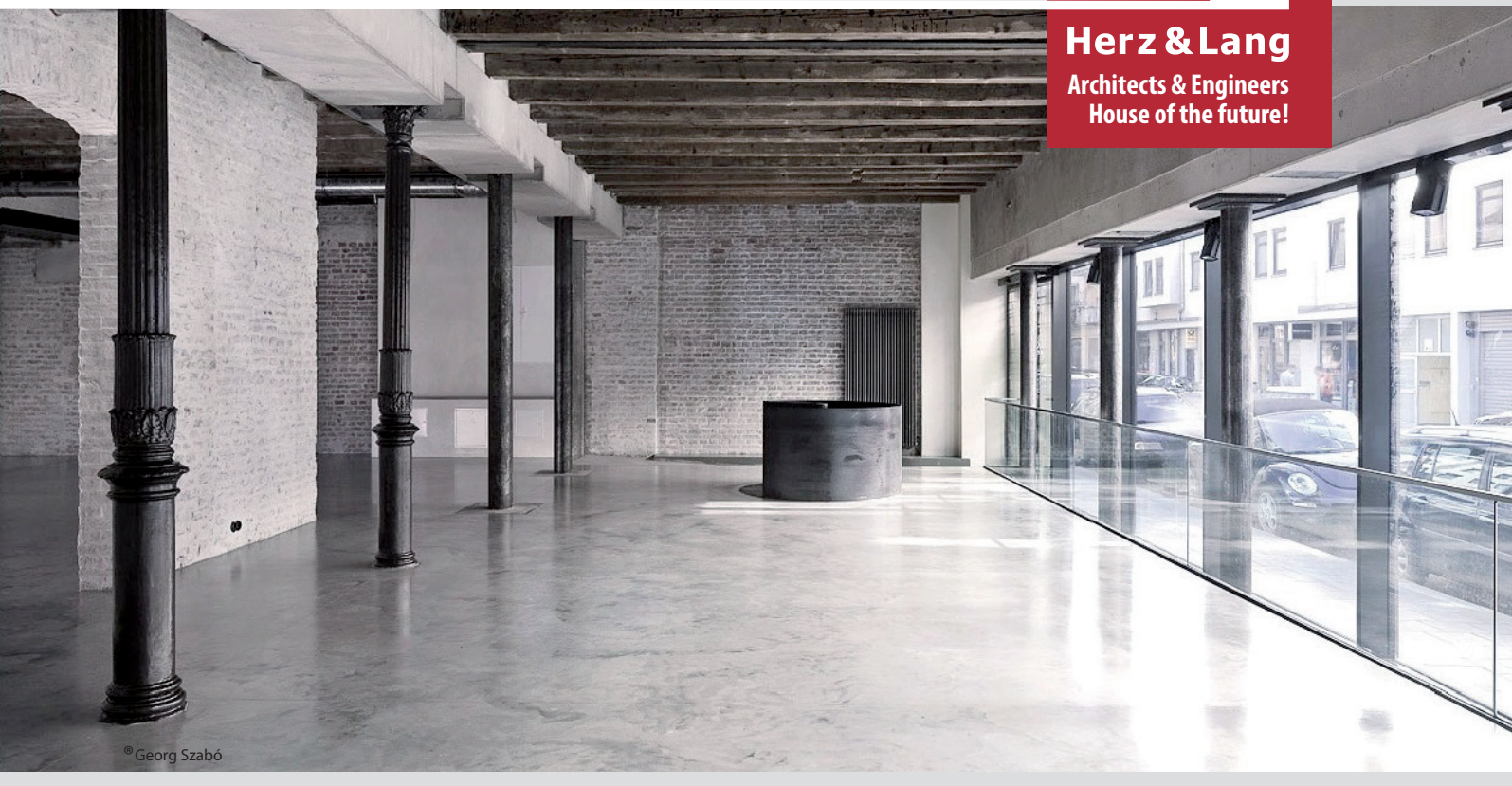
Herz & Lang

Architects & Engineers

House of the future!



CONSULTING

Competent team in overall planning, technical planning and consultation!

The aim of Passive House consulting is to bring specialised know-how into existing planning and construction teams to achieve the Passive House standard.

Dear Ladies and Gentlemen,

Are you responsible for the implementation of a large scale residential development, an industrial building, commercial, trade, community or office building and intend to construct or renovate to Passive House standard?

You already have a planning team with experience from previous realized projects or competitions. There is however less experience in the field of high energy efficiency standards, such as a certified Passive House in the team. You would like to guarantee this high standard through an integrated process of planning, design and operation.

You would like to be sure from the outset that the customer receives an energy efficient, maintenance (operation, servicing, users), and trouble-free building. You would also like a building that will ultimately provide savings that justify the additional expenditure and for this to be achieved through ease of use with the overall concept for the building envelope and building technology?

Then you are in safe hands with us as there is where our Passive House consulting comes into play. We started with the Passive House concept in 1998 and have up until now being involved as an integrated designer (architect + technical planning) in more than 100 single and multi-family houses in both new construction and renovation.

