

Architecture

Architectural Brief Report



TEAM IKAROS

BAVARIA

SOLAR DECATHLON EUROPE 2010



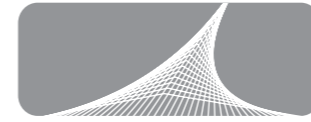
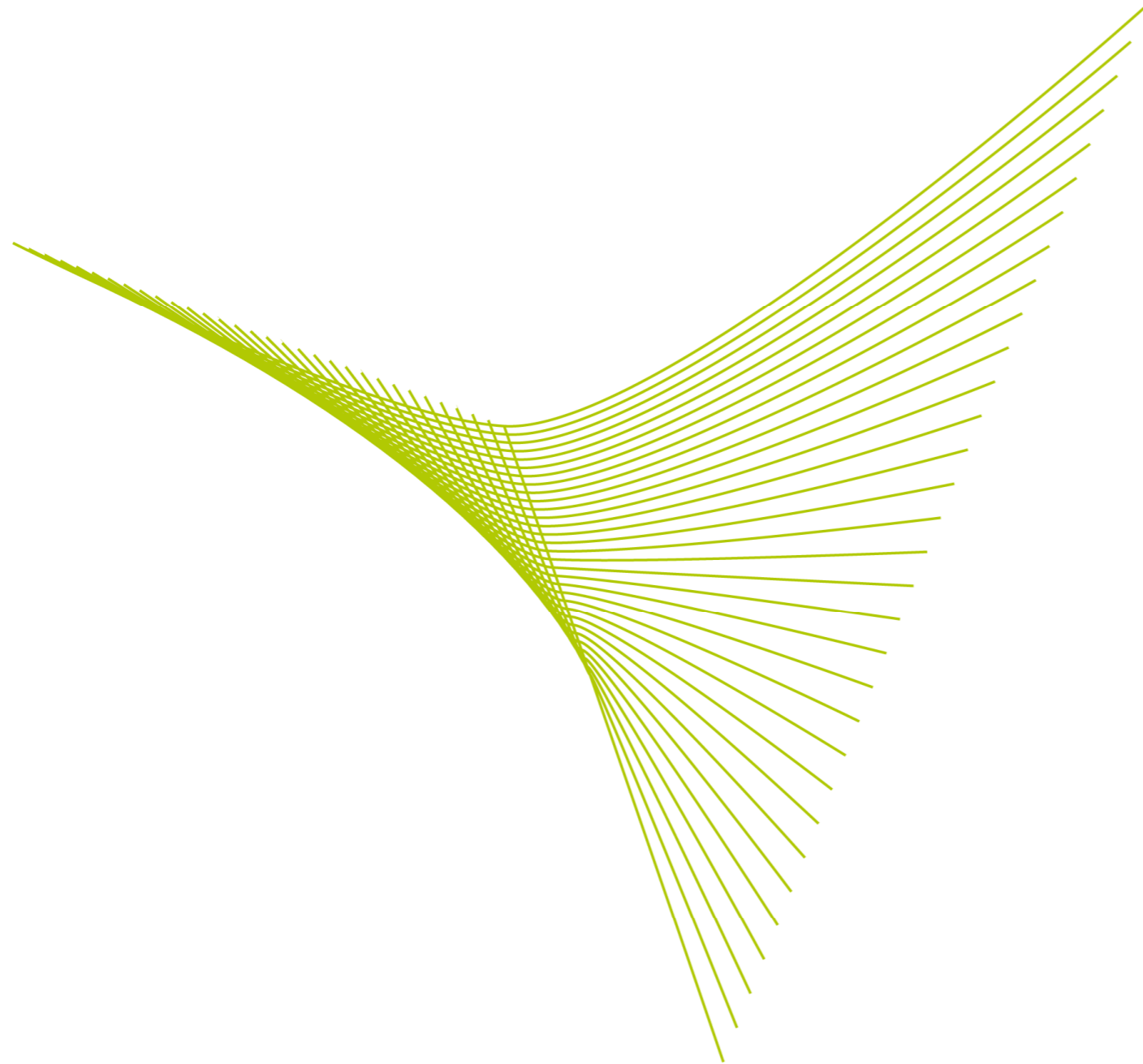


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1. Changes in Society and Architecture

In what kind of society are we living today? What will our home of the future look like? What impact will technical developments have on our lifestyle? In how far do we want to be confronted with our environment? Values are constantly changing. People are getting ever more independent and flexible. Environmental awareness, too, is constantly increasing.

How do people react to rising property prices and increasingly scarce resources? Who does not want to have a peaceful oasis for retreat to compensate for a hectic everyday life?

Technization and efficiency are requirements to architecture, and people's desire for a comfortable and functional home suggests simple and clear forms.

The concept of our house answers to this development by combining these requirements.

