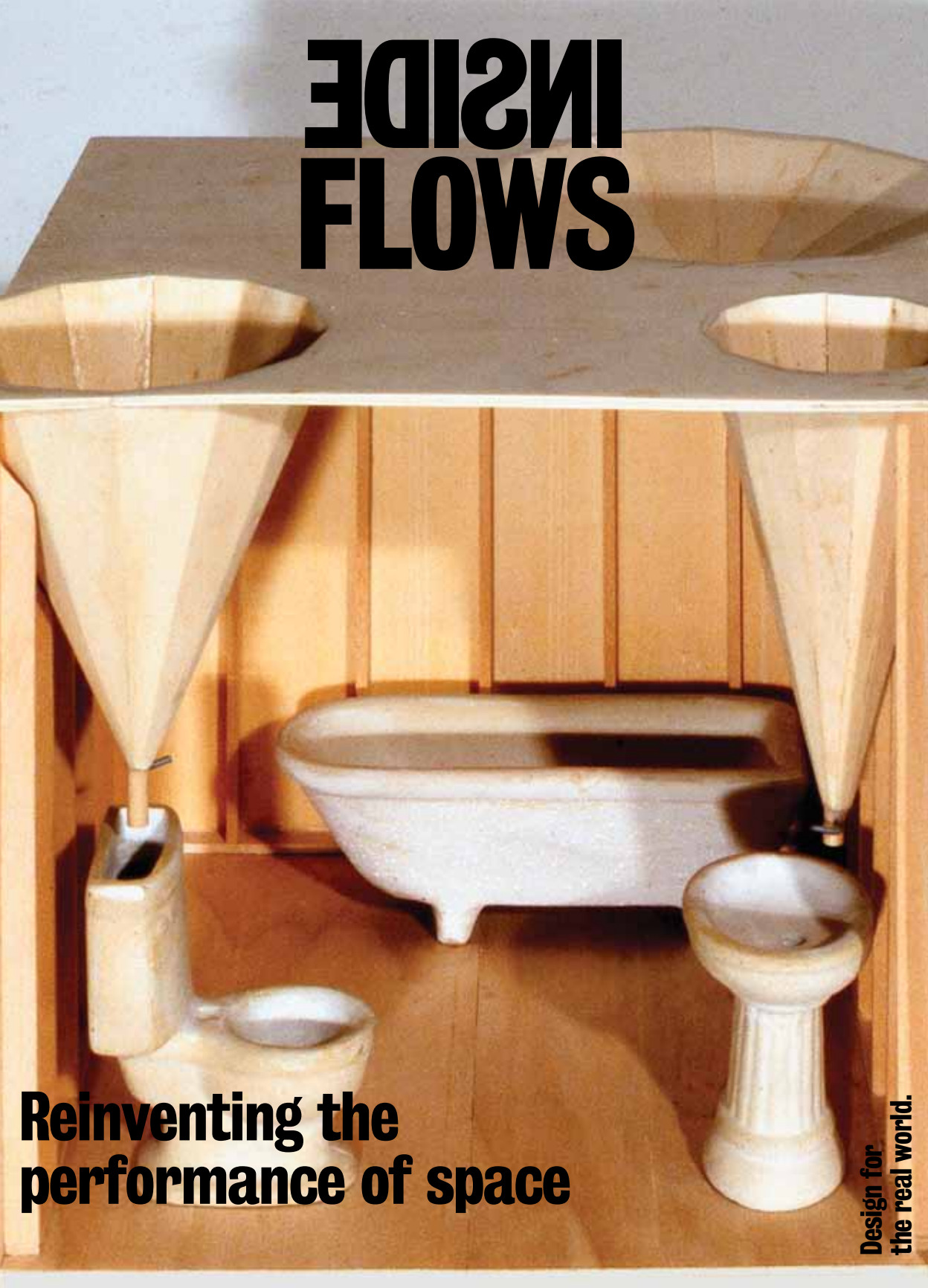
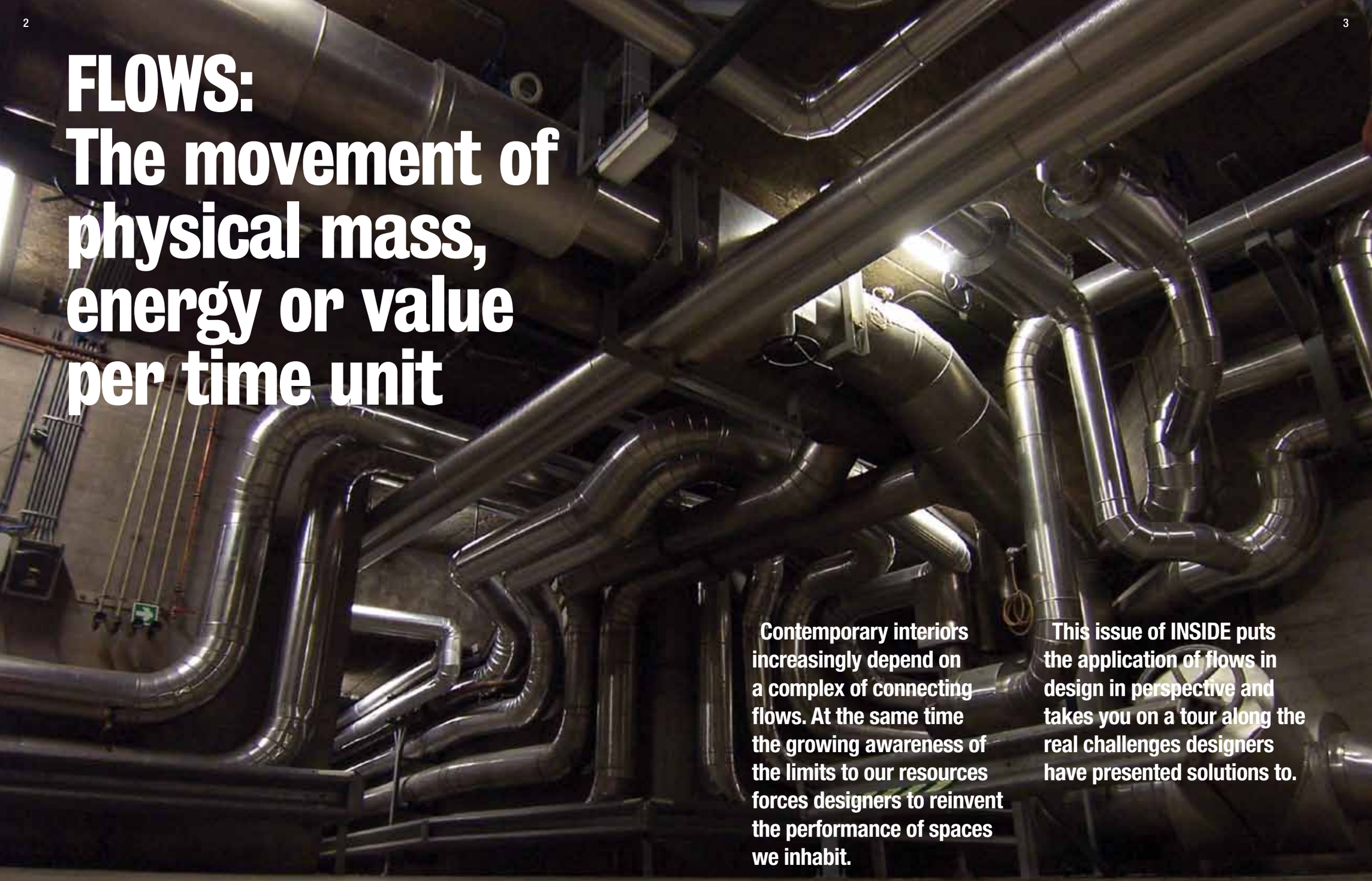

INSIDE
FLOWS
Reinventing the
performance of space
Design for
the real world.

FLOWS: The movement of physical mass, energy or value per time unit



Contemporary interiors increasingly depend on a complex of connecting flows. At the same time the growing awareness of the limits to our resources forces designers to reinvent the performance of spaces we inhabit.

This issue of INSIDE puts the application of flows in design in perspective and takes you on a tour along the real challenges designers have presented solutions to.

Foreword

By Hans Venhuizen
Head of INSIDE

FLOWS is the second publication by INSIDE. INSIDE is a two-year, English-taught Master Interior Architecture program which targets the real world. A world that is changing. Large-scale interiors, a changing relationship between private and public space, sustainability and a greater demand for social cohesion are themes that call for a new perspective on interior architecture. At INSIDE, we challenge and see the world from inside-out and become INSIDE-architects.

FLOWS is edited by Jan Jongert, leader of the research group called FLOWS that is part of the INSIDE program. As is well introduced and illustrated in this publication, Jongert aims at reconnecting the world of spatial design to what you might call common sense. To go past the ludicrous dynamics that so called logical thinking has brought us. For instance to bring large scale food production to regions where the soil is cheap seems to be logical. When produced the food can be easily transported to the urban region where it is consumed. But the effects are devastating on several levels. The local food production loses its income and knowledge. Large scale production is run by huge international firms more loyal towards their shareholders than their local employees and clients.

To keep prices low, new harmful techniques and chemicals are introduced that protect against crop failure, guaranteeing profit levels in all circumstances. Other techniques and chemicals are used to keep the products fresh or at least seemingly fresh, on their long road to the urban consumer. Sometimes these dynamics have hilarious effects such as the way cucumbers are optimised for production. Only straight ones are allowed that look green and fresh even if they are not.

You can fit more straight cucumbers in a box than crooked ones so, the crop becomes more optimized but also more vulnerable to diseases.

This example from the essential world of food shows that this kind of 'logical thinking' ruins local markets and eventually even poisons the clients. What seems to be a smart thing to do, turns out to be absolutely disastrous. It is exactly this kind of rationalism that Jongert wants to oppose with his research.

I first met Jan Jongert some ten years ago when I was curating an art research project in a rural area in the east of the Netherlands. The area was proud of their building heritage that they cherished. Typical regional houses that were built with the local bricks baked from clay from their local river banks. These bricks were no longer produced so the region felt they had lost the source of this originality. In the research Jan and his 2012-architectural colleagues performed, he showed that these dynamics that create typical heritage were still very much alive, you only had to rethink the way it arises. In a regional harvest map, Jan showed that the area was filled with exciting materials that could easily fulfill this task of creating specific architecture. There was, for instance, a very large waste incinerator active in the region that increasingly changed its activities from burning garbage to re-using it.

These and other materials Jan gathered and presented on his harvest map of the region. It was the first time I was confronted with this principle of harvesting regional materials to start your design with but was immediately convinced of its amazing value.

"At INSIDE we challenge designers to see the world from inside-out and become INSIDE architects"

INSIDE-poster 2012-2013.

Since then many harvest maps, websites, books and designs followed. In the research group FLOWS Jan Jongert brings on this approach of harvesting materials as a starting point for design. Thus FLOWS creates attractive alternatives for the lack of logic we see all around us. And because a sense of history is essential for everything you want to do, a prominent place is given to a very original Dutch way of thinking in flows. The Dutch windmill turns out to be an unbeatable source of FLOWS thinking. In its efficient but brilliant way of combining harvesting energy with storage of crop, food processing and housing, it still is a design to admire.

This publication includes the texts, interviews, researches and designs of Jan Jongert and the very first class of INSIDE-architects.

February 2013.

INSIDEflows

Introduction by Jan Jongert

INSIDEflows works at a systemic understanding of the working of flows in our environment and aims at giving them a positive contribution to design. Positive in relation to its users needs, its clients interests, in their environmental impact and ultimately in the quality of the resulting design.