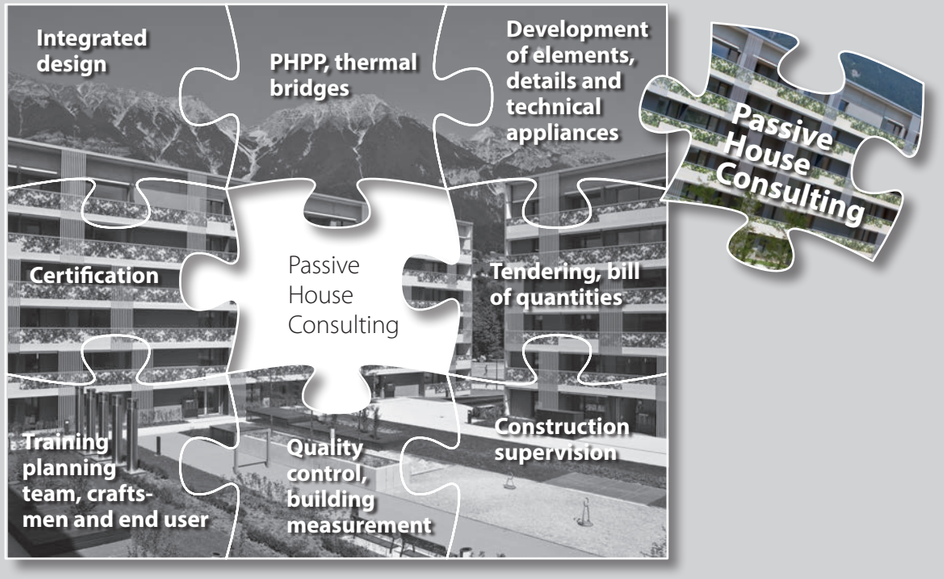
We use this experience in consulting to benefit our customers (builders, general planner). We have done this since 2005 and have accompanied over 1500 residential units and over 80,000 m² of non-residential buildings to the Passive House standard. Among them are many of the world's first realized Passive House buildings in their class (multi-storey buildings, hotel, museum, prison, court), and a variety of local authority buildings in both new construction and renovation at home and abroad.

Our standard is to bring all our projects through to certification with econmic solutions and high comfort. All our buildings meet the requirements; therefore we recommend speaking to our clients if you need more references.

The following pages will inform you about our methodology and our experiences based on photos and especially projects in practice. We look forward to gaining your trust and to become planning partners on your team.

Florian Lang
DI (FH)

Dieter Herz
DI (FH)



Company details

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Membership/Qualifications

Our Team!

MANAGING DIRECTOR

Dipl.Ing. (FH)
Florian Lang

Special expertise:
Energy Efficiency Consultant
Acred. Passive House Certifier

Projects:
Art Museum, Ravensburg
Justis Centre, Korneuburg
Olympic Village, Innsbruck
Lodeareal, Innsbruck

MANAGING DIRECTOR

Dipl.Ing. (FH)
Dieter Herz

Special expertise:
Energy Efficiency Consultant KMU
Certified Passive House Designer
Certified Air Tightness Tester
Structual timber planning

Projects:
Explorer Hotels
Hotel & Resort Sonnenalp, Ofterschwang
Kindergarten St.Mang, Kempten

PASSIVE HOUSE PLANNING

Joachim Blaas

Special expertise:
Certified Passive House Planner
Acred. Passive House Certifier
Dynamic building simulation
Certified Air Tightness Tester

Projects:
Museum of bavarian history, Regensburg
District Court, Günzburg
Secondary School, Buchloe
Secondary School, Poing

PROJECT MANAGEMENT
ENERGY CONCEPTS

Dipl. Ing. (FH)
Simon Schmerker

Special expertise::
Certified Passive House Designer
Hygrothermal simulation
Sound insulation planning

Projects:
Kindergarten, Bodnegg
Kindergarten, Baienfurt
Baaderstraße, Munich
Marienheim, Kempten

ARCHITECTURE

Dipl.Ing. Architect
Anita Bechter

Projects:
Certified Passive House Designer

Persönliche Referenz:
Apartment complex 56 Apts., Kaufbeuren
Green Centre, competition
Allgäu Fitness Centre, competition

PROJECT MANAGEMENT
NEW BUILDINGS

Dipl.Ing.(FH) Architect
Julian Flecks

Special expertise:
Certified Passive House Designer

Projects:
Single and multi family houses
Terraced houses
Competitions

PASSIVE HOUSE PLANNING

BEng., MIEI
Stephen Quinn

Special expertise:
Certified Passive House Designer

Projects:
Riverside, Norwich
Airoptima, Kaufbeuren
Justice Centre, Korneuburg

PASSIVE HOUSE PLANNING

Dipl.Ing.
Raphael Vibert

Special expertise:
Certified Passive House Designer
Dynamic building simulation

Projects:
Metzstraße, Friedrichshafen
Postquartier, Ravensburg
Student accomadation, Munich
An der Stadtmauer, Kempten
Kindergarden, Aberdeen

PROJECT MANAGEMENT
OLD BUILDINGS

Dipl. Ing. (FH)
Helmut König

Special expertise:
Fire Protection Planning
Certified Air Tighness Tester
Energy Efficiency Consultant
Dena-Expert
Structural Planning

Projects:
Secondary school, Lindenberg
MVAS, Kempten
Refurb Immenbrücke, Sigmarzell
Holitsch, Tettnang

PROJECT MANAGEMENT
NEW BUILDINGS

Georg Endras

Special expertise:
Master Carpenter
Gov. appvd. BuildingTechnician
3D Planning

Projects:
Vocational school, Immenstadt
Astrid-Lindgren-School, Kempten
Job centre, Kempten
Champigon dairy, Heising

PROJECT MANAGEMENT
OLD BUILDINGS

Manfred Kolb

Special expertise:
Certified Energy Advisor
3D Planning

Projects:
Primary school, Missen
Ibergzentrum, Maierhöfen
Dialysis centre, Immenstadt
Allgäusonne Hotel, Oberstaufen

PROJECT MANAGEMENT
STRUCTURAL WORK

Josef Wille

Special expertise:
Gov. appvd. BuildingTechnician
Previously managing director of self owned conctruction company

Projects:
Multi-purpose hall, Stiefenhofen
Riedbergpass street with bridge
Kreisstraße Weißach, Hangverbau

SECRETARIAL / ACCOUNTING

Claudia Baldauf

Silvia Stöhr

Gaby Strobel

Explorer Hotel Neuschwanstein

FACTS

Location:
An der Risse 46, Nesselwang im Allgäu

Planning and construction time:
2012-2013

Client:
Explorer Hotel Nesselwang GmbH & Co. KG

Contact for the client:
Mr Reisigl

Building volume:
10.500 m^3

Building cost:
10,1 Mil.

