



Illustration: Johannes Lang, LouseScript, 2018

Summer Exhibition

**Alphabet of Life — Nature's Learning Lab**

23 June – 6 October 2018

**Opening**

**Friday, 22 June 2018, 6:00 PM**

**in the Werkraumhaus in Andelsbuch**

Welcome

**Martin Bereuter**, Chairman Werkraum Bregenzewald

Introduction

**Elisabeth Kopf**, Project and Communication Designer, Design Buero Baustelle

**Regina Rowland**, Professor and Biomimicry Specialist

Guest

**Conrad Amber**, Author, Photographer and Nature Thinker

Moderator

**Thomas Geisler**, Director Werkraum Bregenzewald

**Opening hours**

Tue – Sat, 10:00 AM – 6:00 PM

Closed on Sundays, Mondays, and on public Holidays

Project Patrons



## Alphabet of Life – Nature’s Learning Lab

**What design principles might we learn from nature that can be applied to designing, producing and managing life in a resource-efficient and sustainable way? These are the key issues being addressed by the current summer exhibition in the Werkraumhaus, *Alphabet of Life – Nature’s Learning Lab*. Strategies and patterns that have evolved for more than 3.8 billion years are investigated through the eco-system of a tree. *26 Principles of Nature* are represented in an alphabet that is used as a tool to learn and remember the principles that form the basis of biomimicry, an approach to design that takes nature as a model, mentor, and measure toward systemic sustainability. The exhibition is conceived as a learning lab and also shows innovative, nature-inspired applications from the world of crafts, design, and technology. This transdisciplinary project has been conceived as an integration of research, education and exhibition design, and combines natural science with crafts and artistic production in an inspiring learning environment for experts, laypeople and the whole family.**

The Bregenzerwald is renowned for its cultural landscape shaped by agriculture, the crafts industry and tourism. Human usage significantly formed and changed the former natural landscape. Seen globally, the human being is regarded today as the key factor influencing earth’s biosphere. How are we managing our limited resources in the so-called Anthropocene – the era of human activity shaping the surface of the earth? What effects will our actions have on future generations?

Sustainability is a key concept in forestry, and the Bregenzerwald is a good place to get involved (once more) with nature. Already in summer 2017 the Werkraum Bregenzerwald invited a transdisciplinary team of creative professionals, scientists and craftspeople to join in the workshop *A.de.Le Lernwerkstatt 1.0 – Biomimicry*, aiming to start a project combining scientific research, education about nature-inspired innovation, and exhibition design, sponsored by the Austrian Research Promotion Agency (FFG) and the Province of Vorarlberg.

In leading roles are Elisabeth Kopf, who is originally from Vorarlberg and now teaches project and communication design at the Vienna University of Applied Arts, and the biomimicry expert Dr Regina Rowland who has focused on innovation research for many years; after several years teaching at the Savanna College of Art and Design (SCAD) she is back in Austria and is now spreading this approach to design in Europe. In the run-up to the exhibition the two curators along with the architect Claus Schnetzer organised interviews with scientists from the fields of zoology, botany, biotechnology, environmental medicine and tree and wood sciences; but first and foremost they visited local crafts industries and involved them in the development process – after all, the main aspiration was to localise the global issues and approaches to solutions for nature-inspired design in the Bregenzerwald region. Further, important impulses came from networking with regional competency partners, including inatura (the provincial museum for science, nature and technology), the designforum Vorarlberg and Energieinstitut Vorarlberg, the nature preserve Nagelfluhkette and the climate change initiative would2050.

### Learning from nature

Biomimicry (Greek bio(s), life, thus mimicry of life) is an approach to design that combines design with science, technology and other academic disciplines. *26 Principles of Nature* form the foundation for future-fit design solutions based on nature. The basic elements are: to (re-)connect with nature, emulate (mimick) nature, and the ethos of biomimicry (sustainability mandate). People are nature and inseparably connected to it. Biomimicry aids us in (re-)adopting this perspective and perception. “The workshop and design lab needed for this practice are present wherever life exists: in the forest, in the water, in the desert, in your own garden and even in a flowerpot,” says Regina Rowland. Nature teaches us natural forms, processes and the dynamics

of eco-systems. “Understanding and imitating nature helps us to realise the vision of a life-friendly world,” adds Rowland. Applying the *26 Principles of Nature* leads to sustainable solutions based on respect and responsibility for all life and for the planet. This ethos embodies the essential difference to other nature-inspired innovation methods. On show in the exhibition are biomimicry projects from the USA and Europe, including tiles specially developed for this purpose by the Kohler WasteLab from Wisconsin – incidentally, the firm’s founder in the nineteenth century was originally from the Bregenzerwald – also plant-based composite materials like PureBond Plywood by Columbia Forest Products in North Carolina, and the Ornilux Vogelschutzglas (bird-protection glass) by Arnold Glas in Germany.

