
ALL
IN
ONE
COOL
HEAT
POWER
SHADE
DESIGN
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ENERGY FAÇADE SYSTEM
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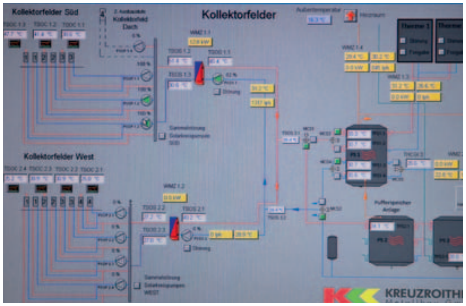
ALL IN ONE

ENERGY FAÇADE SYSTEM



Heliopan real time control system

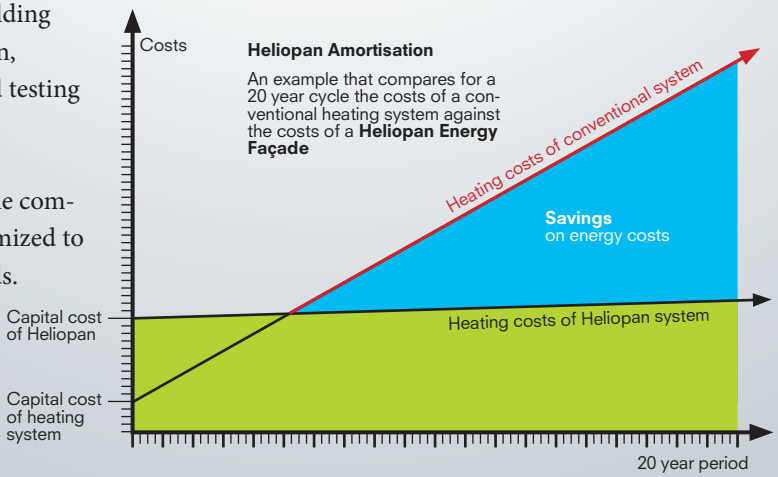
Improved Energy efficiency, even in some cases energy independence, is achievable through the Heliopan façade system which at the same time enables designers to satisfy the aesthetic aspirations of modern glass façade designs.
ALL IN ONE – hydro-solar energy, electric energy or both together are able to be generated by the façade, without compromising design. Heliopan panels can be manufactured to fit any size required in any façade system.

ALL IN ONE – from beginning to end: a wide range of services is provided with Heliopan energy facades:

- from system dimensioning to the calculation of amortisation costs,
- from façade to building services installation,
- from mock-up and testing to maintenance.

Heliopan provides the complete solution, customized to design and user needs.

Become independent:
from energy crises, from shortages of resources and from external suppliers.
Just delight in the wide range of Heliopan products and services – ALL IN ONE.



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HEAT

HYDRO-SOLAR

Heating and hot water generation are the classic applications of hydro-solar panels. Up to 80 % of the demand of a heating system can be produced by the Heliopan energy façade – far and away more efficient than is achievable with a conventional solar heating system! Unsurprisingly the ideal application is in buildings with significant water demand, such as swimming pool, hotels, nursing homes, spas, and the like.

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HEAT

HYDRO-SOLAR

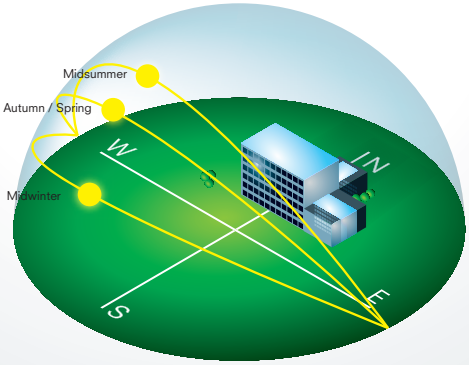
Perfect even where the angle of sunlight (azimuth) is low!

