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Green technologies - an opportunity for construction industry

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Polish Construction Cluster
Key National Cluster

BUSINESS PLAYS GREEN

Progressing climate change, depletion of energy resources and constantly growing urbanization processes are forcing the transformation of the world economy. Green technologies shape the entire economic environment and influence the business models of all companies.

Green technologies:

- renewable energy
- effective storage of energy from renewable sources
- low- and zero-emission transport
- sustainable management of raw materials and waste
- energy-saving building materials



Green technologies – advantages and disadvantages for construction industry

Companies leading in green technologies are growing much faster, offering more competitive and innovative solutions. They are the change we want to see in the world.

Advantages

- allow you to significantly reduce global energy consumption
- reduce air pollution and the effects of global Warming
- affect the quality of soil and water
- minimize the amount of waste
- real financial savings



Disadvantages

- high „start-up” expenses
- the cost of research and implementation of innovative solutions
- long payback period for investing in renewable energy sources
- still limited availability



Green transformation of the company

When examining the impact on the environment and climate, companies in Poland no longer take into account only applicable legal regulations and the related costs trend. It becomes necessary to estimate the costs of greenhouse gas emissions internally.

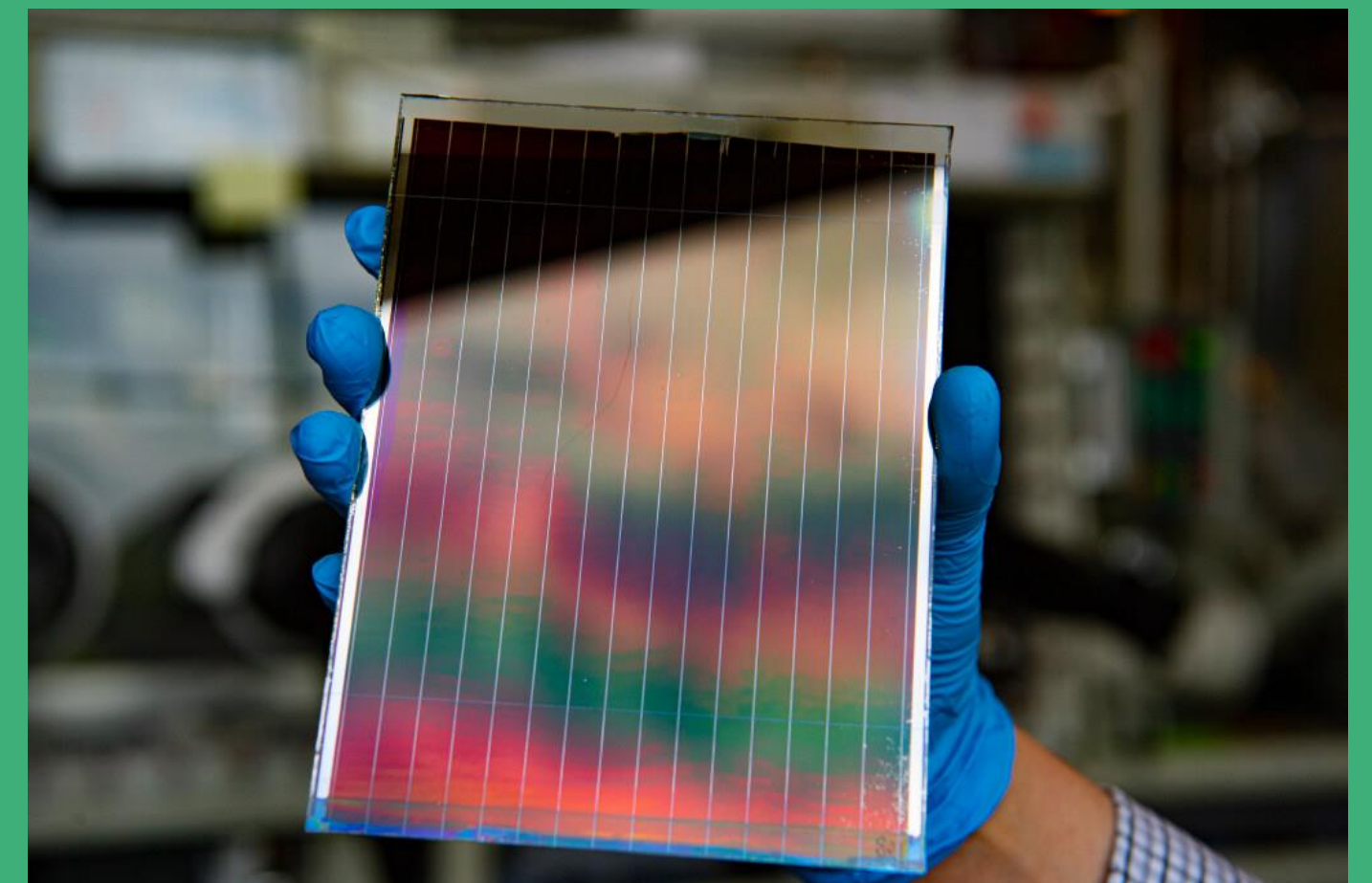
Green transformation of the company

Just that strategy will allow the company to realize current and potential ones legal requirements, determine the risks for current business model and enable the green transformation the enterprise and its environment business.

Green technologies: **perovskite photovoltaic cells**

Perovskite photovoltaic cells are a chance for a breakthrough in obtaining energy from light - not only from sunlight, because perovskites also absorb artificial light. This technology involves the use of a group of minerals with properties such as electrical conductivity, low weight and the ability to produce photovoltaic panels. They can be placed on any surfaces, including transparent ones, so perovskite cells can be used on building facades, vehicle roofs and small devices connected to the Internet of Things.

The world's first factory producing perovskite cells for commercial use was launched in 2021 in Wrocław.



Green technologies:

