



Highlights

Active House for dummies



About the author:

Bas Hasselaar is an architect and works as a consultant on Building Physics and Sustainability at DGMR, an engineering and consultancy agency. DGMR is member of the Active House Alliance Netherlands. Since 2017, he is a board member of Active House Netherlands and Active House International. He is currently building his own Active House.

There is increasing interest in Active House in the Netherlands. I notice this by the number of questions I get about Active House, as well as by the increasing number of projects that are (in the process of being) realised in which the Active House vision plays a prominent role. The Active House Guidelines, in combination with the Specifications, provide all information that an architect, or someone else with a background in the building industry, needs to be able to design an Active House.

However, the Design Guidelines are 80 pages from start to finish, and the Specifications are more than 50. That is quite a lot if you are curious about what Active House is, but do not want to spend a few hours studying. For that reason, I wrote a 10-step plan on one page that will guarantee an Active House. Of course, it lacks explanation and misses some nuances, but the essence of an Active House is captured in it.

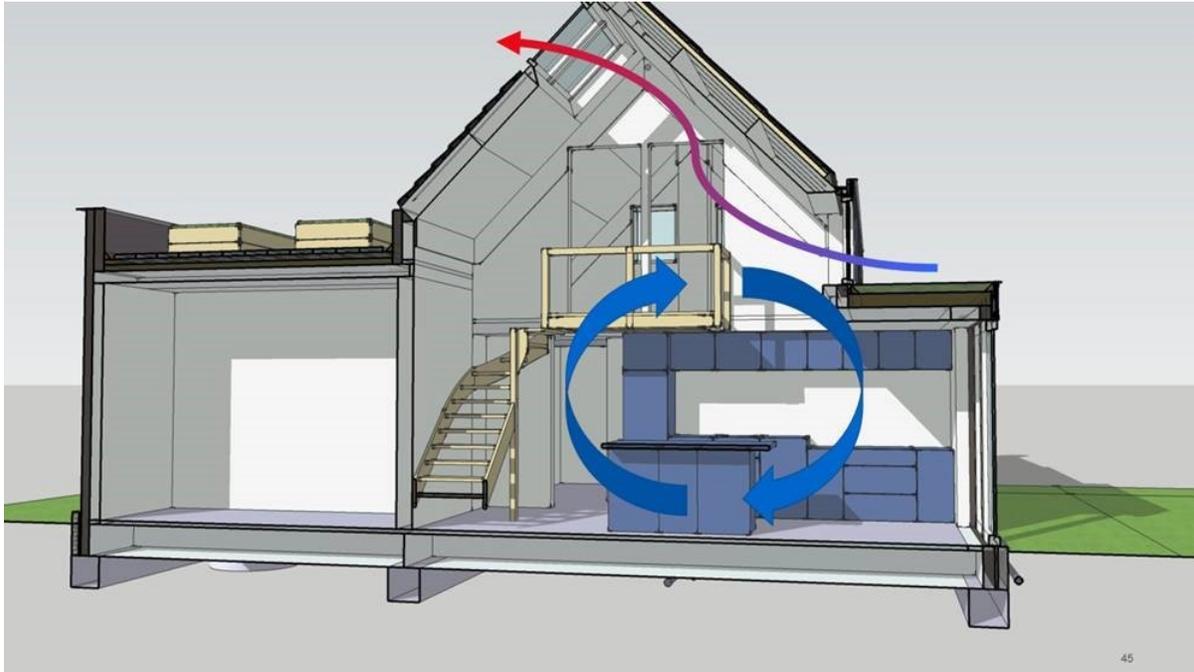
1. **Location.** Assess the plot, identify aspects that are important but out of your control, such as:

- Where does the sun rise and set?
- Where are access roads?

- Where is the best view?
- Which façade is the most noise-affected?

2. **Plan.** Make a conceptual plan of the house with the results of step 1 in the back of your head and determine the desired climate for different rooms:

- Bedrooms cooler (north / east orientation if possible)
- Kitchen and living room warmer (south / west orientation if possible)
- Home-office with indirect light (north orientation if possible)



3. **Daylight.** For the main living areas, have windows (daylight) at least at 2 orientations, more is better. Daylight can also come from above! Also bring daylight into the core of the building (above the stairwell) by means of a roof light.



4. **Space.** Free floor to ceiling heights of 3 meters (or higher, for example with a loft) with windows up to the ceiling. A free span of 5 (rather 6) meters between load bearing walls means the space can be divided into multiple usable spaces in the future.