This publication by the research group explores the new means to support interior designers retaking an active integrating role in the execution of their profession. The publication reviews projects and pioneers in the field of designing with flows. A clear example of such a pioneer is Daan Roosegaarde, not waiting for a commission to reach him but developing his own innovations and finding the clients for them. He crosses the boundaries of art, architecture, design and science with seemingly ultimate ease, as he has a clear vision of the future he is creating.
Daan Roosegaarde shares his vision with INSIDE in an interview with Wei Hsun Chen. (page 40)
From a different perspective, Marije van Zomeren introduces us to the changing world of project development and the sustainable flows of money. With her projects she personalises a shifting focus from the most prosperous market segments to the larger population of less fortunate. Minsun Kim interviewed Marije on how she sees the economy developing at the base of the pyramid, the real needs and what design can do. (page 46)

In the rapidly changing context that affects the relationships between different stakeholders and the way value is created, new socio-economic models emerge. Gunter Pauli's Blue Economy is one of the most comprehensive attempts to redesign our environment into an ecosystem. The blue economy promotes the rapidly developing awareness that designers need to shift into a different mode: to do more with less and address the opportunities in the wasteful processes that have been created in the past. Photini Mermygka asked Gunter Pauli about his intentions and how he understands designing with flows can help us create a resilient environment, not just for the spaces we inhabit. (page 34) Because we are in a period of enormous transition that will affect design education we have asked asked Gunter, Marije and Daan how they think current education should prepare students for their future practice.

Flows in design practise

Contemporary interiors increasingly depend on a complex of connecting flows. At the same time current design practice suffers from the segregation of activity and fierce specialisation. This has led to designers rapidly becoming dependent on external specialists and losing one of their primary capacities: to integrate. In interiors, this becomes visible in dysfunctional space, waste and pollution, undesired systems interfering with each other and with the quality of space. Also the process of design and construction is frustrated. Because, as the designer pulls back to become an aesthetic consultant, the role to structure the integration of different flows in the development of the design remains vacant. At best, designs are hiding the conflicts and omissions from the users of spaces.

The most common example is the vast number of buildings being constructed out of concrete causing overheated spaces that need to be cooled by air-conditioning, leading to noise and heat problems for others. In densely populated spaces, people need to close their windows against their neighbours' exhaust, leading to even more climatisation. The disconnection of the specialists dealing with different problems and the hidden nature of most of these processes results in fears and protective behaviour of the different stakeholders operating in each other's field of interest. With our research group, we believe that understanding our environment as an interconnected dynamic environment can help us overcome the gridlock. We cannot do this without the knowledge of the flows that create it and without understanding their mutual influence.

One by one INSIDEflows investigates how a flow is best analysed, represented and how design can optimally act upon them to profit from their presence.

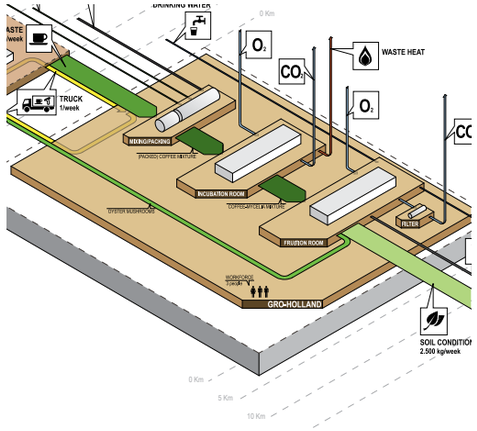
In practice it means that we analyse existing designs and sites, investigate losses and disconnections in the process or the physical space, then search for opportunities to design the (re)connection. In the first one and a half years the research group addressed the first three flows: Food, money and materials.

"INSIDEflows works at a systemic understanding of the working of flows in our environment and aims at giving them a positive contribution to design."

The flow of food

Food, being one of the primary needs for life, is a good example of a flow that has completely been disconnected from our daily experience. Production, treatment, and storage are separated from the urban environment where most consumption takes place. Our bacteria-free dwellings seem to ban the natural food cycle from our homes completely. But also the waste forms are channelled away in closed systems such as containers and sewage systems. Their energetic and nutritional value is neglected needing treatment with large amounts of energy and chemicals to neutralise their potential. INSIDEflows looked at examples that recreate the connection between the production of food and our daily lives on different scales. So we learn a lot

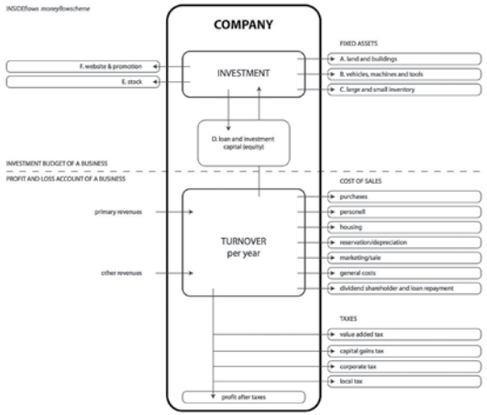
from historical examples like the Dutch windmill that combined the harvesting of energy with storage of crops, with food processing, housing its workers and sometimes even selling its products on site. And from contemporary kitchen designs that create a kitchen desk ecosystem in your kitchen. Interesting are new enterprises like GRO Holland that grow mushrooms on coffee waste of a restaurant chain, to whom it sells back



Part of Sankey flowscheme for GRO by Anna Brambilla.

The flow of money

For designers, money as a positive drive for design seems to be a major taboo. It seems as if designers feel they lose their creative integrity if they become part of the economic logic of a process*. On the other hand many design proposals are often rejected precisely on the basis of their costliness. In times when the economic reality increases competition between designers, com-



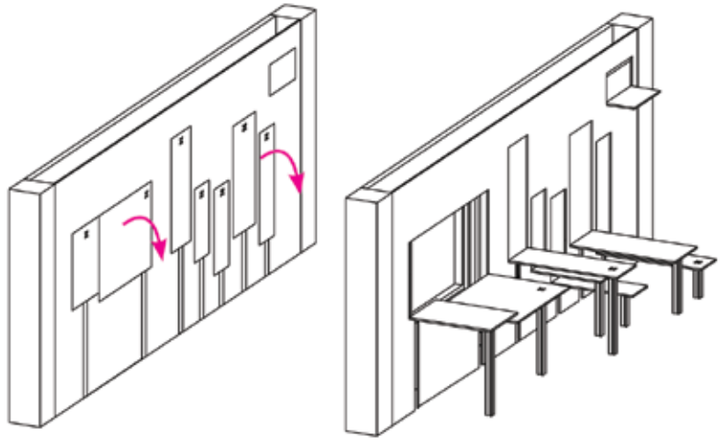
Money flowscheme to analyse businessmodel developed by INSIDE and 100%zomer.

the mushrooms. The same trucks bringing waste to GRO Holland take back delicious ingredients for soups and pies. The remaining coffee grounds can be used as soil conditioner to grow new crops. Taking this a step further, we are investigating the possibility to implement such practice in the huge number of vacant buildings that partially could be transformed to produce food growing areas with the CO_2 emitted by the mushroom production and at the same time heat up populated spaces with residual heat released in the process.

missioners will increasingly assess the choice of a designer on the basis of a potential increase in profit. The designers' lack of knowledge in this field combined with a passive attitude towards clients makes the designers' profession very vulnerable. From a social perspective the lack of attention for money flows has lead to an economic reality in which the profit earned from sales is hardly of any benefit to local communities but is concentrated in large multinationals reinvested by their headquarters in projects growing in scale and bridging bigger distances.

* Contrary to what the name suggests, even so called 'commercial design' is not based on a true understanding of money flows. Commercial design is more the result of what has proven to work best, or pleases most people or customers. Money flow-based design would potentially be much more powerful as it actively tries to translate the effect of interventions in measurable economic profit.

FLOW5 cyclical kitchen by StudioGorm. Flow analysis by student Magdalena Curdova showed us that this kitchen can only function in a one-person household.



Furniture can be folded into the wall at night.

Milk bar design and realisation (June 2012) by first year students of INSIDE is a collaboration between Studio URBAN by ZUS, INSIDEflows and Marije van Zomeren.

Money flows are an important but not the only type of value flow. The knowledge of value flows also gives the opportunity to analyse and influence other values than Dollars and Euros. INSIDEflows looks for means to help a designer become aware of his clients needs by offering an analysis tool that illustrates the client's main money flows and allows a designer to position his proposal within this system. The systemic designer would be able to present his design proposal as a business proposition, and learning from the Blue Economy it would be most beneficial if this proposition would create multiple cash flows. For an understanding of a client's business we organised a company balance sheet into a graphical flowchart that could become a communication tool between client and designer.

Within the framework of the INSIDEflows research group, students tested the tool with seven different companies in an unattended street in the center of Rotterdam and were asked to offer a design intervention for the company to improve its profit, cut its costs or add another value to their business.

The Milk bar, connecting the flows of food and money

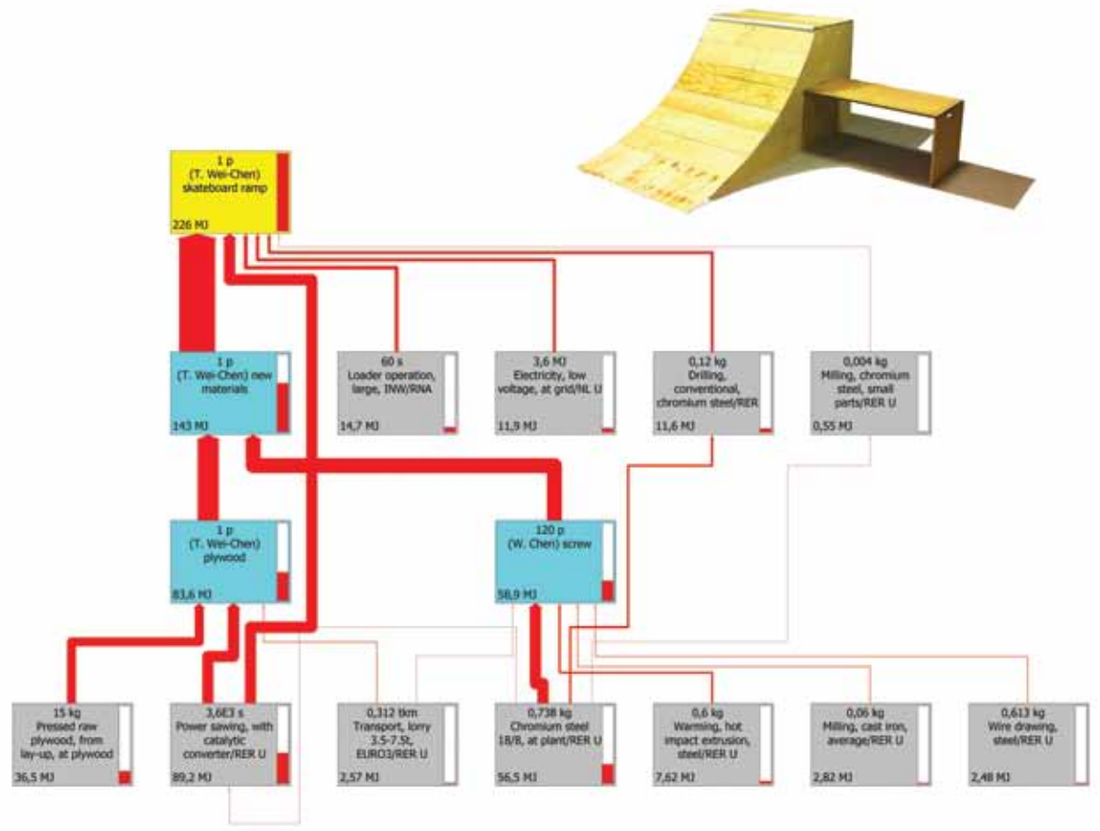
As a result of the research in the flows of food and money, the final work of our students consisted of the development of a business plan, marketing strategy, designing, building and running a small enterprise in a vacant building in Rotterdam.