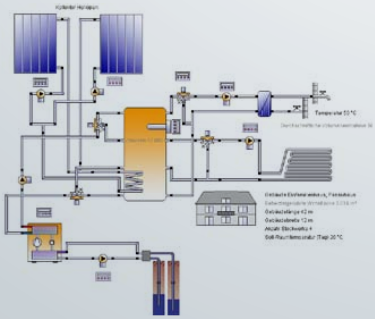
Warm water generation is the classic way using solar heat. Now Heliopan really shows the strength of its energy façade by outperforming normal solar heating systems.

In Autumn and Winter the solar azimuth is particularly low but by integrating the solar heat facility into a façade the solar irradiation at even low angles optimises the outcome.

Heliopan hydro-solar façades …

- are the ideal solution for refurbishment,
- can be integrated into existing systems,
- show their highest efficiency in combination with floor heating systems, air-conditioning ceilings and thermal concrete activation.





Heliopan air-conditioning ceiling

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COOL

HYDRO-SOLAR

Cooling of glass buildings requires high energy input. Heliopan uses solar energy to reduce these costs considerably. Heliopan Façades combined with innovative cooling technology replace normal air conditioning systems. The use of the Heliopan cooling and heating system is capable of achieving amortization of cost within 7 years. With Heliopan you are ready for an independent future.

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COOL

HYDRO-SOLAR

Great Heat – Quick / Swift Cooling

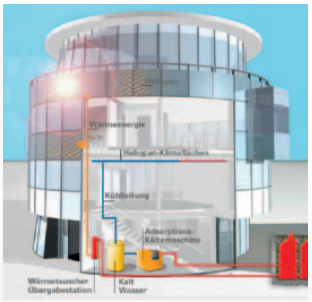
The most important benefit of cooling with solar power is that the demand for cooling parallels the solar irradiation. When solar irradiation increases, the temperatures rises and the demand for cooling also increases; when that happens, the use of solar power becomes more effective!

Heliopan uses thermal compressors instead of electronic ones. So 98 % of the energy demand is satisfied by solar energy – that is why Heliopan-operating costs are marginal. The independence of energy suppliers preserves the environment – Heliopan is "your very own power plant" – and when it's getting colder outside, Heliopan supports the building's heating system and the production of hot water.

We also provide support with planning and help in system dimensioning.

Heliopan energy – façade system includes:

- Integrated Heliopan energy panels
- Heliopan building services
- Heliopan control system
- Cooling absorption system (7-100 kW)
- Heliopan air-conditioning ceilings



The perfect "Heliopan" circulation

Solar cooling plant

Office building Schörfling, Austria

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DESIGN

COLOURS AND SURFACES

Wide variations of colours, surfaces, angles, frames, jointing, sheeting, glass combinations and dimensions provide almost infinite freedom of design. The dimensions, colour and surface texture of the Heliopan Panels can be selected to suit individual specific needs.

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DESIGN

FAÇADE DESIGN

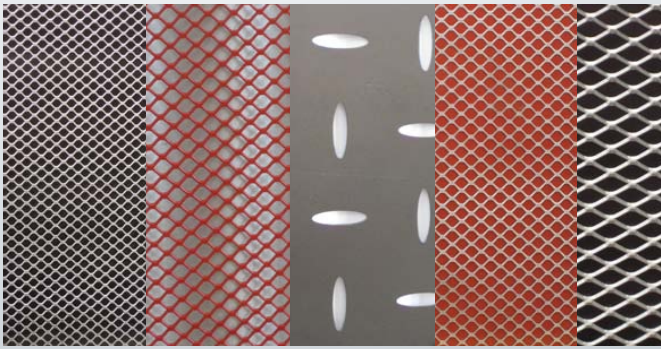
With Heliopan panels you can compose various designs customized for your façade. Different options and variants as well as continuing further development, with the already existing potential to satisfy non-standard customer requirements, provide great scope for design:

- Dimensions: up to 3 m x 4 m, (larger available on request)
- Colours: more than 60 anodizing – colours & combinations
- Surfaces: various textures and glass coatings
- Absorber surface textures: standard metal, perforated metal plates, expanded metal, etc.
- Façade system details: frames, cover bars, silicon joints
- Functions: solar heat, photovoltaic, hybrid
- Façade systems: transom-mullion-system, elemental system, windows, pure glass-façades and any façade made of aluminium and steel.