Services provided:
Passive House Planning
Detailed Planning
Building Measurement
Certification Coordination

Energy Standard:
Certified Passive House

Project Supervisor(s):
Mr Herz, Mr Blaas, Mr Quinn

Project Manager:
Explorer Hotel Nesselwang GmbH & Co. KG

PROJECT STATUS
- [x] Realised project
- [ ] In Planning
- [ ] Competition
- [ ] Energy concept

Energy concept:
Highest energy efficiency through the implementation of Passive House certification and related four-eyes principle. Holistic consideration of all energy consumption with respect to final and primary energy. Quality management system to implement the planning through to the execution and operation. High usage of solar energy through solar thermal collectors and photovoltaics. Comfort ventilation with high heat recovery and efficient electrical appliances in all areas.

Zero emissions, great comfort!

The world's first certified Passive House Hotel was opened in Fischen (Oberallgäu). Designed as a zero emission house the Explorer Hotel with its 76 rooms is consistently thinking about climate change, which goes down very well with the guests. According to the hotel owner Jürnjakob Reisigl, the hotel on the outskirts of Oberstdorf is already booked out with "active" guests and is far exceeding expectations.

Dieter Herz from the planning office responsible for the Passive House Consulting and training of the participating designers and craftsmen involved speaks of „a milestone" in the Hospitality industry.

The Explore Hotel has set a new standard in an industry which normally consumes a tremendous amount of energy and emits a lot of CO2 into the atmosphere.

According to results of the annual balance sheet total, the total energy demand being offset from the photovoltaic system installed on the roof will even give a CO2 credit for the distinctive building from the Sonthofener architectural firm Sieber-Renn. A fact that makes Jürnjakob Reisigl proud and who in his own words has said „is Green at heart".

The Passive House design was not

FACTS

New
Zero emissions building
Plus certified Passive House,

Location:
Fishing / Allgäu

Building use:
Hotel with 76 rooms

Architecture:
Architects SIEBER RACE

Professional Passive House planning:
Herz & Lang GmbH

Type of building:
Massive construction with exterior insulation-
composite system
Shingle formwork

Energy concept:
Gas condensing boiler with biogas
3 comfort ventilation systems
Photovoltaic and solar system

Energy reference area:
2453 m^2 (PHPP)

Energy demand:
14 kWh / (m^2 a) (PHPP)

Ecological aspects:
Plus-Energy House
Zero emissions building
renewable energy

GREENBUILDING

Certified
Passive House

mentioned in the planning phase, says the hotelier who also runs other hotels in Oberstdorf. But then Jürnjakob Reisigl heard of two projects in which the planning office Herz & Lang played a major role: the construction of the Innsbruck Lodenareal a total of 354 residential units and the new staff accommodation at the Hotel Sonnenalp in Ofterschwang, both constructed to Passive House standard.
Jürnjakob Reisigl realized that highly energy-efficient construction is the way of the future.

Initial concerns

„It is not only going to be a hotel for the next few years, but for the next few decades," says the native of Tyrol. Reisigl therefore decided „If it's feasible, then the Explorer Hotel will be a Passive House". However, he was initially advised against it due to a number of different concerns; too expensive, too long turnaround time and a risk of mold growth, but Jürnjakob Reisigl stuck to his guns and turned to the expert team at Herz & Lang, under whose direction many Passive Houses in the Alps have arose. „Now all those involved in the construction of the Explorer Hotel agree that the Passive House concept was a really good idea," says the innovative hotelier.

The additional cost due to the Passive House Design of the 5.8-million project, Reisigl estimated at six to seven percent. Reisigl believes „it will take less than six years for the additional expenditure for the highly insulated building envelope, the triple-glazed windows and the ventilation system to pay for itself."

Jürnjakob Reisigl also assumes that the Passive House standard of hotel marketing is useful and attracts costumers. Due to the high quality of construction and the comfort ventilation system, that is really easy to use, the climate in the rooms is perfect. He believes that ecology and energy saving goes down well with customers in general.

This is reflected in the number of reservation requests. However he says that this is not only due to the innovative energy concept but also the designer bathrooms, stylish rooms facilities, warm wood tones, a sport spa area with latest fitness and cardio equipment for advanced training opportunities as well as sauna & steam room and of course the Explorer lounge with multi-touch screens. The Explorer Hotel presents itself as a chic and easy going Sports Resort; it is inexpensive, but not cheap. Jürnjakob Reisigl tells us „even though we are cutting back on energy consumption and heating costs we are definitely not cutting back on comfort."

Explorer Hotel Montafon

FACTS

Location:
Austria Gaschurn

Planning and construction time:
2012-2013

Client:
Explorer Hotel Nesselwang
GmbH & Co. KG

Contact for the client:
Mr Reisigl

Building volume:
10.500 m³

Building cost:
10,7 Mil.

Services provided:
Passive House Planning
Detailed Planning
Building Measurement
Certification Coordination

Energy Standard:
Certified Passive House

Project Supervisor(s):
Mr Herz, Mr Blaas, Mr Quinn

Project Manager:
Rhomberg Bau

PROJECT STATUS

- [x] Realised project
- [ ] In Planning
- [ ] Competition
- [ ] Energy concept

The Explorer Hotel Montafon Gaschurn / Vorarlberg is the first Passive Hotel in Austria. The concept of the Explorer Hotel Oberstdorf (Fischen i. Allgäu) a Passive Hotel (99 rooms) with spa was used as a base for design and then furthered developed. The highest building standard was achieved along with low follow-up costs in maintenance due to the Passive House construction.

