

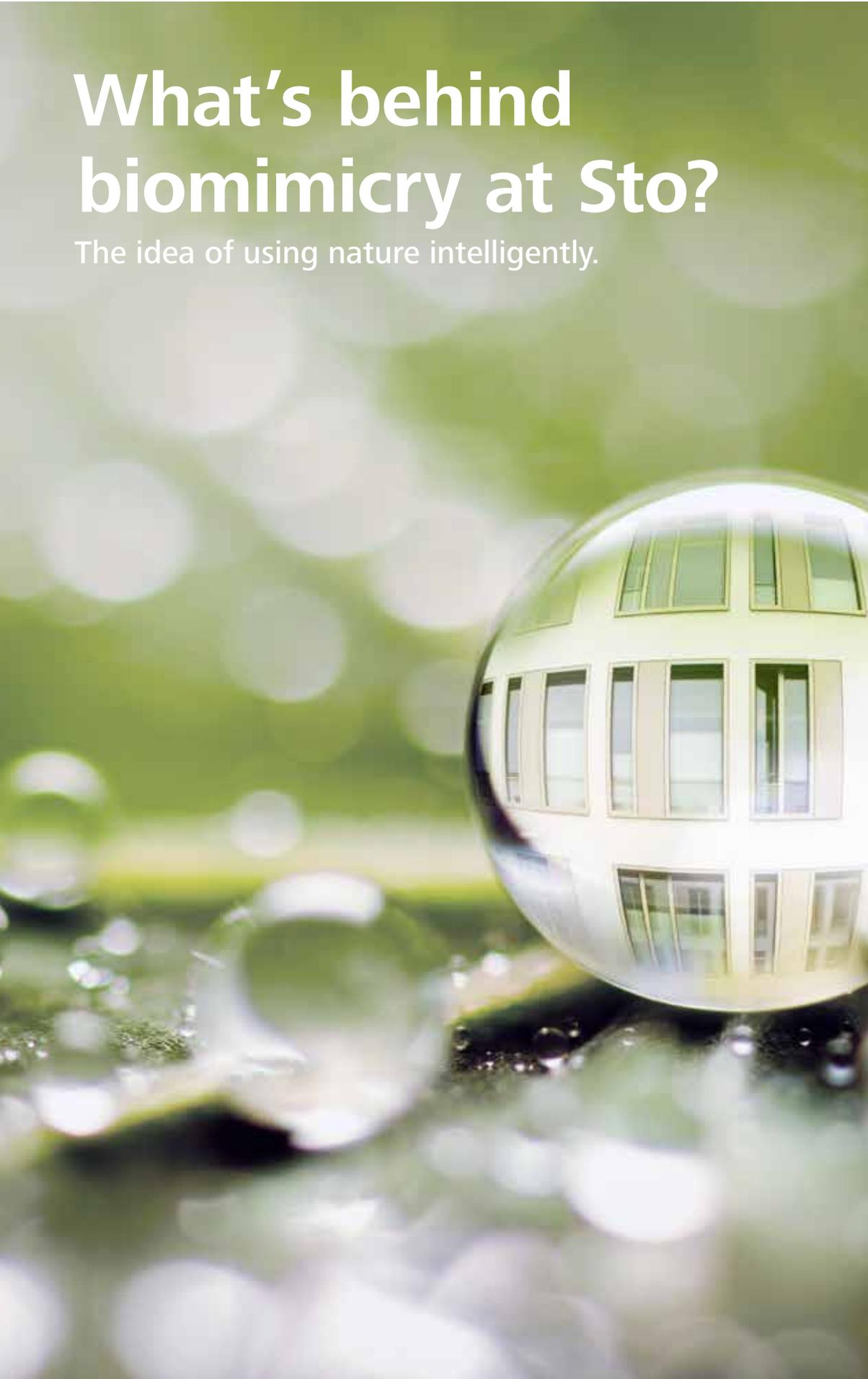
sto



Building with conscience.