As a result of an intensive workshop, the students decided to develop a milk bar and divided the management tasks amongst themselves. They managed to include two local stakeholders for supply of ingredients and were able to install and run the business for two months with a small investment by the school. The Milkbar was part of the 2012 Rotterdam Architecture Biennial.
See: www.themilkbar.nl

"The knowledge of flows has been neglected for many decades resulting in buildings fighting processes, rather than working with them."

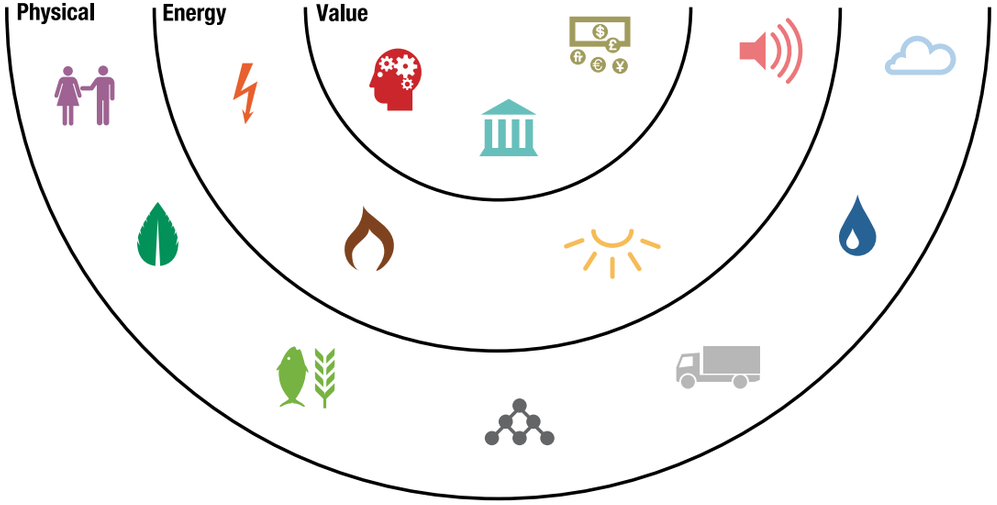
The flow of materials

Until the industrial revolution, most materials were used in the direct vicinity of their natural origin, buildings were constructed out of wood close to a forest or out of clay baked into brick when a river would be near. In this case, even the colour of the brick completely depended on the colour of the local ingredients. Since the 20th century, because of the change in resources (oil and ores) and production methods (industrialisation and centralisation), our resources are continually being transported and modified, while the use of materials has increasingly become something to express the free creative will of designers. This development has lead to a huge environmental impact. These days, with the help of dedicated software, it becomes easier to trace back the path our resources follow and calculate their impact in a life cycle analysis. With the help of LCA-calculations, we are trying to regain logical, sustainable and inventive ways to redesign our surroundings.



Lifecycle analysis of the design of a skateramp by INSIDE student Wei Chen Lee as proposed to reprogram the vacant building of the Ministry of Justice and Internal Affairs in The Hague. Scheme for INSIDEflows by Piero Medici with SimaPro.

14 Flows



INSIDEflows works at a systemic understanding of the working of flows in our environment and aims at giving them a positive contribution to design. We have identified 14 flows so far that are subdivided into three layers: physical, energy and value.

Physical layer

Tangible or observable matter, in solid, liquid or gas shape.

Users

People that use the planet. They move around and are involved in different activities that put many of the flows that are discussed in motion.
Example: the flow of people that travel by metro from home to work.

Nature

Living flora and fauna that can spread, concentrate, expand, decline or migrate to different areas.
Example: plant species that expand in different areas by spreading their seeds with the flow of air or the flow of animals.

Food and other organics

Dead organic material that is biodegradable and renewable. Food is one flow of organic material.
Example: vegetables grown on agricultural land, transported to markets and distributed to kitchens where they are prepared for consumption. After this process the organic material flows further as food waste collected for waste treatment and human excreta into the sewage.

Inorganic material

Inanimate, non biological material that can both be natural or man-made.
Example: glass is produced from sand and turned into a bottle, after which it is used, discarded and recycled into new glass for a new bottle.

Traffic

A flow of vehicles to transport people and/or goods.
Example: a truck picking up products from a producer and delivering them to a supermarket.

Water and other liquids

Fluid matter. Water is by far the most common liquid flow on earth and is vital for all known forms of life.
Example: rain and melting snow flow via rivers into water treatment plants and into our houses, where we use it to drink, bath or rinse. From here most of the water flows via sewage systems into treatment plants to be filtered and to flow back into rivers or into our houses.

Air and other gases

Earth's atmosphere. The atmosphere contains different layers and gases.
Example: the flow of air in a natural ventilation system of a building. Warm air in a building can be allowed to rise and flow out upper openings to the outside thus forcing cool outside air to be drawn into the building naturally through openings in the lower areas.

Energy

The available power in a physical system.

Electricity and other powers

An accumulation or flow of electrically charged particles (electrons) due to electrical potential difference. Electric energy is measured in joules or kilowatt-hours (kW h).
Example: in a generator electricity is generated by the movement of a loop of wire, or disc of copper between the poles of a magnet. Electricity is transported to our homes through metal wires.

Heat

"Energy transferred from one body to another by thermal interactions. Heat is not a property of a system or body, but instead is always associated with a process of some kind." (Wikipedia)
Example: with the cultivation of mushrooms, heat is produced and exchanged with the surrounding air. This residual heat can be used to warm up the air in a nearby space.

Light

An energy flow that is perceived by sight.
Example: sunlight that is transmitted by solar cells into electricity, used to power a lamp and thus transformed into light and heat.

Sound

An energy flow that is perceived with our hearing.
Example: at a radio station, sound from one user is transformed into electromagnetic waves that travel through space. When these waves strike an electrical conductor, the information in the waves can be extracted and transformed back into sound.

Value layer

The appreciation and quality of the physical and energetic flows passing through a system.

Data/ information and knowledge

Data are the variables belonging to an item or a set of items. Data can be numbers, words, images, etc. For data to become information, it must be interpreted and take on a meaning. Knowledge is a more embedded form of information. It can refer to the theoretical or practical understanding of a subject, derived from experience or education. (Wikipedia)
Example: a carpenter teaching a craft to an apprentice who learns through study and practice and applies his acquired skills to objects that are sold and exhibited in people's houses.

Money

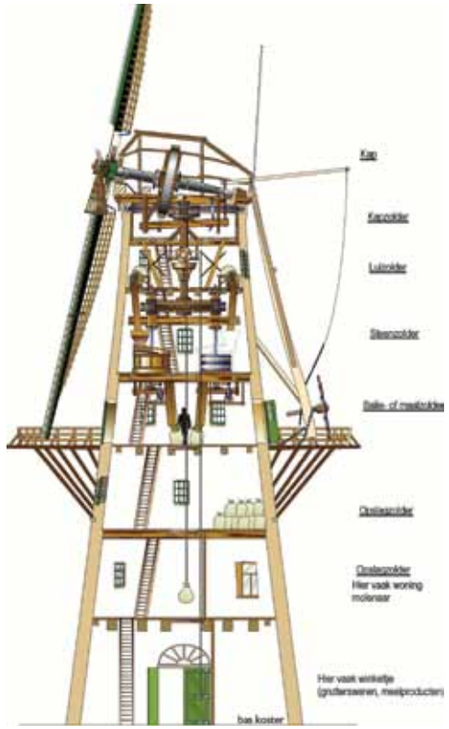
A measurement of value for things. It is also used as a medium to trade.
Example: money that flows from the capital of a business to people who perform labour and are rewarded by a salary which they can then spend on goods such as food.

Identity and culture

Identity is "... a person's concept and expression of their individuality or group affiliations." Culture is "... the evolved human capacity to classify and represent experiences with symbols, and to act imaginatively and creatively." (Wikipedia)
Example: people that migrate and take their food culture with them, which they share with local habitants.

Example Projects

Metro Fresh Market by Tesco and Homeplus.



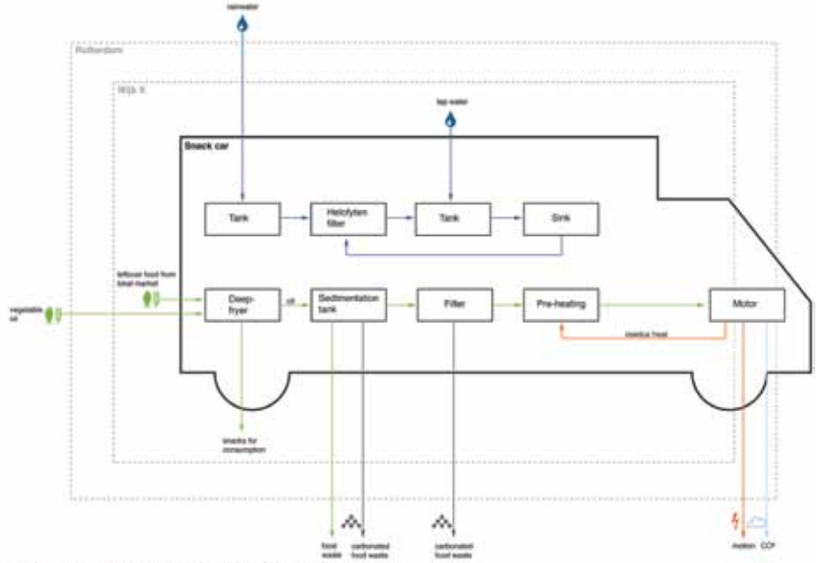
Dutch Classic Windmill

From 1390

The classic Dutch windmill is an early example of cleverly connecting available energy flows with labour and the use of space.

The Dutch design of a tower mill was developed to automate grain-grinding. It originated from 1390 and the process of perfecting took over 500 years. The tower is designed with separate floors devoted to grinding grain, removing chaff, storing grain, and housing. The constructive volume that is needed to catch the wind and convert it, leaves a lot of extra space in the tower, which is then cleverly arranged as living quarters for the windsmith and his family.

These early windmills had to be oriented into the wind manually. Optimizing windmill energy, and protecting the mill from damage during storms, were the windsmith's primary jobs.



Lucky Mi Fortune Cooking snack car

By Superuse Studios in collaboration with Freehouse and Debra Solomon

2006

The Lucky Mi Fortune Cooking snack car, designed by Superuse Studios, is a mobile kitchen and restaurant powered by its own frying oil, filtered into biodiesel.

The aim of the Fortune Cooking project, initiated by Freehouse, is to research food culture and identity in diverse Dutch neighborhoods. By driving around and parking in different localities the snack car creates an atmosphere and connects people.

