. Consumers suddenly became more critical and wanted to be sure that their food was free of poisons. Thanks to the Claus Hipp Company’s natural foods – particularly its organic baby food – the organic food industry cleared a further hurdle. In the early 1990s, I set a clear example in the large-scale introduction of organic products when I opened the first SuperBioMarkt (a German organic foods supermarket), which then grew into a chain of stores with fifteen supermarkets in North Rhine-Westphalia and Lower Saxony. In 2010, organic products are everywhere – not only are they found in the shopping baskets of hip city-slickers and critical consumers, but they are purchased by people of all ages and attitudes who simply prefer the pure taste and pleasure that organic products can offer.

OLD INGREDIENTS – NEW RECIPE
Take the assortment on offer in a supermarket and combine it with the standards of a natural foods specialist, two well-known ingredients which combine to make a new dish – the SuperBioMarkt. Founded in 1993, SuperBioMarkt was the first supermarket chain of North Rhine-Westphalia to offer only organic products. And as was proven way back then, the customers are pleased with the concept. It is the organic supermarkets with sales areas of approximately 500 square meters that have turned out to be the winners in the organic foods boom. When I started my career in an organic foods shop in 1982, I never would have dreamed that such a boom would take place at all. The whole organic foods business started in a tight niche that was plagued with negative stereotypes. Today I am head of the association of organic supermarkets (Verband der Bio-Supermärkte e. V.).

JUST THE GRANOLA MAN?
I started out by looking for a way of going into business for myself with organic products. My professional background and insider’s perspective helped me to do the impossible – a professionalisation of organic retailers that satisfies customers’ wishes and moves far away from the stereotypes surrounding the ideological “woollen socks crowd”.

As has always been the case, our main principles are cultivating authenticity and credibility in the eyes of producers, crop growers associations, as well as our clientele. This was how SuperBioMarkt began in 1993. Our once small palette of products has increased to over 7,000 products ranging from foods to cosmetics. The standard of quality has always been very high, but in the beginning there were hardly enough producers and distributors to develop marketing on a grand scale. We were the pioneers in the field.

EXPANSION, BUT MUNSTER CALLS THE SHOTS
The company’s headquarters remains in Munster. The network of SuperBioMarkt stores continues to grow and our natural food chain ranks top among the regions’ supermarkets. The limits of growth have yet to be reached, but expansion is not an end in itself. Our sustainable corporate strategy dictates that the SuperBioMarkt chain will continue to grow at a slow yet self-determined rate.

CHANGE PRESENTS BOTH OPPORTUNITIES AND RISKS
Organic products are booming, and, despite reduced acceleration, there is no end in sight for growth. The fact that conventional retailers and, in particular, powerful discounters have jumped on the bandwagon has created opportunities as well as risks. We are in the middle of a massive market shift. The struggle for new customers is more difficult, but their numbers are constantly growing. Expected customer behaviour includes customers who usually buy organic products at a discounter and occasionally drop by a natural food specialist. Customers are now more aware of healthy food, and their desire to influence crop growing and working conditions by means of their shopping patterns is growing. The “power of the consumer” has increasingly become the crucial factor for both small and large enterprises. With 300 employees – including 28 trainees –
who stand for quality, choice, assured origin, and customer consultation, I do not mind competing against larger businesses.

**ORGANIC IS NOT ALWAYS ORGANIC**

It is true that the European organic food standards introduced in 1992 and Renate Kühnast’s – Germany’s former Minister of Consumer Protection – 2001 organic label provided for a minimum of standards in the organic foods industry. These changes at least stopped the unregulated manner in which foodstuffs were labelled, but food producing associations such as Bioland and Demeter, which had been in existence since long before the arrival of the broader organic movement, imposed their own standards that are much stricter than EU law. It is not just a matter of limiting pollutants. SuperBioMarkt believes organic also encompasses issues such as fair trade, resource-conserving products, and sustainability at all levels of corporate governance.

For more information see www.superbiomarkt.de
THE MATERIAL INPUT PER SERVICE UNIT (MIPS) CONCEPT
The basis for the development of a product-service system

INTRODUCTION
Since the early 1990s, Friedrich Schmidt-Bleek has advocated radical economic dematerialisation by a factor of ten in order to reduce worldwide material consumption to sustainable levels and avoid long-term damage to the ecosphere. In 1993 Schmidt-Bleek published the concepts of the “ecological rucksack” and the MIPS in order to facilitate the measurement of resource productivity and dematerialisation. In doing so he designed an instrument with which one can compare products’ potential environmental impact. The ecological rucksack is also commonly referred to as the “material footprint” or “resource footprint” (see Lettenmeier et al. 2009). MIPS calculations cover the entire life-cycle of a product over the entire world. In this manner, the “exported” environmental burdens are brought to light. The MIPS concept is based on the idea that a product’s environmental impact potential can be assessed on the basis of material input throughout its life-cycle: The fewer the resources that are used, the fewer environmental impacts are to be expected.

THE MIPS CONCEPT – BASIS FOR THE DEVELOPMENT OF A PRODUCT SERVICE SYSTEM
MIPS stands for Material Input Per Service unit. In order to estimate the input-related impact caused by a product’s manufacturing or servicing on the environment, MIPS (MI/S) indicates the quantity of resources (referred to as “material” according to the MIPS concept) used for this product or service. By employing a reverse calculation (S/MI), a statement can be made concerning resource productivity. For example, one can calculate how much “use” can be obtained from a certain amount of “nature”.

MIPS is both a specific and practicable indicator. It helps to identify the positive as well as the financial potential of resource-conserving entrepreneurship (use and service management as well as cost and resource efficiency). By using the MIPS concept, sustainable entrepreneurship can be realised internally at the company level and externally in all areas of the business economy, including at the regional, national, and global levels. By interlocking the processes at all of these levels, the optimisation of all material inputs contributes to an increase in resource productivity either life-cycle-wide or in terms of the overall economy.

MIPS calculates the use of resources from the point of their extraction in nature, and all data corresponds to the amount of tons moved. This includes consumption of the following categories of resources:
+ biotic (or renewable) raw materials
+ abiotic (or non-renewable) raw materials
+ water
+ air
+ earth moving in agriculture and forestry (including erosion).

All material consumption during the manufacture, use, and recycling or disposal is calculated according to natural resource consumption in the categories mentioned above. This is done by inserting simple values into the calculation that take into account the material intensity of different materials (expressed in kg/kg, i.e. kg of natural resources per kg of a specific material), energy carriers (such as electrical power expressed in kg/kWh), or transport (in kg/ton). This simplifies calculations and makes the use of MIPS easy to understand, practicable, and comprehensive.