5. **Ventilation.** Over-size ventilation possibilities, at least 1.5x building regulations. For balanced

ventilation: the system already meets the requirements in medium setting. With natural supply: place ventilation grids as high as possible, directly under the ceiling, preferably at all windows. As a result, grids can be closed and still ventilate sufficiently. Regardless of which ventilation system, use CO₂-based ventilation, with monitoring in at least two zones (living and sleeping zones). Provide ample operable (burglar proof) windows in combination with the roof light above the stairs for summer night ventilation.

6. **Solar access.** The sun is a source of heat! Use this by harvesting as much solar heat as possible through windows in the winter, but avoid overheating by blocking unwanted solar access in summer by means of dynamic (outdoor) shading. Avoid large windows on the south, this creates the risk of overheating in well insulated homes.



7. **Insulation.** The house is carefully built and well insulated, with:

- $q_{v-10} < 0.25 \text{ dm}^2/\text{s.m}^2$
- $R_c \text{ floor} \geq 4.5 \text{ m}^2\text{K/W}$
- $R_c \text{ wall} \geq 6.5 \text{ m}^2\text{K/W}$
- $R_c \text{ roof} \geq 8.0 \text{ m}^2\text{K/W}$
- $U\text{-value windows} \leq 0.9 \text{ W/m}^2\text{K}$

8. **Heating.** Heat recovery is necessary for energy saving. With balanced ventilation this is done with an air/air heat exchanger. In addition, a heat pump will have to be installed for heating / hot tap water. With natural supply, a heat pump is coupled to the extracted ventilation air. The heat is stored as warm water for space heating and/or tap water. In addition to the extracted indoor air, the heat pump will draw outside air in order to generate sufficient heat. Heat rooms via low temperature, water-based floor, ceiling and/or wall heating.

9. **Energy generation.** Use the roof surface to generate as much solar energy as possible. Pay attention to shading, but realize that a roof north-facing surface under 45° still generates over 50% of the available solar energy! A solar collector (thermal) has three times the yield per m² of solar panels (electrical), but delivers the bulk of its energy when it is needed the least: in summer. When available space is limited, choose solar panels (PV), a heat pump compensates for the difference in efficiency and electricity is much more widely applicable.

10. **Materialisation.** Choose as many natural (bio-based) building materials as possible with a certificate of responsible sourcing. (Heavy) materials with a high thermal mass (for example in floors or walls) help to prevent overheating and retain heat longer. Porous materials with high moisture-absorbing capacity help keep the indoor climate stable (humidity, temperature), but require extra attention when detailing. Avoid materials with many solvents (such as formaldehyde).

The above is of course not the only way to make an Active House. The very freedom to come up with your own solutions is a quality that appeals to many in the Active House vision. But if you are still looking for a quick-and-dirty method to realise as much quality as possible as quickly as possible, then these 10 steps will do just that.



How to win the race? - Insights from last years' Active House Award Winner

With the deadline of the Active House Label Awards submission approaching, we talked with last year's winner, Dr. István Kistelegdi, to get some insights and take-aways from the competition.



About the winner:

Dr. István Kistelegdi is a research professor at the University of Pécs and since 2010 Head of Department for Energy Design. He is the CEO of two companies – an architecture firm and a research consulting office. He focuses on thermal and CFD simulation, as well as on the effects of buildings on the human brain processes and supported the Active House prototype development. He also works on artificial intelligence-based design techniques. Istvan is part of this year's Active House Awards Jury.

- **What does the competition offer to project owners/home users like you? Why would you recommend them to participate?**

First of all, this competition brings a great chance to “weight” and evaluate the submitted project in the framework of an international, renowned green award contest. The main and the special Active House prizes deliver the highest international and professional acknowledgement, as well as publicity of a particular project. “One award attracts the other”: In my case, approx. 6 months after receiving the Active House Award 2017, a next great prize, the Energy Globe Hungary Award 2017 was won (commonly sad nickname ‘Energy-Oscar’). In addition, the award’s great publicity (success) brings definitely new, further assignments and projects on board.



- **What do you think is the secret for a project to be outstanding that catches the Jury’s attention?**

To be unique. Unique in terms of technology and appearance. Originality in basic building concept (space and geometry organisation), in reasonable used green structures and high efficient MEP systems, as well as in efficient and comfortable seasonal operation. On the other hand, beauty and aesthetics are another form of energy, hence external and interior architecture should be authentic and unique as well. The visual quality of the appearance and the daylighting of the spaces is essential. Furthermore, prototypical qualities are always an ‘eye-catcher’ for juries.



