The Best Outlook for Energy Savers

Energy-efficient Windows, Doors and Glass Facades.

“we don’t just build homes, we create lifestyles”
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OPTIWIN by AmbiHouse - Manufactured and Installed by AmbiHouse
OPTIWIN – Where Tradition meets the Future

OPTIWIN is an international partnership of medium-sized window manufacturers. The goal of the partnership is whilst considering ecological and economical aspects, to develop and make available innovative building elements – especially energy efficient windows and doors - that are also suitable for passive houses.

The group of businesses consists of partners, who were licensed to utilise the patented window design belonging to the Tyrolean window manufacturer Freisinger. Inspired by the great success of working with these partners, Freisinger intensified the cooperation with the licensed partners and founded OPTIWIN.

In May 2011 AmbiHouse became the newest manufacturing partner of Optiwin and the first company in Ireland to actually manufacture timber passive certified windows. Since then we have found growing support from clients both in Ireland and in the UK.

Today, medium-sized companies from several countries belong to the OPTIWIN–Group. The members of the group and their customers benefit not only from continuous technology transfer, but also from a standardised quality control mechanism, from group conform training and from a coherent marketing concept.

The specialised know-how has been developed through international experience, years of cooperation and continuous improvement processes. The attention to detail, quality, the perfectly crafted product and the passion to create innovation out of tradition, define the special value of OPTIWIN products.

Through continuous R&D OPTIWIN is acknowledged worldwide in the passive house sector and is with regard to innovation, energy efficiency, comfort and design one step ahead of the largest window producers.

Editorial

Windows in good hands

The developments of the OPTIWIN Group are rooted in traditional handcraft and were introduced and established on the market in cooperation with medium sized window manufacturers. Every product is therefore also optimised with regard to its technical production.

OPTIWIN is flexible, powerful and able to react quickly to market requirements. Efficiency that you would expect from the technological leader of the sector for sustainable passive house windows.

OPTIWIN know-how originates from years of cooperation and the resulting improvement processes. This innovation flow is aided and maintained by the regular meetings at the OPTIWIN member businesses. It is an essential part of the shared philosophy of the product and the group.

The attention to detail, quality, the perfectly crafted product and the passion to create innovation out of tradition, define the special value of OPTIWIN products - not only from a technical point of view. As well as technical perfection, sustainable values including individual and emotional qualities - therefore guarantee customers long-term comfort, security and perfect service.

OPTIWIN - Quality from master craftsmen!
Alu2Wood Windows – Window Frame Solution
as low as $U_w 0.74 \text{ W/m}^2\text{K}$
($U_g 0.5 \text{ W/m}^2\text{K}$)

Alu2Wood Windows – Window Rabbet Solution
as low as $U_w 0.70 \text{ W/m}^2\text{K}$
($U_g 0.5 \text{ W/m}^2\text{K}$)

Wood2Wood Windows
as low as $U_w 0.69 \text{ W/m}^2\text{K}$
($U_g 0.5 \text{ W/m}^2\text{K}$)

Alphawin Windows
as low as $U_w 0.64 \text{ W/m}^2\text{K}$
($U_g 0.5 \text{ W/m}^2\text{K}$)
Alu²Wood Windows

Never paint a window again!
The Alu²Wood Window consists of an interior layer, which performs the actual window function. The (removable) exterior layer is made of aluminium. The mounting frame is no longer visible from the outside. Therefore, compared to conventional aluminium windows, it is possible to have extremely slender and elegant frame widths. **OPTIWIN** achieves this through very narrow sashes and mounting frames, which are almost completely covered and insulated from the outside.

The excellent heat insulation characteristics of the Alu²Wood Windows make it one of the most cost-effective passive house windows of its time. A European patent was issued.

You gain a unique advantage in energy efficiency and construction physics with the window rabot solution.

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**Advantages**
- Suitable for all window types (multi-sash, custom designs, sash bars...)
- Interior layer implemented as a statically bearing structure
- Short renovation times due to removable exterior layer
- Interior wood types: fir, spruce, larch, oak
- Removable aluminium exterior layer
- Slender frames, elegant design
- Custom colour schemes for interior and exterior
- Special features: sound insulation, sun screening and burglary protection
- Custom detail-planning
- As low as $U_{w,0} \leq 0.70$ W/m²K ($U_{g} \leq 0.5$ W/m²K)
- Certified thermal bridge free connection (PHI Darmstadt)
- For renovations, also possible without insulating the frame ($U_{w}$ value determined according to respective installation situation)
Wood2Wood Windows

Weather? What weather?

This system offers the same advantages as the Alu2Wood technology. The protective outer layer can be removed by turning the connecting elements, thus reducing renovation or exchange costs.