By using MIPS enterprises and designers can calculate the life-cycle-wide material footprint (or ecological rucksack) of their products and services. Thus, MIPS provides the possibility of calculating resource productivity potentials of product and process innovations in current and
future markets. The crucial difference to indicators that consider outputs (emissions) is the active orientation towards a system-wide dematerialisation of products and services, as opposed to a system that seeks only the reduction of particular emissions.

**MIPS IDENTIFIES MORE THAN MEETS THE EYE**

Sooner or later, all material input becomes either output waste or an emission. If every input will anyway become an output, then one can arrive at an estimation of the potential for environmental impact by measuring the input. Most methods of evaluating a product’s ecological quality investigate a variety of outputs (emissions) whose relevance is known or at least partially described. However, when compared to the multitude of emissions (some hundred-thousands to a million substances), the number of substances whose effects have been thoroughly and comprehensively researched is miniscule (only a few hundred).

**Usable indicators for determining relevant potential of environmental impact must satisfy the following requirements:**

+ They must be scientifically founded.
+ They must guarantee transparent and reproducible estimates of potential of environmental impact for all processes, goods and services, from cradle to grave.
+ They must be easy to apply in practical use, as well as being time and cost efficient.
+ They must give targeted answers.
+ They must practically and conceptionally, be relevant to the economy and to profitability aspects.
+ They must be applicable on all 3 levels: locally, regionally and globally.

Source: FSB 1994, 2009
By taking the inputs into account, the quantitative outputs are automatically included in the calculation. Inputs become outputs after undergoing processes, but unfortunately only very few of the outputs are usable or desired as only the end products themselves are desirable. By measuring the inputs, we may not arrive at a qualitative impact assessment, but instead at a valuable quantitative indicator of the potential for product or service’s environmental impact. Thus, MIPS is suitable as an indicator of precautionary environmental protection and fills a gap that has been overlooked by other ecological estimation systems. MIPS is unspecific to particular materials and substance-specific hazards. It is precautionary, and, by means of a reduction of material flows, is directed at the known as well as unknown environmental problems.

**OBSERVATIONS ACROSS LIFE-CYCLES**

The same is true of MIPS as is true of any other form of ecological assessment. In order for the assessment to be meaningful, it has to be carried out life-cycle-wide. This assessment must include all of a product’s phases:

+ Production (including the extraction of raw materials, the manufacturing of pre-products, transport, and sales);
+ Use (including all consumption, transport, and repairs);
+ Recycling and/or disposal.

This extensive examination of a product’s life-cycle is necessary, as it is not always apparent what environmental impact has taken place during manufacturing and what impacts are associated with the use of a product, for all products carry with them an invisible “ecological rucksack” or “material footprint” that represents their invisible environmental impacts.
HOT SPOT ANALYSIS
A sustainability tool for designers and companies

CHRISTA LIEDTKE WUPPERTAL INSTITUTE FOR CLIMATE, ENVIRONMENT AND ENERGY

Hot spot analysis is a practical tool for the evaluation and assessment of value-chain-oriented sustainability. It can be used both in the search for new solutions (outside the box) or within an existing framework (step solution). Hot spot analysis was designed to allow companies to improve the sustainability indicators of their products and services. This method can support the interaction between a company's needs and the developmental work of designers or scientists in the R&D process. For designers who wish to apply sustainability as an aspect of their work, this method has been summarised in a design guide that focuses on the design process. This guide aims to support an innovative product and service development process directed towards achieving sustainability. The guide's concept is based on eco-design, which focuses on dematerialisation and service orientation across the product's life-cycle as well as comprehensive concepts such as "cradle-to-cradle".

An Instrument for Integrating Sustainability
The aim of the design guide is to illustrate how eco-design concepts can be applied in practice. The following five systematic steps provide the designer with an easy-to-follow and systematic roadmap when designing a sustainable product or service.

Step 1: Assessment of the existing product
Step 2: Hot spot analysis
Step 3: Searching for possible solutions
Step 4: Planning
Step 5: Design evaluation

Each step of the process is supported by ready-to-use worksheets that allow the designer to easily relate the concepts explained in the first part of the guide to his or her everyday work. At the same time, the process avoids limiting the designer's creativity. Seven worksheets with clear instructions support the guide and allow for a systematic, step-by-step, and easy to follow design process. The worksheets were well received by design students who used the design guide during the First Sustainable Summer School in 2009.

ECO-DESIGN
Eco-design is intended to counter the large amounts of natural abiotic resources that are wasted when they are used, moved, or disturbed during a production and consumption process. Resource inputs need to be reduced, and this lies within the power of the designer. Sustainability, which includes environmental, social, and financial considerations, should be introduced into product planning at the earliest possible stage. Eco-design understands the important role of design, dematerialisation, and consumer satisfaction in sustainable product-service systems. It demands maximum possible functionality of a product with the least possible use and pollution of natural resources. The focus is on the services provided by the product instead of on the material possession of goods. Functionality, however, is not forgotten. Four golden rules for eco-design are:

1. High resource efficiency
2. Low environmental and social impacts
3. Needs-oriented solution combined with a high degree of user satisfaction
4. Cost efficiency (during R&D, production, and consumption)

ASSESSING THE EXISTING PRODUCT'S PURPOSE AND LIFE-CYCLE (STEP 1)
What is the product's principle service? Are there other kinds of services that could be provided? To answer these questions the supporting worksheet provides two tasks. First, designers are asked to provide a detailed description of the product's service or utility in order understand the purpose of its design. Second, the worksheet provides a template for drawing the complete product life-cycle. This provides the basis for identifying the hot spots.
HOT SPOTS

Hot spots are aspects in a specific phase of a life-cycle that assume a high degree of relevance within the entire chain. The following aspects are considered:

+ Environmental aspects: Resource efficiency, water use/rucksacks, land use, and energy efficiency/CO₂ emissions
+ Social aspects: Consumer satisfaction, health and safety, hazardous substances
+ Economic aspects: Cost efficiency in production and consumption, cost of research and development

Once identified, hot spots can be the leverage points that can allow designers to make a product more sustainable in terms of eco-design. Further aspects could be added to the evaluation if necessary.

IDENTIFYING HOT SPOTS IN A PRODUCT LIFE CYCLE (STEP 2)

After identifying these hot spots, the designer will understand the points where improvement is most needed in order to make the product more sustainable. The supporting worksheet has a table for grading each phase of the life cycle according to its contribution to the product’s overall sustainable impact. (For example, a wedding ring is highly resource-intensive during the first stage of raw material extraction when compared to the other life cycle phases that could be rated grade 3. However, later life-cycle phases are graded with lower scores.) A second table allows for the evaluation of the environmental, social, and economic sustainability aspects for every phase of the product life-cycle. Hot spots are identified by multiplying these scores with the scores from the first table, thus incorporating the combined importance of every stage of the product’s life-cycle. A reviewer can repeat the process in order to obtain a second opinion on the allocated ratings. Finally, the hot spots are mapped in an overview grid.

