



THE PLUSENERGY HOUSE FOR EVERY COMMUNITY

*A*rchitecture is a key to preventing climate change. Because it is buildings that account for 50% of all energy consumption. What if buildings were simply to become power stations? If they were even to generate excess energy? Such a PlusEnergyHouse already exists. Setting new standards. That now need to become the best practice everywhere.

Local politics are a key to protecting the climate. Because where, if not locally, can the revolution in energy efficiency impact? Cities and municipalities take the very lead in sustainable development wherever an appreciation of ecological necessity is combined with the prospect of the opportunities offered by structural change in energy usage. Whenever the decision-makers highlight prospects that are both realistic and encouraging, that political plus-energy arises on which a community's ability to survive has always depended.

The nationwide "A PlusEnergyHouse for every Community" campaign gets the ball rolling.



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Today we once again find ourselves in the throes of a major industrial revolution that hinges on energy technology. From a political and technical viewpoint, the change in the climate also represents a fascinating challenge: an opportunity for new solutions that make efficient use of energy and raw materials.

In my experience as Minister of the Environment and Director of the UN Environmental Program authority I know that the countries of Asia, Africa, and Latin America expect (and I believe rightly) that as the leading countries in terms of technology, we should prove that in future a developed nation can make do with two to three tons of CO₂ emissions per capita without this endangering economic stability.

Likewise, the rapidly growing cities and municipalities in those countries expect our communities here in Germany to come up with real solutions. I am convinced that we can, provided we systematically go about establishing the “top runners” as the standard, namely those products that are the most advanced in environmental terms

We must create incentives for modernization and in the case of new buildings ensure optimal use of resources. In the future, landlords will only be

able to make their apartments attractive if they reduce energy costs. That truly entails a systematic approach, one which incidentally also creates lots of local jobs.

The fact that business itself also has a high level of interest in offering products that are not a burden to the environment, is revealed by the many years of development work and the current campaign by Rolf Disch. On their home turf, buildings that generate more energy than they consume are the “top runners” in terms of climate protection.

For our communities, regardless of whether they are small villages or big cities, this campaign can represent an important part of their effort to assume their global political responsibilities and make their mark at the top of a global trend – and becoming involved in and exploiting the tremendous opportunities this development offers.

Prof. Dr. Klaus Töpfer

1987 to 1994 Federal Minister of the Environment

1994 to 1998 Federal Minister of Construction

1998 to 2006 Executive Director of the United Nations Environment Program (UNEP)



For almost 30 years now I have been following the work of Rolf Disch with growing admiration, mostly from afar, but always with interest. One can safely say that for 15 years he has been revolutionizing efficiency.

With the projects he has completed, Rolf Disch has demonstrated first that if a house needs almost no energy, or even none at all, then its inhabitants need not concern themselves with the rising price of energy on the global market. And second that the climate change in no way need spells a reduction in our quality of life. The Freiburg Solar Settlement and the advances presented there represent the highest of standards in terms of quality of life. A city, a community, in which it is possible to live in this way, can indeed count itself lucky.

Would it not be an electrifying idea for every community in Germany to acquire one example of this quality of life, and thus own something that anyone interested could really see and feel?

Whenever there are visitors from partner cities, it would be at the top of the list of things to see. A PlusEnergyHouse by Rolf Disch embodies modernity, a way of life, indeed luxury at its finest, in short everything a location would like to show off to promote itself. And new standards of construction demonstrate: We are thinking of future generations as well!

Prof. Dr. Ernst Ulrich von Weizsäcker

Dean of the California School of Environmental Science in Santa Barbara, previously Chairman of the German Bundestag Environment Committee

Just what is PlusEnergy? PlusEnergy is a simple principle based on complex technology – the best house and building technology currently available. PlusEnergy is a fundamental ecological necessity, which pays its way economically – for developers as well as for the economy. PlusEnergy is an elementary political force.

The solar era has begun. The era of fossil and nuclear fuels is a thing of the past!



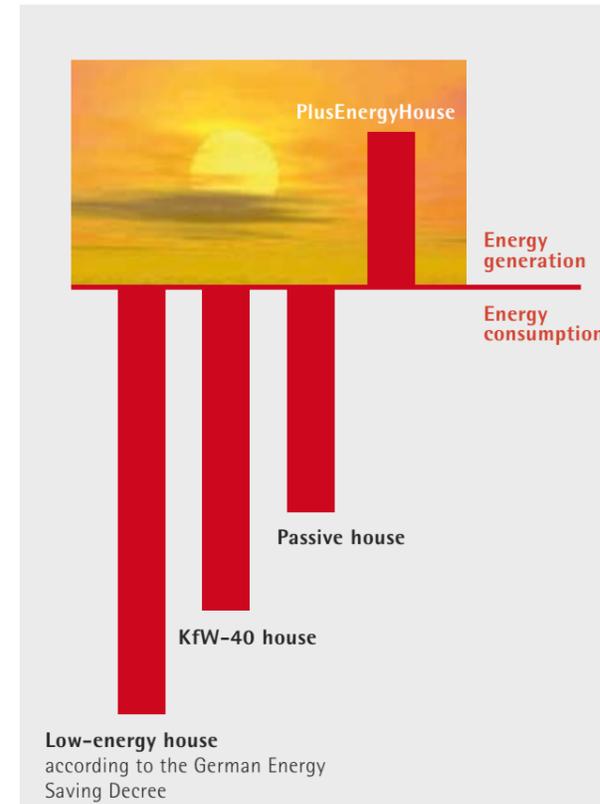
The European Solar Charter – drawn up by 30 of the most influential architects worldwide such as Thomas Herzog, Norman Foster, and Renzo Piano – puts it in a nutshell: “The form of our future built environment must be based on a responsible approach to nature and the inexhaustible energy of the sun.”

Yet even low-energy buildings consume too much energy, and even Passive Houses still emit CO₂ into the atmosphere. Passive building is not enough – we need a “solar activation” of our houses!

To this end, we set three goals for the PlusEnergyHouse: 100 percent renewable energy supply, emission-free operation, and a positive energy footprint. On top of which, building materials for healthy living are chosen – and all is to be achieved at a marketable price.

With regard to new buildings this is the decisive breakthrough. For cities and communities as overall energy-using entities, the PlusEnergyHouse can be a symbol, a stimulus to introduce further measures, a component in a holistic concept of sustainability that embraces modernization, transportation and other infrastructure, green areas, and water systems.

The PlusEnergyHouse: a building that spells change!



Primary energy consumption / generation in comparison (heating, domestic water heating and electricity)



Freiburg Solar Settlement, view of a penthouse

The energy imperative:
Don't waste energy, use it!

Wilhelm Ostwald,
German Nobel prize winner for Chemistry

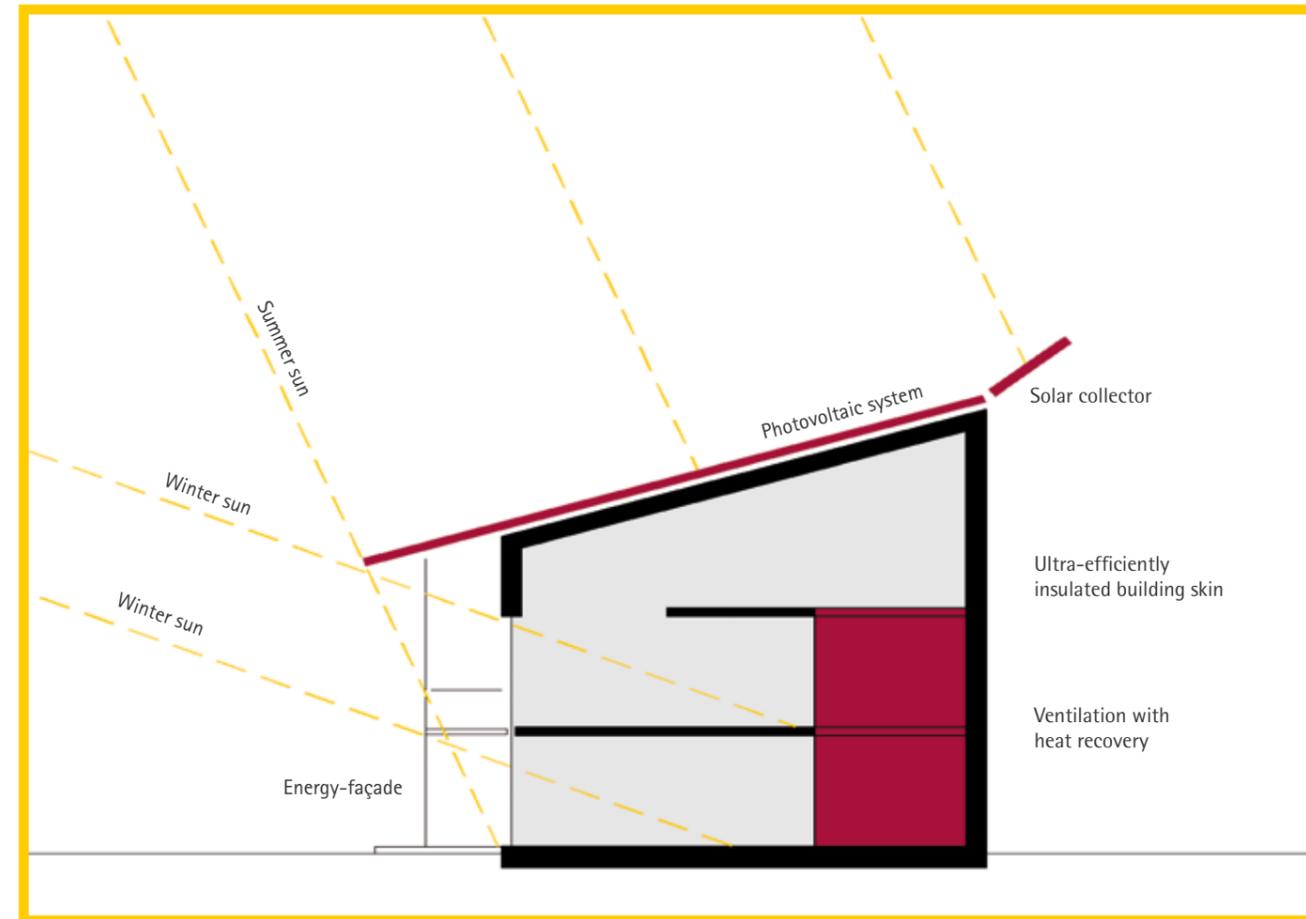


How does the PlusEnergyHouse actually work? In order to achieve its annual median positive energy footprint, the building makes the best possible use – active and passive – from the only form of energy available in abundance, free of charge everyday, everywhere: solar energy. The house generates its own electricity and heat, uses them intelligently, and retains them in the building.