Sustainable Dancefloor

by Studio Roosegaarde in collaboration with Energy Floors and Alijd van Doorn

2008

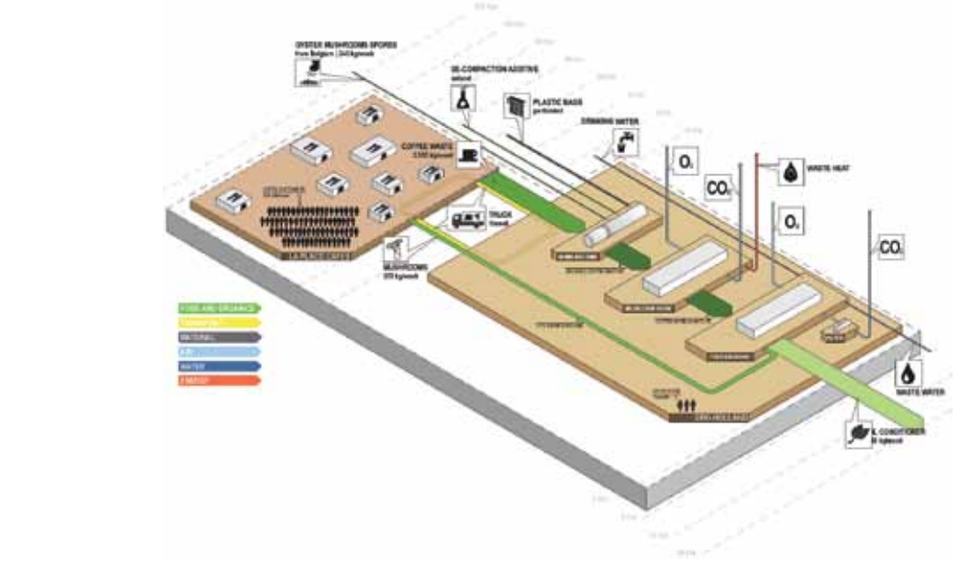
Studio Roosegaarde created the design and interaction of the first Sustainable Dance Floor™. The electricity generated through dancing is collected by energy harvesting mechanisms, software and embedded electronics. Each floor module (65x65x30 cm) generates 5–25 Watts, depending on the weight of the user and the intensity of his/her movements. This energy is then used to power the lights in the floor modules, which ensures a continuous real-time interaction between the users on the floor and the floor itself. Making the users aware of their own energy, their interaction and their impact on the 'environment' is the goal of the Sustainable Dance Club™.

Building for Water Collection with Bathroom

by Allan Wexler

1994

The architectural model "Building for Water Collection with Bathroom", 1994, by Allan Wexler illustrates how the flow of rainwater can be used in the bathroom. It also shows how the structure of a building is altered to direct this flow. In this model, the roof collects the rainwater in three funnels that drain directly into a bathtub, sink and toilet. The size of the funnels shows the user how much water is needed for each bathroom activity.



GRO Mushrooms

By GRO in collaboration with La Place restaurants and Vroegop Windig Logistics

2010 – ongoing

GRO uses coffee residue as a growth substrate for oyster mushrooms, which it sells back to La Place cafés that provide the coffee residue. Coffee ground is mixed with oyster mushroom spores and hung in finely-perforated plastic bags in an incubation room. In this process mycelia grows through the mixture and a large amount of heat is generated. This can potentially be used to heat up other spaces or material.

The flow of organic waste (coffee) and food (mushrooms) occupies a unique niche in the distribution network. The distribution trucks are full in both directions, picking up coffee ground – that otherwise would go to waste – and dropping off mushrooms at La Place cafés across the Netherlands.

Coffee Cyclifier

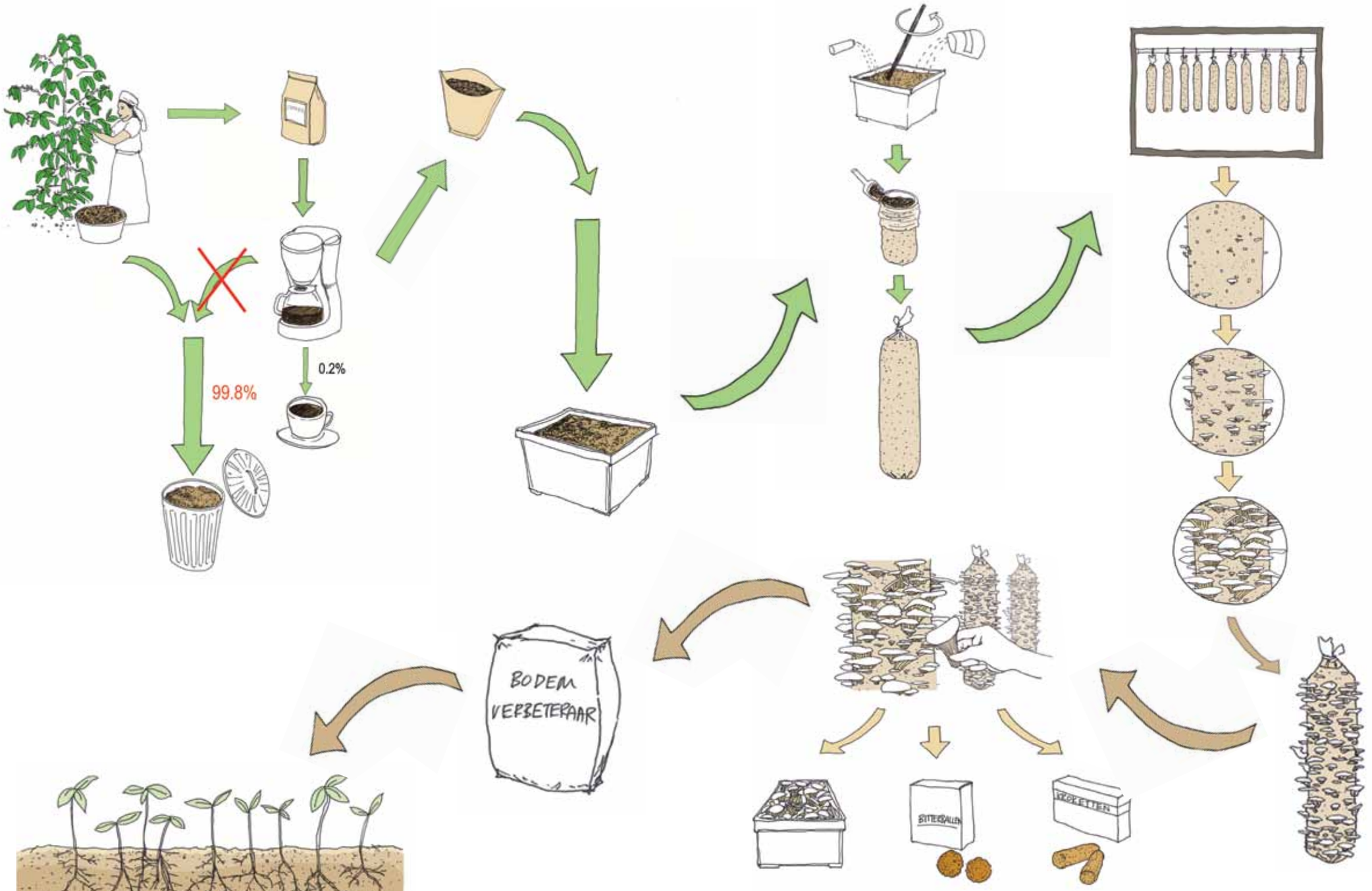
By Superuse Studios in collaboration with GRO and Refunc

2012

Coffee Cyclifier is a small scale installation developed and designed by Superuse Studios in collaboration with Refunc to represent the larger process of coffee ground recycling for growing mushrooms that is applied by GRO.

It consists of 7 stations that are made of IBC tanks with each station dedicated to a specific part of the process. From drinking coffee, coffee ground collection, growing mushrooms, cooking and consuming mushrooms to finally using the residual as soil conditioner. On a side track you see how residual heat can be used to heat up a piece of furniture.

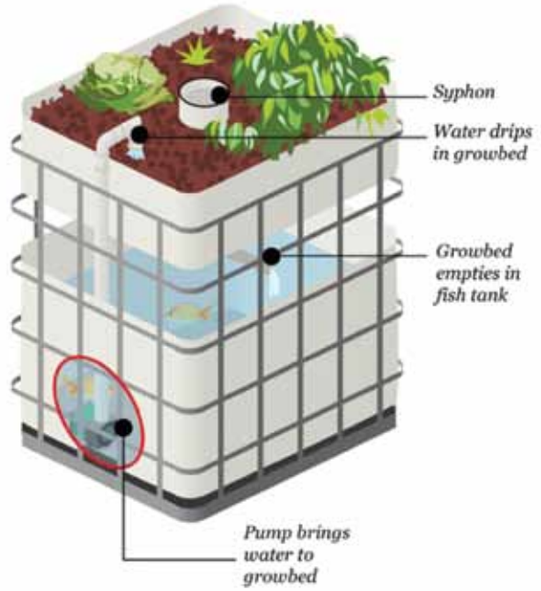
Coffee Cyclifier is used as a presentation model for exhibitions and events to demonstrate the potential of connecting one waste stream (coffee ground) with another process (growing mushrooms).



At this moment 99.8% of coffee biomass is wasted in the process. Growing mushrooms on coffeewaste produces heat, food and nutricious soil. This Blue Economy process has been developed by Zeri in Colombia and Zimbabwe and now is introduced in The Netherlands by GRO.

INSIDE

FLOWS



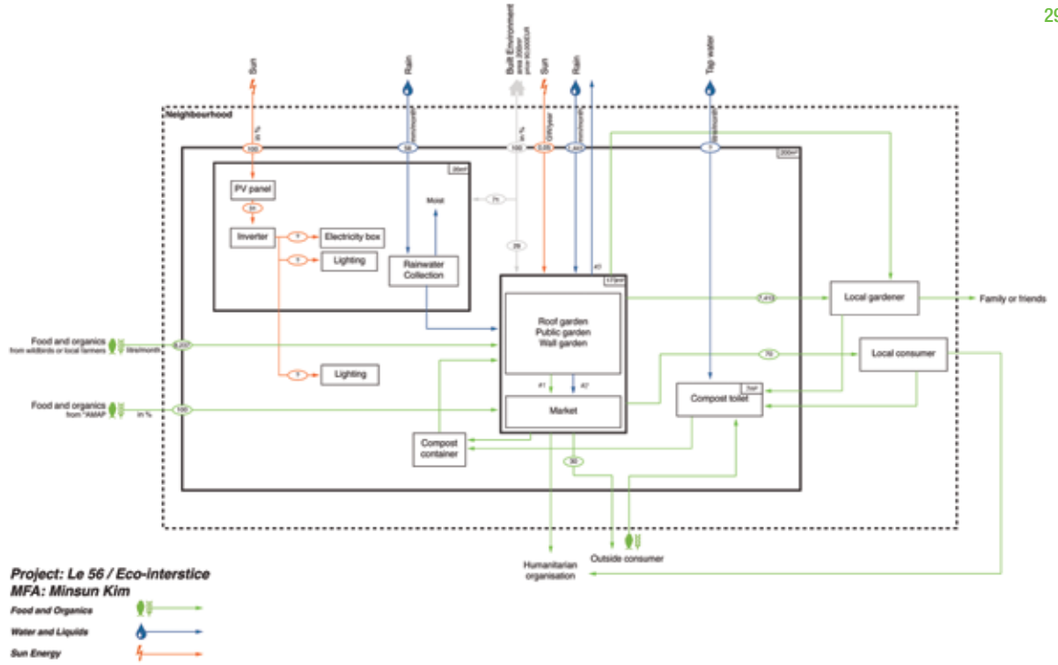
Aquaponics at Mediamatic

By Mediamatic Amsterdam

2012

The cultural institute Mediamatic started an aquaponics project in their project space in Amsterdam. Aquaponics is a sustainable, recirculating ecosystem for food production made up of fish, microorganisms and vegetables. Fish are kept in one container and vegetables in another. Natural bacteria convert the fish waste into plant nutrients. The water with the nutrients is pumped into the vegetable container(s), where the bacteria and the plant roots work as a filter: they clean the water, which is then released back into the fish tank.