Information Box:

**HOT SPOTS**

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SEARCHING FOR POSSIBLE NEW INNOVATIVE SOLUTIONS (STEP 3)

Techniques such as brainstorming, morphological analysis, or analogies may be helpful at this stage. The supporting worksheet asks designers to select and describe the three most promising solutions from an environmental point of view in terms of their resource efficiency. Depending on the requirements, these could offer an absolutely new service system or merely represent improvements. Using a table of detailed environmental criteria, the solutions are assessed during every phase of the product's life-cycle. If no solution is deemed satisfactory, the search is started anew.

DETAILED PLANNING OF THE FOUND SOLUTION (STEP 4)

At this point designers are encouraged to create a spider diagram which identifies the points that lead to the optimisation of environmental and economical factors. The designer must then ask the following questions:

- How can the minimal use of materials and energy be achieved?
- Which is a reasonable lifespan that can still satisfy the function?
- Which is the best material when considering function and lifespan?
- How can a sensible – and therefore materially extensive – recycling take place?
- How can transport be avoided?
- How can we ensure the end product is free of hazardous materials?
- What has to be considered in order to ensure customer satisfaction?
- How can the cost of research and development be minimised?
- How can usage efficiency be maximised in order to keep user costs low?

EVALUATION OF THE DESIGN SOLUTIONS (STEP 5)

The design drafts are first assessed and compared with one another. Hot spot analysis is again used, but here MIPS estimates and pollutant consideration are also useful. At this point the most successful solution to fit the task will emerge. A comparison with existing solutions is necessary.

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OVERVIEW OF STEPS FOR DESIGNING SUSTAINABLE PRODUCTS AND SERVICES
OPTIMISATION DURING THE FIRST SUSTAINABLE SUMMER SCHOOL
During the early stages of the First Sustainable Summer School, design students were sceptical of the design guide methods, as these appeared to be too complex. This sparked a critical and stimulating discussion over whether such methods would limit a designer’s creativity. Furthermore, students demanded exact data for grading the indicators and/or criteria. During the summer school, students applied the methods in the design guide and the improvement of the stated criteria was actually graded. One of the original participants in the First Sustainable Summer School is currently working together with the summer school’s organisers in order to help optimise the design guide.
SUSTAINABILITY IN PROCESS: Christa Liedtke: HOT SPOT ANALYSIS
HANDS ON SUSTAINABILITY

WHAT IF? EXPLORING ALTERNATIVE SERVICES FOR A MORE HUMAN MARKET
Nina Gellersen

LUXURY AND SUSTAINABILITY – IS IT EVEN POSSIBLE?
Anke Bernotat, Ulrich Scholz

RITUALS, HABITS, LIFESTYLES
Bernd Draser

LIFESTYLE LIGHT
Brigitte Wolf

SUMMARY OF THE SUSTAINABLE SUMMER SCHOOL FINDINGS
Maria Jolanta Welfens, Ina Schäfer

PERSPECTIVES
Brigitte Wolf
WHAT IF?
Exploring alternative services for a more humane market

NINA GELLERSEN LUCERNE UNIVERSITY OF APPLIED SCIENCES AND ARTS

TASK
Unrestrained capitalism is in a crisis. This gives us time to pause for a moment and challenge a few of the generally accepted views of markets and consumption. The First Sustainable Summer School provides a framework for a playful new way of thinking.

This workshop is not about creating new products for new markets. Instead it seeks strategies that can allow us to break out of the vicious circle of production that creates more and more things that people may think they want but do not really need.

We will be working on concepts for services that fit people’s real needs. How can we share time, knowledge, experiences, or products among a diverse community for the common good? What could enhance our quality of life? If the driving force is not the economy, then what are the ways of organising such services? Let us explore the possibilities!

METHOD
The students were asked to prepare by reading Peter Barnes’s Capitalism 3.0. At the beginning of the workshop, we discussed several of the author’s concepts in order to achieve a deeper insight into the complexity of the problem. Starting with definitions for “ilth” (negative externalities) and “thneeds” (things we want but do not really need), we talked about nature, community, culture and the commons. We also spoke about issues such as the rapidly expanding publicly traded stock corporations and the financial system in general. During our discussion we collected both positive and negative factors.

After the general introduction, the students formed into groups of two or three and focussed on different texts ranging from aesthetics in sustainability to social design and design ethics. Further discussions were supported by short inputs on service design and values. In several brainstorming sessions we collected general needs and values and made a list of services that already
cover these requirements. Finally we came up with a large variety of new services that do not yet exist but have the potential to make a significant difference on people’s lives.

LOCAL FAIR
Looking at these manifold services, the group decided not to focus on one or two specialised services, but instead to address the system as a whole. They called this “Local Fair”. Local Fair is a service platform that enables neighbourhood residents to share and exchange activities, products, knowledge, space, etc. Membership is not obligatory, and the service is available to everyone in the local neighbourhood. It is there when you need it.

The system is based on the following values:
+ Happiness is defined by freedom and choices.
+ While money is abstract, personal human interaction is real.
+ One constantly learns through interaction with others – intellectually, socially and emotionally.
+ Caring about one’s home, neighbourhood, and planet connects one with others.
+ Local interaction improves both community and individual quality of life. A reinforced local community serves both tangible and intangible needs.
+ A sustainable lifestyle can only be achieved by respecting the value of our surroundings.
+ As possessions are limiting, sharing maximises choices.

A shift from “I, me, my” to “we, us, our” promotes both environmental and social sustainability. Local Fair is not just a service but also a process in which individuals can themselves develop. By providing a framework in which the guidelines can be adjusted, the individual can take part in creating the local neighbourhood. It is an interactive life-cycle of realizing, caring, and sharing.
REALIZING is understanding the environment by informal learning or through formal education.

CAREING is taking responsibility for the community and becoming active in it.

SHARING enables one to have more variety and flexibility. You receive more than any individual can own.

DEVELOPMENT of the individual and of the local community itself.