What's behind biomimicry at Sto?

The idea of using nature intelligently.



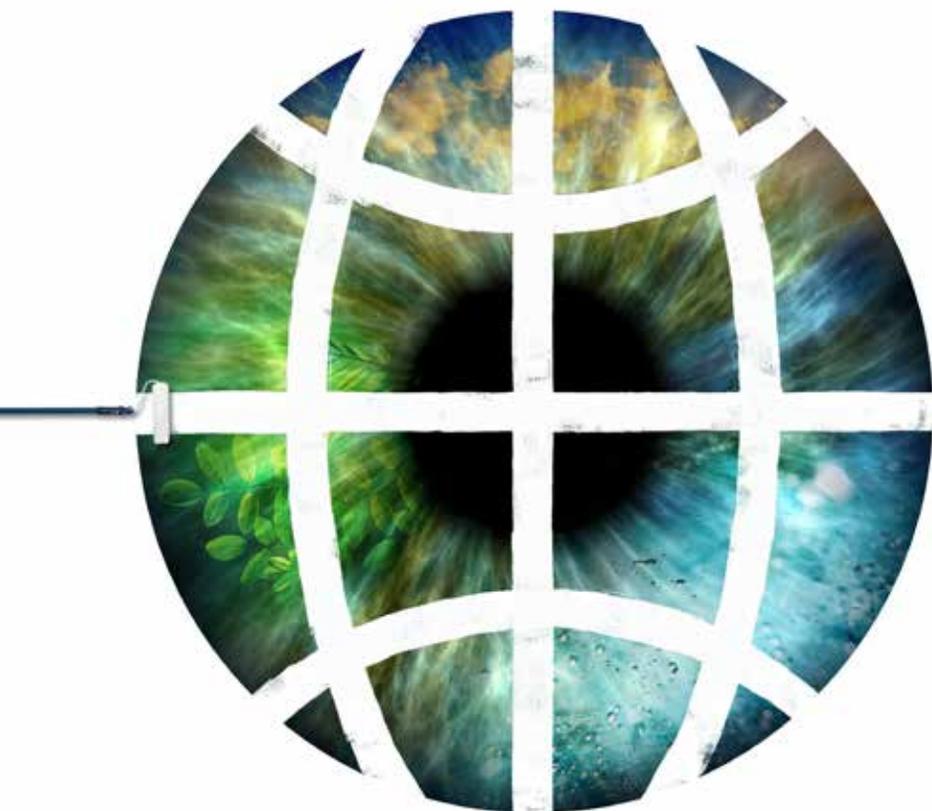
“Our biomimetic product development requires a wealth of experience. More than 160 employees in our research and development department make sure that the innovation engines constantly run at maximum revs.”

Reiner Schmid,
Head of Segment Facade Coatings



Biomimicry. Our step ahead.

We have been developing products based on the most efficient solutions from nature for 20 years. Our inspiration: 3430 million years of evolution – constant optimisation through further development. The benefit to you: radiant colour intensity, UV protection, weather protection, surfaces that clean themselves, and a longer lifecycle for your facades. Cost-effectiveness and ecology combined. This is what we mean by Building with conscience.



Turning nature into a guiding principle

How it all began: 20 years of biomimicry at Sto

Sometimes, a real treasure falls into your lap. And if it happens twice, there must be a reason behind it. In our case, it all came from reading the newspaper. Or put differently – an open mind, joined-up thinking, and a passion for research.

An American Sto sales advisor was sitting at the dentist – and for once was happy to be there. Browsing through National Geographic, he came across an article about Sto's Lotus-Effect® Technology. It described how the lotus flower from the Far East never gets dirty: the microtexture of its surface provides a very small contact surface for dirt and water to accumulate. Sto integrated this principle for the first time in the StoColor Lotusan® facade paint back in 1999 in order to protect buildings.