The 4-level set-up consists of one fish tank and three plant containers. The main structure is made from recycled shipping containers. In a later stage of the project, one level of containers was dedicated to mushroom cultivation. This releases heat and CO_2, two other flows that potentially can be reused or improve the air quality.



Le 56 / Eco-interstice

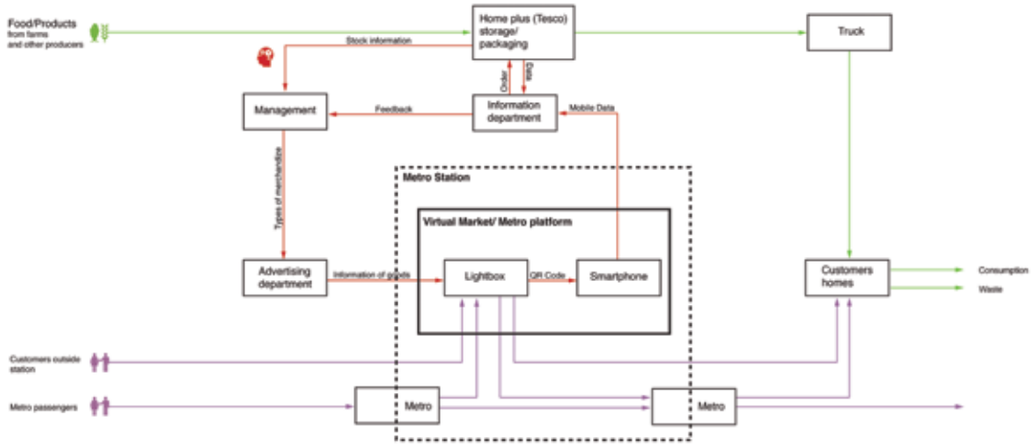
By Atelier d'Architecture Autogérée in collaboration with various local stakeholders

2006

Le 56 is a space wedged between two Parisian buildings and is designed as an ecological interstice, being a green house with green roof powered by solar panels. It includes a compost toilet, rainwater collector and seed catchers.

Various activities are held at this place i.e gardening, storytelling, open market, compost laboratory and theater. This leads to cooperation with professionals and local government, as well as with local residents.

The place makes optimal use of physical flows but also enables knowledge and culture flows.



Metro Virtual Market

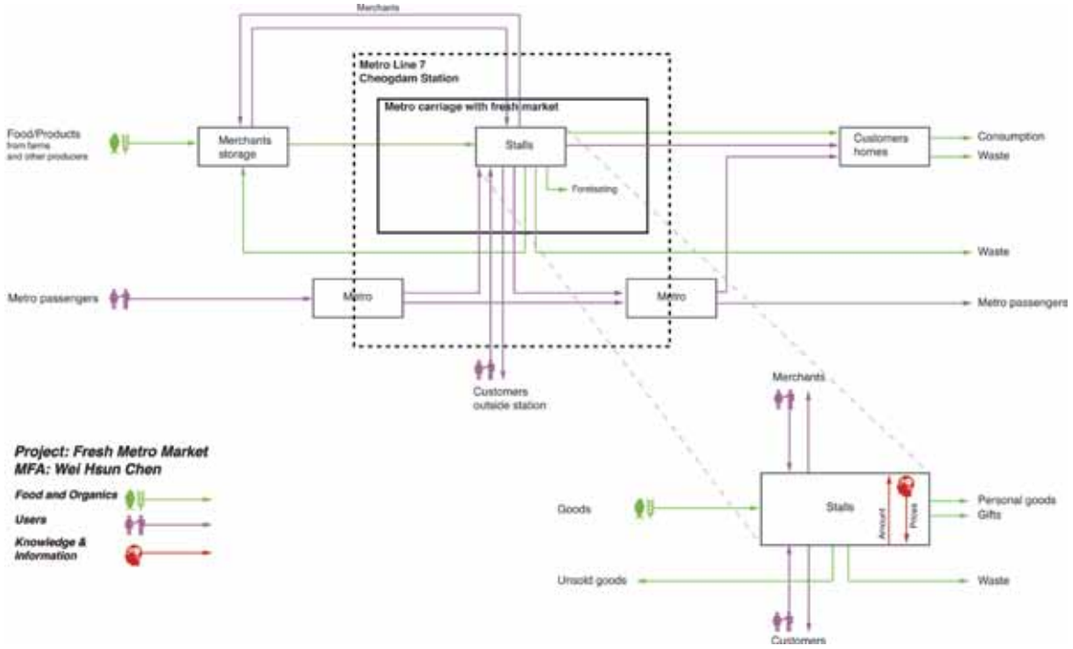
By Tesco & Homeplus

2012

The virtual subway store by Home plus is a new home delivery shopping service. The retail company uses metro platforms to become supermarkets, by hanging life-size posters with product images and QR codes.

Subway users just need to scan the QR code on the products with a smart phone and the goods will be delivered to the home. The QR technology alters the traditional flow of food because the physical supermarket becomes redundant. Instead it taps into the potential of the metro platform where people are waiting and thus have time for shopping.

Additionally, by applying the QR technology, there is a new flow of information between the user and the retailer.



Metro Fresh Market

2011

In spring 2011 a temporary marketplace was arranged in a vacant metro carriage in Seoul, South Korea. Products that are available are fresh vegetables and herbs, sold directly by the producers. The metro market responds to the existing flow of metro passengers that commute from work to home and have limited time for food shopping.

Interviews

FLOW by Studio Roosegaarde.

Designing with flows for a Blue Economy

Interview with Gunter Pauli
By Photini Mermygka

Gunter Pauli was born in 1956 in Belgium, studied Economics (1979) and obtained his MBA from INSEAD (1982) in Fontainebleau, France. He also has a Doctorate in Systemic Design from the Instituto Politecnico di Torino (Italy).

He has been active as an entrepreneur, lecturer and commentator in culture, science, politics, sustainability innovation, and the environment. He built the first ecological factory when Chairman and CEO of Ecover, that under his leadership became a worldwide acclaimed ecological building, being completed in 1992. He has written 20 books printed in 34 languages, and 37 fables for children. Some estimate that 90 million copies of his fables have been distributed worldwide.

In 1994 Pauli initiated the Zero Emissions Research and Initiatives[2] in Tokyo with the support of the Japanese Government and the United Nations University (UNU), redesigning production and consumption into clusters of industries inspired by natural systems.

He wrote the book The Blue Economy, originally a report to the Club of Rome which then became a commercial book. He wrote this book with the twin aims of stimulating entrepreneurship while setting up new and higher standards towards sustainability, where good for our health and the environment is cheap. The book includes the principles that support the Blue Economy concept and also one hundred business cases that follow those principles. The goals set for the Blue Economy as a Business Model are high: To create 100 million jobs and substantial capital value through 100 innovations in a decade.

The Blue Economy is one of the inspiring resources for INSIDE flows; a closer collaboration is planned for in the near future.

Gunter Pauli is resident of Japan and based in Cape Town, South Africa.

This interview by Photini Mermygka took place during his travels between Bogota and Johannesburg.

F.M. Urging everyone to be involved with science and entrepreneurship, what would you identify as the most rich and approachable, yet neglected resource or flow around us in Europe?

G.P. People, Young People. Look at the disaster we have. Getting a job is a curse. We have a floating generation of well-educated people. People with great peaceful upbringing and there are no jobs.

We have been telling them to get a diploma, master's and doctorate. But what we need is people with an attitude of change, curiosity and perseverance. An attitude of hope, of risk-taking to go beyond the rules of the game. And we might have not prepared them but the crisis will force them.

So this is the great stimulant: no experience and little money. It's exactly what you need to be an innovator. An entrepreneur with a lot of money and experience will only make marginal improvements. People with no experience and little money are much more likely to be fundamentally innovative in their approach.

We also need to realize what we have. Everyone is preoccupied by what we don't have. But you can start with coffee waste and generate mushrooms or take slaughterhouse waste and generate medical products. Having a different perspective, it is sometimes embarrassing to discover how easy it is to get going.

F.M. You have stated: "there is no way to find freedom and happiness if we keep teaching what we know and do things the way we did". Who or where was the most surprising tutor or situation that made you see things differently?

G.P. My no. 1 mentor is Aurelio Peccei, the founder of the club of Rome. Aurelio was a remarkable person trained as economist in the University of Turin. In his Ph.D., he analyzed the 5 year plan of Lenin. He ended up as the CEO of Fiat and later founder of Alitalia and in the end of his life devotes his intellectual resources to identifying new pathways for the world. I was intrigued by this capacity to navigate between the 5 year plan of Lenin and being the Chief Executive of Italy's largest companies.

F.M. How did you become a change agent yourself?

G.P. My fellow students elected me as a student leader in Belgium. I took confidence from this and asked to join the club of Rome with no credentials or scientific background. So I always make space for young people. Now I have a network of 3,000 people around the world and the majority of initiatives we take are with young people.

I was able to navigate between reality and fantasy. You can only see whether it is possible to move from fantasy to reality by sourcing yourself with science. A fantasy might remain fantasy because it is very much beyond what we know. But science is there to suggest that what you have in your fantasy world is or could be reality, providing perseverance.

F.M. What would you consider as the biggest constraint that designers and architects have to deal with today? And what is the biggest challenge?

G.P. Architects think with an idea – a structure

"Architects need to become the masters of flows that determine the health and functionality of a structure, an office building and a city."

in mind. Architects need to move from compression, tension and flexibility of a structure with ergonomics and costs controls to become the masters of the flows that determine the health and the functionality of a structure, an office building and a city.

F.M. When implementing the blue economy in design, where should be our focus?

G.P. You have to find the balance. If I focus solely on the chemistry and process of manufacturing, we are not going to have the most efficient systems for living and housing. This is in the chapter of blue economy about flows. You have to work with the flows that are already there. Once you know how to harness those flows then things are much easier.

Follow the flow of water, air, sound, and light. It is crazy that we use straight pipes and that combined with the 90 degree elbows, they create massive chaos and back pressure. So we need to produce more energy for the pumps for the same amount of water. That is just stupid design. We all learned the physics and engineers forget those basics.

F.M. Can you give a good example of designing interior architecture starting from flows?

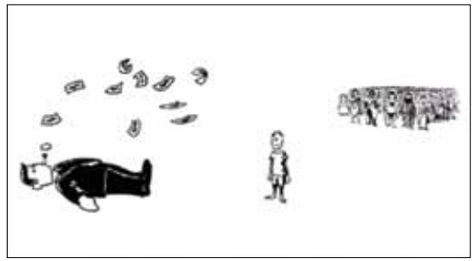
G.P. At the Laggerberg School in the north of Sweden the whole toilet system is organized with the law of physics applied. They created a separation toilet and immediately with a little vortex system in the basement they dry out the solid excreta and recover the liquids. Through fermentation they produce heat so at the same time as drying out, it kills all the bacteria. So very little waste needs to be removed. If you compare it with any other system designed today, it is highly efficient in water consumption. 35% of all our water consumption is flushing water.