In a local community, everyone knows each other. This supports:

1. Commitment and responsibility
   - protection of objects and contexts
   - respect of privacy, dignity, and time
2. Integration: no rating system required
   - Everyone should maintain his or her personal judgment
3. Mediation and self-moderation
   - Taking local responsibility and engagement
   - Democratic and transparent local election system
4. Value as a currency:
   - Time, donation, money, sharing goods, services, and spaces

HOW TO BEGIN
In order to begin constructing such a complex system, we must first design and compile a “starter-kit” consisting of guidelines and rules. Working together in cross-disciplinary teams with social workers, educators, psychologists, or lawyers, for example, designers need to think towards such systems and create a framework for possible services. It must be open enough to integrate future services that are developed within the community. Once the framework has been provided, Local Fair could be activated by either the city authorities or by a local incubator. After it has been set up, information, communication, education, and other activities can encourage people to use the local neighbourhood space.

LOCAL FAIR – WHAT IS TO GAIN?
Local Fair is a tool for a new sustainable thinking in a social environment. It offers the opportunity of making free choices and getting involved. Here is a list of some possible services, but there could indeed be many more:

**Time for ourselves**
- i.e. Matching simple joys
- Games we can play

**Food**
- i.e. Today I will cook …
- Use my garden.

**Mobility**
- i.e. Use my car.
- Let’s go to …

**Goods**
- i.e. Use my printer.
- Use my lawnmower.

**Clothing**
- i.e. Take my shirt.
- Make something new out of …

**Knowledge**
- i.e. Teach my children.
- I wonder if you know how to make …

**Skills**
- i.e. Fix my bike.
- Paint my walls.

Participants: Szilvia Biró, Jenny Chan, Lenka Petzold, Carlos Santana Jr., Christian Schlatter, Leon Wenning, Connie Yeh
LUXURY AND SUSTAINABILITY
Is it even possible?

“Luxury is always what you do not have.”
“Luxury will also exist in the future (as it always has). It is the stubborn opponent of equality.”
“Luxury – everything which is not absolutely necessary for survival.”

The aim was to develop solutions that combine luxury with sustainability. The group was provided with a brief description of potential users of these solutions.

DEVELOPMENT AND CONSUMPTION
Our lifestyles are changing. Mankind’s determination to constantly improve and renew objects has led from the flint stone tools of the past to today’s iPhone. As a result, our environment is also changing. As the Wuppertal Institute’s research results clearly illustrate, we consume more resources than we ever have in the past. If other countries do the same, mankind would need many times the resources that are available on the planet. There is no doubt that this situation cannot be allowed to continue.

Luxury (from the Latin luxus, which originally meant “outstanding” or “extravagance”) stands for something very special and out of the ordinary. Luxury is never taken for granted, and it is subject to different cultural perceptions. According to Maslow’s hierarchy of needs, the better off we are in the social pyramid, the more we want to set ourselves apart from others through travel, fine clothes, cars, sports, knowledge, special skills, a large circle of friends, etc.

People all over the world are becoming aware of the need to assume responsibility, and a result they are increasingly adopting sustainable lifestyles. Media and technology support this process, but it is not happening fast enough.

TASK
Figures show that consumption is increasing despite the new awareness of the need for sustainability. Life in Western societies is stressful and tough, which is why we all wish to treat ourselves to a bit of luxury now and then.

Designers from different fields were briefed on how to address this complex task and develop strategic solutions. Interviews were conducted in order to provide insight into people’s social lives and needs. The aim of the workshop was to develop new forms of luxury that are compatible with sustainability.

METHOD
Intensive brainstorming centred on variations of sustainable consumption provided possible answers to the following questions: What does luxury mean to us? Who indulges in luxury? How do they do it? Why do they do it?

An article by Hans Magnus Enzensberger titled “The Future of Luxury”, milieu studies by Heinrich Schipperges, and our own studies helped us to understand and describe the relevant demographic groups and target audiences. With this information we formed three teams to develop effective solution strategies. Each team described a fictional person as well as his or her living habits, needs, and desires in order to make the consumption of luxury goods and services more easily understandable.

Luxury can be interpreted in a variety of ways. What one person regards as luxury may be irrelevant to the next. Objects or phenomena that are available in abundance to one group might be scarce – and therefore a luxury – for another. Let us examine the life of Eva, Rebecca, and TomTom and take a look at their patterns of luxury consumption.
THE YOUNG NAVIGATOR, EVA
The Young Navigators are a subset of the “Adapters” group, of which Eva is a member. This group is generally made up of young people. They are flexible, insecure, and use all available digital media. They think and act globally. They are aged between 15 and 25, and they have been exposed to all recent and current crises: financial crisis, unemployment, climate change, etc.

The “Adapters” have learned to respond in a flexible and adapted manner and maintain several solution strategies. This user group is very interested in travel, interactive media, and communication.

THE “EVA, ANTON, & YOU” FASHION SHOP
Eva is a 22-year-old student who likes to travel. Her financial means are limited. She enjoys life, likes reading, dining out, and wearing fashionable clothes.

Due to its high volume, clothing is a negative item in terms of waste statistics, as it has become a throwaway item. Mathilde Vlieg and Jennifer Saikowski developed a second-hand store with an integrated tailor’s shop where used clothing donated by customers is redesigned in line with the latest fashions. They do not use plastic bags. Resource efficiency is reflected in water savings and the avoidance of plastic and other waste.

THE “QUALITY OF LIFE” TYPES: REBECCA AND TOM
The “Quality of Life” group includes status-oriented cosmopolitans. Keywords such as baby boomers, emancipation, individualisation, wealth, pleasure and success are all descriptive terms that apply to this group. Despite its heightened environmental awareness, this target group consumes high-quality travel, clothing, and food.
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The “EVA, ANTON, & YOU” Fashion Shop

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The “QUALITY OF LIFE” Types: Rebecca and Tom

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One for All

Rebecca, 34, one child aged two, is a successful self-employed architect. She is fashion-conscious, and has many interests and commitments. Nature and health are important to her. Due to her busy life, she has only little time for her personal interests. Students Samay Claro and Jasmin Schneider developed the “One for All” label, which identifies products that are resource and energy-efficient, low in carbon emissions, and/or fairly traded. This makes Rebecca’s decision to spend money on sustainable and luxury objects easier. Rebecca could become a pioneer and make sustainable luxury products more widely acceptable.

TomPass

Tom is 32 years old and works as a marketing consultant. He loves material things and consumption. His partner is a Japanese woman who lives in Tokyo. His life is characterised by a great amount of business and private flying and long car trips to and from his countryside mansion. Tom attaches great importance to things that give him a distinctive appearance.

Emre Mihcilar, Aditi Ruiz, and Yu-Fang Teh developed the TomPass software package to provide this multicultural target group with sustainable offerings, such as proposals for alternative forms of business travel like rail instead of car. This allows the user to live an individualistic lifestyle while at the same time make alternative sustainable decisions every day.