This system takes full advantage of the special features different wood types offer. For the exterior layer OPTIWIN uses mainly woods like larch or oak. These woods are naturally very weather-resistant making external surface treatment unnecessary. For the interior, spruce or firs are suitable wood types, as they possess the appropriate bulk density and excellent static characteristics.

The Wood2Wood window has excellent heat insulation characteristics, is available in a passive house compatible variant and was issued a European patent. It has been certified as a connection free of thermal bridges by the PHI Darmstadt.
Alphawin Windows
Your window to the future

Revolutionary today. Standard tomorrow. Alphawin is the leading product for the next generation of ecological and economic windows, which are also suitable for passive houses. Cost-saving, energy efficient and revolutionary in terms of material, flexibility and appearance. The new, deeper design allows for a flush arrangement of frame and sash. Reduced to the max: the total facing width of frame and sash on the inside is only 90 mm - minimalism that represents supreme innovation, not just architecturally but from an energy standpoint too. Alphawin can contain 48 mm glass units and therefore also 0.5 W/mK glazing filled with argon. This cuts costs. Plus, there no longer is a need for the more energy-intensive, radon-combined krypton.

The special construction of Alphawin allows for completely new perspectives in external appearance. Thanks to slim frames and the simple, minimalist design on the inside, the window frames virtually disappear altogether. Only the glass is visible; with fixed elements as much as with opening sashes. As a result completely new design options are now available to planners and builders. The otherwise necessary maintenance intervals on the outside are eliminated entirely.

As with all OPTIWIN products, Alphawin is fully de-mountable and individual components can be recycled. The materials used consume as little energy as possible, both in production as in the subsequent processing stages. Thus the Alphawin window is also state of the art when it comes to sustainability. Alphawin meets the requirements of the Passive House Institute (Darmstadt). The special design means only one installation with optimized thermal bridging is needed.

Advantages
- Suitable for fixed and rotary-tilting elements as well as double sashes
- Revolutionary exterior appearance (only glass visible with sash and fixed elements)
- Classical design on the interior
- Custom colour schemes and detailed planning
- Optimised, sustainable production for assessments by DGNB or Leed
- Installation optimised thermal bridge specified by construction
- Larger proportion of glass due to slim line design
- As low as $U_{w}$ 0.64 W/m$^2$K ($U_{g}$ 0.5 W/m$^2$K)
- Certified window (PHI Darmstadt)
Energy-efficient Folding Elements

Folding doors offer maximum freedom and maximum comfort
Anyone wishing to enjoy an open-plan living room should definitely have a look at our folding doors in the Alu2Wood and the Wood2Wood family. The folding elements from the OPTIWIN group offer maximum freedom and comfort and combine energy-efficiency with individuality.

The characteristics of the folding elements have already been integrated into the requirements of the future through precision and care. The three continuous sealing levels, the inclusion of 48 mm glazing together with the decades-long tried and tested tongue and groove joints for the sashes and frames are just a few special features of the elements.

Experience and constant improvements in the processing of components and in production make these elements extra special. High-quality, fine-grain wood from a single tree trunk may indeed be a very subtle feature, not immediately recognised by everyone, but is one of the many fundamental differences that make these elements stand out from what the window market otherwise has to offer.

This combination of ‘everything’ fulfils the requirements of quality, design, comfort, impermeability, usability and durability that you as a customer can and should expect.

The diversity of the product family opens up unimagined opportunities. Whether fixed-glass, side-hung or sliding doors, everything can be combined with the folding elements.

The systems can also be adapted to special construction requirements such as renovations. This means that the design of the folding elements has no limits in all trends or requirements.

Advantages
- Suitable for all types of windows (multi-sash, glazed bars)
- Short renovation times due to a removable outer layer
- Interior wood types: customer’s choice
- Removable outer layer in aluminium
- Slender frame, elegant design
- Custom colour schemes for inside and outside
- Special functions: sound insulated and protected from the sun and against burglary
- Custom detailed planning
- As low as $U_w = 0.70 \text{ W/m}^2\text{K}$ ($U_g = 0.5 \text{ W/m}^2\text{K}$)
- Certified with no thermal bridging (PHI Darmstadt)
- Can also be renovated without insulating the window frame ($U_w$-value can be determined according to the particular installation situation)
Lift and Slide Doors and Parallel Slide-Tilt Elements

More push for much more area

OPTIWIN systems Alu2Wood and Wood2Wood make their grand entrance as parallel slide and tilt element and lift and slide doors. The opportunity to combine large sliding elements with normal windows means OPTIWIN can provide designers and builders with extraordinary solutions in terms of quality and flexibility. Even the lifting/sliding doors can be supplied with 3-pane glazing in the standard version or in a combination of wood and aluminium. Many years of experience and intensive, standardized quality controls for all components and production phases, guarantee longevity and customer satisfaction – even the largest portal elements.