In Laggerberg the cost of investment has decreased the cost of operation. Another thing that is attractive is that all children know how it works and they start wondering how they do it at home. They realize that even if it was the correct way for their parents, now time has come to do it much better.

"What we need is people with an attitude of change, curiosity and perseverance. An attitude of hope, of risk to go beyond the rules of the game."

F.M. You suggest that we forget for a while about authorship and egos. But do you think that in a mobile world collaboration is possible?

G.P. For me the difference in the world is not if you have a patent or not. The difference is do you have a business model that allows you to earn money to be financially sustainable, to contribute to your community and put your environment on a path of evolutionary redevelopment? It all depends today not on the technology and intellectual rights related to it but on the kind of business model we are developing with these multiple benefits.



Stills from "the blue economy simple show" by Zeri.

F.M. To get designers on a track, what ingredients are required to design a blue economy business model?

G.P. The first is enthusiasm. And inspiration and examples of how things have worked. The last thing we need is problem analysis. It is amazing that people start with analyzing problems. Then you only condition your mind. Look what you want to achieve. In all the projects I take on, I am in favor of identifying a portfolio of opportunities.

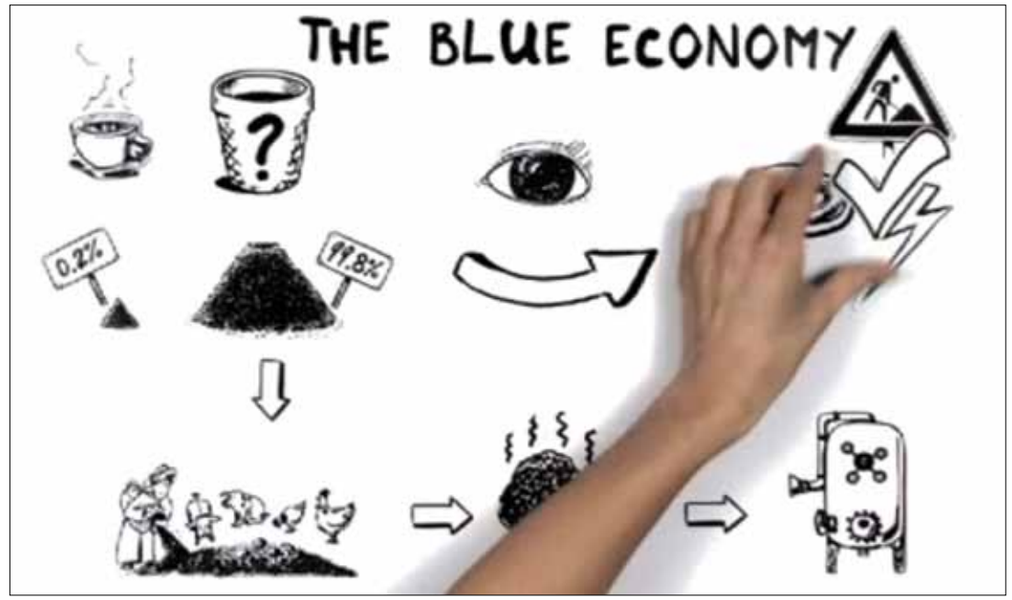
F.M. What would be needed to change in design education so that architects are prepared for a practice in the blue economy?

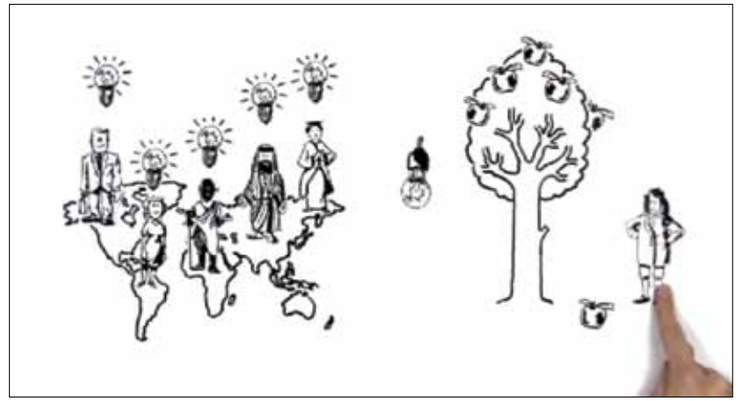
G.P. We need to teach architects that buildings by design promote health and happiness – not functions. The key is that buildings naturally gravitate to an air with pH 8.2 (that is the level at which life emerges) and that the key is to have fresh air so the brains can work best and the occupants can imagine a better world.

F.M. You say green economy is expensive and blue economy is cheap. Concerning the flows of money, could you explain what do you mean by cheap?

G.P. If you buy a solar panel you pay for the electricity of your solar panel and you pay for the electricity of the grid, because you can't cover it up. That is because solar energy only looks at the electricity. In blue economy, you are not the cheapest because you cut costs, but because you generate multiple revenues so that you have multiple benefits. That is the shift in logic. Current logic is looking at cost price. My logic is looking at revenue streams. So if I can put small pipes inside my panels then I can generate hot water during day and cold water during night. If I put an optical effect in my panel so that I can shine the sun in a concentrated way on the bottom of the panel, then with 1/3 of the photovoltaic cells I can generate 80% more electricity. I just generate more with what I have, since your investment can be spread over more revenues. Therefore the blue economy is cheaper.

"In blue economy you are not the cheapest because you cut the cost but because you generate multiple revenues so that you have multiple benefits."





Stills from "the blue economy simple show" by Zeri.

Liquid atmosphere and social interaction

Interview with Daan Roosgaarde
By Wei-Hsun Chen

Artist and innovator Daan Roosegaarde (1979) is internationally known for creating social designs that explore the relationship between human, technology and space. His Studio Roosegaarde is a social design lab of designers and engineers based in Waddinxveen (NL) and Shanghai (CN).

With projects ranging from fashion to architecture his recent interactive designs such as 'Dune', 'Intimacy' and 'Smart Highway' are tactile high-tech environments in which viewer and space become one. This connection, established between ideology and technology, results in what Roosegaarde calls 'techno-poetry'. Roosegaarde has exhibited at Tate Modern, National Museum in Tokyo, Victoria and Albert Museum in London and won the Charlotte Köhler Award, two Dutch Design Awards, the Media Architecture Award, and China's Most Successful Design Award. His Studio Roosegaarde has an extensive experience with public space commissions for the City of Rotterdam, Singapore, Eindhoven and Stockholm.

Daan Roosegaarde has lectured at TED, ArchiFest, TU Delft, Lexington University, Tongji University Shanghai, and Tate Modern.

W.H.C. On the website, they call you an artist and innovator, and in some articles, they call you an architect. Which do you prefer to be called? Or which position are you closer to than others? Or do you not mind at all?

D.R. I don't really see the necessity to choose a position. I think that the world we're living in has already become hybrid, and it has shifted from physical to digital. It is very important to be diverse and multitalented. So sometimes I am an artist, and sometimes I am an architect or innovator. I use all of these elements at the same time, and it depends on the context of projects as to which kind of position I take. I see myself as a hippie with a business plan, like a reformer, and I use different disciplines for different media. I would not want to choose just one. It is interesting that projects such as Dune, Sustainable Dance Floor and Smart Highway have been published in art, design and architectural magazines. Somehow they are able to infiltrate into all of these fields. I always think that's a good thing.

"I was interested in the liquid atmosphere and the social interaction between people, and I decided to use those as main ingredients for the things I made"

DUNE by Studio Roosegaarde.

W.H.C. On one of your projects, Sustainable Dance Floor, you transformed activities of people into energy for lighting, sound systems, and all the other energy-consuming elements in a club. As I understood, you took two flows: energy and users. Recently you expanded this theme to a large scale project: Smart Highway. The main principle looks similar to the Sustainable Dance Floor. If it is similar, could you explain more about the energy flow?

D.R. AAfter we built the Sustainable Dance Floor, in which the floor could generate electricity when danced upon, I started thinking more about the landscape and the future of our landscape – and I became fascinated by roads. Somehow we spend a lot of time and money on roads, but the architect is completely absent within this discipline, and these roads are managed in a very old fashioned way. So we started thinking about whether we could make roads more interactive and more sustainable in terms of lighting, information and experience, and we developed an artist's impression and proposal. One day, I was giving a talk to the innovation sector and the Director of Heijmans Infrastructure was in the audience. He was really interested and invited us to collaborate with them to make it happen. We started thinking about making roads themselves self-sustainable. For example, you could make paint which charges up in day time and emits light at night. You could

INSIDE SUSTAINABLE DANCEFLOOR by Studio Roosegaarde.

also make a sign with this paint that is only visible when really cold, so you would immediately see if the road were slippery or not. It is a new way of thinking, this dynamic world in which we're living, and the result is incredible.

W.H.C. What is the difference in the flows concerned between small scale projects and large scale projects?

D.R. As a designer you have different roles, and a good idea has different scales. We started with artworks for museums and some public space, like the Lotus Dome in the French church. We are always interested in public space as architecture. Depending on our projects, we team up with different people, sometimes with fashion designers and sometimes with manufacturers. For me, it is a part of the process. We start with a vision, visualizing an idea, thinking how it would look, and then thinking how we could make it happen and what kind of technology and manufacturing would be necessary. So we start looking for people, like a network. When we have an idea, we start spreading the story in media or lectures, and then people come to us. Architects, in my opinion, should be more provocative and reach out instead of waiting for a client. I think you should take much more initiative and deliver a full package, from idea to vision and actually make it happen. When you look at people, like Buckminster Fuller, he used high-level technology to create social engagement of high quality. I feel much more related to that way of working, than an architect waiting for a client to commission a design.

W.H.C. Is this something your education has provided you the necessary skills for? Or how did you learn this?

D.R. Doing a Master's in architecture or working for architects was great because you can learn how to deal with a complex and intelligent system and how to deal with huge amounts of information to edit and find your own way through and make a statement with; that is what I learned at the Berlage Institute. At the same time, I wanted to innovate and make new ideas happen. I was more interested in creating my own story with architecture instead of thinking about doors and windows. So I was interested in the fluid atmosphere and the social interaction between people, and I decided to use those as the main ingredients for my designs. It liberates the system and program and allows people to change and transform it. I would like to talk about nature and more organic matters. Architecture and technology can become more natural, like flowers, to connect with experience but also in a functional way. So it's in that way, like some of Le Corbusier's houses, that it can liberate. It is extremely important to personalize and customize space for the people who live in it, and use it as a valuable tool. When you look at the Rietveld House and the movable walls, he tried to transform and re-create space in a very simple but very effective way. I think that architecture should be active in combining the virtual and real world.

"Architecture and technology can become more natural, like flowers, to connect with experience but also in a functional way"

DAAN ROOSEGAARDE

What does a facebook square look like? How can we increasingly connect the virtual and real world? I would like to create a dialogue and interaction and incorporate sustainability into a design in a very innovative and provocative way. We are updating the reality instead of just thinking how a building or public space should become, and we can once more make the environment much more human without disregarding technology. I think that is interesting and very important.

W.H.C. Could you talk about which and how flows influence your design or design process?

D.R. We want to make flows more active and more poetic. We are interested in what things look like and also how they behave. They are always changing. On the dance floor, the more steps you dance the more visual effect you create because of mirrors and LEDs; you can also see this in photos. I think it interesting to make an environment visually connect with behavior, and to make people aware of the relationship between their body and the environment.

The flow of energy and information are always a part of that.

W.H.C. What do you think is most important and/or missing in design education these days?