In another article in National Geographic, the fog-basking beetle was also mentioned – an insect which is able to collect precious drinking water on its special shell early in the morning, and then performs a headstand to allow the water to run into its mouth. Impressed by this beetle, our employee sent the article to Sto in Germany. The product developers at Sto recognised the potential of the beetle's shell structure as a way of conveying water away quickly. They requested a specimen of the fog-basking beetle be sent to them to investigate further.

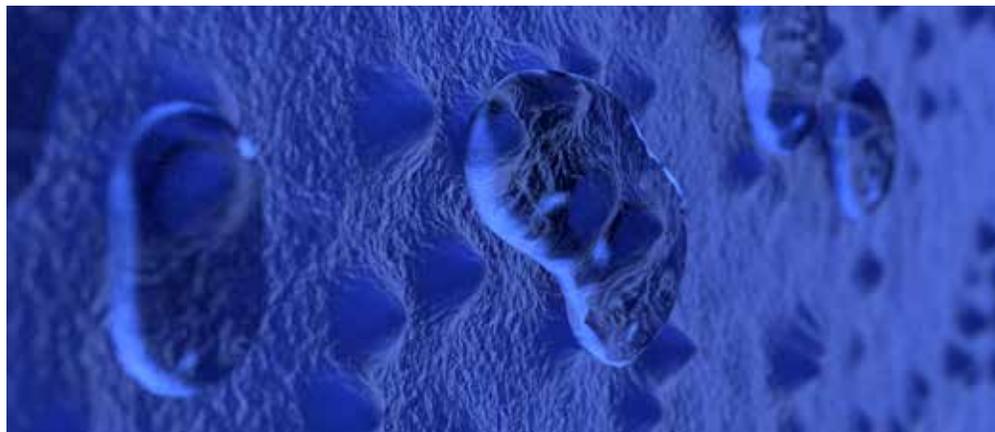
Following extensive research, they succeeded in transferring the microtexture of the beetle's shell to a facade paint. StoColor Dryonic® became the company's second biomimetic milestone.



Raindrops run off the lotus leaf in a matter of seconds.



The fog-basking beetle performing its legendary headstand.



Macro shot of a StoColor Dryonic® surface – the new biomimetic solution uses the principle of the fog-basking beetle to produce dry facades.

The experience of nature in our products

Biomimetic facade paints and how they work

How StoColor Lotusan® works:

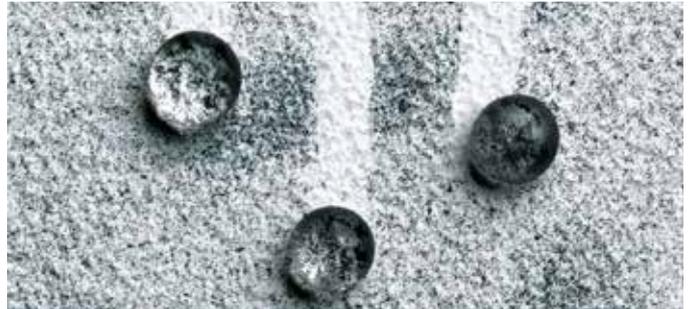
Water management is one of the most important jobs of facade paints. Due to its high surface tension, water forms in droplets. The water-repellent microtexture in the Lotusan® facade paint minimises the contact that the water has with the surface. As a result, dirt runs off with the raindrops in a matter of seconds. And the facade stays pristine for longer.

How StoColor Dryonic® works:

The microtexture of StoColor Dryonic® forms tiny peaks. While the hydrophilic tips let the water condense, the hydrophobic depressions in between repel water. We took this observation from nature and transferred it into our top-performing facade paints. The paint's special surface texture ensures that dew and rain on the facade dry in record time, depriving algae and fungi of the nutrients they need to grow. In addition, StoColor Dryonic® can be combined with other technologies: integrated solar protection, SunBlock Technology, prevents bold colours from fading as a result of UV rays, while X-black Technology stops the facade from heating up.