- **As a winner of the last years' edition, what would you recommend for this year's participants when submitting their projects? Any particular aspect they should focus on?**

The main focus should be on a holistic character of the building project, including high energy efficiency, high visual and thermal comfort, as well as environmental conscious choice of structures, materials and HVAC systems. The higher the performance in these three components, the higher will be the chance to go for the Award! If the project possesses monitored measurements about the implemented buildings performance, - this means a great advantage as well. Last but not least, presentation of the application should be in highest quality (plans, photos), and info-graphs about the building's operation can be also recommended. The description in the application is a further key in the competition. It should include a well-balanced, somehow 'captivating' and compressed writing about most important contents of the above mentioned three criteria and the design quality of the project...



The Alliance at Work

**2018 Active House Label Awards submission
deadline extended!**

17th September
2018

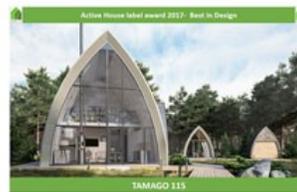
DEADLINE
EXTENDED



Active House label award 2017 – Winner



Reborn Home



The deadline for submitting your sustainable building project for the 2018 Active House Awards has been extended – new deadline 17 September!

The Awards invite professional house builders, developers, architects, designers and students to submit their projects in 4 different categories (designed buildings and built buildings, with or without radar). The Winner and the 4 Active House Label Awards will be announced during the Active House Symposium in Lecco, Italy taking place on the 7-8 November.

Find out more about the competition and submit your project [here](#).

Active House to host Webinar during World Green Building Week



This year's edition of the World Green Building Week (24-30 September) will feature a webinar hosted by Active House, entitled 'Smart nearly zero energy buildings'. The session will take place on the 28 September between 15h-16h and will use as a starting point the newly published Politecnico di Milano Springer Briefs 'Active House – smart nearly zero energy buildings'. The projects will detail homes under different climate conditions from Canada, Denmark, Belgium, Austria and Italy. The webinar will feature:

- **Welcome and introduction** by Catriona Brady, World Green Building Council
- **What is an Active House? – A vision beyond 2020**, presented by Secretary General Lone Feifer, Active House Alliance
- **Intro to Active House: Smart Nearly Zero Energy Buildings**, presented by Professor Marco Imperadori Politecnico di Milano
- **Active House case studies as benchmark for future design**, presented by Federica Brunone Politecnico di Mila
- **Discussions with the participants**, moderated by Catriona Brady, World Green Building Council

Further information will follow [here](#).

6th Active House Symposium breakout sessions revealed

The 6th edition of the International Active House Symposium, organised on 7-8 November in Lecco Italy, will bring together architects, investors, house developments and researchers for two days of discussions on the future of healthy and sustainable buildings.



Follow us on [@Activehouseinfo](#) #AHsymp18 #ActiveHouse to get updates on the agenda and speakers!
To register email Secretariat@activehouse.info

This year's edition will include 5 breakthrough sessions, scheduled for the second day of the event:

- Active House Live 2.0 0 – presented by Vinay Venkatramen and Marco Imperadori
- **MOBISTYLE Project** – open discussion about the innovative behavioural change concept and first business case ideas session, presented by Andre Litiu
- **Digital Design Meets Digital Use:** Active House principles in BIM and smart buildings, presented by Federica Brunone and Lara Hale
- Active House Specifications 2.0 – presented by Casten Rode, Bas Hasselaar and Amdi Worm
- Active House Academy – presented by Alexander Kucharavv

Additional details on the sessions will follow soon. For more information on the event and how to participate, follow this [link](#).



Welcome to Protim Ržišnik Perc amongst our Members!

Protim Ržišnik Perc architects and engineers are the newest Active House Alliance members. With offices in Slovenia, Austria and Croatia, Protim is an independent consulting and design company, leading clients through all project phases – from initial concepts to project close-out and operational optimisation. You can find out more about their work and sustainable projects [here](#).



Events

World Green Building Week in September

The 9th edition of the World Green Building Week will take place between 24-30 September. The theme of the 2018 edition is #HomeGreenHome and aims to empower building communities to deliver greener buildings. You can find out more about the week and how to get involved [here](#).



Members

Active House members:



Knowledge centers:



Partner organisations:



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Become a member of the Alliance

Press and communication



activehouse.INFO
NETWORK AND KNOWLEDGE SHARING
www.activehouse.info

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