# Winners of Active House Awards 2018 announced in Lecco

**7 November, Lecco, Italy** – Active House Alliance, the network of companies sharing a vision of buildings that create healthier and more comfortable lives for their occupants with no negative impact on the climate, selected the winner of its 2018 Active House Label Awards at its international Symposium in Italy today.

This year's contest is the third in a row, brought to life to promote the Active House Label. The Label is a tangible reflection of the Active House vision and a worldwide quality stamp for comfortable and sustainable buildings. It advises on elements that are important to people's lives and their homes.

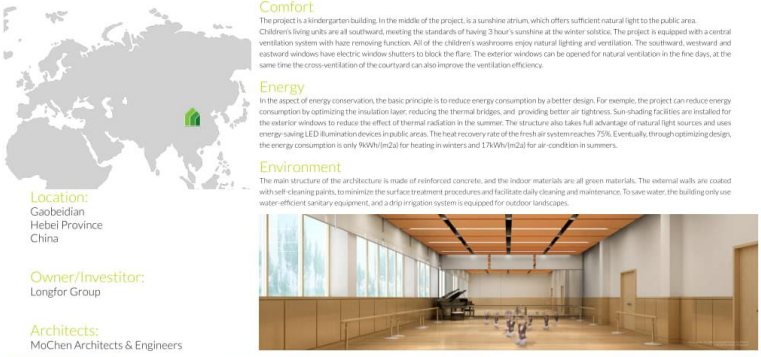
Exceeding the expectations, the contest gathered 35 excellent submissions from across the world. All the projects were assessed by a highly professional jury composed of international building experts, including Marco Imperadori, Professor, Politecnico di Milano (Italy), Eileen Meyer, architect and co-founder of ActiveHouseItalia (Italy), Shaun Joffe, executive director, Great Gulf (Canada), Bas Hasselaar, architect, DGMR (Netherlands), István Kistelegdi, research professor, University of Pécs (Hungary) and Emilia-Cerna Mladin, professor, Polytechnic University of Bucharest (Romania).

The submissions were divided into four categories of projects. The jury named winners for each of the categories and an overall winner of the Active House Awards. Categories are: designed projects without radar, designed projects with radar, built projects without radar and finally built projects with radar. With two categories having two projects each tied for the winner position, a total of 6 projects ended up winning Active House labels in the four categories.

# Four categories, six winners

## Winner of the Designed projects without radar category

**Kindergarten of Longfor Gaobeidian Railway City:** The project shows how is important design for education in a nice and articulated space with consciousness about energy approach and comfort by using natural/zenital light and possible natural ventilation.


## Winner of the Designed projects with radar category

**Wetland Museum of GuanTing:** Applying the Radar and AH approach to a Museum is a very clever and innovative way to show that AH principles are not limited to housing but also possible for more complex buildings. In this case the outside shape shows a compactness which is then very well solved in the inner spaces and always keeping in mind: energy, comfort and environment. Thus a very inspiring project indeed.


Location:
GuanTing Wetland Park
Zhang JiaKou
China

Owner/Investitor:
Forestry Bureau of Huailai

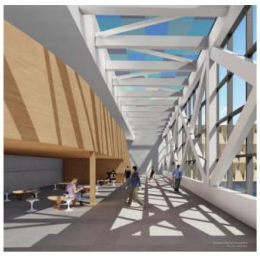
Architects:
Ren Jun, Jiang Nan

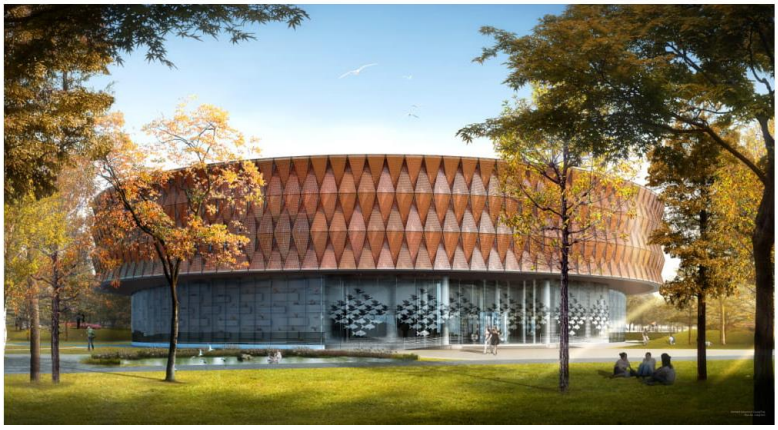
### Energy

In terms of energy saving, considering the features of cold area where the museum is located, ring form that has a low shape coefficient is chosen, and high-insulation enclosure system and curtain wall system (exterior wall K=0.29w/m2.k and exterior window K=1.80w/m2.k) are used to minimize energy use. As electricity is the only energy source in the wetland park, suitable VRV system is used for heat and cold supply, and LED lamps are used for lighting. In terms of solar energy utilization, colored film PV corridor and roof solar water heating system are set, with a renewable energy utilization rate of 6.1%.