Photovoltaic panels are not just stuck on the roof like stamps – they are the roof. Solar thermal elements heat up water for domestic use. Here, high energy output goes hand in hand with aesthetic appeal, with the tried-and-tested use of the roof overhang providing protection from the summer sun, while the rays of the winter sun can penetrate deep into the interior.

The house's large south-facing front functions as a light trap: Permitting large amounts of natural light to enter, the infra-red-reflecting triple insulated glazing at the same time stops heat from oozing out of the house.

The entire outer skin is insulated without a thermal bridge and sealed tightly. An effect enhanced by thermal activation of the building mass by means of efficient energy storage. And the ventilation system enables permanent fresh air intake – with almost no loss of heat.



Cross-section of the PlusEnergyHouse

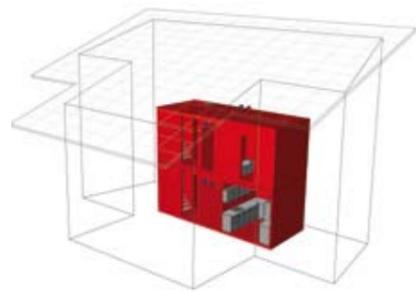
The best strategy to guarantee the supply of energy is therefore increased efficiency and the use of renewable forms of energy. [...] Each barrel of oil that is not consumed because we have made our cars more efficient and insulated our houses better does not have to be imported and is not a burden on the climate.

Angela Merkel,
Chancellor of the Federal Republic of Germany

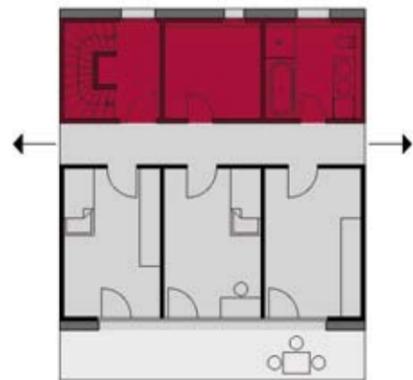
*R*oof – outer skin – PowerBox. Generating energy. Concentrating energy. Distributing energy intelligently: The roof of the Plus-EnergyHouse actively supplies electricity and heat. The sheath passively collects energy and retains it for the entire house.

The PowerBox, the third component, is the brain, heart, and lungs. It is the cybernetic core of the house, organizing as it does all the elementary cycles: electricity and heat, water and air.

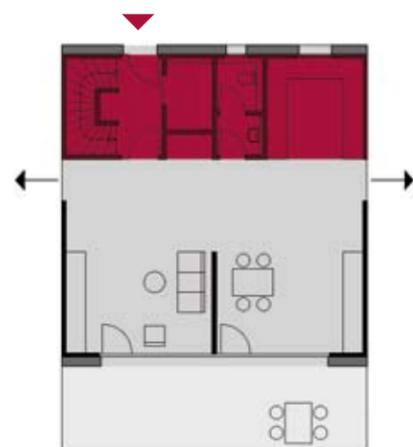
It opens up the house, organizes routes and zones up and down, to the north and south, configures living areas and functional aspects. The concentrated integration here permits maximum opportunities when planning the house's main rooms.



Come in please! You immediately find yourself at the heart of house. The PowerBox embraces all the functions a PlusEnergy-House requires: Energy, access, and installations are all combined here. You enter through the Box and find before you living and work rooms bathed in light, and the panorama through the large sun window at the front. Follow me please ...

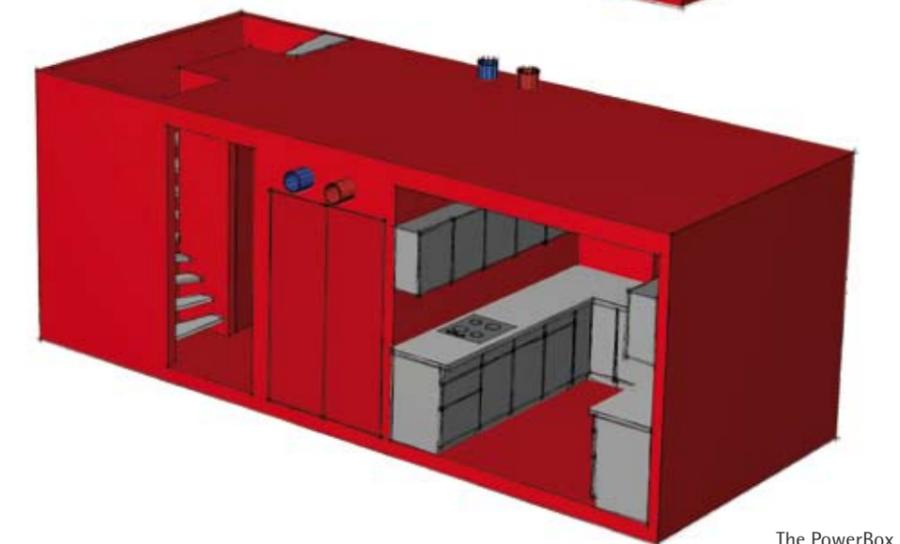
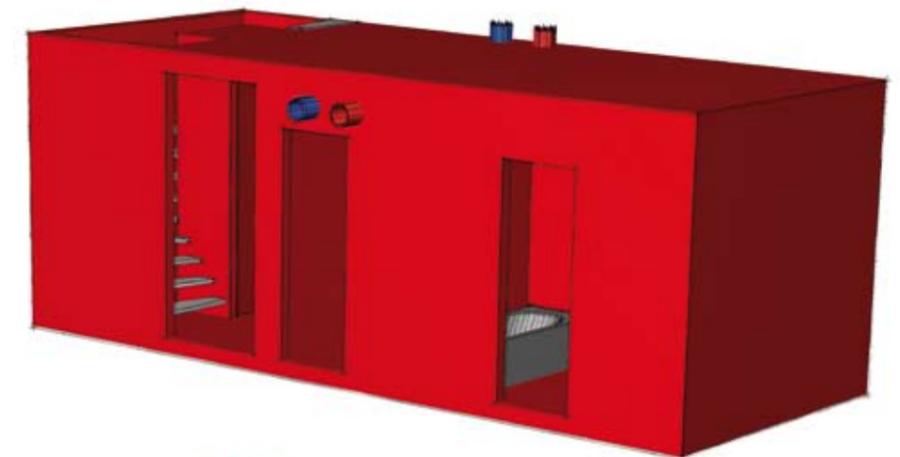


To begin with we linger in the functional core, from where everything opens: On the ground floor, right by the entrance, you will find the PlusEnergy distribution center. This is where the information about the generation and consumption of energy is collated. This is where you optimize the heart beat in the PlusEnergy house. The processes become visible, comprehensible, and controllable. Next to it resource conservation is handled by the cutting edge technical equipment producing electricity and ventilation, water and heating.



Following up the stairs you reach the upper section of the PowerBox. This is where the bathroom is, and also your personal power station with sauna area, ergometer, or running machine – for your well-being, for fitness, and your own personal Plus-Energy.

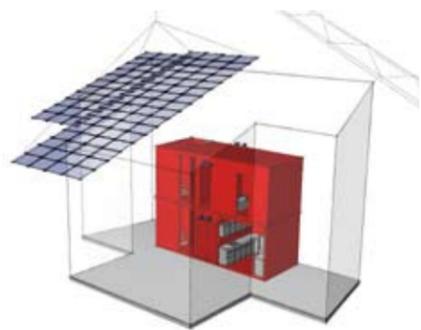
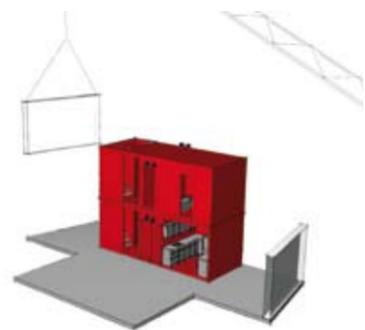
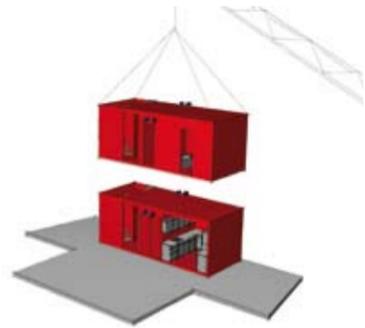
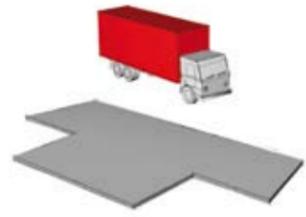
Or did you decide on separate access to the storeys? Because the PowerBox is designed in such a way that several generations can all live under the same roof.