D.R. I think it important to be half free and half entrepreneur. On the one hand, you can have a really clear idea and vision of your own but, to make it happen, you need to create a dialogue with the world around you. I think for a very long time that architectural education has created its own grammar and own story only architects understood. I think that is boring and out of date. It is important to have your own vision and idea, but at the same time be willing to hack the world around you and update it. So go and talk to the manufacturer, go and learn from biology - for instance, how flowers rotate towards the sun. Currently, architecture is completely controlled by the process. I think design should change to research needs, create its own story and then clients will come to the architect. Architects are not really good at that yet. We should not design buildings for architects, but design buildings for people. I like the world of architecture and the intelligent thinking within it, but I do think time is changing and you have to reinvent values. What does architecture mean in this over digitalised world? This question architects need to ask themselves, and the new generation is already thinking about it.

SMART HIGHWAY by Studio Roosegaarde.

W.H.C. Today, technical products have become indispensable in our daily life, and your designs form a new bridge between technology and humanity. In the meantime, how do you look at the communication among people?

D.R. Technology is already jumping out of the computer screen, and becoming a part of walls, floors or architectural rendering. It is not just something on the screen anymore. It influences the way we experience space in an emotional and functional way. We use technology to dominate and control our activities but it is also becoming more human. We learn how to fly, how to cure disease and we learn about ourselves. We should invest more time and thought in that, and build a proposal about how we want the future to look. Again, that is what Buckminster Fuller did a very long time ago, using high tech material for social housing and intervention. That really interests me –to build a new future and combine it with humanity. Right now, we are working on the development of a building facade, on a skin. The idea is already there, and we are ready to do that to scale.

"It is very important to be diverse and multitalented. Sometimes I am an artist, and sometimes I am an architect or innovator"

W.H.C. Up to now, what is the biggest difficulty or challenge you have encountered when you have put your conceptual ideas into practice?

D.R. Sometimes we have to deal with a lack of imagination and clients. That is a bigger challenge than the technological issues. I mean you have to struggle to create something between fantasy and practice. You have a fluid dream but the world around you is static. Every project has its challenges. We have always been very lucky to work with great designers, architects, and also great engineers. We always have people who tell us what cannot be done and I always hope to prove them wrong. I think you can imagine something and you also can build it. Next year we are going to work with the interactive facade, for example the Lotus. We will apply it on a large scale, an architectural facade, and that will be interesting. We will see.

Money flows going local

Interview with Marije van Zomeren
By Minsun Kim

Marije van Zomeren is director and founder of 100% Zomer BV (2004). Zomer develops with partners sustainable and innovative companies and projects in The Netherlands and abroad. Companies that are commercially strong and that contribute to a better future for all stakeholders. 100% Zomers turns her own ideas into various companies, but also helps others in the process of starting, restarting and growing. Different industries she works for are tourism, ICT, new media, commerce, hospitality, food and agricultural business. 100% Zomer has put organisations in various industries back on track and developed (sustainable) marketing or magnetizing plans for new and existing products. 100% Zomer writes business plans with and for entrepreneurs and looks for suitable partners, grants and or investors.

M.K. You usually work abroad with local people, especially in upcoming markets. What attracts you in this field?

M.Z. I have never believed in the traditional developmental AID programs. I started my business 100% Zomer in 2004 already. I wanted to prove it possible to develop sustainable commercially sound businesses in Africa and South and Latin America: Business that contributes to nature, that empowers people and communities and optimises profits for various stakeholders. Create shared value. I managed to acquire investment capital with my partners. Informal local and European investors invested in the businesses that we created. They provided equity and also in some cases subordinated loans, for example. They were inspired by our innovative plans, network, energy and perseverance to actually realise a common dream. I still firmly believe that you can only succeed if you involve stakeholders actively in your business. Some say it is a lot of work. I feel it is fun and an enriching experience and creates happiness for all.

"We wanted to create various money flows benefiting regional stakeholders. We found that a balanced regional growth is the key to long-term success for all."

My first business was Mabira Forest Lodge in Uganda (open since 2007), situated in a pristine rainforest close to Kampala. The forest measured around 500 hectares and was surrounded by many communities of farmers and craftsmen. We felt that we should create an integrated vision for the entire region. We also explored the possibility of offering investment opportunities in the coherent growth of this entire region, through the web. We wanted to create various money flows benefitting regional stakeholders. We found that a balanced regional growth is the key to long-term success for all. This plan we called "COOLRegion". Our Mabira Forest Lodge would be the heart of this region. Did we succeed? Yes and no. We opened the lodge in 2007. It was built in the open spaces of the rainforest. We also had the ambition to restore the lost biodiversity again. Together with Forest Trends we managed to do so. Ashoka* and students of a Ugandan University helped us to perform stakeholder interviews in the region. They provided a compact map of professions, businesses, financial flows, education and near future opportunities. We held sessions with the communities who visualised their desired image of their future. We managed to write a regional business plan for investment. The World Bank and Conservation International then became interested and invited us to come to the USA to present our approach. Also private investors and funds were interested in the idea of investing in a coherent region. After a long period of negotiation, we unfortunately did not succeed to get COOLRegion working as we planned. I think we were ahead of our time. It is interesting though that the UN has started to develop entire villages in the past few years.

We did manage to connect entrepreneurs to local microfinance institutions and international funds. Several entrepreneurs started to develop goods and services. Farmers for example discovered the business opportunity of solar dried fruit. They started earning money from their "waste".

M.K. How do you get investment for your sustainable businesses and or projects?

M.Z. It all starts with an idea that makes your heart beat faster. To get others interested I always developed a clear and compact business plan. I used the visual two A4 "business canvas method" and/or made a short YouTube item, that's it. I always made sure that the business plan is sustainable from the heart of the company. We held sessions with our stakeholders to determine what we wanted to contribute to the environment and to social matters. It is important to be able to share your dream in a few sentences. This helps get people inspired, so that they want to be part of the dream. We also pictured in an early stage our future investors and other business partners. What role could they play, what do we want to offer them? We made a profile or a mood board. As a sustainable business, a match with venture capital was not the best solution for us. They often looked to maximise profits in the short run and we were looking for optimisation of profit in the medium and long run. Crowd funding can be attractive, but make sure you have a very clear idea what the mutual benefits are and expectations. Not just in terms of vision but also financially.

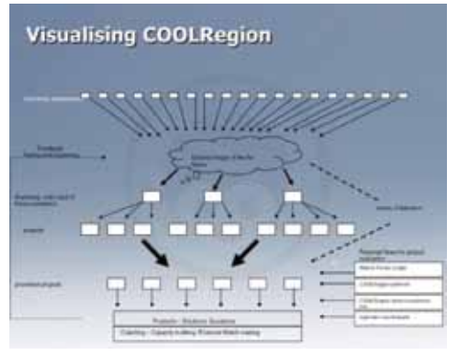
"I wanted to prove it possible to develop business that contributes to nature, that empowers people and communities and optimises profits for various stakeholders."

Interior Mabira Forest Lodge project (Uganda, Africa)

Our investors had various reasons to invest in our companies. The concept of sustainability was certainly attractive for many. However they also required that our businesses had to be commercially viable within 3-5 years. It helped that we created real estate (our lodges) and sometimes bought land, which provided extra security. I also wanted our investors to be part of the sustainable business development. We wanted to interact with their networks, for them to become our ambassadors, and share their knowledge and ideas with us. It helped us to create shared ownership and a solid base in good and bad times.

M.K. One of your projects, Danpaati River Lodge was connected to healthcare projects in 12 surrounding villages. Can you describe the project briefly and explain how local inhabitants profited from incoming money flows?

M.Z. Danpaati River Lodge existed 6 years when I was asked to become an interim-director as 100% Zomer. It was situated in the beautiful Surinam rainforest. You had to travel one day by boat or fly one hour from Paramaribo to visit the lodge. The lodge was connected to Dutch Health Insurer Menzis. They had started the healthcare program connected to the lodge. The purpose was to earn money from guests staying in Danpaati River Lodge and reinvest part of the profit in the homecare for the elderly in 12 villages. We focused on sick older people without family in the near surroundings. Due to a lack of an integrated (business) approach this goal was not met. Also the relationship with the villages was disturbed. It was my task as interim-director to "turn this around"; restore good relationships and develop a profitable business again. I used many of the lessons learned in Uganda. Especially the importance of a coherent self-sustaining region connected to the lodge was a key goal. I challenged local communities and leaders to shift their mind-set. Why would they depend on uncertain gifts and subsidies while they could use their talents and entrepreneurial spirit to gain a better life for themselves and their families. In a short period of time, they started selling fruit and vegetables and crafts to Danpaati River Lodge. Another result was that trade in and between the villages increased. Also the money earned was often spent by the women on education for their daughters. We invested in tourism education for our employees. Working with our international guests improved their skills. Education was also provided; in the healthcare program local leadership was looked for and supported.



Integrated regional development model COOLRegion.
Multiple value creation for various stakeholders.

"After two years of hard work the percentage of money flows reinvested in the surrounding region appeared to be 90% while before it was less than 50%."

After two years of hard work, we asked our Surinamese accountant to calculate the percentage of money flows reinvested in the surrounding region. It appeared to be 90% while before it was less than 50%. It was now spent on buying food from local farmers and hiring local services for instance. Of course, many local people worked for us. In total, 60 worked in tourism and the health care program.

M.K. Danpaati River Lodge Surinam, 100% Zomer is not involved in any more since 2007. Does this mean they are self supporting?

M.Z. From the beginning, we chose to search for local talent and educate these people in a program. We educated local management in healthcare and in tourism. This education took several years. We also hired a Dutch director; she had lived in Surinam for 10 years already. She guided this process for several years. At the moment the health care program is fully managed by a local woman; a single mother of 4 daughters. She manages all of the villages and a team of 20 employees. The Ministry of Surinam announced last year that the Danpaati healthcare project is a key example for all the interior areas of Surinam. The method is now the blueprint for many healthcare programs in the interior of Surinam.

Healthcare, Danpaati River Lodge project (Surinam)

Danpaati River Lodge project (Surinam)

M.K. Since most of your businesses included the development of real estate how do you choose the designer?

M.Z. We work with many different international architects and landscape architects. In the course of time we have developed several selection criteria.
The key criteria:

- Interest, understanding and feeling with our entire sustainable business.
- Open for co-creation with various local partners with different cultural backgrounds.
- Experience in building with local materials.

Importing tons of FSC wood in Uganda is not sustainable in many ways. Especially not when there is bamboo ready available in the neighbourhood for example. To gain long-term support and thus success you have to co-design with local stakeholders and respect their culture. Also don't forget that there is a lot of local knowledge available to build strong lodges in a local context, for example a rainforest area.

M.K. 100% Zomer also cooperates with Base of the Pyramid innovation Center (BoP). Could you explain more how finance works in this approach?

M.Z. 3.7 billion people are part of the Base of the Pyramid (BoP). They live off around one dollar a day. It is a fast growing and untapped market. There is currently an underutilized production and entrepreneurial capacity. There is a need for quality elementary products and services for this market at affordable prices; commercial activities that contribute to the well-being of people at the base of the pyramid and create job opportunities. This is called by the BoP Inc. centre Inclusive Innovation. 100% Zomer has advised on the framework for an Inclusive Innovation Hub. The purpose of the Hub services is to prepare investment plans on Inclusive Innovations for impact investors, guide proto typing and provide matchmaking.