Conclusion

Luxury and sustainability are naturally difficult to reconcile with one another. Nevertheless, the students showed that it is possible to develop other means of allowing their user groups to enjoy luxury. Lastly – at least in terms of the acceptance and penetration of more sustainable habits and procedures – it is necessary to positively influence people and encourage them to live a more sustainable lifestyle that fits with their personal requirements and attitudes.
The vast majority of people in the industrialised world are aware of the necessity to adapt consumer behaviour towards more sustainable ways of production and consumption, but the gap between knowing and doing is hard to overcome. Human habits are extremely persistent, especially when it comes to individual mobility: “My car is my castle” proves an unyielding motto.

There are however ways to overcome such persistent habits.

The objective of our workshop was re-thinking and re-inventing mobility without negating the individual’s legitimate needs. To be successful, solutions must operate in terms of engineering and product design as well as communications and social design.

**METHODOLOGY**

**Analysing the structures of rituals and habits**

We chose a cultural approach as a starting point in analysing the structures of rituals and habits. Important questions included: How do these rituals and habits work? Why are they so persistent? How can they be overcome? How can we bridge the gap between knowing and doing?

We soon discovered that habits are based on unreflected patterns of behaviour. Thus, they can be overcome by contemplation. Rituals have a different structure with a long tradition. They can help constitute communities, safeguard against unsettling changes, and reshape behaviour.

**Immersing into the practices of transforming individual mobility**

Guest speaker Rolf Schumann from the Better Place project is an expert on electric vehicles. Rather than simply focussing on the vehicle itself, Schumann presented new technologies while looking at the topic from a much wider angle. He also discussed the supply of renewable energies, sufficient infrastructure including energy storage services for better grid utilisation, new business models, and software solutions that can help customers more easily change their habits.

**Creative teamwork**

During this phase the participants used their creativity to shape new ideas and to apply their theoretical and practical insights to new spheres of products and services. The objective was to shape visions of new and sustainable habits and rituals involving more sustainable means of individual mobility.

**Concept wrap-up**

The newly developed ideas and sketches were linked to technical, economic, ecological, and social requirements and realities. This was the real-life test for the newly developed ideas. Felix Stark, a freelance sustainable-product designer based in Cologne, guided the participants through this phase of their work.

**WORKSHOP RESULTS**

**car.munity by Cornelia Einicke, Daniela Loraing, Anna Hornberger**

As private cars remain unused most of the time, the team developed an idea that could take advantage of this situation in the form of a car-sharing project. The concept uses existing technological solutions to make car sharing more attractive. Main features include convenient logistics, a web-based platform that provides membership to both mobility seekers and car owners, and GPS devices in the cars to administer user settings such as mileage and damage checklists. Additional services include insurance, payment management, free parking in the city, and user-generated maps with “green tips”.

**Local Foods Finder by Simone Huser and Gundula von Hartrott**

The team developed a platform for promoting regional, seasonal, and organic foods. The project is based on an online network that clusters shopping trips to local organic food stores, farms, etc. This infrastructure also helps regional enterprises promote their products and services. Additionally, the network serves as a tool for organising and reviving the rituals of cooking, dining, and
socialising in groups. An additional benefit is a reduction in car travel. The concept connects ecological, economic, and social aspects of sustainable consumption that can improve both quality of life and promote local culture.

Project Free City by Ramona Rösch and Majid Mago-Mulangwa
This team developed a platform to link public transportation with public car-sharing models with retail enterprises in order to reduce downtown automobile traffic. The team suggests several approaches towards attaining this goal, such as restricting access for private cars to the inner city, for example. As compensation, public transportation availability is increased and a pool of electric cars is made available for drivers to share. Inner-city retail stores offer additional services such as free parking, sharing in the cost of public transportation fees, shopping trolleys that can be left at the bus or tram station, etc. A web-based platform helps users find the most efficient transport downtown, either by public transportation, car sharing, or a combination of both.

Enter Here by Othmar Mühlebach, Ezekiel Wheeler and Inês Reis
The team suggested a grass-roots movement of sustainable lifestyles in order to discover and explore local culture, environment, and foods. The plan deliberately incorporates the social adhesiveness found in rituals to implement completely new and sustainable ways of life. The movement begins with the individual sphere by introducing local culture and regional food in the form of workshops. These attract more people on a private networking basis, and the internet platform makes events more accessible. The concept is applicable to different cultures and can easily adapt to cross-cultural differences.
CONCLUSION

The input and discussions throughout our workshop as well as the results from all four individual workshops supported our stated thesis: Implementing sustainable behaviour into new lifestyles is a complex task made up of various discourses. Transforming products into services demands a comprehensive understanding of design as well as its practice. Technological sophistication is just as important as communicative vigilance, cultural subtlety, and unending creativity. Sustainable designers must be the moderators of complex processes between communication and society as well as technology and aesthetics.
INTRODUCTION
If the entire population of the planet maintained the same form of lifestyle as the inhabitants of the world's industrialised countries, by 2050 we would need several “Earths” to provide the resources necessary for their support. Yet we only have one Earth, and this one is already in trouble. In order to afford comfortable, sustainable lifestyles, we must first re-determine our values and create a "lifestyle-light". This remains the great challenge for the future. As Friedrich Schmidt-Bleek stated in 1994, “Ten percent is enough for the rich.” The same statement was later published as a part of the exhibition “Designing the Environment – Perspectives for an Ecological Future”. In 1998 he published “The MIPS Concept – Factor 10” – a method for measuring the amount of natural resources used in the production of products and services.

OBJECTIVE
In order to lead a comfortable lifestyle and simultaneously save resources, we must first develop new and attractive patterns of behaviour – a lifestyle light! We have to dramatically reduce the use of resources and energy to ten percent of what we currently use. The focus of the workshop is the creation of new patterns for a sustainable lifestyle that people would want to adapt.

METHODOLOGICAL APPROACH
To change the future one must first be aware of the present. As changes in a society begin with changes on the behalf of individuals, we began the workshop by examining our own everyday life. As a result, we were able to estimate what kind of products and how much energy we use in an average day. These data formed the basis for a discussion focussed on determining potential subjects that can be improved in terms of sustainability. After the final evaluation, which considered the environmental relevance of the selected subjects, the participants decided to work on subjects such as “sharing”.

The participants of the workshop split into three groups that would each develop concepts and patterns for sustainable, resource-efficient, and “lighter” life-styles.