### **Here we go round the mulberry bush from A to Z**

To ensure that the biomimetic *26 Principles of Nature* are appropriately illustrated in the exhibition, the curators got together with the zoologist Timo Kopf and looked for examples from nature in the Bregenzerwald – namely, from the eco system of a tree. Monika Ernst, a young graphic designer, painted these samples as *Alphabet of the Champions* in acrylic on wooden boards, the typographer Johannes Lang developed *LouseScript* for this exhibit, a spontaneously generating letter alphabet based on the gene code of the plant louse. Every letter stands for an example from nature, representing a biomimicry principle. “R” stands for the wood-nesting wild bee, representing the principle of resource efficiency. It nests in the existing insect mines in dead wood and organises its flights to fetch material food for the brood cells in an extremely economical way.

The tree, itself on show as “champion” of the 26 biomimicry principles with the letter “M”, is the central object taking up an entire wing in the Peter Zumthor building, around which the alphabet is arranged. The nature principle “Cultivating Cooperative Relations” plays a double role, also standing in for the concept of craft cooperatives within the Werkraum membership.

A tree lives mainly from water, light and air and is a prime example for cycling nutrients through the system. Furthermore, it offers habitat and nourishment for an immense diversity of fauna, flora, fungi and micro-organisms. “The tree is a symbol of an intact eco-system in which every living creature plays its role and in which the natural cycles are perfectly optimised,” says Elisabeth Kopf, who along with woodworkers and gardeners is bringing nature into the Werkraumhaus, and explored this in project work together with her students at the Vienna University of Applied Arts. The knowledge of her brother Timo Kopf and the craftspeople was essential for working on this transdisciplinary contribution to the exhibition based on artistic research, scientific art and handicraft-based understanding of nature.

### **Living like the wild bee**

The wood-nesting wild bee from the *Alphabet of Champions* gave us the inspiration for a sleeping area in the Werkraumhaus learning lab. As modelled by nature, the thrifty and intelligent management of resources, material and energy formed the starting point. The conceptual specification and construction material involved a stack of boards, its clever arrangement allowing the formation of sleeping spaces and niches. The *Bed in Wood* in the object’s interior is devoted to the theme of healthy sleep, and the *Bed in Hemp* on the outside shell of the wood structure invites sensuousness and dreaming. Both areas were developed together with experts from the crafts industry, building biology, environmental medicine and sleep research institutes.

This concept was developed by architects Claus Schnetzer and Gregor Pils from SchetzerPils ZT from Vienna, who were responsible for the entire exhibition design as an experienced team in the field of sustainable building. They played a major part in realising the research project *LISI-Haus* (Living Inspired by Sustainable Innovation), the winners of the Solar Decathlon 2013 in California. SchnetzerPils planned for a 24-hour usage for the Werkraumhaus, which provides several

sleeping options (another one is the *Sofa in the Garden* with cushioned upholstery made of biodegradable materials, such as dried leaves and others). Incidentally, the spruce wood used in it comes from a windthrow in January 2018 caused by the gale-force cyclone “Burglind”. After the exhibition closes, the used boards are intended to be further used as wall panelling, so that the Werkraumhaus will simply be a temporary drying station, following the spirit of biomimicry with high material and resource efficiency.

### **Nature’s materials and recipes**

Of course, a proper workshop is indispensable in a learning lab, where natural materials for building and living are presented on the work benches of the *Nature-Building-Kitchen*. They are biologically unobjectionable and comply with the highest standards of quality and functionality. Recipes that have proven their worth in handicraft practice – some of them for centuries – serve as guidelines for an environmentally-friendly use of natural materials and their applications, such as Zeolith, natural cement, loam, vegetal glue, linseed oil products, natural pigments, plant granulates, waxes, natural rubber, bone glue and so forth. A special workshop programme runs courses for mixing and using recipes for plaster rendering, mortar, paints, floor coverings, bonding technology and nature-inspired design. This aims to motivate the sharing of useful knowledge and experience. The materials available in the *Nature-Building-Kitchen* are for the most part certified according to the BRUNO Quality Seal—the premier Austrian quality seal in environmental medicine for natural building and home-living materials.

### **A garden of earth, water and air**

The final section of the exhibition is a “floating garden” for which plant tables are recycled, offered by a local gardening firm. This area of cultivating nature closes the imaginary circle of the tree as symbol of nature’s life cycle. What we learned so far: nature is abundant, nothing is lost, and everything is re-used – intelligent strategies represented in the *26 Principles of Nature*. In ecosystems, materials and nutrients circulate in infinite cycles or are decomposed and recombined into regenerative or renewable raw materials. Living creatures, big and small, are incessantly busy creating material and energy transformations; the basic components resulting from these actions form the biological foundation for new life (biological cycle). Examples from the textile industry include the compostable fashion label of *F-ABRIC* by the Swiss bag manufacturer FREITAG, and the *Cradle-to-Cradle Lingerie* by Wolford.

Confronted by the finiteness of „earth’s store“ of raw materials, recycling of non-renewable raw materials plays an increasingly important role in the production chains of global economies. In order to answer the question, “What is good design?” At this point in human history, and to survive as a species, we actually have to move toward an intelligent management of resources, not only for economic but above all for ecological reasons.

