Smart Wiki Home

Open Source Project
by Jenn and Teun

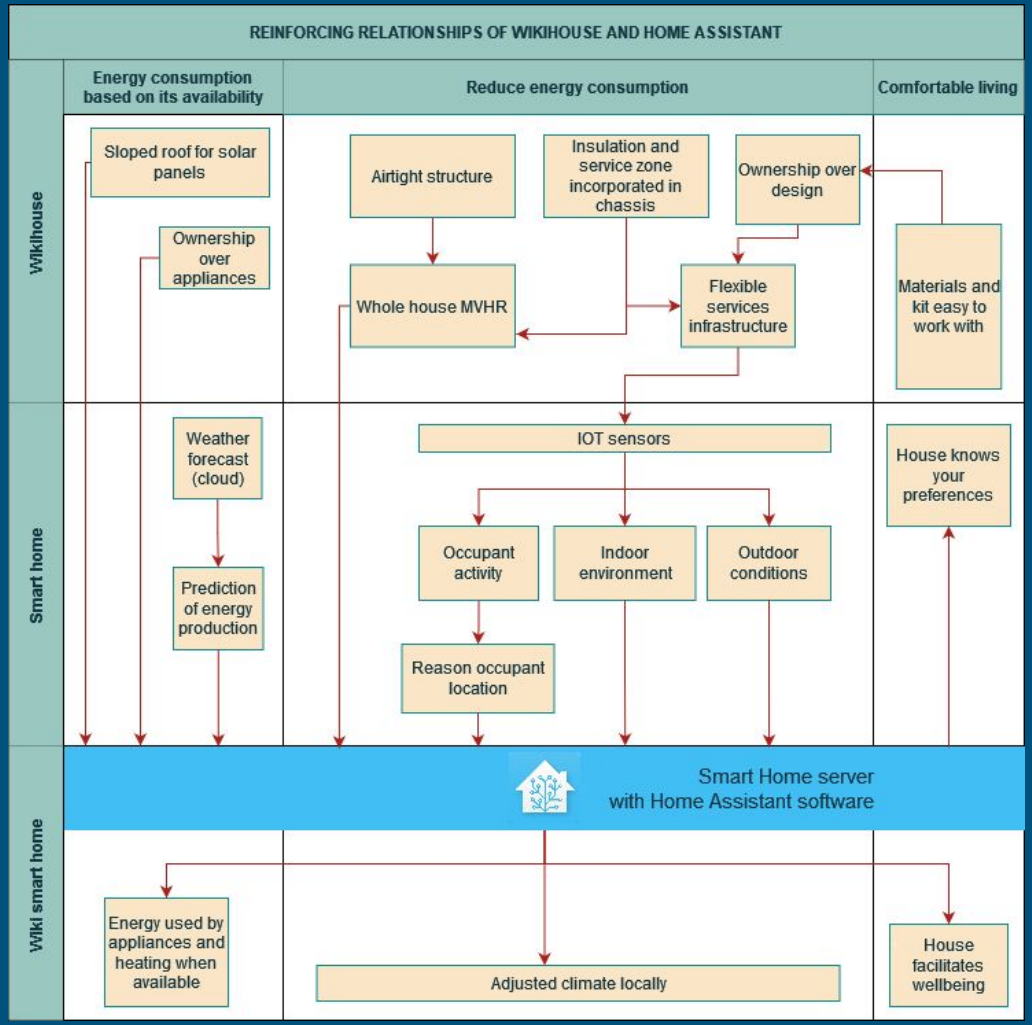
Update for the WikiHouse Contributors Call, April 2022

Design Principles

WikiHouse makes it possible for us to build our own home, and gives us the flexibility to implement sustainable and efficient designs.

WikiHouse is the foundation for our project, but our Smart Wiki Home is a combination of:

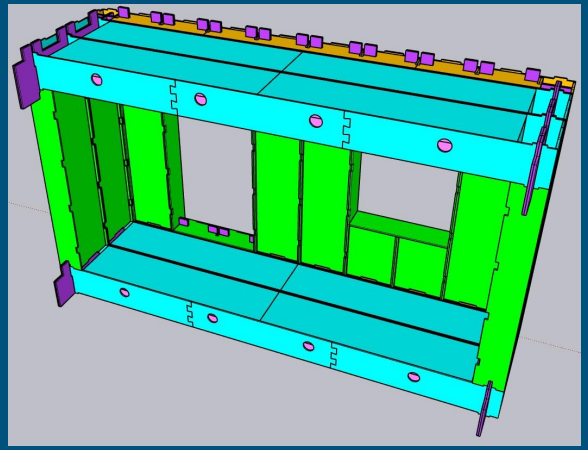
- ✓ WikiHouse Skylark
- ✓ Smart Home via Home Assistant
- ✓ Net zero considerations
- ✓ Personal preferences



