

UNLIMITED

Nº 01

>

Nature conservation

**Rothenthurm:
The endless lure of the mire**

>

Architecture

**A place where
trainee talent is forged**

>

Frutigen Tropic House

Caviar made in Switzerland

>

Interview with Prof. Hansjürg Leibundgut

**Heat pumps, solar cells,
probes: «It's a revolution
in building services technology.»**



REHAU moves people
and people drive REHAU.

A handwritten signature in black ink, consisting of the letters 'RS' followed by a stylized 'Sf' and a long horizontal stroke that extends to the right and then curves downwards.

Rainer Schulz, CEO, REHAU Group

UNLIMITED N° 01

Request your free subscription on:
www.rehau.com/unlimited

IMPRINT

UNLIMITED

N° 01

A magazine by
REHAU AG + Co

Publisher

REHAU AG + Co

Published

biannual

Print run: 20,000

Project manager

Nils Wagner

Editor-in-Chief

Birgitta Willmann

Contributors

René Lüchinger

Photography

Christian Grund

Design concept

Art Direction

Simone Fennel

Content concept

Lüchinger

Publishing GmbH

Litho

DRUCKPRODUKT

Buchmann

Print

Mayr Miesbach

GmbH

Dear Readers,

Everyone is talking about sustainability. And so are we. In fact it has been a corporate practice of ours for the past 60 years. By pursuing a far sighted corporate policy aligned to the long term, we have always endeavoured to fulfil our responsibility both as an employer and as an industrial enterprise. Since the founding of the company in 1948 by Helmut Wagner, innovation and the ongoing development of materials and products have been the focus of all our aspirations. To begin with, our main goal was to replace expensive and scarce materials with polymers. Today we are proud that our intelligent system solutions in the area of infrastructure, building technology or mobility make a contribution to the responsible use of energy and raw materials.

What our systems and products achieve is shown by the articles in this new magazine that we have named Unlimited. This is right in line with our guiding principle "REHAU moves people and people drive REHAU". Unlimited is all about the people who manufacture our products, install them or plan their use. We reveal how REHAU systems can make a contribution to conserving our environment. We all want to preserve our planet for coming generations.

This first issue of Unlimited is devoted to the topic of water. It is well known that life cannot exist without water, which is why we must do everything in our power to safeguard this vital but diminishing resource. Wastewater has to be collected and treated, precious drinking water transported safely over long distances, rainwater returned to the water cycle in a controlled way. By supporting all these processes, REHAU contributes to the responsible and sustainable use of this precious element.

I sincerely hope that our magazine Unlimited will help you get to know REHAU as a company like never before.

And now, enjoy your read!



Nils Wagner, Project Manager

Contents

>

Editorial	03
News	05
People	19
Statistics	30
Locations	31



Sustainability

Mire landscape
in Rothenthurm.

Page 08



H₂O

Roman von Urbanowicz on
water management.

Page 23

11
best archi
tect's



Training

An investment in the future.

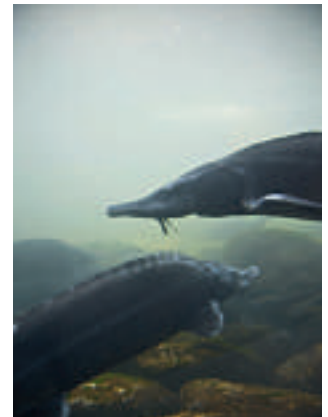
Page 14



Interview

Prof. Hansjürg Leibundgut
on new building
services technologies.

Page 26



Fish farming

Caviar from Frutigen.

Page 20

> Hygiene



Safe and clean drinking water is a basic human right. This is the key message of a declaration made by the UN General Assembly in New York in July. The concept represents a major step in the right direction, given the fact that 1.5 billion people around the world do not have direct access to the life-giving liquid. To help resolve the problem, considerable research is being performed into the safe, sustainable and affordable sterilization of water. A group of researchers at the Ferdinand-Braun-Institute Leibniz and Berlin Institute of Technology (TU Berlin) that has been looking into this problem for some time has now reported a success. The possible solution involves illuminating the water with ultra-

Clean Water

violet light-emitting diodes (UV-LEDs). With the right dosage and wavelength, the UV light is ideally suited for disarming micro-organisms like bacteria, viruses and spores. The illumination destroys the genetic material, thus preventing the organisms from reproducing. This finding is not new. What is new, though, is the method of obtaining the UV light. Up until now, this was created using environmentally harmful low-pressure mercury vapour lamps. The alternative method is based on semiconductor-based InAlGaN LEDs, and the researchers are now working on improving their performance and efficiency. If they were to succeed, a promising, inexpensive alternative to traditional mercury lamps could be used in the future, thus also providing an opportunity to permanently sanitize water in poor countries.

www.wgl.de

> Green technology

Daimler has set itself a development budget of no less than four billion Euros. As the company's head of Group Research&Development, Thomas Weber, confirmed in a recent interview, half of this is earmarked for green technologies and products. In Stuttgart, this is seen as an investment in the future in the light of ever scarcer and ever more expensive fuel. The cor-