Many BoP communities live in large slums in Asia, Africa and South and Latin America. Just as everyone else, they want to have access to good sanitation, healthcare and food for themselves and their families. They often pay 3 times more for food in the slums and food is often less nutritious. This is due to poor logistics and lack of adequate facilities, which makes it difficult to import or produce fresh products in these areas. Also many products are sold in large quantities while they would like to buy small sachets for example. There is often a lack of a total integrated vision to redesign these slums into more sustainable living areas. The key issue is to create a shared value. 100% Zomer found many opportunities to use the COOLregion approach also in these areas. In this way local entrepreneurship can flourish again, for example through urban agriculture and other production in the slums by local entrepreneurs that understand their customers. It is crucial though that those principles of circular economy and or Blue economy are integrated from the beginning. Make local waste the raw material for new products. It will create new financial flows within the slums and from slums to the rest of a country.

M.K. What can designers do for the BoP Market?

M.Z. Designers are masters in visualisation of complex plans and ideas. They can develop an integrated visual with local stakeholders as a blue print to redesign for example large slums. There are some good examples in Brazil where architects led the way.

M.K. What do you see as the most important challenges to designers now?

M.Z. Use your talent for design to contribute to the next century's challenges. By this I mean access to good affordable houses, nutritious food, healthcare and more. Designers can contribute by creating safer and happier neighbourhoods with more (edible) green. As a designer it is important to look beyond a single product. A product is often a solution for a bigger issue. Use the circular economy as a source of inspiration and creativity also to inspire others to do so as well. Good luck!

*Ashoka is a global organization that identifies and invests in leading social entrepreneurs. https://www.ashoka.org/.

"To gain long-term support and thus success you have to co-design with local stakeholders and respect their culture."

Information

INSIDEflows monitor workshop march 2013.

Glossary

Like every new approach also FLOWS creates its own jargon with words carrying meanings that are significant to insiders.

Biomimicry
A new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems.
www.biomimicryinstitute.org

Circular economy
A generic term for an industrial economy that is, by design or intention, restorative and in which material flows are of two types, biological nutrients, designed to re-enter the biosphere safely, and technical nutrients, which are of high quality and designed to circulate without entering the biosphere.
www.circleeconomy.com

Cradle to cradle
Registered trademark of a biomimetic design model based on no waste, not having to do without and with no limitations. Using biological and technological nutrient cycles, the right materials are brought to the right place at the right time. Cradle to cradle assumes renewable energy to be abundant at any time.
epea-hamburg.org

Cradle to grave
Design model for products in which material flows are formed without any conscious consideration of protecting resources.

Cyclifiers
Catalytic entities that enable connections in material, energy and value flows

Downcycling
The application of recycled material in a lower quality than its primary use.

Design for disassembly
The process of designing products so that they can easily, cost-effectively and rapidly be taken apart at the end of the product's life so that components can be reused and/or recycled.

Ecosystem
A community of living organisms (plants, animals and microbes) in conjunction with the non-living components of their environment (such as air, water and mineral soil), interacting as a system.

Flow
The movement of physical mass, energy or value per time unit.

Flow-based design
Design process that integrates and enables flows and systems in buildings, interiors and products.

INSIDEflows
Research group on flow-based design for interior architecture at the Royal Academy of Art in The Hague. The research group is set up as collaboration between INSIDE, Master in Interior Architecture and the research department of Superuse Studios.

Life cycle analysis
A technique to assess environmental impacts associated with all the stages of a product's life.

Material Flow Analysis (MFA)
Material Flow Analysis is a graphical tool to investigate the flows and stocks of material-based systems.
mfadiagrams.blogspot.de

Recycling
1. The collection of all terms for processes dealing with turning waste into functional matter.
2. Industrial reprocessing of waste into a raw material.

Reuse
The secondary use of materials, products and components according to their designed function.

Sankey diagram
A specific type of flow diagram, in which the width of the arrows is proportional to the flow quantity. They are typically used to visualize energy or material transfers between processes.
www.sankey-diagrams.com/

Superuse
Unimagined second life for products and components with as little as possible energy required for modification and transportation.

Sustainability
Meeting the economic, ecological and social needs of the day without impairing the chances or development of future generations.

Urban metabolism
A model to facilitate the description and analysis of the flows of the materials and energy within cities, such as undertaken in a material flow analysis of a city. Urban metabolism provides a unified or holistic viewpoint to encompass all of the activities of a city in a single model.

The Blue Economy

An open source economic business model developed to shift society from scarcity to abundance with resources already available. It stands for a different way of designing business by using the available resources in cascading systems, in which the waste of one product becomes the input to create a new cash flow. It aims to create jobs, build up social capital and raise income whilst saving the environment.
www.theblueeconomy.org

Upcycling

The application of recycled material in a (similar or) higher quality than its primary use.

Value Flow Analysis (VFA)

Value Flow Analysis is a graphical tool to investigate the flows and stocks of value-based systems.

Waste

1. A resource available at the wrong time and/or wrong place
2. A resource that lacks the owner's will or knowledge to be turned into something valuable.

Web platforms connected with the research group FLOWS:

www.insideflows.org
The official web platform for the research group showcasing flow-based design and literature, inviting others to continue developing the available knowledge.

superuse.org
Popular web platform with over a thousand designs with waste-material flows and a special section for interior architecture.

harvestmap.org
Web platform for the exchange of waste materials in design (Beta version to be launched July 2013).

cyclifier.org
Web platform showcasing over 100 flow-connecting designs at various scales.

Credits/Colofon

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helped us on this publication!

Graphic Design

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As part of the Graphic Design course: Do.
at the Royal Academy of Art

Typeface Juna designed by Jolien Verduijn

Printing

Second Edition 2013
Ecodrukkers, Nieuwkoop
All used components of this brochure, as well as the printing process, are climate neutral.
The inks are produced on a vegetable base.

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INSIDE

INSIDE is a two-year, English-taught master's programme, which targets the real world. A world that is changing: Large-scale interiors, the relationship between private and public space, sustainability and a greater demand for social cohesion are themes that call for new perspectives on interior architecture.

At INSIDE, we will challenge and see the world from inside-out and become INSIDE-architects.

INSIDE Master Interior Architecture (MIA)
Design for the real world

In September 2011 the Royal Academy of Art in The Hague launched an entirely new Master Programmeme in Interior Architecture.

The content of INSIDE is based on an annual social theme and concentrates on issues that designers, clients, residents or users of interior architecture are faced with. Through research, conceptualization and spatial design, sustainable, humane solutions for real world problems are developed and presented. In 2012/2013 the annual theme is about empty office buildings.

Case studies for all studios, courses and the research group of the year 2012/2013 are the vacant buildings of the Ministry of Internal Affairs in the City of The Hague (First Semester) and the empty spaces of the Shell Tower at Hofplein in Rotterdam (Second Semester).

Silo house by Jan Körbes of REFUNC, photo: Jan Körbes.

Programme

The curriculum of the Master programme in Interior Architecture at the Royal Academy is based on two principles. Firstly, it is based on an analysis of research and design processes. Secondly, it builds on the principle of 'learning by doing'. Combined, these two principles lead to a curriculum that is divided into phases that each deal with specific stadia of research and design processes: observing, gathering knowledge, planning, research, presentation, evaluation, design, and again presentation and evaluation. These aspects are addressed in all parts of the curriculum and form the criteria on the basis of which student work is assessed.

The programme comprises of five parts. The heart of INSIDE is formed by the three studios – Inter, Urban and Space – which make up for about 40% of the programme's total study load. Alongside the studios, students participate in a longer research trajectory – INSIDEflows – about flows in contemporary interior architecture.
In addition to this the programme is supported by a theoretical backbone, which trains students in their reflection on and position in the field of interior architecture, as well as a SKILLS programme that offers students hands on experience through intensive technical workshops. Finally, the travel programme allows students to observe and reflect on the discipline, cultural phenomena and social themes.

Structure

The total study load for the programme is 120 ECTS, equally spread over two years, which are divided into two semesters of 20 weeks each.

First year

The first year is focused on the student's introduction to design for the real world. Through the studios, the research group, the travel and the theory and skills programmes, students will be familiarized with all stadia of researching and designing for the real world: gathering knowledge, planning, research, design, presentation and evaluation. Students choose one from the three studios for each semester. The other courses run throughout the year, but will change their focus per semester or block.

Second year

The first semester of the second year has the same structure as the first year, but will be focused on mastering the skills that were introduced in the first year. In the fourth semester, the knowledge and skills acquired by students in the first three semesters will culminate in a final presentation that integrates all the above-mentioned stadia of research and design.

Programme Lecturers and Tutors

All parts of the programme are led by internationally orientated architects and theorists:

STUDIO SPACE
By Oana Rades and Thijs Bijsterveldt (Shift Architecture Urbanism, www.shifta.nl)
Oana Rades and Thijs Bijsterveldt lead the studio SPORT. They focus on sport as an integral part of our urban lifestyle deserving a prominent place in our city centres.

STUDIO URBAN
By Elma van Boxel and Kristian Koreman (ZUS – Zones Urbaines Sensibles, www.zus.cc, www.imakerotterdam.nl)

This studio concentrates on urban interiors, from agora to shopping mall and the changing relationship between public and private.

STUDIO INTER
By Jan Konings (www.hoteltransvaal.com)
Deals with the interaction between "somebody and the object, between somebody and the space, and between somebody and the city". Studio themes in 2012/2013 are SOUND (First Semester) and TIME (Second Semester).

FLOWS
By Jan Jongert (Superuse Studios, www.superuse-studios.com, www.superuse.org)
Contemporary interiors increasingly depend on a complex of connecting flows. The research group INSIDEflows investigates the specifications and behaviour of these flows to support the development of sustainable design methods.

THEORY
By Louise Schouwenberg
The course links theoretical and intuitive insights of both theorists and students to practical case studies. In each semester the Theory Programme, together with the other programmes, focuses on a common case study, which will be worked on in separate assignments. Working on these shared case studies will familiarize students with both theoretical and practical concerns in spatial design.

SKILLS
The SKILLS Programme is taught by various guest lecturers.

TRAVEL
By Hans Venhuizen (www.bureauvenhuizen.com, www.hansvenhuizen.eu)
National and international excursions, symposiums, lectures, interviews and studio visits stimulate the observations of and research on phenomena in spatial design.

Various guest lecturers in 2011/2012 and 2012/2013:
Thomas Bedaux, Bas van Beek, Pieke Bergmans
Mathijs de Boer, Atze Boerstra, Merijn Bolink,
Lieven de Cauter, Simon Davies, Andre Dekker,
Theo Deutinger, Matthijs van Dijk, Frank Feder
Fredie Floré, Job Floris, Aetzel Griffioen,
Sven Grooten, Frank Havermans, Ronald Hooft
Birgit Jürgenhake, Chris Kabel,
Gert van der Keuken, Krijn de Koning, Thomas A.P. van Leeuwen, Pierre Lhoas and Pablo Lhoas,
John Lonsdale, Rianne Makkink, Wilma Marijnissen, Ernie Mellegers, Nels Nelson,
Denis Oudendijk, Kyong Park, Mark Pimlott,
Bertjan Pot, Eva van Regenmoortel,
Vincent de Rijk, Lorenzo de Rita, Marc Schuilenburg, Marianne Theunissen, Ari Versluis, Peter Zuiderwijk.

Head of INSIDE: Hans Venhuizen
Coordinator: Marja van der Burgh
Studio Assistant: Erik Jutten

Admissions are accepted until 1 May (non EU members/EU members) and 1 July (EU members only).

Enter INSIDE

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www.enterinside.nl

Please visit www.enterinside.nl

INTER SPACE URBAN FLOWS

INSIDE

Master Interior Architecture
www.enterinside.nl

Design for
the real world.