Art Museum Ravensburg

FACTS

Location:
Burgstraße 9, 88212 Ravensburg

Planning and construction time:
2010-2013

Client:
Reisch-Bau Gbr

Contact for the client:
Mr Reisch

Building volume:
6.300 m³

Building cost:

Services provided:
Energy Efficiency Planning,
Building Physics, Detail Development
Passive House Planning
Building measurement
Coordinating certification

Energy Standard:
Certified Passive House

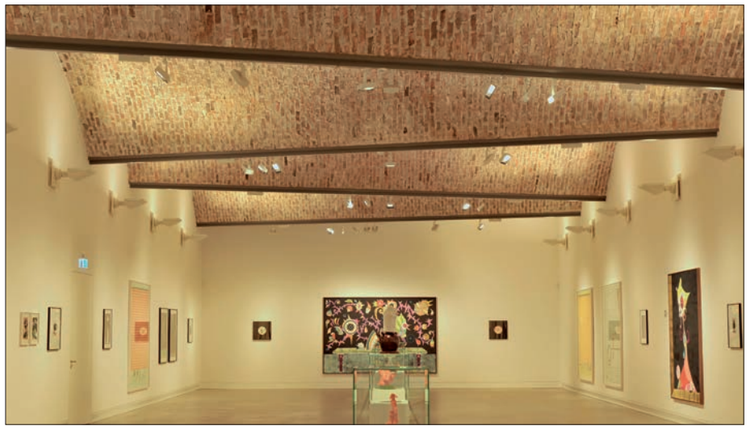
Project Supervisor(s):
Mr Lang, Mr Schmerker

Project Manager:
Reisch-Bau Gbr

PROJECT STATUS

- [x] Realised project
- [ ] In Planning
- [ ] Competition
- [ ] Energy concept

The world's first Passive House certified museum was built in Ravensburg. The Stuttgart office Lederer Ragnarsdóttir Oei has won the German Architecture Award 2013 for the museum. The building is not only aesthetically pleasing but also contributes to the concept of sustainability and a high-energy standard. A museum in Passive House design places high demands on all involved. One of these challenges was dealing with the minimal amount of windows in the museum which was due to the fact that the paintings must be only lit with artificial light.



Hotel and Resort Sonnenalp

herz-lang.com

The Hotel Sonnenalp in Ofterschwang is Germany's leading wellness hotel. However, the 5 Star Wellness Resort is number one in a different category as well.

Apartments for approximately 60 employees are available in the two newly built Passive Houses. This was the first Passive House built in the German hotel industry. The planning office of Herz & Lang was responsible for the building physics and quality management.

The old staff accommodation was only a stone's throw from the hotel, even in the 1960's it was unusual to have the employee accommodations so close to the main building. "The employee accommodation was quite outdated and because a renovation would have been more expensive, we decided to build a new employee accomadation a few hundred meters away" says Sonnenalp CEO Michael Fäßler.

„From the beginning, we were clear that the new housing had to meet a high standard of energy efficiency and we wanted to build with the future in mind."said Fäßler. It is also important from an economic stand point, for a hotel to save energy, thereby reducing cost. This is a way of thinking that has always been part of the Sonnenalp concept. Even Sonnenalp Senior Chef, Karlheinz in keeping with this concept decided to build a co-generation plant. For some time, much of the hot water demand, which is significant in a spa hotel, was met by recovering heat from the cooling and ventilation systems. An eco-friendly wood-chip boiler provides warmth for each hotel room. Every year the 444-bed operation costs around one million euros in restructuring measures. „With this in mind the aspect of energy efficiency always plays a very important role," says Michael Fäßler.
The company invested five million euros in the construction of the Passive House staff accommodation. „Medium and long term money well spent." says Michael Fäßler. The successful hotelier appreciates that to build apartments only with a conventional energy standard would indeed have been 10 to 15 per cent cheaper, but if the prices of heating oil and gas continue to develop as in the past, the additional costs due to the energy savings will have paid for itself in twelve years.

The project has caused a stir in the industry. A number of colleagues from the hospitality sector have marveled at the fact that the Sonnenalp staff were staying in high quality accommodation on par with that of the high end rooms for guests in the 5 star hotel. The Sonnenalp boss can only smile about it, pointing out how important it is that the hotel staff feels comfortable and totally motivated to go work every day. In fact, the employees are overjoyed with their new Passive House standard homes.
„Also the marketing issue cannot be underestimated," adds Dieter Herz „The guests will see that the Sonnenalp Hotel takes the issue of climate change seriously."

Experts see huge energy savings, especially in the hotel sector. Every euro not spent on energy is a euro I will invest in our service, which therefore goes to the satisfaction of the guests. In the hospitality industry approximately seven percent of sales goes towards energy costs „We now have our energy costs at four percent," said Michael Fäßler. „This is a very small amount for when dealing with a 5 star Hotel."

FACTS

New
Passive House certified,

Location:
Ofterschwang / Allgäu

Building use:
Staff building, 60 apartments

Architecture:
Architects Unzeitig GmbH

Professional Passive House planning/ structural timber planning:
Herz & Lang GmbH

Type of building:
Wood-frame construction

Energy concept:
District heating systems, renewable comfort ventilation

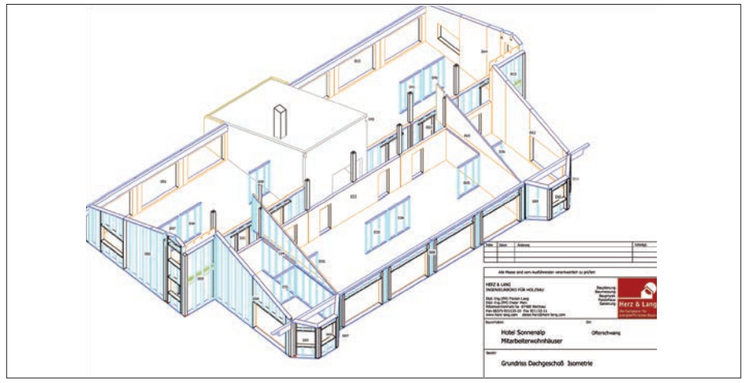
Energy reference area:
1087 m² (PHPP)

Energy demand:
13 kWh / m² a (PHPP)

Ecological aspects:
Renewable energy and building materials, local craftsmen

GREENBUILDING

Certified Passive House



First Prison in the Passive House Standard worldwide

herz-lang.com

In Korneuburg / Lower Austria a project was developed that has already received an EU award.