heat recovery from the installation

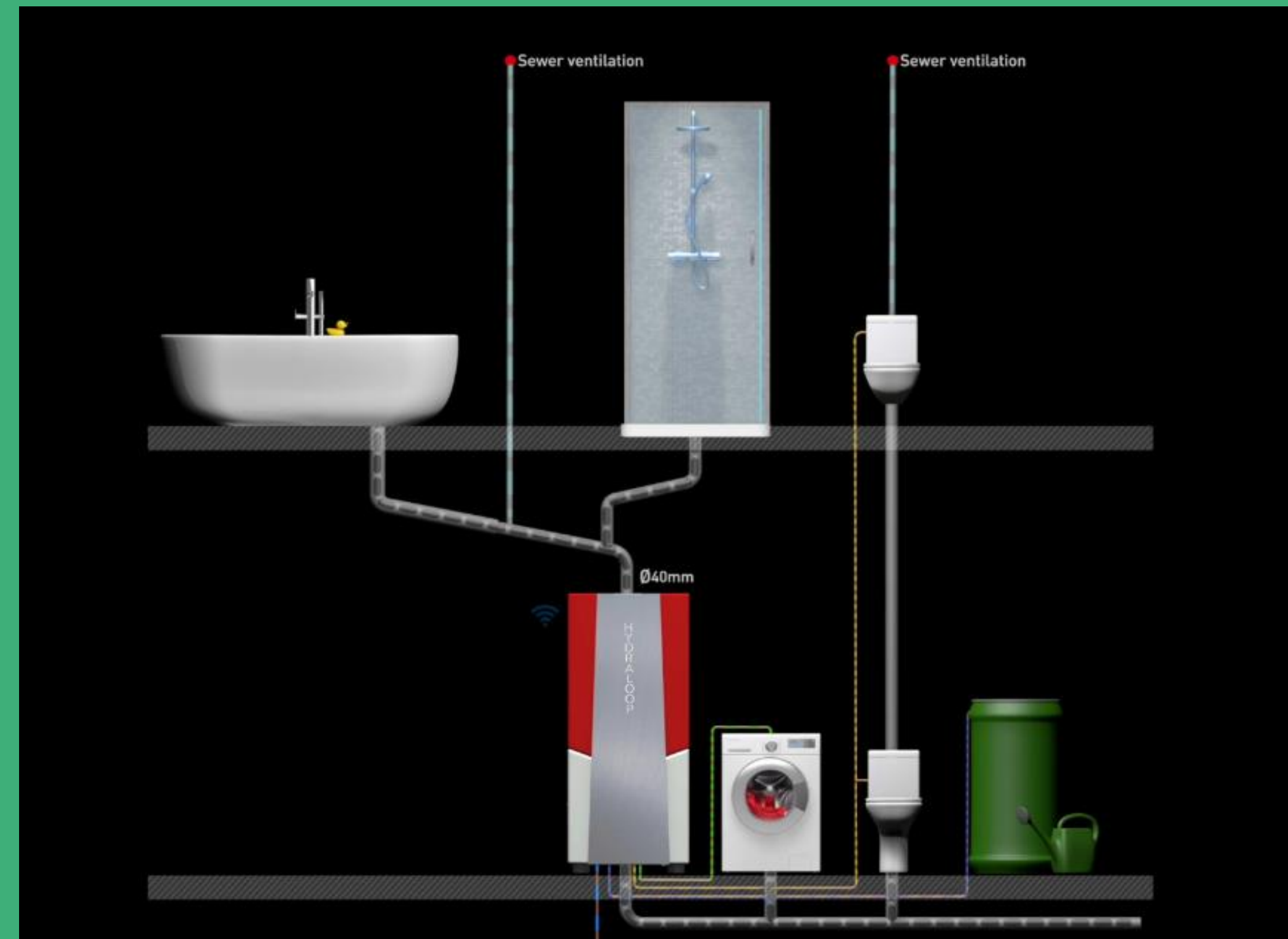
Efficient heating systems play a key role in maintaining a facility's operational energy efficiency. There are technologies that allow the heat once generated to heat the air inside the building to be reused to heat another batch of air. Heat exchangers are responsible for this, and their operating principle can be simply divided into recuperation and regeneration.



Green technologies: grey water reuse

We call gray water that has already been used in the building's circulation. To put it simply, it is pre-purified water that has not previously been in contact with feces or food remains. In practice, mainly water used in showers and sinks is used.

After purification and filtering, gray water can be used for purposes not related to direct contact with humans - most often for flushing toilets, reused in cooling systems and for watering plants around the building.



Green construction requires green cement. Revolution in the cement industry.

Concrete, due to its properties, is still one of the key materials in construction and will continue to be so in the future. As a material, it is durable and non-flammable, does not conduct heat and does not deform under the influence of temperature. In addition, concrete with appropriate parameters absorbs 20% from the broadcast. 100 percent suitable for recycling and reuse as e.g. aggregate.