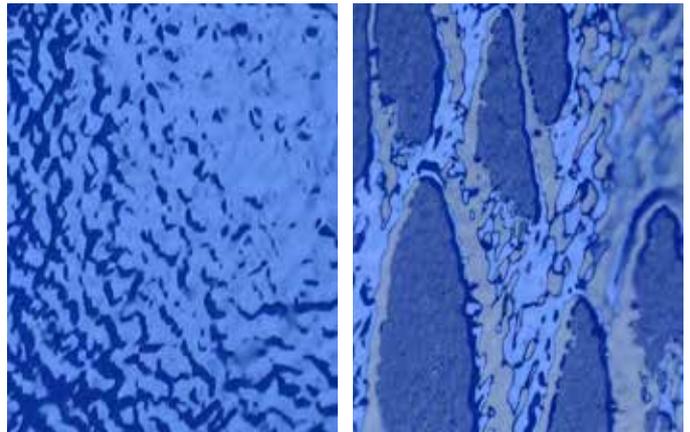
Our biomimetic facade paints are available without biocidal film protection, making them exceptionally environmentally friendly.

Dirt runs off with the rain.



The self-cleaning ability of StoColor Lotusan® guarantees active, moisture-regulating weatherproofing to protect against algae and fungi.

Beautifully dry, come what may.



The result is extremely quick drying after rain, fog, and dew. With StoColor Dryonic®, the facade has an environmentally friendly and long-term safeguard against algae and fungal attack.



Biomimetic facade paints from Sto retain their colour intensity and remain clean and attractive for years to come.



Technology leadership right around the building

Product advantages for building owners and tradespeople

Product	StoColor Lotusan®	StoColor Dryonic®	StoColor Dryonic® Wood
Properties	<ul style="list-style-type: none"> • Maximum resistance to soiling • Natural protection against algae and fungal attack • Without biocidal film protection • Lotusan® G is available with encapsulated film protection • Moisture-regulating • Structural weatherproofing not very important, therefore more design freedom • Optionally available with heat shield against solar heating (X-black Technology) 	<ul style="list-style-type: none"> • Very quick drying after rain and dew formation • Biomimetic principle for dry facades against algae and fungal attack • Without biocidal film protection • Extremely wide colour shade variety and high level of colour stability • Minimal extender material breakdown (not easily scuffed) • Can be applied to virtually all conventional construction substrates • SunBlock Technology in StoColor Dryonic® S for maximum colour shade variety and colour stability • Optionally available with heat shield against solar heating (X-black Technology) 	<ul style="list-style-type: none"> • Biomimetic operating principle for dry wood facades against algae and fungal attack with extremely quick drying after rain and dew formation • SunBlock Technology: for maximum colour shade variety and colour stability • X-black Technology: keeps temperatures below 65 °C when exposed to solar radiation, even with dark colour shades • Isolating effect against many wood constituents • For semi-dimensionally stable and non-dimensionally stable wooden substrates, except framework • High level of resistance to mechanical stress • Silk matt surface • Retains the texture of the wood

StoColor Dryonic® for virtually all building elements

1 StoColor Dryonic® for cement shingles 2 StoColor Dryonic® for roof tiles 3 StoColor Dryonic® as a finish on EWIS 4 StoColor Dryonic® with X-black Technology to prevent intense colour shades from heating up in the sun (FT 37100)

5 StoColor Dryonic® for galvanised sheet metal, plastic substrates, and aluminium substrates 6 StoColor Dryonic® Wood for semi-dimensionally stable wooden substrates 7 StoColor Dryonic® for fair-faced concrete 8 StoColor Dryonic® for gutters 9 StoColor Dryonic® S for HPL boards, also available in RAL colour shades 10 StoColor Dryonic® Wood for roof soffits





We use nature's blueprint
to combine cost-effectiveness and ecology.
This is what we mean by
"Building with conscience".

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Learn a whole lot more:

Visit www.sto.com/biomimicry for further details and background information on biomimetic product development at Sto.