The new Justice Center in Korneuburg / Lower Austria is considered a pioneering pilot project for buildings of this scale. Lack of space in the old building and the expansion of the district court meant that Korneuburg required a new building. The Allgäu planning office Herz & Lang accompanied this innovative project. Managing director DI (FH) Florian Lang presents the first Passive House for the Bundesimmobiliengesellschaft (BIG, Federal Property Association)for a federal authority and at the same time the first Courthouse Center in Passive House standard in the world.

The client, the Federal Property Association (BIG) wanted to be convinced first before implementing the building in PH standard. The architecture firm DIN A4 and the Passive House consultants Herz & Lang have this mastered together as they have already proved this on their first joint project, the Lodenareal in Innbruck. Another challenge was the fact that investment and maintenance are in different hands. The construction period was between 2009 and 2012 - the project has (with Dieter Mathoi architects and architecture firm DIN A4) received an award: the first prize as the part of an EU wide competition.

Challenges in planning

The first Passive House BIG has constructed for a federal authority left nothing to be desired when it came to challenges: the compactness of the court proved favorable for the Passive House standard. „The prison, however, is anything but compact and along with the high security requirements remained a major challenge," says DI (FH) Florian Lang of Herz & Lang GmbH.
The joint venture of Herz & Lang and AIROPTIMA delivered the Passive House know-how to this pilot project.
They carried out both the Passive House and thermal bridge calculations. Both companies are active members of the IG Passivhaus Tirol. The joint venture has advised the planning team in the Passive House specific detailing, with respect to thermal bridges and air leaks. Just as in the selection of suitable components and a Passive House suitable ventilation concept.

The accompaniment of the Passive House certification was conducted in accordance with the criteria from the Passive House Institute. In addition to the quality assurance during construction Herz & Lang and AIROPTIMA also trained the craftsmen. This included onsite training and also training on the Passive House requirements.
The exterior walls of the court were completely prefabricated as timber facade elements. Special attention was paid to the air tightness of the main building connections e.g façade element to the building structure and the elements to each other.
"An air tightness (Blower Door) measurement was carried out for the entire building. During the construction phase it was only possible to test a small section through the installation of temporary walls," says Florian Lang, „therefore the details and instructions needed to be agreed on in advance and then to be visually inspected by us onsite."
The high security requirements partially reduced the thermal insulation (window systems, glazing and thermal bridges) and the air-tightness of the windows (special seals), which always had to be taken into account in the integral planning and energy balancing in order to maintain the certification standard.
The prison (13,200 m2) and the courthouse (12,300 m2) were structurally separated. An underground connection between the two buildings is used for screening of prisoners in the court area, without allowing them to come into contact with witnesses. Furthermore, modern interrogation rooms and an optimally designed visiting area will be available.
There is a technical demand on the offices of the judges, prosecutors and the court rooms; due to the fact that this is a new building of course all of the technical requirements were already in met.
Self functional units
The Court as a major public building fits in very well into the city center and the prison will not only be partially integrated into the existing building structure but also maintain the open space aspect of the area.

There was a decision made during the preliminary design to plan the project beyond the current building requirements and to plan the building as a Passive House - in this size and type of building use (court and prison) the JZ Korneuburg is a pioneering pilot project. The court is designed as a compact structure with multi-storey access courtyards and also internal courtyards which have been designed to receive a lot of daylight. To avoid an insight into the ground-floor court rooms, sections of the ground floor level have been raised by 30 cm, along with the band of windows on the ground floor. The prison is divided into several structures each having a separate function. The outside security of the building which integrates into the façade then brings each structure together again to give the appearance of one solid unit.

FACTS

Location:
Korneuburg/ Niederöstterich

Planning and construction time:
2009-2013

Client:
Architekten Dieter Mathoi und din a4

Contact for the client:
Mr Mathoi, Mr Messner, Mr Prackwieser

Building volume:
52.9040 m^3

Building cost:
65 Mil.

Services provided:
Passive House planning
Building measurement
Coordinating certification

Energy Standard:
Certified Passive House

Project Supervisor(s):
Mr Lang, Mr Blaas, Mr Vibert

Project Manager:
Architects Dieter Mathoi and din a4

PROJECT STATUS
- [x] Realised project
- [ ] In Planning
- [ ] Competition
- [ ] Energy concept

Passive House tuner turns the energy screw

herz-lang.com

It is one of the **world's largest passive house projects** ever undertaken. At the Lodenareal in Innsbruck 354 housing units have been built.

Herz & Lang played a crucial role. The the team of experts at Herz & Lang not only trained the architects, engineers and craftsmen during this building process, but was also responsible for quality assurance. News has spread all the way to Vorarlberg and Tirol, that there is planning office in "Oberallgäu" that built Bavaria's first Passive House in 1998, and has since been the leader in their field when it comes to Passive House construction.

Even with all the knowledge that both Dieter Herz and his partner Florian Lang have acquired in the past 13 years after having built 50 Passive Houses, 100 energy efficient houses and several high quality renovation with Passive House components (Level 10- renovation), the major project in Innsbruck presented a special challenge. The size of the project alone was daunting enough. The building contractor "Neue Heimat Tirol" has erected four large apartment complexes with a total of 354 apartments on the "Lodenareal", a former industrial district. These are not luxury apartments for young urban professionals but rather social housing. **The objective was low heating costs and active climate protection.** Both have been achieved and have caused a stir in the residential construction industry.

According to Dieter Herz, Tirol Bavaria and other states in Germany are clearly ahead when it comes to energy efficient housing. In particular, the "Neue Heimat Tirol" (NHT) as a non-profit real estate developer has recognized the long term benefits of a Passive House design.