The PowerBox

The task of an architect today is that of an organizer, to collect all biological, social and technical problems and blend them to form an independent unit.

Walter Gropius,
Architekt, founder of Bauhaus

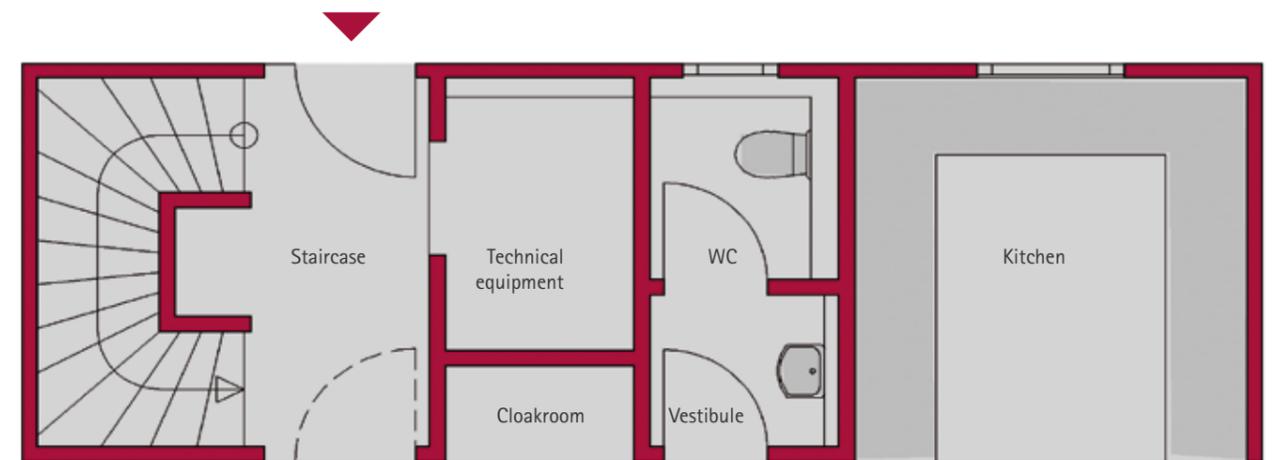
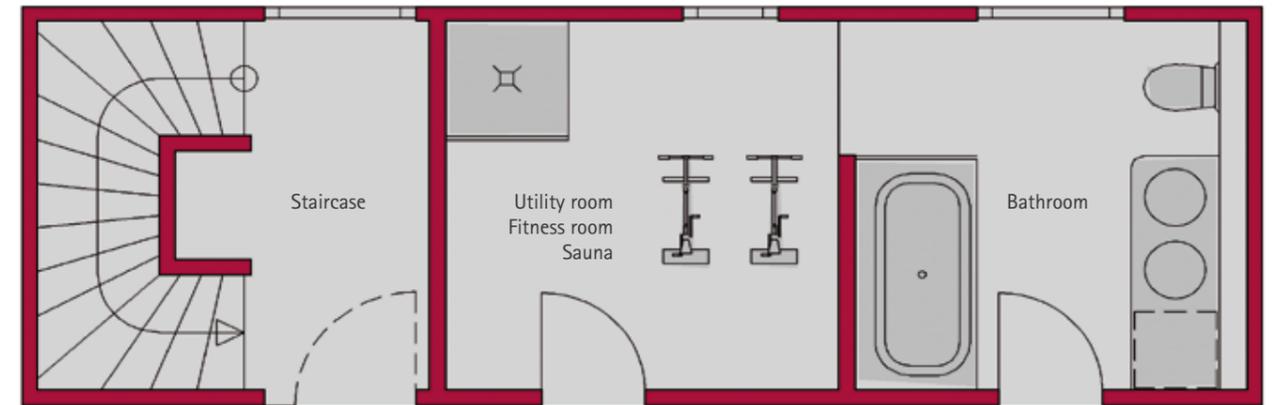


Just what does the PowerBox contain? And what does it do? The core within the core – the PlusEnergetic muscle within the muscle – is located on the ground floor: The PowerCell houses the solar station and heat storage, as well as alternator, electricity distributor and meter, not to mention all the control elements.

The low-noise ventilation with air intake and expulsion for all rooms features heat recovery with an efficiency level of over 90 percent. Furthermore, a central vacuum cleaning system can be installed.

Depending on local circumstances and individual requirements any number of solutions is conceivable for additional energy input for domestic water, extra heating and if necessary cooling. This will, however, only be necessary a few days each year. The entrance, hall, wardrobe, staircase and doors are all completely pre-fabricated and fitted, as are the WC, bathroom and kitchen. A utility room and storage room are also possible.

The developer gets optimized PlusEnergy technology from a single source. Standardization and pre-fabrication guarantee the highest quality, produced by experienced manufacturers – who can of course provide customized fittings. The PowerBox minimizes costs, not least of all through considerably shorter construction times: When it is standing the house is also almost ready.



PowerBox: Example of a footprint for a two-storey house

The use of solar energy integrated into the house is the ideal route with regard to the Energy Turn, as documented in the PlusEnergyHouse.

Stephan Kohler,
Managing Director Deutsche Energie Agentur

***P**lusEnergy anywhere and everywhere. In every community. From Aachen to Zwickau. In the Sauerland, the Vogtland, in Markgräfler and Bergisches Land. Naturally enough in Münsterland as well. And Saarland. On the Hallig islands and up in the mountains. In Pfälzer, Teutoburger and Bayerischer Wald. On the Mosel, Main, Müritz, and Mulde. At sea, at sea! In Munich's English Gardens. In Berlin's Tiergarten. In garden cities. In the suburbs, downtown. In villages and major cities.*

The sun shines everywhere. The PlusEnergyHouse works everywhere. And it is so variable in terms of design that we can find an individual solution wherever you are.



There are so many ideas, so many intentions – and PlusEnergy offers the just as many opportunities. The PlusEnergy construction method can be adapted to any conceivable use. The modular system is intended to make as many of these ideas realizable as possible: by simplifying the elements and multiplying the combinations. Let your imagination run away with you ...



The PlusEnergy single-room house is the smallest unit

Small is beautiful! The smallest unit is a PlusEnergy single-room house over one-and-a-half storeys: a modern, compact and dynamic power package. A building for a writer-in-residence, a guest house? A tea house in a park, with a café and changing art exhibitions on the upper section? A city information pavilion for tourism – or an advice center for the environment and energy, with an informative exhibition about the turnaround with regard to energy locally? A visitor center for a company with sustainable operations?

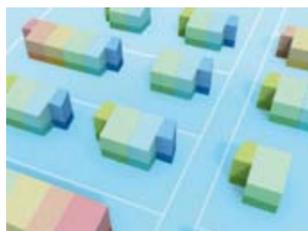
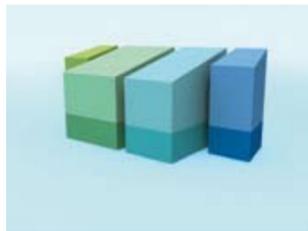
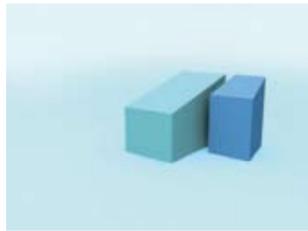
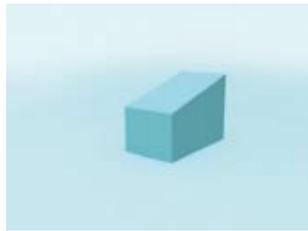
Think big! At the other end of the spectrum there are integrated solutions for entire districts: A new development, rural or urban, that is consistently built with PlusEnergyHouses represents a major step towards climate protection! A solar settlement – the one in Freiburg proves this – fosters identification between people and their locality, and has enormous benefits. It attracts solvent tenants and innovative companies and creates jobs. It goes without saying that a large plus-energy service center is also possible.



Solar Settlement – project

In Germany, the way future settlements are built will take its cue from the Freiburg Solar Settlement.