Star with an electric motor

poration is upping the pace: it already produces a Smart with an electric engine and it aims to roll out the first hybrid engines in its larger Mercedes B-Class mid-range and executive vehicles by the end of the year. Weber believes it will be possible for models in the S-Class to achieve fuel consumption levels of 3.2 litres per hundred kilometres in the future. In line with this, the Board member is calling upon the suppliers to exploit this period of upheaval in the automotive industry creatively, pointing out that this is a «tremendous opportunity» for them, since the carmakers are not able to do everything themselves. A truly attractive proportion: The rate of vendor parts currently used by Daimler amounts to 70 percent.

www.mercedes-benz.ch/b-klasse



> Ressources



www.evaporiticosbolivia.org

What do laptops, mobile phones and hybrid and electric vehicles have in common? They all rely on long-life batteries which for years now have required lithium-ion. And because global demand for this light metal has risen massively, the focus has suddenly switched to its sources. The biggest lithium reserves in the world are found in Bolivia. The biggest salt lake on the planet, the Salar de Uyuni, is located on a plateau in the southwest of the country. What is believed to be largest lithium deposits in the world are stored beneath its thick salt crust: 5.4 million tonnes of them,

The gold of salt lakes

apparently. And even if other lithium-producing countries like Chile, Argentina and China are capable of increasing their output, international interest in Bolivia's stocks is growing from day to day. Yet the Bolivian government wants to be wiser this time round and not give away its lithium cheaply and easily to foreigners as once happened with silver. Under President Evo Morales, whose government has placed commodities under state control, Bolivian-run lithium-mining projects are now planned, which is why some specialists have taken to calling the Andean state the «Saudi Arabia of lithium».

> Electromobility

The white runabout, a small Citroën Berlingo, is the pride of REHAU's new vehicle fleet. The company has set an example by adding the electric version of the VW T5, a Berlingo and an electric scooter to its collection. The electric vehicles will be deployed internally at the various facilities, using their own refueling points. «Energy efficiency drives us» is the slogan under which the new vehicles were unveiled to the workforce. In going over to electric

REHAUs fleet

vehicles to some extent, the company is responding to the appeal from the German government for companies to gradually switch to renewables. The polymer specialist aims to set a good example by building its business and development strategies around the megatrends of energy efficiency and electromobility. The words are backed by actions: not just by deploying the new electric cars but also by reducing carbon emissions by means of energy-efficient construction, among other things. So the new white fleet featuring the green car and plug is also more than just a means of transport; it is also a commitment to ecology, sustainability and research.



www.rehau.de

> Eco-ships

It is well known that ageing oil tankers can cause environmental disasters. A less well-known fact, though, is that shipping as a whole is responsible for three percent of global greenhouse gas emissions, and the figure is rising. Consequently, pressure has been increasing on the international shipping industry for some time now to build environmentally friendly vessels.

Japan is taking the first step. Several companies over there are currently drawing up plans to develop the first eco-ships in the world. As with the car, hybrid and electric motors together with fuel cells will play a leading role in the eco-freighters, albeit on a much larger scale. A subsidiary of IHI, a manufacturer of heavy machinery, aims to equip a 30-metre passenger ferry with a lithium-ion battery that is up to 300 times the size of an equivalent car battery. The

Plug-in ferry

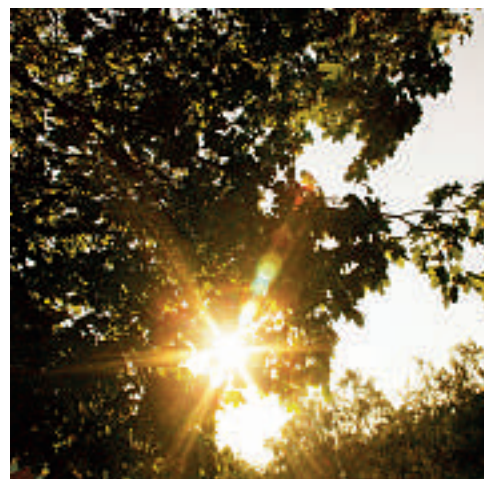
company states that this first plug-in ferry in the world for 800 passengers will be able to cover up to 80 kilometres without having to recharge. One of its competitors, Mitsui Engineering&Shipbuilding, is currently developing a diesel-electric hybrid system for long-distance container ships. And last but not least, NYK is looking to the alternative of wind and solar energy. The shipping firm aims to have the NYK Super Eco Ship 2020 equipped with at least 8 sails and 31,000sqm of solar cells ready for use by 2030. We can only hope that the researchers continue to enjoy a fair wind.

www.japanmarkt.de



© NYK Line

> Solar energy



And the research is continuing. The Fraunhofer Institute for Solar Energy Systems (ISE) working in conjunction with the Freiburg Materials Research Centre (FMF) has reported success in their efforts to generate solar energy using organic solar cells. The research team has succeeded in achieving the best fill factor in the world for flexible organic solar cells. The fill factor defines the quality of the solar cell, measuring how well the cell is capable of collecting the charge

Energy-producing polymers

carriers generated by light. The goal was to develop the lightest possible, flexible solar cells. The FMF carried out research into conductive plastics for use in organic photovoltaic systems. Compared with established silicon photovoltaics, this is a young area of research that has evolved rapidly over recent years. Unlike traditional solar cells made from inorganic semiconductors that are already established on the market, organic solar cells employ organic materials like polymers to convert sunlight into electrical energy.

www.ise.fraunhofer.de
www.fmf.uni-freiburg.de