### Environment

An elevated overall structure is designed for the building to reduce the impact on the wetland ecosystem. The ultra-low energy consumption design and operation strategy of the building reduce carbon emission throughout the life cycle. The low illumination nightscape lamps and the patterned glass curtain wall can prevent bird strike. The low impact development (LID) designs such as rainwater garden and constructed wetlands as well the high-efficiency sewage treatment system help to reduce water discharge, leading to a water conservation rate of 45%. Steel frame system is used for the building structure, and integrated wall board of high overall thermal insulation performance is used for the exterior wall, with outer surface made of copper-aluminum composite board that changes with time and has a service life of 100 years. The proportion of recyclable building materials used for the building 70%.





## Winners of the Built projects without radar category

**S8:** Extremely interesting building with a very nice articulation of volumes in a small shape. Interior design, double height spaces which can create a chimney effect in hot/middle seasons, beautiful inner light and also outside views make this small example a very creative one even in a small single family house.

# #ActiveHouseAwards2018

S8

activehouse

Read more at
www.activehouse.info

Learn more at
www.activehouse.academy

Location:
Silberdisteiweg 8
22391 Hamburg
Germany

Owner/Investitor:
Wolfram Trinius

Architects:
Wolfram Trinius, Kai Steppan

### Comfort

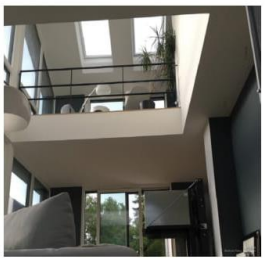
The ambition on energy performance was paired with the explicit vision on the future living environment, with key aspects of a melting interior–exterior boundary where rooms would expand from the inside to the outside, and where the availability of daylight with the experience of daytime and seasonal shiftings was a paramount interest. The L-shaped footprint with rather narrow dimensions allows all rooms with a residence function (living room, kitchen/dining room, master bedroom) to be flooded with daylight from two opposing directions. The living room features a floating gallery, open to the second floor's roof top, including north-faced skylights. The shape of the room acts as a light-chute. Windows and sliding doors are truly floor to ceiling, two of the buildings gables are completely glazed. Overheating is prevented through integrated external venetian blinds, allowing control and protection of light and views, the massive construction shows provides energy storage and retardant capacity. The geothermal heat pump system features a natural cooling function. In total, the indoor temperature can sustainably be stabilized – this summer (with max temperatures close to 40 degrees Celsius) resulted in indoor air temperatures never above 24. Side effect of summer cooling is the reheating of the geothermal bore holes. A mechanical ventilation system with heat recovery (>90%) is installed – however natural ventilation can be applied through operable windows in all rooms. A KNX-based control system is installed, smart home functions however are reduced to what the users find appropriate rather than oriented at what technically would be possible.

### Energy

The ambition to design and build a net zero or net surplus energy building was one of the basic design goals. The planning team and constructors involved typically build 30% below German energy requirements, their clients would not demand better. With regards to the company's and the craftsmen's experience, the building owner acted as energy and construction consultant, starting the overall energy concept, including selection and sometimes tendering of technical components. Refinements typically stayed within the builders' standard solution, but increased insulation, exchanged to higher performing materials, included higher performing components. The resulting total energy demand of the building lies at 32kWh/m2a or at 1/3 of the regulatory reference building. Heating, cooling and domestic hot water is provided by a geothermal heat pump system with a COP > 5. Electricity is produced by a 8,8 kWp PV installation with a 10kWh energy storage. The expected annual energy production exceeds the buildings energy demand (including user appliances) by more than a factor 2. Surplus energy is fed to electric mobility, projected to fuel 12,000km annually. Seasonal variation is fed to or purchased from the grid. The measures are: increased insulation and replaced materials in the building envelope, high-performance windows and doors at passive-house-performance levels, heat recovery in ventilation system, energy efficient lighting (LED), 8.8 kWp PV installation and geothermal heat pump system