In Germany, all too often the builders think in the short term, and choose the cheapest option. However, due to constantly rising energy prices, NHT, along with CEO Professor Dr. Klaus Lugger, have put great emphasis on quality and sustainability.
Not only is the size of this project unusual, with 354 apartment units, but the use of the latest energy efficient technology is also unprecedented in a building project of this size. Unlike in other Passive Houses, the heating and ventilation system are separated and completely independent of each other, which allows the temperatures to be controlled room by room. Herz & Lang took over the role of "Tuner" on the Innsbrucker Passive House Project. "We have perfected the design as well as the implementation of energy efficiency and executed the construction with economic efficiency."

Herz & Lang prepared the craftsmen involved, on their tasks, through workshops. The requirements are significantly higher on a project like this, than on a conventional build. The construction of a Passive House presents a challenge to architects, engineers, and craftsmen alike. **"They have to learn and improve their skills,"** says Florian Lang. "The companies involved in the Lodenareal project were ready for the job."

We are expecting that more and more building companies in Bavaria constructing multi-story buildings will opt for a Passive House design. Given the development of energy prices, there is no way around it.


Neue Heimat Tirol

FACTS

New
World's largest certified
Passive House (in 2009)

Location:
Innsbruck / Tyrol

Building use:
Social Housing, Building 4,
354 residential units

Architecture:
din a 4 & K 2 team architects,
on behalf of the Neue Heimat Tirol

Professional Passive House planning:
Herz & Lang GmbH

Type of building:
Concrete construction with an
external insulation system

Energy concept:
Pellet, peak gas
Solar plant
Comfort ventilation

Energy reference area:
26,000 m² (PHPP)

Energy demand:
13 kWh / (m² a) (PHPP)
8 kWh / (m² a) (OIB-Tirolean Passivhaus)

Ecological aspects:
Renewable energy
Pilot Project for Climate Protection and
the buildings of the future in Europe

Certified
Passive House


Neue Heimat Tirol


Neue Heimat Tirol

The first ever Olympic Passive House Village

herz-lang.com


Neue Heimat Tirol




Neue Heimat Tirol

FACTS

New
Olympic Village in
Passive House Standard

Location:
Innsbruck / Tyrol

Type of building:
Social Housing, 13 buildings, 450 WE

Architecture:
Argentina Reitter-Eck & Rider, a4
On behalf of the Neue Heimat Tirol

Professional Passive House planning:
Herz & Lang GmbH

Type of building:
Material design
Concrete / insulation system
Concrete / wood elements

Energy concept:
District heating
Solar plant
Comfort ventilation

Energy reference area:
29,600 m^2 (PHPP)

Energy demand:
17 kWh / (m^2 a) (PHPP)
<10 kWh / (m^2 a) (OIB-Tirolean Passivhaus)

Ecological aspects:
Renewable energy and building materials

Innsbruck is looking forward to the first Youth Olympic Winter Games 2012 and the planning office of Herz & Lang is excited to take on this very special project!

As the delegated consultants on Passive House builds, the energy efficient construction company from Weinau (Oberallgaeu) played a central role in the building of the Olympic Village. Thirteen buildings, with around 450 residential units were built in the Passive House design, for over 1000 young athletes, ages 14-18 years, from 70 countries around the world.

It will be the first Youth Olympic Winter Games in history. Because of this, Herz & Lang is even more proud to have played a part in the construction of this build. The time given to complete this build was extremely short. In December 2009 the Herz and Lang team broke ground, and the project was to be completed by October of 2011. "The tight schedule presented a great challenge to all that were involved," explained Florian Lang. All the more reason for Herz & Lang to coordinate the process from the beginning, which was one of their main tasks. **"We have perfected the design as well as the implementation of energy efficiency,"** said Lang. For this reason, Herz & Lang sent their staff and all craftsmen of the companies that were involved, to participate in a workshop on what it means to build according to Passive House standards. „The requirements are of building a Passive House are significantly higher than on a conventional build," added Lang, who is also responsible for quality control.
The "Neue Heimat Tirol" (NHT), is the largest property management company in the state of Tyrol, and very innovative. Although in a large multi storey building they always seek to find the cheapest solution possible, high quality and sustainabilty are never compromised and is always given the upmost importance in a project by Professor Dr. Klaus Lugger and engineer Alois Leiter.

The new Olympic Village in Innsbruck, whose apartment units are to be sold or rented out after the Olympic games, is not the only proof. In the Innsbrucker Lodenreal, under the direction of the experts at Herz & Lang, NHT built four large apartment complexes with a total of 354 units. The Olympic Village in Innsbruck, in view of rising energy prices is another example of how to deal responsibly with public funds.


Neue Heimat Tirol

++ 13 buildings with 450 condos, built in the Passive House design ++

++ short construction period, high quality build ++

Residential and Commercial Building

FACTS

Location:
Baaderstraße 7, 80469 Munich

Planning and construction time:
2010-2013

Client:
Peter Fink Architekten GmbH

Contact for the client:
Herr Fink

Building volume:
10.971m³

Building cost:
5 Mil.

Services provided:
Energy Efficiency Planning, Building Physics, Detail Development Construction Management Building Physics, Funding Advice, Building Measurement

Energy Standard:
Effizienzhaus 55, EnerPhit Pilot Project: Redevelopment with Passive House components.