CONCEPTS
1. Community for More
Alexis Brion and Maria Kuperski
The first group developed a concept for a “sharing point” for a neighbourhood made up of young families. Here items which are not used every day can be shared and exchanged (items for children, sports equipment, gardening tools, parties supplies). The sharing point would need to be in a central location with easy access. For the use of these products, users can either pay in cash or with personal services, such as child-care, window cleaning, or other forms of social or technical assistance. A membership fee is paid that goes towards paying employees at the sharing point as well as website upkeep. The sharing point has several benefits for the users: They gain access to a great variety of products, including expensive products, and they save time, money, and storage space. They also get to know their neighbours. The environmental advantages are also obvious, as the programme saves raw materials and energy and can also help lower pollution. But here we must also point out the social aspects of sharing, which can help create new jobs, allow people to get to know one another, and increase residents’ safety and satisfaction.

2. Slow Shopping – Meaningful Experiences and Relationships
Maria Paula Saba dos Reis, Tainá Isabel Lacerda, and Yana Kramskaya
This concept begins with basic and unending tenet of the Slow Movement – “the need for nearness and care and for a little love.” “We can only satisfy these needs with slowness in human relations”, says Oslo University’s G. Folstad. Nowadays, people all too often shop without thinking, and everywhere we see excessive consumption as a compensation for unfulfilled needs. The services offered include the exchange or donation of used clothes, redesign, and customisation of used clothing by young professionals and new clothing from ecologically responsible companies that when applicable carry only fair trade products of organic origin. To improve the experience, the shop will include a lounge-like atmosphere incorporating natural elements, plants, and music. The fitting rooms will be furnished with large mirrors, comfortable furniture, and
natural light. Shopping will be educative. Multimedia presentations that users can operate via touch screens will deliver information about the origin and manufacture of the products sold in the shops.

3. Soop Wareshare
Christian Winkler, Nora Gonzalez, Till Karrenbrock, and Katharina Krüger
Inspired by the services provided by a good library, a professional sharing system was developed for products suitable for sharing, such as cars, bicycles, music equipment, garden equipment, professional tools, and dishes. The "shareware chain" is intended to cooperate with high quality specialty trade shops. The idea is to lend the equipment for one-time use near the location where needed and then return it. This helps reduce transportation and increase efficiency of use. Making use of the soop wareshare system does not only mean sharing goods, but also includes aspects such as experience, knowledge, service, and pleasure.

CONCLUSION
The fact that all of the groups decided to work on sharing concepts that would save energy and resources can be seen as a first indicator representing a shift in values among the younger generation. This generation seems more interested in quality of experience than in actually owning a product, but of course we must remember that these participants have a strong awareness of environmental issues. However, it is important to remember that they might well be opinion leaders.
Designers can either be a part of the environmental problems we face, or they can choose to be a part of the solution. The First Sustainable Summer School at the Nikolaus Monastery in North Rhine-Westphalia, Germany, focused on the sustainable solutions designers can provide in terms of consumer behaviour and lifestyles.

The First Sustainable Summer School demonstrated that after a week of intense and creative cooperation, young designers can offer a whole new array of innovative ideas for solving environmental problems. The project drafts show the colourful spectrum of the participants’ innovative solutions for energy and resource efficient lifestyles.

The students integrated aspects of sustainability in both their ideas and creative planning processes. Diverse discussions about the interactions between resource consumptions provided valuable impulses while demonstrating the importance of both design and designers’ relationships and potentials.

The eleven projects that were developed during the workshops are each worthy of attention in their own right. At the same time they can be viewed as pieces of the larger puzzle of “sustainable lifestyles”. All of the project drafts developed as a part of the four workshops complement one another.

This figure mapping the project ideas that came out of the workshops illustrates their complementary aspects. Despite the fact that students worked in different teams using different methods, there was a fruitful exchange of project ideas during the various phases of development. If these ideas are ever realised, their complementary nature allows each consumer to choose according to his or her own personal requirements.

The “TomPass” – an information resource for sustainable consumption such as car sharing, slow food restaurants, and other offerings – was conceived for the iPhone as a sort of post-materialistic TomTom navigator. This project concept can be directly connected to other ideas shown in the figure, such as “Slow Shopping”, “Local Foods Finder”, “car.munity”, “Free City”, or “Enter Here”.

The luxury-conscious woman, who when shopping pays close regard to known brands with sustainable labels, can use the TomPass to inform herself of slow-shopping opportunities, clothing re-design, or fancy sustainable restaurants.

The “soop-sharing” concept complements the “Community for More” project concept, and both could be established as a part of the “Local Fair” community.

At the end of the summer school, students and instructors came up with specific statements on the topic of sustainability in general while looking back over the week of intensive workshops that took place at the Nikolaus Monastery. As a final step, participants produced a manifesto (see chapter …).
Designers can either be a part of the environmental problems we face, or they can choose to be a part of the solution. The First Sustainable Summer School at the Nikolaus Monastery in North Rhine-Westphalia, Germany, focused on the sustainable solutions designers can provide in terms of consumer behaviour and lifestyles.

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**Hands on Sustainability:** Maria Jolanta Waflens and Ina Schäfer: **Short Overview**
The First Sustainable Summer School was a pilot project, and considering the participating students’ evaluations, the workshop directors’ feedback, and the guest speakers’ input, it was a successful event that lays the corner stone for a future international network. We hope that this network will continue to grow and therefore intend to link the summer school to other initiatives such as a living lab, design management forum, and other similar concepts that will allow the ideas grow and transfer these concepts into practice. We want to make the Sustainable Summer School an annual event, and the Second Sustainable Summer School is already in preparation and will take place in the last week of August 2010. We are again looking forward to welcoming students from all over the world to the Nikolaus Monastery in Jüchen, where we expect to see the development of new concepts and ideas that will contribute to quality of life in a sustainable environment.
PARTICIPANTS & PARTNERS

THE VENUE: THE NIKOLAUS MONASTERY
Bernd Draser

LUCERNE UNIVERSITY OF APPLIED SCIENCES AND ARTS
Nina Gellersen

FOLKwang UNIVERSITY
Anke Bernotat

ECOSIGN / ACADEMY FOR DESIGN
Bernd Draser

UNIVERSITY OF WUPPERTAL, DEPARTMENT OF INDUSTRIAL DESIGN
Brigitte Wolf

WUPPERTAL INSTITUTE
Christa Liedtke

CSCP

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IMPRINT
THE VENUE: THE NIKOLAUS MONASTERY

BERND DRASER ECOSIGN ACADEMY FOR DESIGN

For more than 600 years, the Nikolaus Monastery has been a place of deceleration and reflection – just the right venue for the First Sustainable Summer School to discuss issues of sustainability and the future of everyday life and rituals.