These technical cycles are demonstrated in biomimicry projects such as the *Ecover Ocean Bottle* by Edificio Logoplaste from Portugal and carpet tiles from Interface. Both products are made from recycling plastics and synthetic materials, and are made from plastic waste reclaimed from the ocean. Designing in holistic systems is presented by an EU-funded research project running until 2022, *Hydrousa*, with a focus on developing autarkic water loop management systems on Mediterranean islands. As a regional example the cooperative biomass thermal power station in Au is on show in form of a model lovingly and especially made for this occasion by pupils of the New Secondary School in Au.

*Alphabet of Life – Nature’s Learning Lab*, the transdisciplinary project comprising scientific research, education and exhibition design, not only combines scientific knowledge with the crafts industry and artistic production but spans an arc from global perspectives all the way to the Bregenzerwald, and first and foremost brings together all kinds of people – experts and

laypeople, children, young people and adults – on an equal footing around the “design table” – the cooperative workplace engaging in the biomimicry innovation process.

**The accompanying programme taking place during the exhibition is designed to appeal to both experts and the whole family:**

Striking up the show was the project „Werkraum School Bautage“ (Building Days) – a project of first- and second-year Werkraum School students lead with the Swiss crafts and design teacher Serge Lunin. Sixty young people built a special structure made of wood, and oriented it in conformity with the summer exhibition towards nature’s building principles while simultaneously relating it to the Werkraumhaus architecture. The temporary construction under the projecting roof of Peter Zumthor’s building is, at the same time, a “nesting place” for the next generation and will be on show until autumn as an outdoor installation until October 21, 2018.

A highlight will be a lecture of Dr Dayna Baumeister. For the first time in Austria, the co-founder of Biomimicry 3.8 is giving a talk together with her partner Dr Thomas Baumeister on her projects and the innovative approach she has co-developed. The lecture will be held on 11 September 2018, 7:00 PM at the FH Vorarlberg Auditorium. Together with the designforum Vorarlberg, two workshops are offered as part of this programme: *aws impulse Training: Biomimicry at play!* (23-25 June 2018) and *Summer Workshop: Biomimicry – Innovation Inspired by Nature* (24 -27 August 2018). The grand finale is the ORF Long Night of the Museum, when the creative collective of [kat]alab will instruct visitors of all ages in building simple, mobile-phone compatible microscopes.

For more information about the wide-ranging accompanying and educational programme with guided tours and nature excursions visit **[werkraum.at](http://werkraum.at)**

## **ALPHABET OF LIFE – NATURE’S LEARNING LAB**

**Opening:** 22 June 2018, 6:00 PM

**Duration:** 23 June – 6 October 2018

### **Opening hours**

Tue - Sat, 10:00 AM - 6:00 PM; closed on Sun, Mon and on public holidays

### **Admission Prices**

Adults € 7.50, concessions € 5

Free admission up to age 16

Groups of 15 or more, per person € 5

Guided tours for groups of 15 or more, per person € 7

Workshop fee for Children’s Workshop € 5

The restaurant and catering service in the Werkraumhaus operates during the regular opening hours, serving daily lunch, with meals for seminars and groups on request.

### **Curators**

Elisabeth Kopf (Project and Communication Designer), Regina Rowland (Biomimicry Expert)

### **Curatorial advisory board**

Timo Kopf (Zoologist), Claus Schnetzer (Architect), Alfred Ruhdorfer (Building Biologist),

Andrea Zraunig (Botanist), Albert Gerlach (Innovation Coach)

### **Scientists-at-the-design table**

Günther W. Amann-Jennson (Sleep Researcher), Karin Grafl (Environmental Physician),

Birgit Gschweidl (Botanist), Theresa Heitzlhofer (Ecologist), Ulli Kammerzell (Tree and

Wood Scientist), Johannes Kisser (Chemist), Christian Rammel (Human Ecologist)

### **Craftspeople-at-the-design table**

Members of the Werkraum Bregenzerwald: Jodok Felder (Metalworker), Helmut Fink

(Woodworker), Andrea Hager (Bed Constructor), Simon Hofer (Boat Constructor, Carpenter),

Daniel Meusburger (Horticulturalist), Stefan Mayer (Stone Carver), Johannes Mohr (Upholsterer),

Thomas Mohr (Carpenter), Anna Claudia Strolz (Lamp Maker), Leander Vögel and Peter Willi

(Electricians); other craft industries: Martin Rauch and Clemens Quirin (Loam Builders),

Anika and Anton Machnik (Pest Controllers)

### **Exhibition architecture**

Claus Schnetzer, Gregor Pils / SchnetzerPils ZT

### **Graphic design, typography and illustration**

Design Buero Baustelle, Gesine Grotian, Johannes Lang, Andreas Palfinger

### **Artistic productions**

Dominik Einfalt, Monika Ernst, Barbara Anna Husar, Joohyun Lee, Suzy Kirsch, Luc Kopf,

Günther and Loredana Selichar / Wolfgang Mitterer, Astrid Seme, Masha Sizikova,

Katharina Triebe

### **Photography and video**

Balint Bíró, Lucas Breuer, Matthias Dietrich, Sabine Dreher, Daniel Hager, Daniel Kozma,

Barnabás Tóth-Justh

### **Press-Contact**

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