Project Supervisor:
Mr Schmerker

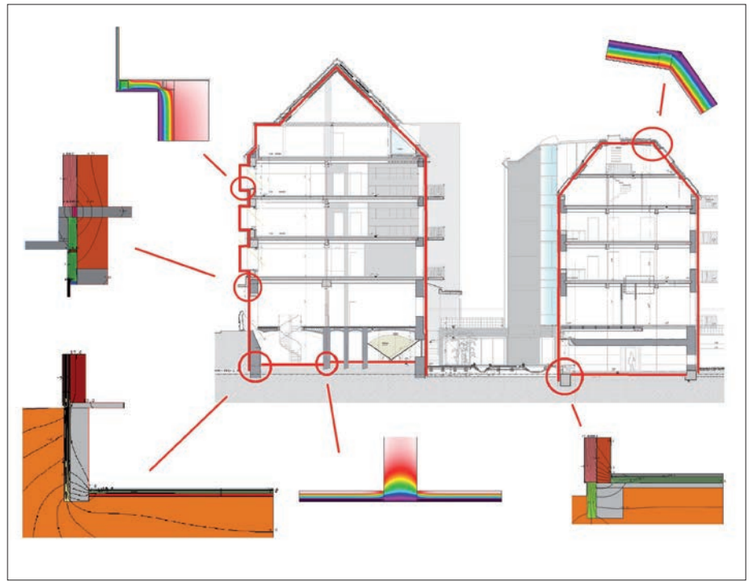
Project Manager:
Peter Fink

EnerPHit
Qualitätsgeprüfte Modernisierung mit Passivhaus-Komponenten
Dr. Wolfgang Feist

PROJECT STATUS

- [x] Realised project
- [ ] In Planning
- [ ] Competition
- [x] Energy concept

The project was accepted as a EnerPHit pilot project, the planning had been pre-certified in 2011 and achieved final certification in 2013. The certification process required planning and greater effort in construction management including the four-eyes principle. This has ensured that the calculted energy values match that of the values in reality.



Children´s House Papperlappap Bodnegg

FACTS

Location:
Dorfstraße 20, 88285 Bodnegg

Planning and construction time:
2012-2013

Client:
Bodnegg Town council

Contact for the client:
Mayor, Mr Frick

Building volume:
1.890 m³

Building cost:
1,4 Mil.

Services provided:
Workshop Planning
Detailed Planning
Noise Protection Planning
Passive House Planning
Grant from KEA

Energy Standard:
Certified Passive House

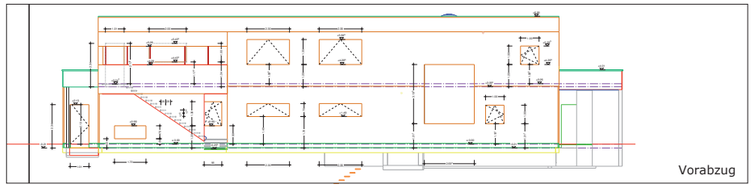
Project Supervisor(s):
Mr Schmerker, Mr Endras

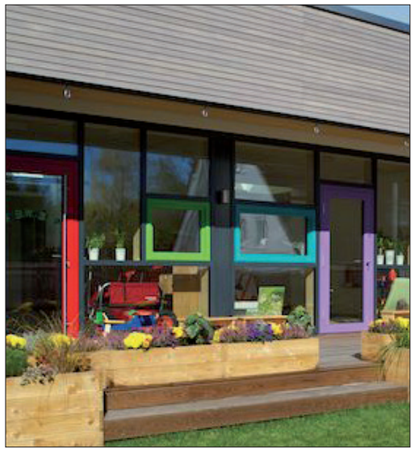
Project Manager:
Dagmar Lorentz

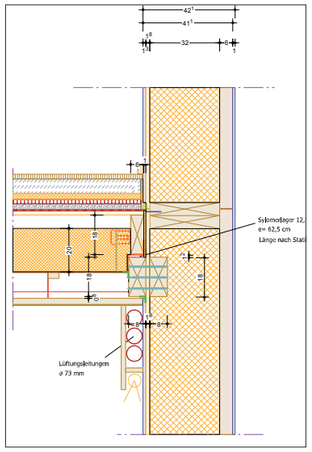
PROJECT STATUS

- [x] Realised project
- [ ] In Planning
- [ ] Competition
- [x] Energy concept

A pre concept with economic analysis was completed and presented to the County Council. After this presentation it was decided that the target would be a certified Passive House. The result was a split level timber-frame building with a highly insulated, thermal-bridge free and airtight building envelope. We were involved in the integrated design process with both the detailed and workshop planning. This ensured the quality of the energy efficiency construction management and also the building measurements. Highest energy efficiency in ecological timber construction with renewable energy now provides maximum environmental protection. The project was funded by the State of Baden-Wuerttemberg as a model project of the KEA.







„Certification assures high quality“

Florian Lang
DI (FH)

Dieter Herz
DI (FH)

When Herz & Lang construct or consult on a Passive House it is done so to certification standard. This is not only because it is an important seal of quality by an independent agency but also so that the client can see in black and white that they truly have a Passive House. Herz & Lang believe that the certification process also provides a more accurate planning, higher quality of construction, a more intensive consultation of all stakeholders, and at the end of the day a better result. We spoke with Dieter Herz and Florian Lang, the two managing directors of Herz & Lang, about the benefits of Passive House certification.

How does the certification process of a Passive House work?

Dieter Herz: The Passive House certification is a process with a preliminary and final testing using the four-eye principle. Right from the planning phase information is gathered on all products used, then the certification body will issue a report. Quite often there are missing documents, planning errors or unsuitable products found. The documents must be completed and any deficiencies remedied. Experience shows us that it is advisable for the consulting company to engage as early as possible in the planning phase. This utilizes the consulting team and gives great benefit towards the development and optimization of the concept. It also helps with the training of the planning and construction teams involved.
Florian Lang: The Passive House is very demanding on all parties and can still be uncharted territory for people experienced in the construction industry. Therefore, it makes sense to get advice from real experts. After the planning phase and the preliminary certification the next step is the qualified tender with the bill of quanties, including stipulation of building materials and products. After reviewing all the technical aspects the plans are handed over to the qualified craftsmen and project managers. When the project is completed, the ventilation system is regulated. Only after the test results from the final air tightness measurement and evidence of installed products are complied the certificate is issued.

Who can carry out a certification?

Florian Lang: Worldwide, there are 25 accredited certifiers appointed from the Passive House Institute in Darmstadt. In Germany there are nine. Included in the nine are architects, consultants, universities and institutes. We are one of them, as through many years working with successful Passive House projects we have proven ourselves competent. Of course when it comes to our own projects the certification must be carried out by an external certifier.

Why in Germany are less than five percent of all houses declared to be Passive Houses certified?