Advantages

- Interior layer is a statically bearing structure
- Short renovation times due to removable exterior layer
- Interior wood types: fir, spruce, larch, oak
- Removable aluminium exterior layer
- Slender frames, elegant design
- Custom colour schemes for interior and exterior
- Special functions: sound insulation, sun screening and burglary protection
- Custom detailed planning
- Uw value determined according to respective, individual solution
- Certified thermal bridge free connection (PHI Darmstadt)
Lift and Slide Doors and Parallel Slide-Tilt Elements
Energy-saving Doors PREMIUM

Cold outside, warm inside and unique around the world

The OPTIWIN wooden door PREMIUM, Frostkorken model, is the world’s first front door to have been certified as passive house compliant by the renowned Passive House Institute in Darmstadt (Germany). Its material composition and ecological insulation ensure a high surface temperature inside and the lowest possible radiation heat loss outside. Even in the entrance area there is no cold airdrop so it stays cozy and warm. Choose your own design; we would be happy to advise you.

Construction

Double rabbet with special plastic door sill, wall connection rebated in cork or plastered in, available with panic devices EN 179 and EN 1125, fire protection EI 2 30 C, Inner width 1-sash max. WxH: 1200 x 2400 mm, Inner width 2-sash max. WxH: 2400 x 2440 mm.

Advantages

• Passive house front door model Frostkorken
• 3-way insulating glazing
• Solid wood frame 93 x 93 mm
• Hinges 3D-adjustable in stainless steel
• Solid-core flush door panel, 100 mm thick double rabbet
• GU Security Automatic, permanent multi-point lock, automatic opening for access control systems
• Available in all types of wood suitable for front doors
• As low as UD = 0.72 W/m²K
• Q 100Pa = 1.2 m²/(h·m)
• Sound insulation R_w ≥ P 37 dB
• Climate class c, d, e
• Intrusion protection WK II available
• All surfaces possible
• Passive house compliant (certified by PHI in Darmstadt)
Energy-saving Doors COMFORT

To warm your heart!
The OPTIWIN wooden front door COMFORT ensures a high surface temperature inside and the lowest possible radiation heat loss outside. Even in the entrance area there is no cold air drop so it stays cozy and warm. Choose your own design; we would be happy to advise you.

Construction
The door is a combination of steel supports, to stop distortion, and ecological wood composites, free of PU foam plates. 68 mm thick, highly elastic silicone seals, maintenance-free and highly stable halogen-free door components. It uses ecological and sustainable products.

Advantages
- State-of-the-art wooden front door system
- 2-way and 3-way insulating glazing available
- Solid door leaf and frame: 68 mm
- 3D-adjustable door hinges
- 3-way safety lock
- Wood types on request
- As low as $U_{\text{w}}$ = 0.90 W/m²K
- $U$ value approx. 1.3 W/m²K
- Sound insulation $R_w$  = 32 dB –
- Sound transmission class 2 DIN 4109
- Door leaf with climate class test c, d, e according to DIN EN 1121 IFT Rosenheim
- Resistance class WK I to WK II
- Painting using ecological water-based paint
- The core of the door is the door leaf with TARREDO technology
Energy-efficient Glass Facades

Sunny views!

Passive-energy houses are very often fitted with façade glazing facing south. This façade system was developed to cater for these requirements in wood as well. The OPTIWIN solar façade consists of a load-bearing wooden structure, which, if desired, can also be coated with wood or aluminium. As with all OPTIWIN window systems, the outer layer serves as a protective cover and can be removed and replaced. This also allows for flexible and individual colour decor.

The OPTIWIN solar façade is mounted on a wooden post-and-mullion construction. The spacer to the exterior facing is thermally separated and consists of wood and wood fibre insulation. The pane-weights are held up by statically calculated glass brackets.

The OPTIWIN solar façade is a suitable „passive-energy house component“ certified by the Passive-Energy House Institute in Darmstadt. The prerequisite for this is an average heat-transmission coefficient \( (U_{\text{w}}) \) for the entire construction of no more than \( 0.8 \text{ W/m}^2\text{K} \).

Advantages
- High level of pre-fabrication
- Rapid installation times
- Interior layer is the load-bearing structure
- Short renovation times due to removable outer layer
- Wood types: fir, spruce, larch, oak can be combined for inside and outside
- Slender frames, elegant design
- Custom colour schemes for inside and outside, use of natural oils thin or thick-layer finishes
- Special functions: sound insulated and protected from the sun and against burglary
- Custom detailed planning
- As low as \( U_{\text{w}} \leq 0.72 \text{ W/m}^2\text{K} \) (\( U_{\text{g}} \leq 0.6 \text{ W/m}^2\text{K} \), \( U_{\text{f}} \leq 0.69 \text{ W/m}^2\text{K} \))
- Suitable for passive-energy houses (certificate: PHI Darmstadt) European patent
Energy-efficient Glass Facades
Edge to Edge Glass corners & connections as individual as you are…

For that special solution, the windows can be made to „swing“ by means of special construction if required.