Michael Sladek, physician and ecology manager

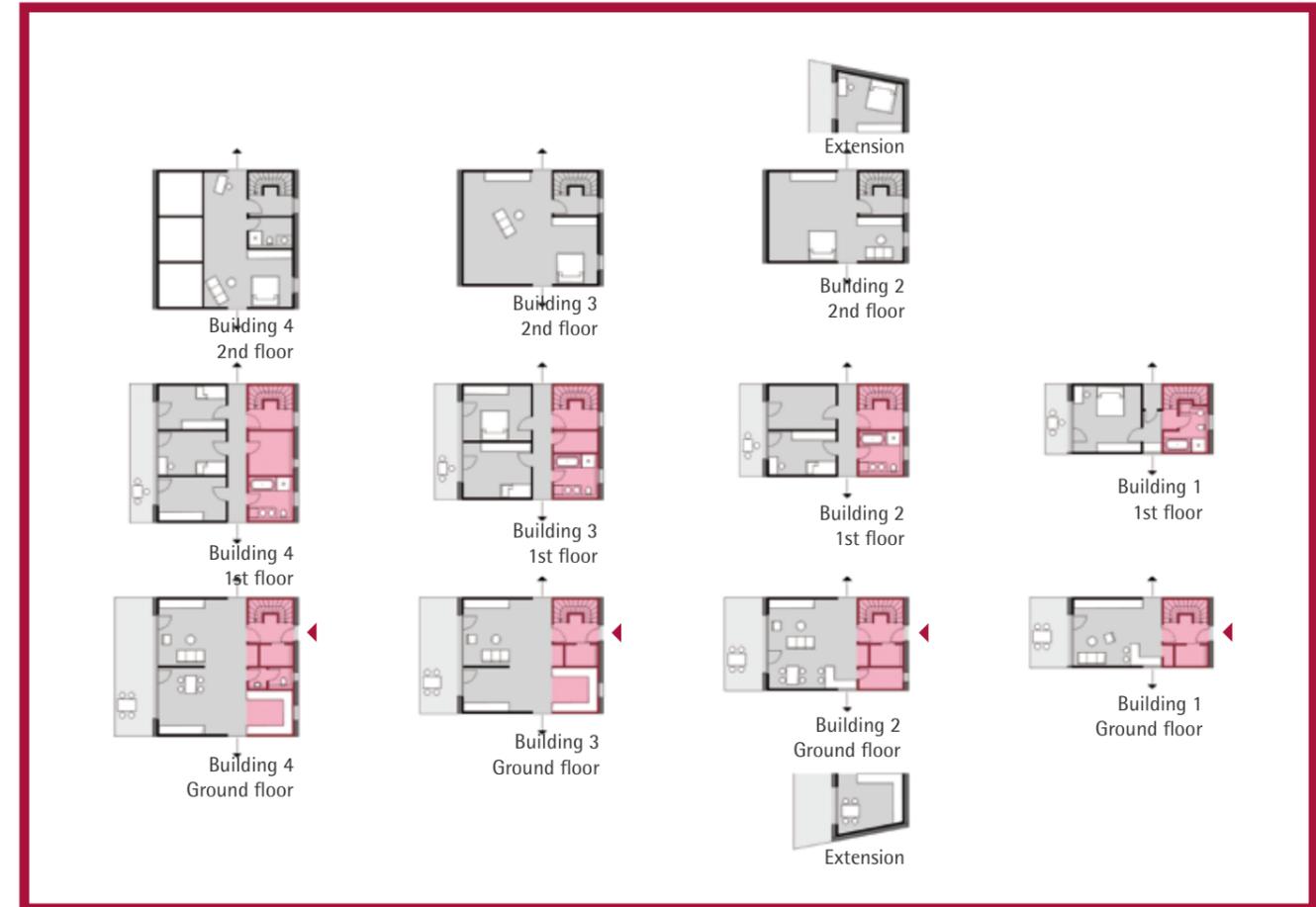


Modular components

Walter Gropius, the founder of Bauhaus, formulated the idea in an exemplary manner: “Not standardization of the footprints through the usual stereotyped and one-sided estate buildings, but standardization of the individual construction elements, in order to guarantee the greatest possible variability in terms of footprint.” And for the PlusEnergyHouse we adopted anything the tried and tested modular construction had to offer that was practical.

Possible combinations and series strike a fine balance between variety and unity. Instead of stereotype drabness and the uncoordinated disfigured products of mixed settlement construction solutions, which reveal little taste and are only seemingly individual. By means of its uniqueness every PlusEnergyHouse can be recognized as the work of architects. The straightforward basic shape – a rectangular footprint and shed roof – can be multiplied and combined to form detached, semi-detached, short-row and terraced houses. Various footprints make it possible to respond to totally different spatial requirements for living and working purposes.

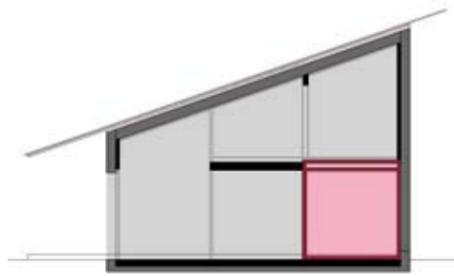
Solar architecture is the social architecture of the 21st century. Rolf Disch team’s long-standing experience in settlement construction bears ripe fruit in terms of the urban side to the PlusEnergyHouse: with complex solutions for energy, infrastructure and a solar community.



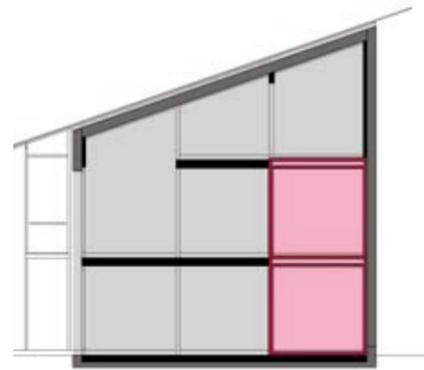
Components: different house widths, storeys and extensions

I was completely taken with the Freiburg Solar Settlement: as an ecological project and as a long-term investment opportunity.

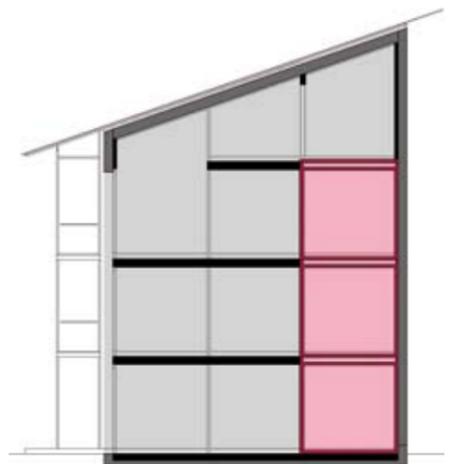
Alfred Ritter, chocolate manufacturer



Single-storey shed roof



Two-storey shed roof

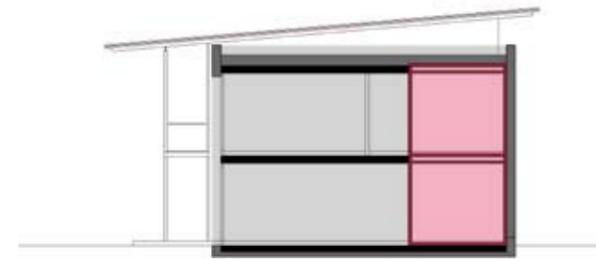


Three-storey shed roof

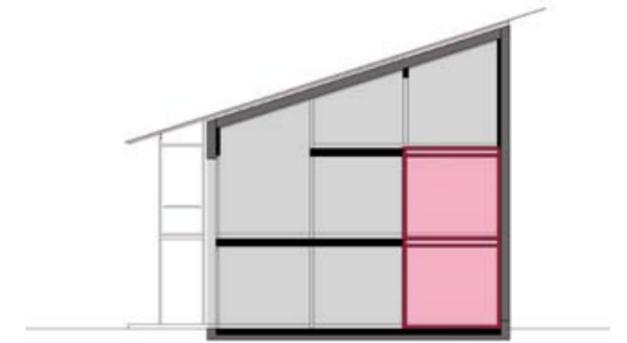
Form follows function. The motto of all Modernist building applies to the PlusEnergy-House, too. In an altogether classic sense this means here that the aesthetic appeal entails designing the function; and for sustainable building on the other hand it means: the house is not given its shape, face, and profile only by bearing in mind the optimum use of energy, but precisely through the elegance of a solar roof, and the transparency of a single, two, or three-storey sun façade: Form follows energy.

Form follows function; it is the plural form that really ought to be used with regard to modular solar construction: The plural of possible functions requires flexibility with regard to shape. The profile of the house functions with varying numbers of storeys, produces in both small and larger dimensions a self-contained appearance – and great openness to the detailed planning of the footprints. The PowerBox also grows organically in line with what in each and any case is required of the house.

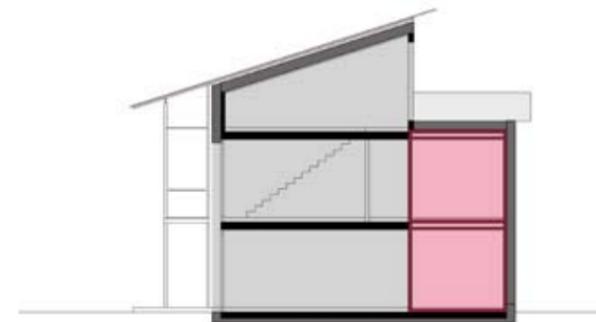
The generation of solar energy increases with the roof's surface area which is exposed to the sun. This is possible in particular in the case of a south-facing shed roof. Yet here too care should be taken to create additional scope with solar-efficient saddleback and flat roofs. Local authorities' building plans must keep sensible options open. The PlusEnergyHouse adapts to local circumstances.



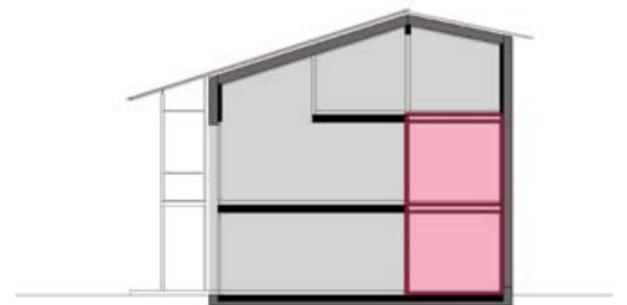
Flat roof



Shed roof



Shed roof with roof terrace



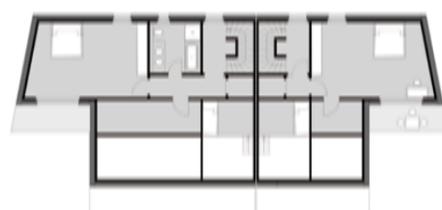
Saddleback roof

We have no choice but to make environmental protection a growth industry and ensure that market prices speak the ecological truth.