Dieter Herz: Firstly many builders, craftsmen and contractors try to reduce construction costs by reducing the planning. But an essential part of the certification is currently a qualified comprehensive planning of all trades. Moreover many architects and planners avoid getting an additional planner or quality inspector onboard for the thermal insulation and building services. Without an additional planner in these important area the gates are open to carrying out wrong procedures, planning approaches, calculations and unsuitable products. This in turn would not only lead to additional costs in the planning, but also could lead to an increase the cost of construction. And that would, of course cause problems with the builders.
Florian Lang: So many craftsmen, builders, architects and engineers prefer to rely on their experience that they have gained during the construction of energy efficient or Passive Houses in the past rather than go down the road of certification. For a quality orientated building contractor who wants to have a house that does exactly what it says on the tin, then there is no question, certification is the only way to go. He is happy to pay the 1500 Euros cost for the certification to have the reassurance that the house has achieved the Passive House standard. This decision is easily made when considering that the qualified planning helps avoid unnecessary costs during the construction phase and also avoid high maintenance costs of the building. Most importantly there is an objective quality certificate at hand which is of great value when it comes to leasing or selling. Considering all of this the cost of certification is not worth talking about!

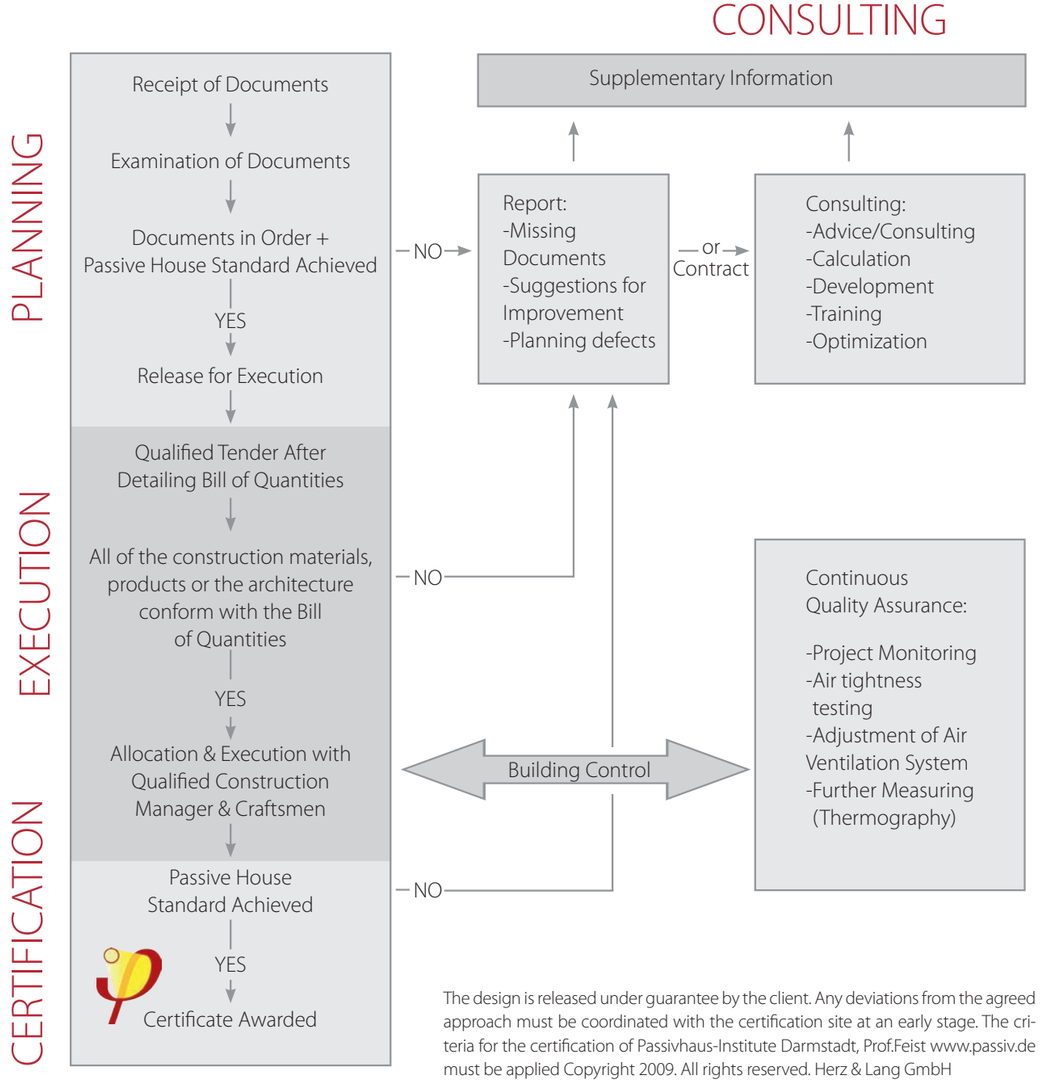
What other benefits does certification have for the building owner?

Dieter Herz: To sum it up: better planning, better products, better construction and lower cost. In the end the client has the assurance that his house consumes the same amount of energy as was planned. The Passive House concept is now 20 years old, but the skilled planning and execution is still not today's standard. At the same time it should be noted that the Passive House concept has the highest rates of growth in construction and more and more companies want to serve this market.

Confidence is good, control is better?

Florian Lang: A neutral view of the plans, details, products and calculations assures the builders and planners of the Passive House standard and that's what is behind the continuing education courses to become a certified Passive House Designer and the four-eye principle of Passive House certification.
Dieter Herz: Although the Passive House certification is much more than a check. Passive House certification basically means quality management, quality management that targets right from the concepts creation. Unfortunately however in construction today a lot is still left to chance. This is especially true when it comes to the private house building sector where there is virtually no integral planning.
Florian Lang: The Passive House certification process is making everyone coordinate and communicate. This helps to detect errors early, before a correction is expensive or even impossible.

The way to the quality proofed Passive House in planning, execution, certification



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