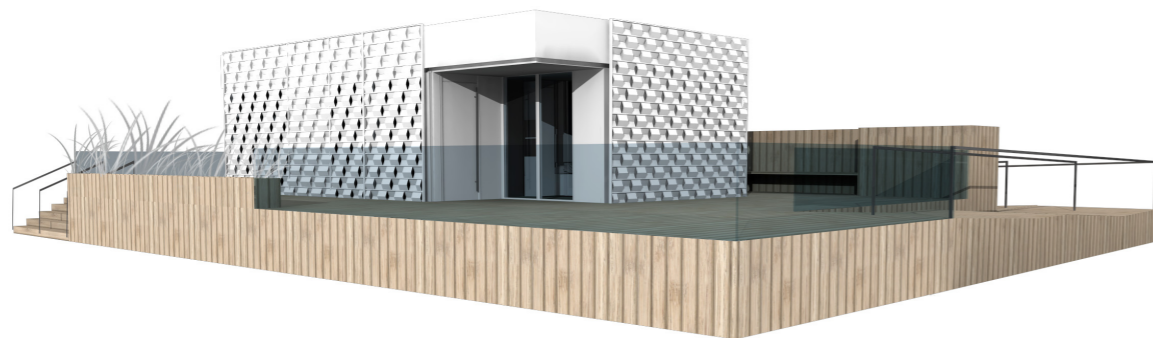
With the reduced cubature, which also includes the furniture, a timeless living environment is created for the inhabitant. The technical elements are integrated, so that the shapes remain clear and simple.

Eco-friendly materials combined with a sustainable kind of construction guarantee the building's durability.

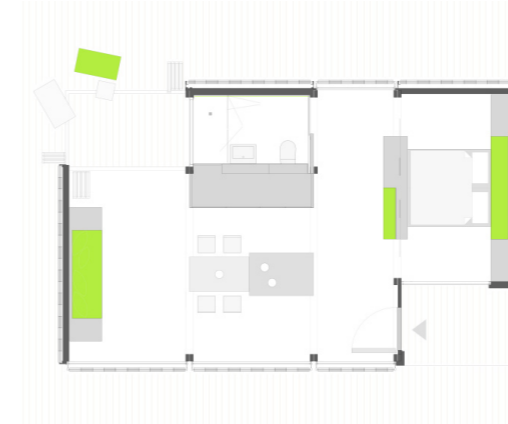
Economic efficiency of the building is ensured by maximal use of the room capacity, which in turn is made possible by the slim design of the components and by the aim-oriented use of technical equipment. The photovoltaics installed on the flat roof and the radiation cooling form an efficient overall system, and through integration behind the roof edge the structural shell does not lose its clearness and elegance.

As society changes, mobility is becoming increasingly important. People change their workplace and their place of residence much more often, individual space requirements change because of new family structures.

Our answer to this development is the concept of a modular house. As it is transportable and easy to erect and to disassemble, it can be moved to a different location and accompany a family for life, growing with it: If required, additional modules can be added or superimposed to create more room for children or a home office. Modular construction makes it possible to construct different kinds of building, from a single-person home with minimum space to a single-family home or townhouse estate or even an apartment that is superimposed onto existing building structures.



Despite all activity and mobility it is important to our inhabitants to be able to enjoy a permanent and comfortable home, in which they can determine the degree of privacy they want. Daylight and a direct visual connection to the outside are essential factors, but it should be possible to modify them at any time depending on the respective situation by opening or closing the visual shields and the sun protection.



Depending on the time of day and season, the inhabitant is thus presented with a continuously changing play of light and shadow in the interior, which is created by the rhomboid openings between the jags. A dynamic effect can be experienced: the plain surfaces, on which the ornament becomes visible, come alive.

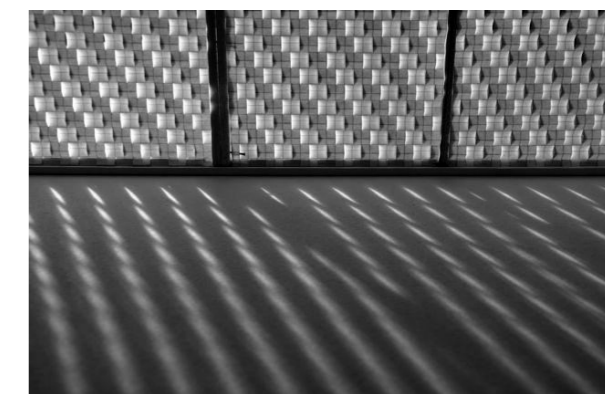
Thanks to the recesses the structure also provides a visual connection to the outside, so that the inhabitant is never fully isolated from the environment. On the outer surface of the jags, too, light and shadow reflect the sun's path in the course of the day and the year.

When the interior space is illuminated at nighttime, light shines through the openings between the jags, which makes the house look like a lamp from a distance.

The jagged structure is affixed on the external side of the closed wall surfaces, so that all facade surfaces have a coherent appearance. The puristic white color underlines the clear, structured shape and creates an impression of freshness.

2. Building Coat

The facade consists of two shells forming a coherent whole. The inner skin, partially consisting of glass and partially of wall surfaces, serves as the primary thermic protective shell for the inhabitant. The outer skin surrounds the entire building like an envelope, except the recesses in the southeast and northwest.