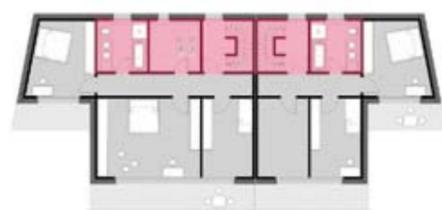
**Richard von Weizsäcker,
President of the Federal Republic of Germany, 1984 to 1994**



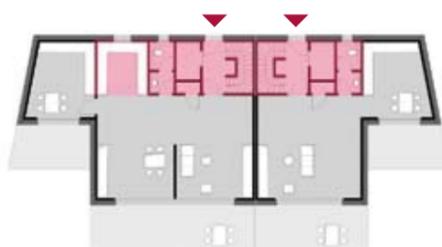
View of a semi-detached house



Attic



1st floor



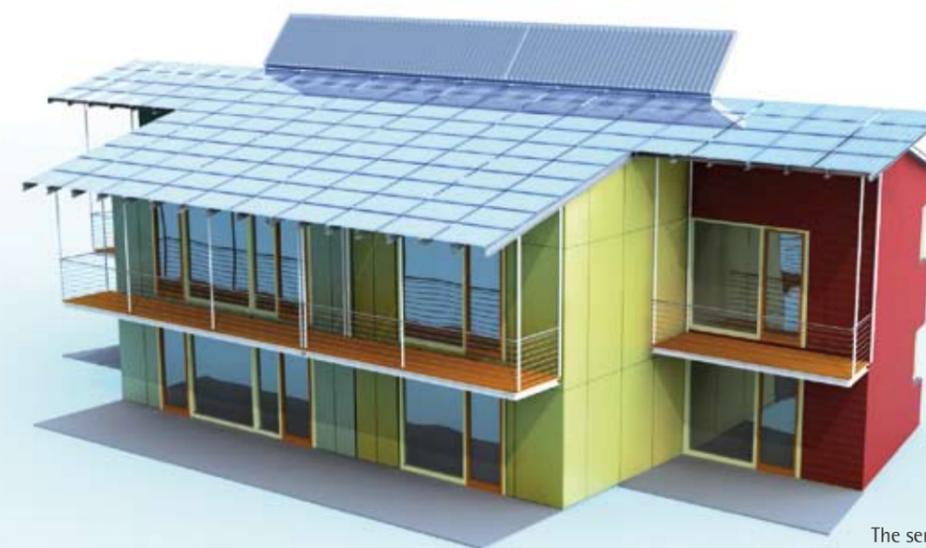
Ground floor

Of all the possible versions, one is presented here. This is what it could look like: a two-and-a-half story PlusEnergy semi-detached house – with symmetrically positioned PowerBoxes. The eastern half of the house boasts a spacious 180 square meters, while with 230 square meters the western half provides an opportunity for combined living and working premises.

Let us begin with the eastern half: The E. family has comfortably furnished its living quarters on the ground floor. The generous living room affords a view of the patio and garden. The family eats its meals in the eat-in kitchen in the extension. The top floor accommodates a bedroom and two children's rooms, one of them with a gallery. The children even have their own balcony. All the family makes use of the large studio in the attic.

Their neighbor Ms. W. runs a graphic design studio with two employees, so her ground floor with its light-filled offices that can be reserved for work purposes. In addition to the open-plan living and dining area, the upper floor provides Ms. W. and her husband with sufficient space for a guest room and separate shower. And the attic accommodates the more private bedroom, dressing room, and bathroom.

At the end of each month the two families get together to enjoy a bottle of sparkling wine together – on the discretionary earnings bill ...



The semi-detached house

I live with my family in the Solar Settlement. I think the low additional energy requirements and the surplus electricity from the solar roof are brilliant. The PlusEnergy-House marks the beginning of a new era.

Andreas Markowsky,
resident of the Freiburg Solar Settlement

*I*n the 1950s, everything was about the standard of life, since the mid-1960s people started to focus on something more, something more open, namely the quality of life. Since the mid-1980s, the catchphrase among sociologists and urban planners has been “life style”: the free interplay of individualities, identities and communities. Wrongly, ecologists are occasionally regarded as spoil sports. And just as wrongly style is often condemned as being irresponsible.

Because all that has to be done is for them to be combined with a bit of skill. The new arithmetic: PlusEnergy is luxury and necessity at one and the same time. PlusEnergy is an attempt to redefine the old, gladly ethical “good life” – plus the burning issue of ecological and social commitment and responsibility. For example in the case of several generations all living under one roof.

Because PlusEnergy as a life style is not about asceticism but very much about common sense. PlusEnergy is an architectural – and at the same time a communitarian model: Every municipality should have the PlusEnergyHouse.



Let me be surrounded with luxury. I can do without the necessities” This is one of the Irish writer Oscar Wilde’s most famous quotations. Were these just the all too clever and cynical words of a privileged dandy?

It is nothing if not curious: The apostles of asceticism – not those of luxury – are far more numerous than the avowals to a splendid, a “good life”– in a society that preserves itself through the ruthless waste of resources. One thing is for sure: It is going to be necessary to do without senseless consumerism and the devastating waste it produces.

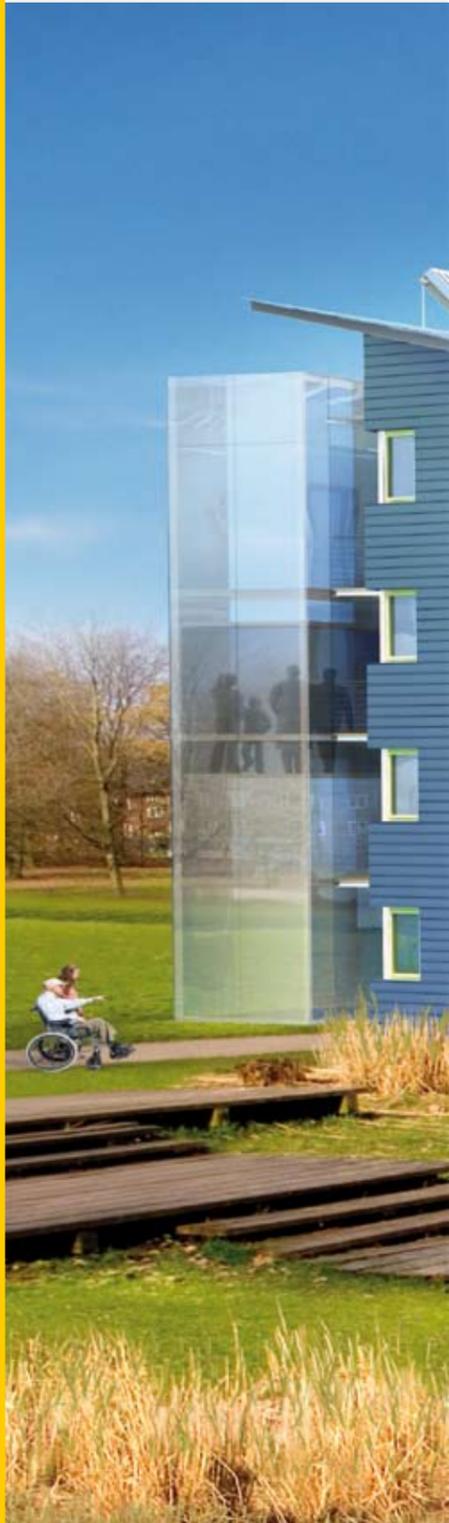
Luxury is something totally different. Specifically in ecological thinking we are seeing a turn, a redefinition, in which the PlusEnergyHouse is involved. A PlusEnergyHouse, a solar settlement – at least we hope and produce designs to this end – creates an environment, a world that is exciting and beautiful, in which it is possible to live sensibly and well. Not despite ecological necessities, but by making these something better and more attractive: by integrating ecology in a style of life. No, we cannot forego necessities here. But we can shape them. We can take them up and surpass them.

Luxury is a surplus of life, and for a good life necessary enough. PlusEnergy is sense and style, luxury and necessity at once.



The concept behind the PlusEnergyHouse is so obvious that one has to ask oneself why we still bother to build in the conventional manner at all. I have owned a PlusEnergyHouse for years and am extremely satisfied.

Volker Finke, renowned German soccer trainer



Two major themes of the future – and one urban planning solution! The fundamental turn with regard to energy and to demographic change, both are issues at local government level. 40 percent of senior citizens would like to live with people of different ages in a communal house. And nobody would like to drift apart, the continuing segmentation by age criteria.

“Multi-generation houses open up spaces that keep generations together. They are like social beehives”, claims German Minister for Family Affairs Ursula von der Leyen, and goes on to explain how houses and quarters that are fit for the future, with mixed age, social, and usage structure can become hubs for social exchange and services, providing cultural knowledge and free help.

The footprints of PlusEnergy houses can be altered any time, even after they have been built: It is possible to separate apartments without any great costs – and also easy to reverse the work again later on. The house can be configured as barrier-free, readily accessible to the physically challenged by means of an outside elevator – solar-powered, of course. Because a creative approach to getting old involves a creative approach to all resources. After all, it was the generation that is now over 60 that discovered the continent that is ecology – but certainly not so for their pension to be engulfed by energy costs shortly.