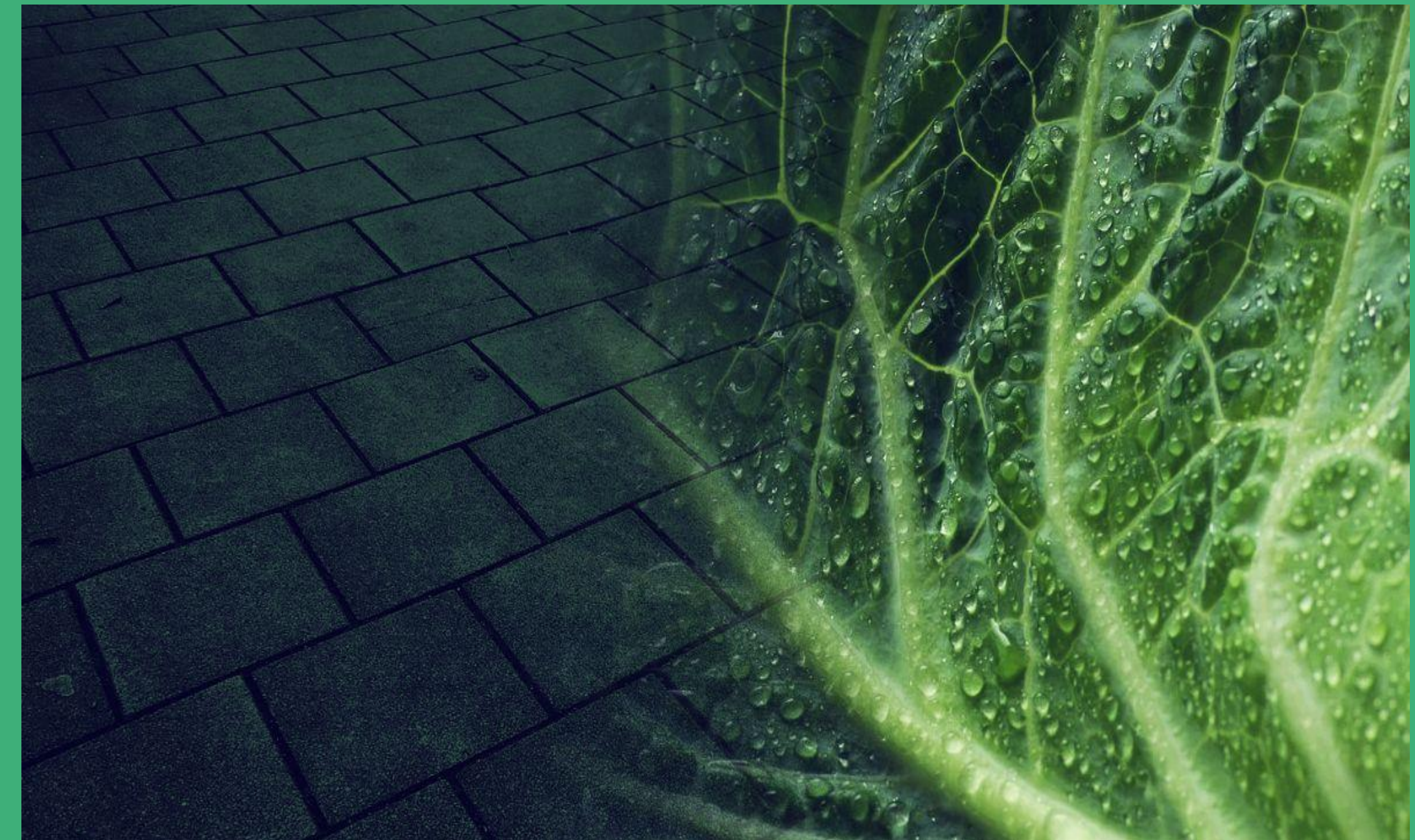
Currently available technologies and products help protect water resources, which is why the use of impermeable concrete and asphalt is being gradually reduced in favor of modern solutions that will also support air purification and energy efficiency.



Green construction requires green cement. Revolution in the cement industry.

Other examples of concrete materials that can be used in urban environments to the benefit of the environment and residents are concrete with photocatalytic properties, which absorbs car exhaust fumes from the air, or concrete designed for 3D printing, which will enable faster and more ecological construction of buildings.

The use of concrete in construction is therefore an effective solution, both cost-effective and environmentally friendly. Low-emission production of this material remains a problem. Producers are aware of this.



Is green construction a temporary thing or already a standard?

Nowadays, every responsible company includes care for the environment in its strategy or philosophy. It is no longer a matter of fashion or trend, but of an obligation arising from EU law. As of this year, regulations have been in force under which large companies are obliged to report ESG, and in the following years this will also be extended to medium and small enterprises. According to the latest regulations, by 2028 all newly constructed buildings in the European Union are to be zero-emission. In turn, according to the World Green Building Council report, by 2050 all buildings will have to meet this requirement. Today, no international fund will buy a building that does not have green certificates, and tenants are increasingly starting to pay attention to whether their office complies with ESG standards.



Iceland
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Thank you!

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