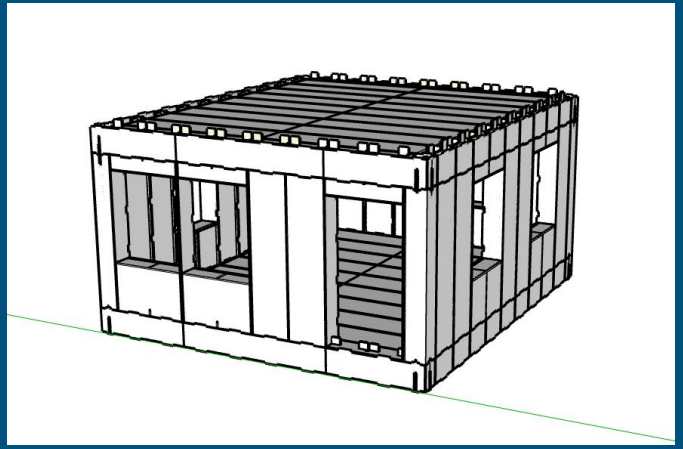
Part One

Orientation

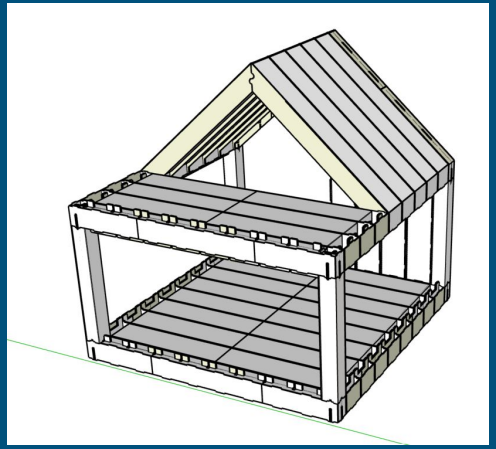
If we want to build with the WikiHouse design system, what do we need to consider?



Rebuilding the Skylark Model as featured in the Building Centre in London



Trying to build a simple house



Practicing with roofs

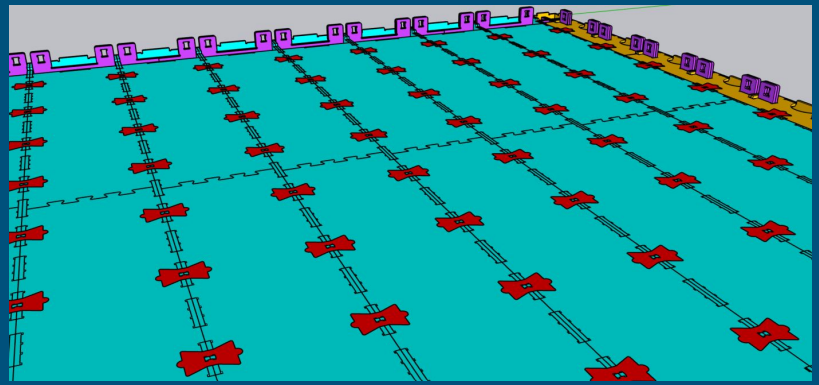
Shared all of our designs and practice on:

GitHub

JennHuygen/Skylark

YouTube

Understanding How To Build With WikiHouse Skylark Using SketchUp



Understanding the detailed design kit including the ties and pegs

Plan your home layout and services

Talk to your Council about your ideas and planning permission

Windows are crucial

Mechanical ventilation with heat recovery system is key

Your home entrance will be higher than you think

Learning from the first ever WikiHouse Home

Visit their blog: https://awikifarmhouse.wordpress.com/

Part Two

Planning

What do we want our Smart Wiki Home to look like?

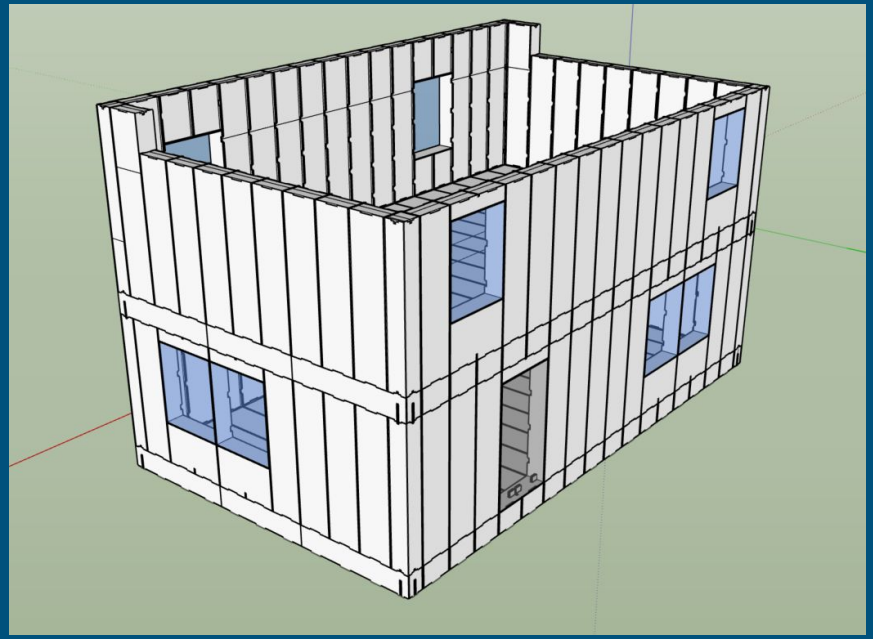
How much will it cost?