### Environment

The building owner is an LCA expert and sustainable construction consultant. For this project LCA and LCC have been conducted to identify hotspots of concern and to support and validate technology and material selections. The featured building is not an "ecohome", but on the basis of life cycle considerations, materials have been carefully selected, but were often limited with regards to practice and experiences of the builder and craftsmen. Indoor air quality was addressed by the preselection of all relevant materials, where the DGNB assessment criteria in the highest category were applied as target. Rain water is collected entirely and directed to an on-site percolation. Pipeworks for future completion of a rainwater supply for toilet flushing and washing machine are pre-installed. Fresh water use is reduced through reduced volume water installations (this is however rather standard).



**Skygarden House:** Very elegant and creative design which shows how a single family house can be designed in a small plot by a dialectic strategy between the outside shape (simple and compact) and the inner volumes (articulated and very well connected).

# #ActiveHouseAwards2018

## SKYGARDEN HOUSE

activehouse

Read more at
www.activehouse.info

Learn more at
www.activehouse.academy

Location:
Toronto, ON
Canada

Owner/Investitor:
Private owner

Architects:
Dubbeldam Architecture + Design

### Comfort:

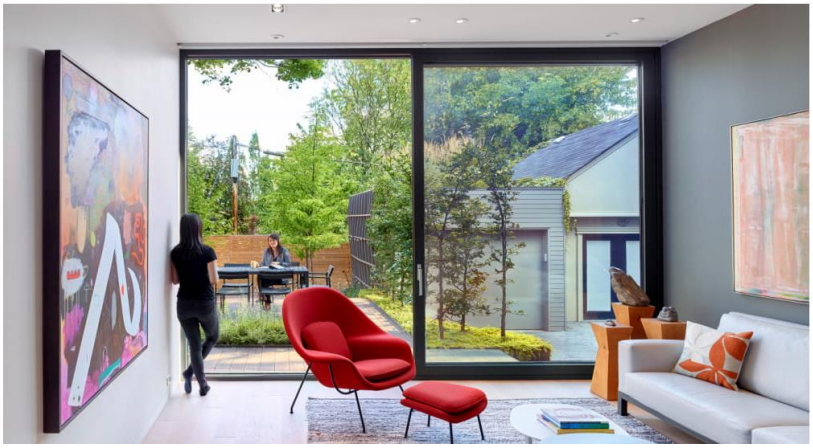
The renewal of this 100 year old, 225m2 three-storey residence on a small urban lot is a transformation of an old leaky house into a highly efficient home, using a few active sustainable systems (radiant infloor heating) integrated with multiple passive sustainable strategies to maximize energy savings and cost. A central light and air shaft - an open-riser stair topped with large operable skylights coupled with strategically placed operable windows - creates a stack effect in the cooling season, drawing warm air upward and cool air in the lower levels. The light shaft also brings natural light deep into the centre of the house to optimize daylighting. The large glazing areas provide passive solar gain in winter and solar exclusion in summer (with the help of a large tree). High performance insulation, an airtight building envelope and mechanical ventilation with energy recovery reduces mechanical air conditioning and increases comfort levels.

### Energy

The house's mechanical and electrical systems are completely integrated with the passive design strategies to achieve the most efficient methods of heating, cooling and lighting while minimizing energy costs. Natural ventilation through operable windows and the central operatem that significantly reduces energy use compared to a standard air conditioning system. The green roofs and high performance insulation help to reduce heat loss and gain through the building envelope. Photovoltaic panels on the roof are planned for the future - rough-in wiring was installed to allow for later installation as well as for a Tesla battery to take advantage of storage of electricity at lower cost time periods. The integration of these systems results in improved building performance, energy conservation, and occupant comfort with an annual energy consumption of only 75.8 MJ/m2 (taken from owner's utility bills).

### Environment

Life Cycle Analysis was a strategic part of the renovation process. The existing masonry exterior side walls of the house were maintained and existing appliances, doors, furnace and radiators were donated. FSCcertified lumber and flooring was used and interior wood cabinet wood products include formaldehydefree wood products. The plumbing runs through PEX tubing made from cross-linked HDPE polymer rather than copper (lighter weight for shipping and less material used in installation). The exterior wood is a thermally-treated ash, made from the destruction of ash trees due to the emerald-ash borer disease. All plumbing fixtures are low flow to minimize potable water use. Domestic hot water is supplied 'on demand' from the radiant heating system boiler, reducing potable water wastage due to wait times. In the design of the landscape, rainwater collection for irrigation is incorporated in a cistern at the back of the yard, reducing potable water consumption for plants.