Continuing scope for evolving design results from Heliopan's ongoing development. Innovative ideas from architects challenge us to create innovative solutions.

Tell us your design – we will produce energy out of it!

9 examples of the collector colours



Heliopan – absorber surfaces with expanded metal and perforated metal plate casing.

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POWER

PHOTOVOLTAIC

Why should energy generation be limited to solid roof areas? Generate power with your façade or your glass roof with Heliopan Electric installed within the building envelope; in this way you become substantially independent of fossil fuels. Naturally of course Heliopan Electric can be combined with other innovative Heliopan elements …

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POWER

PHOTOVOLTAIC

Heliopan can be used for the production of heating and cooling, and also for generating power.

High efficiency photovoltaic modules in “Heliopan Electric” are your very own power plant inside the façade. Power, cooling and heat-producing panels can all be combined in one façade to widen the parameters for façade design: apart from known design elements like varied colours and forms, the panel function can also be “designed”.

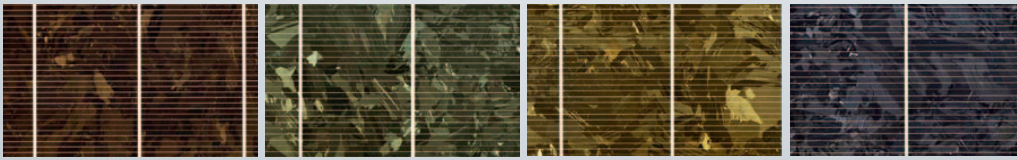
The energy producing character of the Heliopan surfaces can be simply exposed or can be attuned to the aspirations of architectureal design by using opaque or partially transparent elements.

The evolution of Heliopan has ensured that it can be combined or integrated expanded with a range of widely available commercial systems and photovoltaic modules, for example:

- ASI THRU® from Schott
- Coloured solar cells from Sunways
- Heliopan industry modules
- Heliopan hybrid

ASI THRU® solar modules

Source: SCHOTT



Coloured solar cells

Source: Sunways AG

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SHADE

Each and every ray of sunlight is used by the Heliopan energy façade system to generate energy – this "ALL IN ONE" system at the same time, through the solar screening lamella, provides cooling.

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SHADE

THE FAÇADE'S SHADE

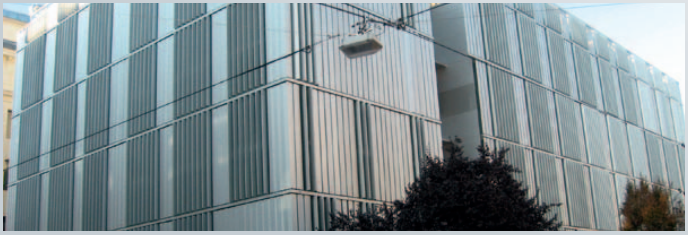
Office buildings are usually built in a multi-storey form. Consequently the façade area is much larger than the roof area.

The sun on the façade necessitates the use of a sunscreen; so why not combine the useful with something more meaningful? Energy can be generated and the sun can be blocked with Heliopan's solar screening lamellas which can be used in a number of different ways:

- To achieve ideal clouding
- As an effective glare shield
- To reduce the cooling load
- For additional solar energy generation
- With fixed or motor-driven solar screening lamellas
- Up to 30 % more output

Various types of Heliopan are available as a sunscreens:

- Thermal flat plate collector
- Vacuum tubes
- Photovoltaic
- Hybrid lamellas



Examples for the multifaceted use of solar screening lamellas

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ALL IN ONE

HYBRID

HEATING, COOLING, POWER GENERATION

Heliopan's hybrid elements are the primary example of the energy façade: ALL IN ONE hybrid elements do not mean solely the generation of power by the façade. The combination of solar thermal and photovoltaic modules reveal the intrinsic benefits of Heliopan: heating, cooling and power generation in one panel.