Chassis Considerations

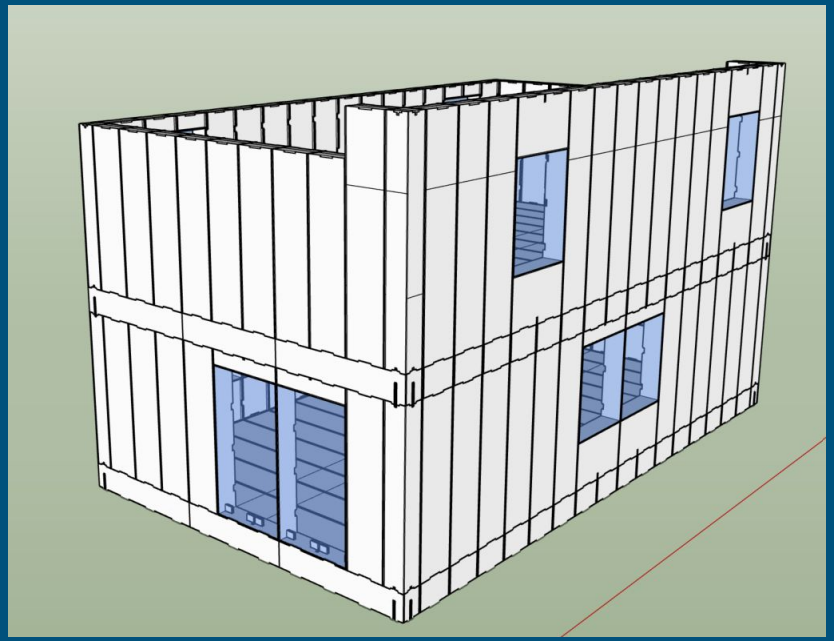
1. It needs to be a rectangular house, using the standard sizes of WikiHouse Skylark to increase width and length.
2. It needs to be large enough to have two study rooms for home working, and have space for our rabbits to free roam.
3. We have currently used the standard house sizes of WikiHouse NL (“basistypen”)* and translated them to WikiHouse Skylark.
    - e.g. 1 floor space in Swift NL (1.2m) = 2 floor beams for Skylark (0.6m each)
4. Current ‘standard’ house format we are modeling with is a combination of ‘L’ in Swift NL and ‘L’ in Skylark:
    - 16 Skylark floor beams = 9.6 meter internal length (8 x M in Swift NL to create the L standard house)
    - Skylark standard L span for the width of the house: 5.4 meter
    - Two-storey house, with a total of 51.84 square meter per floor

**Designed by Ontwerpburo Muller, with thanks to Vincent Muller for speaking to us about the WikiHouse projects in the Netherlands.*
More information and illustrations of the standard house sizes (in Dutch): https://wikihousenl.cc/opties/

Which looks like this ....



Front and right side.



Back and left side.

£29,340*

€35,317 / $38,307 / $AUD 51,452 / $NZD 56,326

*Approximate cost for building the chassis

Does not yet include the roof. Based on an average cost of £42 / sheet of plywood and estimated manufacturing cost as per the WikiHouse Skylark Excel sheet (part of the design kits).

- ✓ 195 blocks which cost c. £17,115 for the plywood and £12,225 to manufacture.
- ✓ 295 hours to build; manufacture (204 hours) and assembly (91 hours / person).