The multi-generation house - an example

It is far easier to transfer old people who are still productive to old people’s homes in God-forsaken places than to make the effort to find solutions enabling them to remain productive, and if this is no longer the case, then among us, respected.

Alexander Mitscherlich, psychoanalyst
(from: *Our inhospitable cities*)



Here you can breathe in deep! Here you need have no fear of building materials with adverse health affects having been used somewhere, no fear that there are toxic emissions, that there are malicious, evil fumes in the air. That is good news; it is an ideal state of affairs not only for those who suffer from allergies and asthma.

To rebuff a persistent prejudice: It goes without saying that if you so wish you can open the windows and let in fresh air in both winter and summer. It is, however, scarcely necessary: Because the best possible ventilation system ensures permanently fresh air at just the right temperature. So take a deep breath ...

You can feel at home here: Rooms bathed in light ensure a carefree atmosphere. Large windows, in particular on the south-facing façade, which are so important for PlusEnergy, also ensure you feel comfortable – or, maybe, if used accordingly, that your work is inspired. Here, the rooms spill outside seamlessly, on the patio or into the garden, to the balconies at the front and rear of the of the PlusEnergyHouse.

Here, air and light create a thoroughly healthy and truly homely atmosphere. The PlusEnergyHouse. “Here am I man – dare to breathe free!” And if even Goethe says so ...



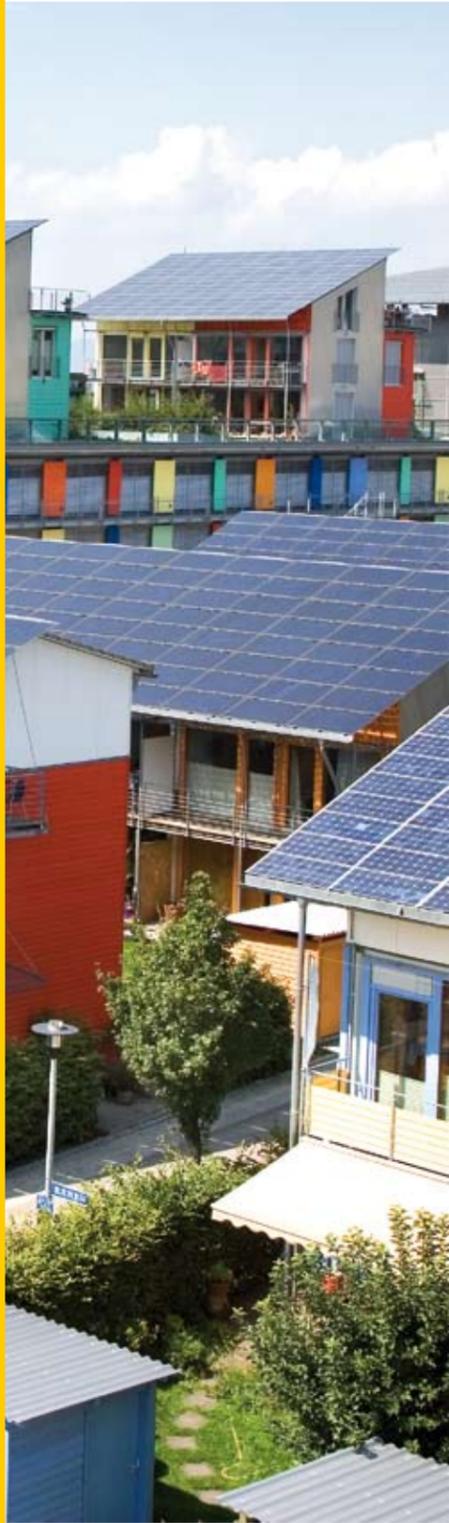
Our house in the Solar Settlement creates a tremendous sense of well-being: The homely warmth and the permanently fresh air inside create an extremely pleasant climate in which to live, with very little energy consumption.

Wolfgang Schnürer und Holde Karstens, inhabitants of the Solar Settlement

Any pilot project that is really convincing and creates a feeling of enthusiasm has always and definitely a chance of being realized. Citizens will rally round to become involved. And any number of institutions, sponsors, funds and foundations that just need to be asked are delighted to provide support.

We need a dual strategy to protect the climate and natural resources: Rules and targets need to be set “from on high” – projects and initiatives demonstrating how to do the job “from below”. Communities in particular can do both.

What we provide is intended to help in this matter: by means of the PlusEnergyHouse as an architectural innovation; by means of great experience with financing and subsidies.



No one any longer disputes the fact that we need to counter the change in the climate. Nowadays there are endless ways of doing just that. Cities and communities can decide to make use of these opportunities. The relevant technology is available and has been tried and tested. The PlusEnergyHouse sets new construction standards that will assert themselves in the medium term because there is no alternative, standards that have now been developed to such an extent that they are ready to be marketed. So why wait?

Nowadays every community that decides to go for PlusEnergyHouses likewise acquires a “beacon project”. For cutting-edge technology such as this there is a wide range of financial support, cheap loans, and subsidies awarded by state and private institutions. The market for “green money” is also booming. Institutional investors as well as private developers are increasingly investing – and indeed profitably – in ethical, ecological projects. There are also several models for realization and financing available for the convinced long-term investors as well as for local authorities themselves as developers.

Mayors, city and district councils, and town planners can take the initiative themselves. The opportunities are there – and the time is ripe for decision making.

Numerous forms of state grants and low-interest loans are in place to facilitate financing the plus-energy house, for example:

Federal Office of Economics and Export Control
Market Incentive Program for Renewable Energies
www.bafa.de

Kreditanstalt für Wiederaufbau
Subsidies, low-interest loans, partial debt relief
www.kfw.de

Deutsche Bundesstiftung Umwelt
Promotion of innovative environmental protection projects
www.dbu.de

Further information on financial aid is available at
www.deutsche-energie-agentur.de
www.foerderdata.de

Everyone can do something to protect the climate and at the same time save energy, not to mention money. Anyone who treats the climate and their own wallet with care receives massive support from the market incentive program.

Sigmar Gabriel, Federal Minister for the Environment



Local authorities act both as developer and role model: A community can build a PlusEnergyHouse as a show home, construct a building for renewable energy supply for itself, and among other things can use its own PlusEnergyHouse to provide advice on energy, climate protection, and environmental issues. It can demonstrate: Yes, we can!

As the owner of land, the local authority can make the right plots available, and as a shareholder or partner of companies supply the demand with PlusEnergy technology. Municipal residential development companies can be obliged to uphold the highest of sustainability criteria. The local authority defines the building plans: As such it can create the framework conditions for solar houses and entire solar settlements. As the source of initiative and a multiplier the local authority can provide information about the opportunities PlusEnergy offers, through citizens' advice centers, trade fairs, and events.

It can collate information on possible models for realization and the attendant subsidies, while creating direct contacts between local partners – for example between developers, specialist regional companies and local banks. It can draw up and decide on holistic political concepts, individual solutions as well as for whole quarters. The local authority devises climate policies fit for the future. We help implement them.

The PlusEnergyHouse is an ecological financial investment: The low level of extra investment compared with conventional forms of construction produces returns from the outset. The advantages:

- Higher value and greater stability in value
- No energy-related improvements required
- Higher basic rents
- Minimum running costs
- Income from feeding solar-generated electricity into the grid
- Greater value, “des res”

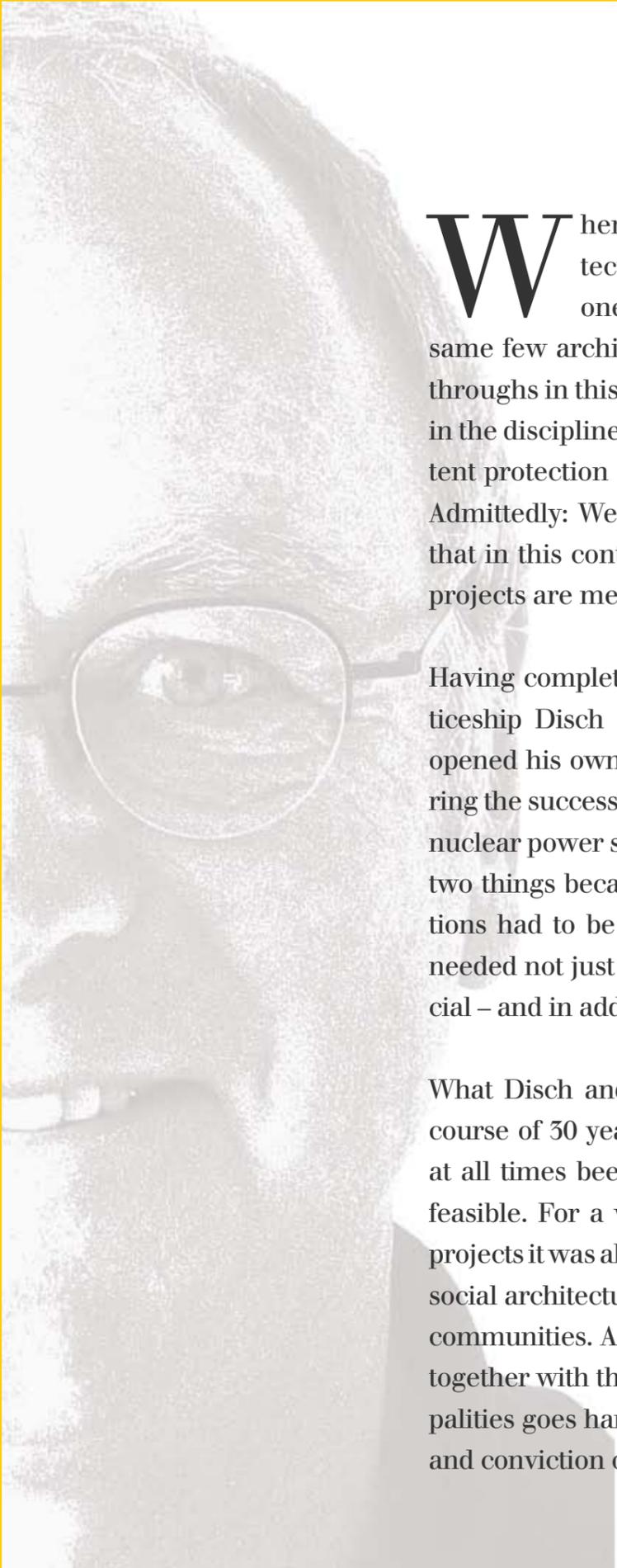
We have the historic opportunity to supply energy in a way that does not involve further damage to the climate.