Located in the picturesque rural Niederrhein countryside, the monastery forms a strong contrast to the nearby open-pit lignite mining at Garzweiler and urban centres of Cologne, Düsseldorf, and the Ruhr Valley. A vivid and diverse metropolis with twenty centuries of rich heritage, Cologne forms an important cultural centre. The state capital of Düsseldorf serves as headquarters for many international corporations while serving as the region’s political and economic heart.

The Ruhr, the focal point of German industrialisation during nineteenth and twentieth centuries, symbolises the difficulties and challenges faced by the sustainable re-design of a whole region that is still experiencing structural changes in terms of economy, ecology, and society. In 2010 the Ruhr will be designated the European Capital of Culture.

The monastery building, which replaced an earlier hermitage and chapel, dates back to 1400. Today the monastery is run by the Catholic Order of Oblati Mariae Immaculatae, a religious order founded in early nineteenth century. The monastery is surrounded by a huge park offering wide spaces for retreat, reflection, and relaxation.

The fathers and brothers of the order proved to be quite accommodating, flexible, and generous hosts. Meals were served at the antique refectory, and participants were accommodated in simple but cosy two-bed rooms. There were impressively furnished and decorated rooms available for the plenary and workshop sessions, such as the antique library and St. Peter’s Hall with its gorgeous ceiling fresco.

It is the monastery’s place amidst the tensions between past and future, heritage and burdens, new cultures and challenges, and its location set against the surrounding area’s urban energy, industrial relics, and rural silence that made the Nikolaus Monastery the perfect venue for the First Sustainable Summer School.
LUCERNE UNIVERSITY OF APPLIED SCIENCES AND ARTS
The School of Art and Design

TEXTILES
This track encompasses the design of surfaces and of textiles for garments and interior design to the development of innovative, functional materials, like Smart Textiles. Students examine manufacturing techniques and explore novel approaches by researching, experimenting and specifying.

PRODUCTS
In this specialisation, students deal with the design of high-quality consumer goods for everyday life and accessories. These products are purchased directly by the user, whose needs are thus placed centre stage. There is also a focus on incorporating the products into their respective spatial, temporal and ideal contexts.

SERVICES
In this track, emphasis is placed on the development and design of services that are usable, useful and innovative. Although the focus is on the user, service designers are also required to rethink the corporate and environmental structures that comprise the service ecology.

The School of Art and Design offers a range of disciplines unmatched anywhere in Switzerland. It is the country’s oldest arts school with a tradition spanning more than 130 years. The school draws on an extensive network of connections with faculty, students and projects in Switzerland and abroad. Its selected bachelor and master programmes and its twenty fully equipped in-house workshops give it a name in the fields of applied art and design affording students the kind of skills that will help them meet the challenges of this industry. This, in turn, further boosts the school’s reputation.

The Design and Arts institutes contribute in equal measure to the areas of research and training, as well as in professional development and service. In the field of design, the school’s major research areas are visual narrative and explanation (communicating by means of images) and design and management (managing creative processes).

In our research-based Master of Arts in Design study programme students can choose between two majors, each of which provides the opportunity to specialise within the contextual framework of the disciplines at Lucerne School of Art and Design: Animage and Product Design & Management.

Product Design & Management is directed at product and textile designers as well as graduates from affiliated disciplines. Within the major students can choose from the three areas of specialisation:

- TEXTILES
  This track encompasses the design of surfaces and of textiles for garments and interior design to the development of innovative, functional materials, like Smart Textiles. Students examine manufacturing techniques and explore novel approaches by researching, experimenting and specifying.

- PRODUCTS
  In this specialisation, students deal with the design of high-quality consumer goods for everyday life and accessories. These products are purchased directly by the user, whose needs are thus placed centre stage. There is also a focus on incorporating the products into their respective spatial, temporal and ideal contexts.

- SERVICES
  In this track, emphasis is placed on the development and design of services that are usable, useful and innovative. Although the focus is on the user, service designers are also required to rethink the corporate and environmental structures that comprise the service ecology.
AN OVERVIEW OF FOLKWANG UNIVERSITY’S WORLD OF DESIGN

Designers attended the School of Trades and Applied Arts here even before the Folkwang School of Music, Dance and Speech was founded in 1927. Designers were closely associated with other artistic fields in Folkwang from the school’s very beginning and in 1928 they formed the Folkwang School of Design (Folkwangschule für Gestaltung). From 1948 to 1972, photographers, carvers, sculptors, graphic designers, commercial artists, and other artists shared the same roof with musicians, dancers, and actors at the Benedictine Abbey in Werden. However, it was not until 2007 that this school became an official part of Folkwang University, including its programmes in photography as well as communication and industrial design. The school is currently planning to move into the Zollverein complex.

NO FUTURE WITHOUT A PAST

Folkwang is one of the oldest photography schools in Germany, and under Otto Steinert in the 1950s it was the last word in photography instruction. The disciplines of communication and industrial design are also indebted to the particular Folkwang tradition and are represented by numerous distinguished teaching staff and a wide range of interdisciplinary artistic, theoretical, and practical instruction. Design at Folkwang University encourages cross-disciplinary work with international partners and maintains close contact with representatives from the areas of commerce and industry, thus allowing the “Folkwang idea” to promote realistic concepts while vibrantly moving forward into the future.

WHAT IS FOLKWANG DESIGN?

Properly educated designers make an important contribution to shaping our environment by virtue of their comprehensive manner of practical and critical thinking, their sensibility, their capacity to imagine the future, and their knowledge of culture, art, technology, ergonomics, science, and the marketplace. Folkwang University’s design programme aims to educate precisely these designers and provide them with the foundation they require to establish their own individual attitudes and approaches to design – all within the context of a unique cross-disciplinary course structure that fuses theory with practice.

Without design, technological innovations are often of no use to humanity. Through the integration of “cultural quality”, design can discover applications for new technical innovations.

INNOVATION AND DESIGN

Design serves as a link between technological innovations and a cultural context. As both catalyst and moderator, the designer oversees the developmental process from initial conception to the design of useful and relevant products. In this fashion, designers combine inspiration and anticipation to create innovations oriented towards a specific context.