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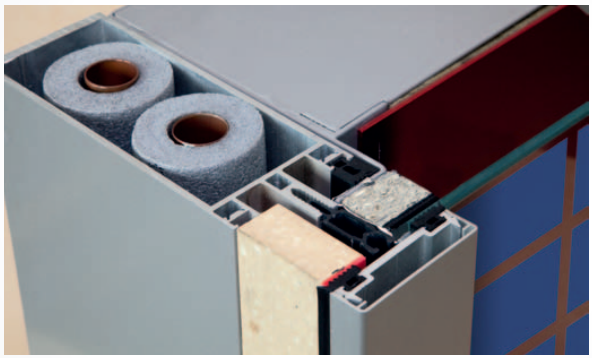
ALL IN ONE HYBRID

HELIOPAN PRIME EXAMPLE



Hybrid collector

ALL IN ONE describes the variety in design and functionality of this one product. Through ongoing research Heliopan hybrid-panels were developed and ALL IN ONE became reality.

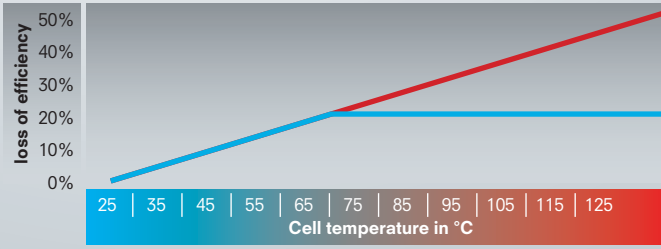
The combination of a photovoltaic module with a solar thermal layer behind creates completely new opportunities for building energy facades. Although the façade area of a building is comparatively large, it is not limitless; consequently it is important to use the areas of a buildings envelope carefully. Now the fact of being able to generate power, heating and cooling in just ONE panel expands the potential efficiency gains from using façade and solar power.

Now there is the unique opportunity for 'Design without limits': a full spectrum of colours and multiple designs are available in combination with transparent photovoltaic modules to suit practically every Architect's and Engineer's desires.

Heliopan Hybrid has even more features and functions:

- The photovoltaic modules are protected against weather by the façade panels
- The modules are cooled by using the rejected heat
- The complete solar radiation spectrum is utilised
- Attractive sponsorship grants

Heliopan's ALL IN ONE Hybrid collector is a giant step into the future – towards ultimately self-sufficiency in energy production!



Hybrid collector – up to 20 % higher efficiency

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400 m² glassfaçade Heliopan High Energy 2.0
integrated solar cooling adsorbtion chiller

OFFICE BUILDING SCHÖRFLING

AUSTRIA

Refurbishment of an existing façade is challenging and offers new opportunities – a classic example to consider the ecological footprint of the building.
The optimum solution was found by adding an outer glass skin. Simple and quick to install, no interference to the existing structure and without disturbing the office work.
The double-skin glass façade on all four sides with integrated Heliopan Solar Panels on the East, South and West Elevations provides a state of the art solution. Passive solar energy is created in the cavity and the Heliopan panels create thermal energy for hot water, heating in winter and cooling in summer.

Technical highlights

- 160 m² Heliopan High Energy 2.0 energy-façade
- approx. 25.000 kWh/a thermal energy created, used for water heating, office heating in winter and for solar cooling in summer
- integrated solar cooling system with adsorption technology
- savings up to 70 % on primary energy for heating and cooling

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200 m² glassfaçade Heliopan High Energy 2.0
Refurbishment of 1.600 m² glassfaçade by
add on aluminium construction

GERHARD

SWAROVSKI BRIXLEGG, TYROL

COMPLETION DECEMBER 2010

"Thermal refurbishment" doesn't sound spectacular. But the example of the 'Gerhard Swarovski building' in Brixlegg shows, that it can be an exciting challenge. It has a completely new architectural appearance. And the economical key data are amazing – due to the active Heliopan High Energy façade up to 75 % energy costs can be saved and a pay back period of 8 years achieved.

Technical highlights

- 200 m² Heliopan High Energy Panels (solar thermal energy is supporting the heating system)
- Replacement of about 1600 m² glass façade: double glazing is changed to triple glazing (U-value = 0.6 W/m²K)
- Replacement of the conventional oil heating system to a high efficient water heat pump with depth drilling

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