Hermann Scheer, MP, President of Eurosolar, winner of the Alternative Nobel Prize

***E**cology is all the rage. Alongside serious endeavors there are also lots of people jumping on the bandwagon simply because it's the thing to do. The fact that the public is aware of the problems of climate change is most certainly to be welcomed, as is the fact that there are lots of people contributing to the discourse. Yet it now needs dozens, hundreds of projects – which now need to be put into practice.*

Rolf Disch has been working on energy optimization in buildings for more than 30 years. These have been built, they exist, they work. They have won the highest awards, have received the most prestigious funding, and are acknowledged by a widespread audience.

The first PlusEnergyHouse worldwide, the first settlement with a positive energy footprint worldwide: These offered proof that there can be solutions – serious solutions, received with enthusiasm. The proof that it is possible.



Whenever the topic turns to solar architecture and sustainable construction, one repeatedly hears the names of the same few architects. With regard to genuine breakthroughs in this field, there are only a few visionaries in the discipline who have taken seriously the consistent protection of the climate and natural resources. Admittedly: We are indeed a little proud of the fact that in this context the Rolf Disch team and its pilot projects are mentioned repeatedly.

Having completed a masonry and carpentry apprenticeship Disch studied engineering, after which he opened his own studio. After Chernobyl and also during the successful civil campaign against the planned nuclear power station in Wyhl in the Kaiserstuhl hills, two things became clear to him: First, different solutions had to be devised. And second these solutions needed not just to be technical in nature, but also social – and in addition only achievable together.

What Disch and his studio have produced over the course of 30 years may well be visionary – but it has at all times been realistic, with a feeling for what is feasible. For a whole series of ecological settlement projects it was always a case of solar architecture being social architecture, to be built for people, for the local communities. Actually building the PlusEnergyHouse together with the local authorities, cities, and municipalities goes hand in hand with the logic, experience, and conviction of an entire architect's life.



The Freiburg Solar Settlement, with the "Sun Ship" in the foreground

With his architecture Rolf Disch blazes the trail into a new solar era.

Hermann Scheer, MP, President of Eurosolar, winner of the Alternative Nobel Prize



Sixty buildings, including nine penthouses, a large commercial structure – and all boasting a positive energy footprint. There were many skeptics, and more than a few problems. Yet by actually building an entire solar settlement Rolf Disch won over the doubters, mastered the architectural requirements, and accomplished the construction work using a development company he founded himself. But what works here, the future that is designed here, can succeed anywhere. From the very outset this was how the solar settlement was intended and planned: As a model, the idea behind which and whose technology and cost-effectiveness are adaptable and transferable, such that they find followers all over.

Ten rows of two and three-storey terraced houses provide 7,850 square meters of living space with minimum ancillary costs – by no means just for committed activists, but also for young families, for anybody who feels at home in a vibrant quarter in a sought-after location. Self-contained, yet open to nature and the urban surroundings; uniform in design and yet with tremendous leeway for individual houses and gardens: this is how a solar community emerges – in 2006 voted “Germany’s most beautiful housing estate”.

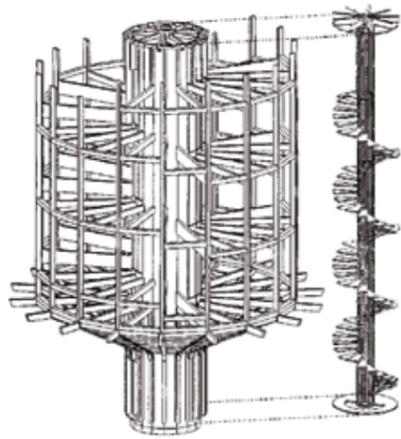
By the way, here is a little urban planning secret: Car-free settlements – a possibility here on account of good connections and car-sharing – make room for people ...



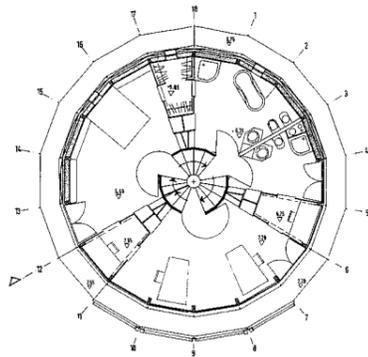
The Freiburg Solar Settlement , in the foreground: the Sun Ship with PlusEnergy penthouses

I think what Rolf Disch achieves is incredible. I took a look at it; I think he really does have Jules Verne qualities. I think that in 40 years this will be the only form of construction.

Irene Fischer, actress



Heliotrope construction



Heliotrope footprint



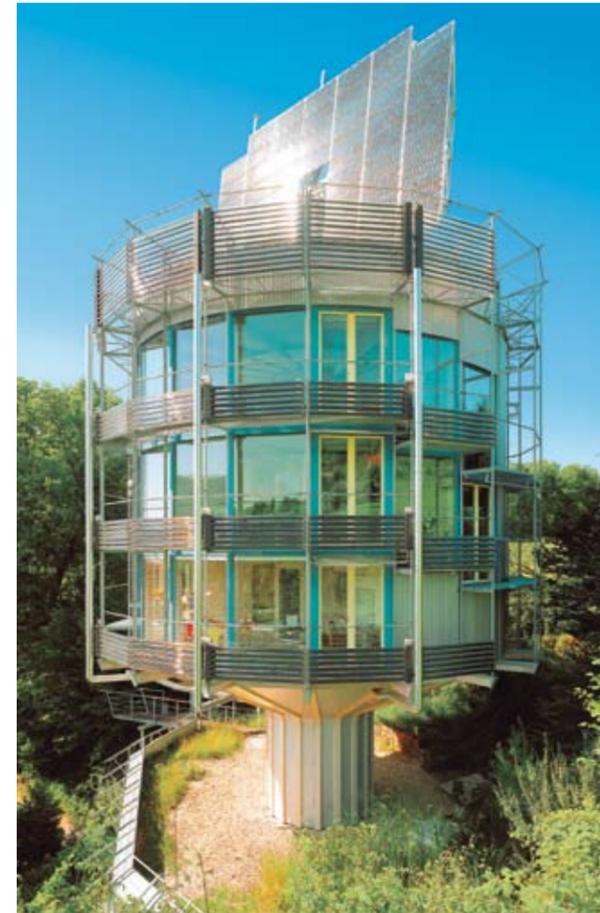
Heliotrope hotel

At the foot of the Black Forest, to the south of Freiburg, on the edge of sloping vineyards walkers encounter an unexpected view of a spectacular, futuristic building. Here the solar architect Rolf Disch has built his domicile, a pioneering achievement for the solar era: the Heliotrope.

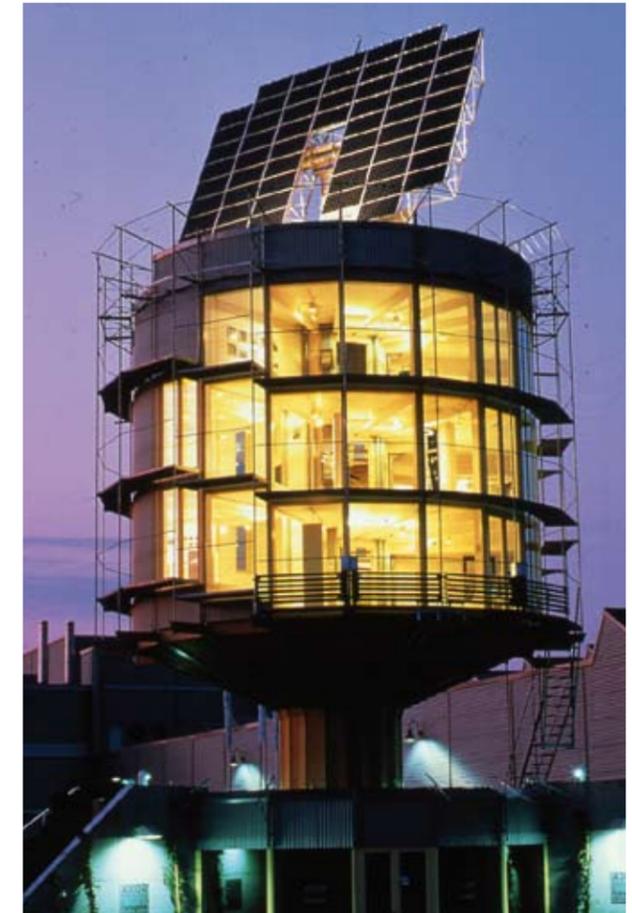
Heliotropic plants – such as sunflowers – have blossoms or leaves that turn with the course of the sun. And the building does precisely that. The cylindrical, three-storey corpus revolves around a column. On hot summer days it turns its heavily insulated rear to the sun, yet when the rays are meant to be captured the window front gradually revolves from east to west from dawn until dusk.