## Winner of the Built projects with radar category

**Casa sul Parco:** Casa sul Parco is a very elegant, clever and contemporary building inside an historical park and city center in Fidenza (Italy). The volumes are very well connected, and Energy strategies are well balanced with morphology and aesthetics. This shows how energy Efficient Buildings can be expressive and unique, attracting developers and stimulating new clients.


### Comfort

Natural illumination was particularly important for the project, due to location in the natural park of Fidenza and as one of the main commercial topics of the object. The different flats were checked by Daylight calculations and improved with the size of the windows. The negative overheating risk is controlled by mobile and fixed shadings and by a cooling unit (geothermal heat pump). Also the trees around of the project where included in the shading concept. Air quality is handled by the mechanical ventilation system and monitored by CO2-datalogging and remote alarm to the constructor. Thermal comfort is optimized by a certified passive house envelope, which gave maximum of guaranty for winter and summer comfort.

### Energy

The project started as a certified Passive House construction. The reached goal asked to stay under 15 kWh/m2a for heating and cooling demand. To reach it, the constructor improved air tightness (n50 = 0,58), transmittances (< 0.15 W/m2K), windows (glazing at 0.6 W/m2K), thermal bridges (calculated and reduced) and mechanical ventilation with high heat recovery (84%). A geothermal pump was adopted to raise the use of renewable energy. The heating COP is on 4.8, the cooling on 3.8. There are two heat pumps to improve performance for mixed mode (cooling/hot water production). Further the constructor adopted a building dedicated PV-Plant (prohibited on site for place protection law) which for validation and certification issues was NOT included in the calculations.

### Environment

Environmental aspects were cared from the beginning as it was constructed in the center of the city in a natural park. To guarantee either earthquake stability and recyclability the constructor decided for an ICF-building with highly recyclable materials and recycle guarantees from the producer. Only 2 apartments of 10 have a little garden. For this reason the construction concentrated water reduction on flow limitator and water saving installations. In a special meeting for the new apartment-owner was explained importance of water saving home appliances.

**Location:**
Via Gramsci 82
Fidenza
Italy

**Owner/Investitor:**
Montanari Costruzioni Srl

**Architects:**
Studio del Boca & Partner, Giovanni Rossi & Partner

**CIS - Copenhagen International School:** Volumes, inner and outer, skins with integrated PV, openings for natural light and ventilation, insulation, thermal delay, clever energy strategies make this building to be a visible Milestone for any future design related to sustainable buildings.


Location:
Levantkaj 4-14, 2150
Northern Harbour
Copenhagen

Owner/Investitor:
ECIS, Ejendomsfonden CIS,
The foundation of CIS

Architects:
C. F. Moller Architects

## Comfort

The C02 concentration level is :≤: 500 ppm above outdoor C02 concentration in most of the rooms. On the Active House radar the result it equal to a satisfaction level 1. The temperature level is identified for the worst case to level 2 in the Active House radar which means that it is in the range between 20 and 26 degree Celsius during the year. The reason for the good results are due to decentralized ventilation systems, which is designed according to DS/EN 15251 Category II providing a high air exchange. The lighting quality is also good based on a combination of LED lighting and access to daylight. The windows area has an average ratio of around 32 % of windows area over floor area, which ensures a very good daylight factor inside the rooms of 5.1%. There is also no emissions from heating and cooling systems since the school uses district heating and district cooling. See online Indoor climate data in: http://labs.leapcraft.dk/cis/

## Energy

Total energy demand is 30,1 kWh/m2 based on a heating and electricity demand of 16,7 and 13,4 kWh/m2 respectively. The actual heating use is based on a very good insulation of the building envelope, district heating as heating supplier, MVHR with 82% efficiency and mechanical cooling is installed with an efficiency of 3,98%. Approximately 6000 m2 equal to 720 kWp Solar Lab PV modules with randomly inclination are installed covering all facades besides the ground floor, where the electricity production is 10,7 kWh/m2. About 50 % of the Danish electricity energy from the net is supplied by renewable resources and 58% of the district heating. In total, 72 % of the energy demand is supplied by renewable energy sources, which is equal to 21,7 kWh/m2. As a result, the primary energy use of the building according to BR2020 is only 15 kWh/m2 equal to a level 3 in the Active House radar, by a conservative calculation not taking the mentioned renewable energy source into account, besides the use of primary energy factors. Another calculation including this could look at the electricity use not being covered by BIPV which is 2,7 kWh/m2, year. Of this, it is calculated that 50% will be covered by fossil fuel in Copenhagen, leading to a value of 1,35 kWh/m2, year, which again can be multiplied by a primary energy factor of 1,8, so we reach 2,4 kWh/m2, year connected to electricity use. For the heating use of 16,7 kWh/m2, year this will be reduced to 42 % equal to 7 kWh/m2, year, which with a primary energy factor of 0,6 will reach a value of 4,2 kWh/m2, year. The total primary energy factor is then 2,4+4,2= 6, 6 kWh/m2, year leading to a level 2,4 in the Active House Radar.