Our working group deals primarily with the integration of new technological developments and conventional techniques combined, most importantly, with the possibilities and opportunities that these new discoveries present both for today and in the future.
In order to realise the concept of teaching ecologically orientated design, Dipl. Des. Karin-Simone Fuhs founded the ecosign/Academy for Design in 1994. The Academy offers a full-time course of study which rewards the student a diploma in design and presents design within a holistic context. The students receive intensive training in technical processes, basic theory, and handicraft skills as well as the transfer of these skills into an ecologically responsible design. The interdisciplinary courses offer future-orientated design principles which can only come about bringing together people and the environment. Students learn how to position themselves as future-orientated, ecologically-aware designers who are capable of bridging the gap between industry, consumers, and the environment while effectively utilising all of the world’s resources and potentials. Solutions must be found which do no harm to the environment yet are both attractive and appealing to consumers and practical and profitable for industry. The students are trained to think cooperatively and work in teams. They acquire the necessary qualifications that will allow them to perform in multinational society in an increasingly globalised world. The wide variety of courses supports the ecosign concept. Practical skills – including drawing, photography, DTP, book binding, and model building – are taught in many of the courses of study as well as in the product design seminars. Courses in philosophy, psychology, design theory, art history, and design management provide the necessary background. Students apply what they have learned in a series of projects that help them in preparing for a successful career in the field of design. The skills learned by the ecological designer are similar to those learned by the conventional designer, yet the design goals are considerably more complex due to the added aspect of an ecological philosophy. This conceptual form of practice increases quality while simultaneously opening up new avenues to the designer. The personal interviews, presentations, and general discussions included in the projects lead to deeper understanding as well as new perspectives. International projects in countries such as Japan or Peru offer insight into foreign cultures.
UNIVERSITY OF WUPPERTAL
Department of Industrial Design

BRIGITTE WOLF UNIVERSITY OF WUPPERTAL

SHAPING THE FUTURE!

Industrial design is a scholarly and creative Bachelor of Arts (BA) programme that offers students the possibility of specialising in:
+ Technical products/product systems
+ Strategic design

The BA in Industrial Design is a four years programme, and enrolment takes place annually beginning with the winter semester. We are currently in the process of establishing a master’s degree. The programme offers a practical university education in process-driven product development.

The “Wuppertal Model’s” unique mission is to enhance the industrial designer’s core competencies by adding skills such as design thinking, applied research, and strategy development to his or her repertoire.

New ways of thinking are linked to technical and design expertise. The design programme connects people’s future needs with commercial business strategies as well as the economy. A course of studies in industrial design at the University of Wuppertal – the only university in Germany to offer a degree in “strategic design” – means learning how to develop innovations.

The students benefit from interdisciplinary and international co-operative projects with other renowned design schools, and they are encouraged to participate in international exchange programmes. Finally, the option of obtaining a Ph.D. in design is one of the unique offerings of the University of Wuppertal’s industrial design department.
Sustainable development requires an integrated approach to policy and science, as many of the issues raised by sustainable development cannot be addressed within a single department or by using the tools offered by individual scientific disciplines. This is where the Wuppertal Institute for Climate, Environment and Energy’s research programme begins – by adopting an interdisciplinary approach and working towards systems research and understanding. Applied sustainability research is the Wuppertal Institute’s stated mission.

The Wuppertal Institute explores and develops models, strategies, and instruments that support sustainable development at the local, national, and international levels. Sustainability research at the Wuppertal Institute focuses on ecology and its relationship to economy and society. Special emphasis is placed on the technological and social innovations that decouple economic growth from the use of nature and wealth and on launching initiatives that address these issues.

Research Group 4 deals with service-oriented sustainable production and consumption systems and seeks to develop instruments, concepts, and strategies that promote the transition to more sustainable patterns of production and consumption. Our research focuses on the development and market launch of products and services that are deemed sustainable in terms of their entire life-cycles as well as optimised production processes throughout the entire added-value chain. Instead of containing and supporting of mass flows that are expensive in terms of cost, time, and nature, Research Group 4’s focus is directed towards the needs and wants of clients and consumers and creating eco-intelligent solution strategies.

The Sustainable Production and Consumption Research Group is convinced that making markets and economies more sustainable requires the optimisation of both production and consumption patterns. One possibility of achieving this goal is to initiate an exchange of information between different institutions and businesses which could contribute to integrated sustainability in terms of both production and consumption. The First Sustainable Summer School allows us to discuss the issue of sustainability with young designers and to empower them to integrate these issues into their daily work and design routines. It offered a great opportunity for collaboration and for a number new ideas and findings. Our members who participated at the First Sustainable Summer School were Dr. Christa Liedtke, director of the Research Group 4, project coordinator Dr. Jolanta Maria Welfens, project coordinator Michael Lettenmeier, and junior research fellow Ina Schaefer.
The UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP) provides scientific support to activities undertaken in the field of sustainable consumption and production. This support includes the development, testing, implementation and monitoring of concrete projects, especially in developing countries. As part of its activities, the CSCP also aims to give sustainability a visual face.

As an introduction to the subject, the CSCP and others organised the two-days conference ‘The Future of Sustainable Products and Services’, which was joined by the Summer School students. Our researcher Satu Lahteenoja then participated at the 1st Sustainable Summer School.
The 1st Sustainable Summer School was supported by the project „Material Efficiency and Resource Protection“ which is funded by the Federal Ministry for Environment, Nature Protection and Nuclear Safety as well as by the Federal Environmental Agency.

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PARTICIPANTS

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WORKSHOP DIRECTORS
Dipl. Des. Nina Gellersen, Lucerne University of Applied Sciences and Arts
Prof. Anke Bernotat, Folkwang University, Essen, industrial design, focus: innovation and design
Bernd Draser M.A., ecosign/Academy for Design, philosophy lecturer
Prof. Dr. Brigitte Wolf, University of Wuppertal, industrial design, design theory, focus: methodology, planning and strategy

SPEAKERS
Prof. Dr. Friedrich Schmidt-Bleek, President Factor 10 Club
Michael Radau, CEO BioSuperMarkt
Michael Lettenmeier M.Sc., Wuppertal Institute for Climate, Environment and Energy
Prof. Dr. Christa Liedtke, Director: Sustainable Production and Consumption, Wuppertal Institute for Climate, Environment and Energy

PARTICIPANTS
Szilvia Biró
Alexis Brion
Jenny Chan
Samay Claro
Maria Paula Saba dos Reis
Cornelia Einicke
Nora González
Anna Hornberger
Simone Huser
Till Karrenbrock
Yana Kramskaya
Katharina Krüger
Anna Maria Kuperski
Tainá Izabel Lacerda
Daniela Loraing
Majid Mago-Mulangwa
Emre Mihcilar

Othmar Mühlebach
Lenka Petzold
Ines Reis
Ramona Rösch
Aditi Ruiz
Jennifer Saikowski
Carlos Santana, jr.
Christian Schlatter
Jasmin Schneider
Gundula v. Hartrott
Mathilde Vlieg
Leon Wenning
Ezekiel C. Wheeler
Christiane Winkler
Connie Yeh
Yu-Fang Teh
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