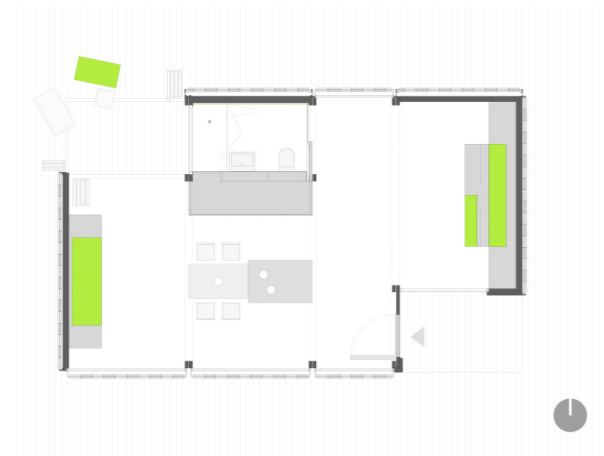
It is composed of individual jagged elements. Together they form a fenfold structure furnished with openings. Positioned in front of the glass surfaces, they serve as external sun protection and visual shield at the same time.

Through the possibility of steplessly moving the sun protection from the bottom up and the skylight strip thus created, the available amount of light can be individually adjusted.



3. Flexible room concept

The living area is bright and open. The living alcove can be turned into a spare bed for two people, sleeping and working area can be used alternately, the dining table can offer space for up to 8 people or can be completely accommodated within the kitchen block. The TV is also accommodated in it and can be operated from the living alcove, thus connecting these two areas.



The inhabitant has the possibility of creating privacy by separating the zones for sleeping and working. The white furniture surfaces have a calming effect in the room that is characterized by a high degree of functionality. Green recesses in the furniture accentuate the larger installations and make them look light and elegant. The green color has a fresh and natural character and forms a contrast to the warm and down-to-earth oak parquet. The parquet is laid out in the entire interior space. To keep the coherent impression, the parquet flooring also jointlessly extends into the bathroom up to the shower tub, which is made of massive oak wood.

The theme „nature inside the house“ is also taken up in the bathroom. The panel on the northern wall, into which long leaves of grass are integrated, appears like the view of a natural landscape.



As for cabinetry, weight-saving lightweight construction boards have been used to make flexible furniture possible. We have developed solutions for an optimal use of the available living space.



The moveable wall unit separates the open living space from the sleeping and working area. Hanging on the ceiling, it has integrated sliding doors and contains a wardrobe, a monitor and additional storage space. This new approach to interior design demonstrates a solution for the functional enlargement of rooms through alternating use.



The living area offers the option of extending the space: The ceiling-high glass surfaces offer a free view of the environment, the terrace located in the northwest connects interior and exterior space. Its glass folding walls can be opened and closed as required, also providing different use options depending on the season.

Especially in the transitional times the terrace constitutes a buffer zone between interior and exterior climate conditions and creates a comfortable place for retreat.

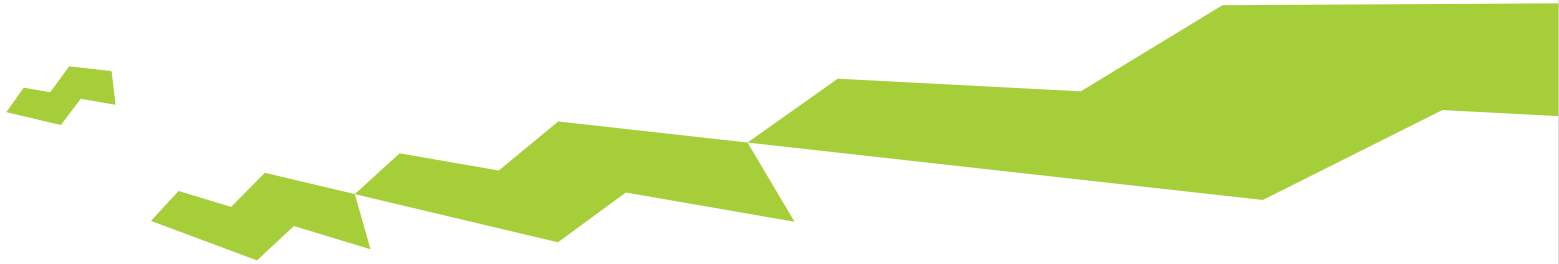


The lighting concept is based on energy-efficient general LED lighting with warm white light, which is steplessly dimmable. The individual function areas are equipped with individual light solutions for the respective seeing tasks, e.g. the pivotable reading lights in the sleeping and living area or the moveable work space illumination. In the dining area a self-developed pendant light creates a comfortable atmosphere at dinnertime. When the dining table is not extended, three of these lights are positioned above the kitchen block in the form of a truncated cone made of acrylic glass. Depending on the situation, one or two of the lights above the dining table can be affixed to the ceiling. As background lighting, all ceiling-high pieces of furniture have cornice lighting in a shadow gap next to the ceiling, which also accommodates the ventilation.





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