## Environment

CIS is a good example of the Prosumer building of the future with BIPV on all facades and actually with a good architecture due to the special PV panels and architectural design. With about 39 % of the total electricity use (inclusive el-apparatus) covered by the PV modules production, CIS is a good example of an almost zero energy building. Environmental quality of CIS was improved by a saving of 28 % of the cold-water consumption due to implementation of water-saving fixtures compared to a standard consumption situation. The environmental impact caused by the building component production and energy used for building operation is in a good level. Moreover, 82 % of the building construction materials are recyclable

**The overall winner is…!**

From these projects the overall winner was selected by the jury of experts. The jury appointed Copenhagen International School as the overall winner of the Active House Awards. At the Awards ceremony, the Chair of the jury, professor Marco Imperadori commented: *"At unanimity, the Jury voted Copenhagen International School as the overall winner of the competition, rewarding its social impact. Besides, it clearly embodies all the three Active House aspects: Energy, Comfort, Environment, in a very clever and expressive way."*

Photo by: Adam Mørk

On behalf of Copenhagen International School, board member Anders Smith says: *"We are extremely proud to be this year's winner of the 'Active House Award'. It has been our goal from the very beginning to push the envelope of what is possible and appropriate by implementing the most cutting-edge knowledge and products to create a learning environment where staff and students can thrive, but also take the opportunity to show the entire community that it is possible and important to contribute sustainably and ambitiously."*

*"We focused on creating an optimal learning and social context for students and community, as well as a flexible building that both conserves and produces energy through our custom 12000 PV panels integrated artistically into the facade….it* ***is*** *the facade and not just an afterthought. We have also emphasized the indoor climate by using natural materials; creating a much higher than usual air circulation to achieve high o2 levels; installing sound absorbers to reduce noise and reverb for a less stressful environment, as well as ensuring as much multidirectional natural light and LED based lighting everywhere in the building - light that is locally controlled to create just the right learning environment in each classroom, while at the same time following the rhythm of natural daylight."*

**Many more ways to win**

This year's winners of the Active House Awards categories showcase the diversity of projects under the Active House principles. Amongst the winning projects are both entirely new buildings and renovations that enable existing buildings to meet the Active House standards.

Geographically the winning of projects also show that Active Houses are not restricted to only a few parts of the globe. With winning projects from China, Germany, Canada, Italy and Denmark, Active House is starting spread the vision of buildings that create healthier and more comfortable lives across the globe.

*For further information, please contact the Active House Secretariat at secretariat@activehouse.info or by phone at +32 22 34 6102.*

*For questions about Copenhagen International School, please contact Peter Sikker Rasmussen at PSR@cfmoller.com or by phone at +45 61 93 68 57*

**Notes to the editor**:

*About Active House*

*Active House is a vision of buildings that create healthier and more comfortable lives for their occupants without negative impact on the climate – moving us towards a cleaner, healthier and safer world.*

*The Active House vision defines highly ambitious long-term goals for the future building stock. The purpose of the vision is to unite interested parties based on a balanced and holistic approach to building design and performance, and to facilitate cooperation on such activities as building projects, product development, research initiatives and performance targets that can move us further towards the vision.*

*The Active House principles propose a target framework for how to design and renovate buildings that contribute positively to human health and well-being by focusing on the indoor and outdoor environment and the use of renewable energy.*

*The Active House label is a tangible reflection of our vision and a worldwide quality stamp for comfortable and sustainable buildings. The label advices on elements that are important to humans' life and living in their homes. The Active House Label can be issued to buildings that has been evaluated in accordance with the Active House specifications and meet the minimum demands for indoor comfort, energy efficiency and environment.*

For further information, please visit: http://www.activehouse.info/ or follow us on:

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