The “sun sail” on the roof, a large photovoltaic system, rotates independently of the building and is always ideally aligned with the sun. In 1994 this concept, combined with other energy-related applications, enabled the first PlusEnergyHouse worldwide, which generates in excess of five times more energy than it consumes.

The Heliotrope was also built as an exquisite customer and presentation center, as a dental laboratory, and there are plans for heliotropic hotels. The know-how from this breakthrough is now available in the “PlusEnergyHouse for everyone”, and to every community.



The Heliotrope in Freiburg



The hansgrohe solar tower in Offenburg

In times when wars are being fought over oil, every PlusEnergyHouse is a symbol of peace

Franz Alt, author and television journalist



Welcome on board! The Sun Ship is the service center of the Freiburg Solar Settlement – and the first commercial building to be constructed in the PlusEnergy style. Because PlusEnergy and 100 percent renewable energy supplies are possible not only for residential buildings but also for spacious functional edifices.

The financing of the Solar Settlement and the Sun Ship was put in place by institutional and private sponsors and investors who were convinced of the idea, and with six innovative solar funds launched one after the other, the refinancing is due to be concluded shortly.

As an economic ensemble the Solar Settlement rests on solid ground, generates yields, and provides space for sustainable living and business. The Sun Ship, with its 5,500 square meters of usable space makes the settlement an important ecological and economic drive for the city and the region.

Through the construction of the solar settlement and sun ship the Rolf Disch team gained experience that extends far beyond designing, planning, and constructing. Experience with financing, subsidies, cost-effectiveness, which earned Disch the “Ecology Manager of the Year” award from the magazine CAPITAL. Experience that is being channelled into “The PlusEnergyHouse for every Community” campaign. Experience that is of benefit to communities.



PlusEnergyHouse “Sun Ship” in Freiburg

Close to Hermann Hertzberger, Auer & Weber and Otto Steidle in its style and concept, Disch’s architecture is avant-garde in ecological terms. It is not ideology, but reasonable realism at a reasonable price.

Falk Jäger, architecture critic



- 2008**
Special prize "Energie + Architektur, Gebäude- und Energietechnik" („Energy + Architecture, Building and Energy Technology")Germany
- 2007 / 2008**
Creative Award 2007 - 2008 by Japan's PEN magazine
- 2006**
Prize awarded by Deutsches Lackinstitut (German Lacquer Institute), for "Germany's most beautiful housing estate"
- 2005**
Wuppertal's Energy and Ecology Prize for the "Sonnenschiff" (Sun Ship)
- 2003**
World Energy Globe
- 2002**
European Solar Prize
- 2002**
State of Baden-Württemberg Innovation Prize, the Dr. Rudolf Eberle Prize 2002
- 2002**
"House of the Year 2002" bestowed by the magazine Häuser together with Reiners Stiftung and Deutsche Verlags Anstalt
- 2002**
Special Prize for Photovoltaics as an integrated element of detached homes, bestowed by BP Germany
- 2002**
1st Prize, German nationwide competition "Who's building for the future?" held by Dresdner Bauspar AG and the magazine CAPITAL
- 2001**
State of Baden-Württemberg Prize for Photovoltaics in Architecture
- 2000**
BUND's creative wood prize for the Schlierberg Solar Settlement in Freiburg
- 1998**
Critics Prize for Architecture, National Federation of German Critics
- 1997**
International Design Prize Baden-Württemberg for the "Weberhaus Övolution" prefabricated house concept.
- 1997**
Eco-manager of the year, bestowed by the magazine CAPITAL and the WWF

- 1996**
European Solar Prize bestowed by EURO-SOLAR for the "Weberhaus Övolution"
- 1996**
1st Prize, Innovation Competition, Immobilien Manager magazine, for the Schlierberg Solar Settlement in Freiburg
- 1996**
Special Prize in the "Das goldene Haus" competition for the HELIOTROP
- 1995**
German Architecture Prize for HELIOTROP
- 1994**
European Solar Prize for "Solargarten Munzingen", bestowed by EUROSOLAR
- 1991**
1st Prize in the German architectural competition for the Solargarten Munzingen, bestowed by Bausparkasse Schwäbisch Hall.
- 1991**
Fritz Winter Prize for technical and artistic commitment
- 1987**
Won the World Championships in the Tour de Sol solar-power car race
- 1986**
Award for cost-effective detached homes in dense settings bestowed by the Federal German Ministry of Spatial Order, Construction and Urban Planning – for the Lindenwäldle housing estate
- 1984**
Gold Medal for the housing estate "Wohnen am Speyerbach" in Speyer bestowed by the Minister of Residential Construction
- 1984**
Gold Medal for the "Wohnhof Ziegelei" bestowed by the Minister of Residential Construction
- 1984**
Medal and Certificate by the Federal German Ministry of Spatial Order, Construction and Urban Planning in the nationwide competition for the "Lindenwäldle" housing estate
- 1983**
Deubau Special Prize in Essen for "Wohnhof Ziegelei"
- 1983**
International Architecture Prize, Brussels:
1st Prize for residential construction, Rabenkopfstrasse
2nd Prize for "Wohnhof Ziegelei"
- 1979**
Bad.-Württ. Wood Construction Prize for "Jugendbegegnungsstätte Freiburg"

With his Solar Settlement and the Sun Ship, Freiburg-based solar architect Rolf Disch has created an internationally recognized masterpiece, blending heavenly colors and shapes.

Kommunal Intern, 6/06

Heliotrope is, in a sense, a temple - a place for the worship of both ancient sunlight and groundbreaking design.

Azure, May 2007

Germany's most beautiful housing estate is in Freiburg.

Bauidee, 6/06

*Disch is without doubt
Germany's best-known
solar pioneer. DIE ZEIT*

The Solar Settlement in Freiburg shows that today financially attractive products that also appeal to the ideals are possible. Solarfonds as a real-estate fund already champions all the advantages that such an investment in an attractive region such as Freiburg offers, with the high level of rent prices, the strong increases in property values and the growing population there. Its particular appeal: it is a sustainable investment, offering earnings that go well beyond the customary good ROI.

Die Welt, 4/04

Making possible today what was impossible yesterday. Houses that produce more energy than their inhabitants can consume. A high quality of life thanks to healthy construction materials. Solar energy as the driving force in society. That is Rolf Disch's vision. And this vision is no utopia but a reality, as he and his team have proved. A large number of widely different construction projects already attest to this committed pioneer's design talent. Solar technology, cost/benefits, and architecture blend in Rolf Disch's oeuvre to offer a convincing alternative to conventional ways of building and living.

Badische Zeitung, 7/05

The linkage of solar energy and the financial sector unleashes new potential. The future belongs to the renewables. And the present? Solar technology is already making a pioneering and stimulating contribution with cross-sector projects. Freiburg's Solar Settlement proves this clearly: The combination of innovative financial experts, the property industry, and solar technology made the housing estate possible in the first place

Die Welt, 4/04

With the Schlierberg Solar Settlement, the company has set new standards for solar construction and residences in the 21st century. The Schlierberg Solar Settlement means that the future of solar construction and residence in harmony with nature is already a reality today.

Der Monat, 3/06

Trendsetter for sun joy: the Schlierberg Solar Settlement in Freiburg, one of the most modern solar housing construction projects in Europe.

Hannoversche Allgemeine Zeitung, 2/06

Disch's energy savings principles impact on the architectural forms chosen, because while the form is supposed to follow the building's function, the criterion of "form follows energy" is given an equal status here.

Family Home, 3/05



Dear Sun Lovers,

As has been our tradition for over 300 years, this year you are once again cordially invited to join us in celebrating our thriving community. This year the motto of our city festival is “Celebrating with the Sun”, and with the sun we are also celebrating our future.

Everyone can remember: In 2008, exactly 12 years ago, we set the course with the “Information Center in the PlusEnergyHouse”. Shortly afterwards we were able to invite our local building company to the ground-breaking ceremony for “Sunny Hill” – the first of our three solar settlements.

A lot has been achieved since then: CO₂ reduction way above the strict EU guidelines; our ambitious “Solar Local! Agenda 2020” renovation program, the photovoltaic roof on the Sacred Heart of Jesus church; the renovation of the school’s energy system by the “Helios” parents’ initiative ...

We now know: PlusEnergy is more. The demographic and economic balance, together with the energy footprint, is on target. Our senior citizens are a productive element in our midst and live in the multi-generation houses adjacent to the “Sun Children” solar nursery. Our energy supply

is decentralized. Our traffic is run by the public authorities and enhanced by solar gas stations and car-sharing.

Shopping and working are done locally, because with an almost 100% renewable energy supply for commerce and craftsmen our growth is decoupled from rising energy prices. What was that slogan 12 years ago? “Let’s finance a solar future, not unemployment!”

It is with a touch of pride that we extend a hearty welcome to the Sun Festival to the citizens and mayors of the 30 communities that in 2010 expanded the “Solar Local” program into “Solar “Regional!” We are particularly pleased to welcome visitors from our partner communities in China and Ecuador: By exchanging information about our solar programs we have learned a lot from each other. - And that is reason enough to celebrate!

With sunny greetings,

Friedrich Sonnleitner
Mayor



Solar
architecture
is not
about
fashion -
it is
about
survival.

Lord
Norman
Foster,
architect

Rolf Disch

SolarArchitektur

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