The special Edge to Edge Glass corners & connections offer a special eye-catcher and can be made and fitted as required. At OPTIWYN, all manufactured Edge to Edge Glass corners & connections are of special quality. Quality is guaranteed by coordinating the surface temperatures and the thermal behaviour. In spite of these filigree constructions, ideal thermal details are possible but must be custom designed with each customer.

Constructions that have not been properly thought through can impair living comfort and warmth through condensation and cold surface temperatures. With the details planned by trained personnel, you have not only aesthetic pleasure but can also relax and enjoy life.
Customers have a choice of three standardised solutions. The three basic options are a window construction in each system, such as the Alu2Wood in the corners. This construction fulfils all static and thermal requirements, including for passive-energy houses. The second option is an aluminium cover inside and outside. In this option the construction is filigreed and smaller. Stepped glass panes coated in black can also be supplied for special optical requirements.

Freisinger Fensterbau will analyse your static and thermal requirements for this construction and will coordinate these with you personally.
Production

Windows from the best of hands

Developments from the OPTIWIN Group have evolved from a handcraft, and through collaboration with medium-sized companies they were introduced and established on the market. Each product is therefore also optimised in terms of production technique. Individual components can be produced with any machinery inexpensively and efficiently.

The OPTIWIN know-how has emerged from the constant improvement processes that resulted through many years of collaboration. This flow of innovation is fostered and promoted through regular meetings at OPTIWIN member companies. It is an essential part of the common product and company philosophy.

The attention to detail, ambition for quality, achieving the perfect hard-crafted product and the passion to create innovation out of tradition are what characterize the special value of OPTIWIN products – not just on the technical side. Sustainable values, alongside technical perfection, include individual and emotional qualities – and thus guarantee customers comfort, security and impeccable service for the long term.

OPTIWIN: Quality from Master Craftsmen.
The New Product Line
2015 from OPTIWIN

EXCLUSIVELY PASSIVE HOUSE CERTIFIED

DIFFERENT CLIMATIC CONDITIONS AROUND THE WORLD PLACE EXCEEDINGLY VARIED DEMANDS ON WINDOWS AND DOORS:
The windows and doors of a house on the coast of Italy are faced with completely different weather conditions to those of a mountainside building in the Alps.

Using the new quality OPTIWIN product line, an international team of experts consisting of several licensed OPTIWIN partners from Europe and North America succeeded in solving the various problems that windows and doors have to cope with in different climatic zones (coastal regions, salty sea air, alpine regions). Collective experience and troubleshooting has led to a new range of products that meet passive house standards.

PURISTA – frameless windows from OPTIWIN
RESISTA – wood-aluminium windows from OPTIWIN
LIGNUMA – wood windows from OPTIWIN
MOTURA – lifting/sliding doors from OPTIWIN

The advantages of the new INDUSTRIAL window product line from OPTIWIN:
• A second drainage level improves water tightness against driving rain.
• 4 seals instead of 3 – all around, with large seal overlay – resulting in extremely good air tightness and consequently a high level of sound insulation, improved comfort and high energy efficiency.
• Production continues as usual with the usual quality supervision.

VISUAL HIGHLIGHTS:
• Windows and lifting/sliding elements have a clean, uniform appearance.
• The possibility to combine with smooth minimalist appearance and systems (e.g. combination of the all-glass appearance of PURISTA with the LIGNUMA system).
• The new product line allows for design flexibility meeting architectural requirements and thus giving the building designer greater leeway.
• Upon customer request, glass and wood can also be bonded together to ensure greater stability.
The new generation of windows 2015 from OPTIWIN
EXCLUSIVELY PASSIVE HOUSE CERTIFIED

Sustainability through wood – this window defined. This model can also be combined with Resista and Purista.

Aluminium increases the life span of this window and keeps maintenance to a minimum for longer. It also allows for more varied design combinations. The aluminium parts of the sash and frame are available in different colours.
Bespoke Design Castletownbere, Co Cork. Manufactured and Installed by AmbiHouse
www.ambihouse.ie
Throughout the past 30 years, this simple and honest philosophy has formed the cornerstone of every new home we have built. Experience has shown me that integrity of materials, craftsmanship and the employment of qualified, trusted professionals result in homes whose design and building quality are second to none. Every member of the AmbiHouse team understands the commitment and trust required to deliver the home of your dreams. I take great pride in my staff and in the homes that we design and build.

Welcome to AmbiHouse
Eamonn Wolohan