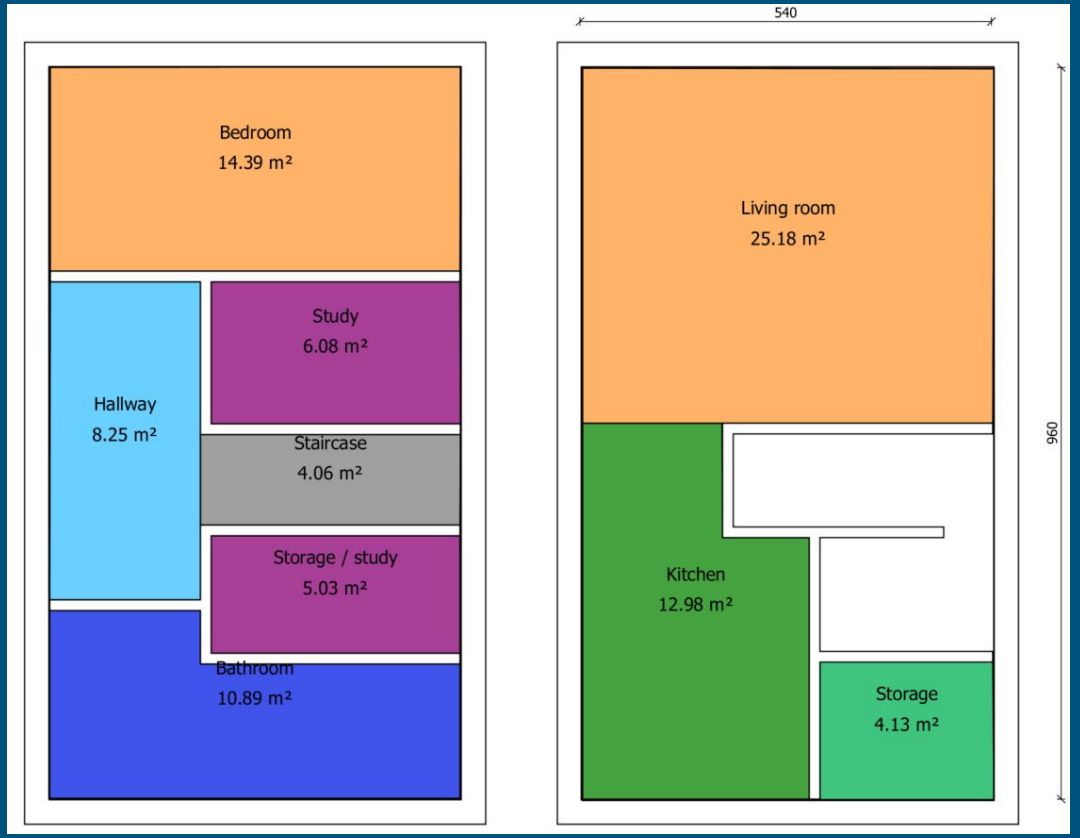
Shared our designs and calculations:

GitHub

JennHuygen/Skylark

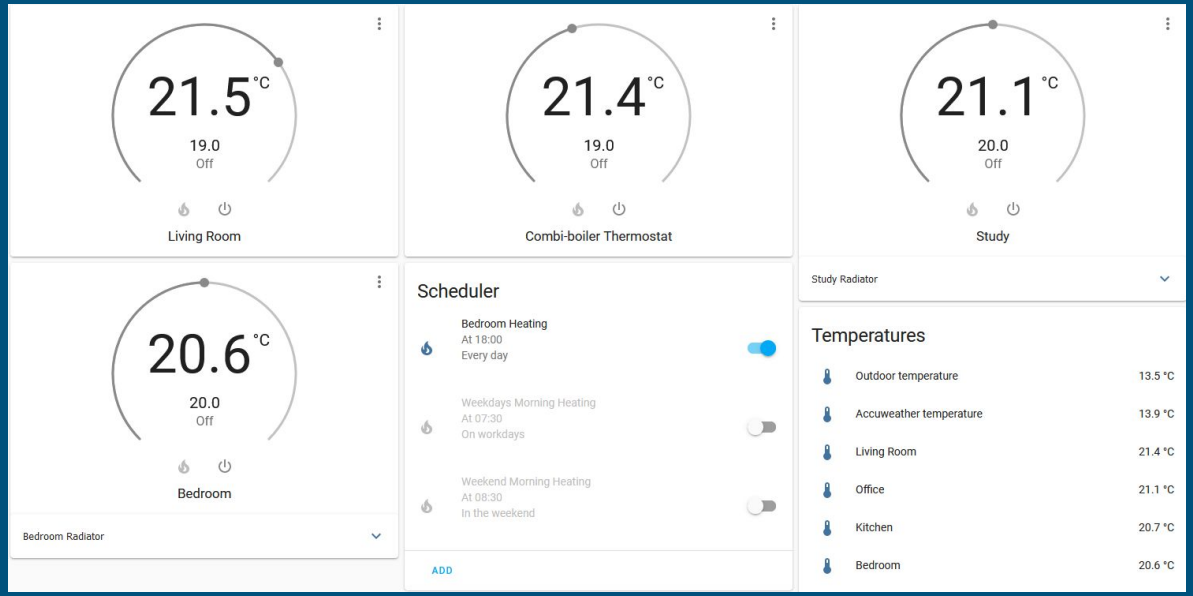
Internal Lay Out

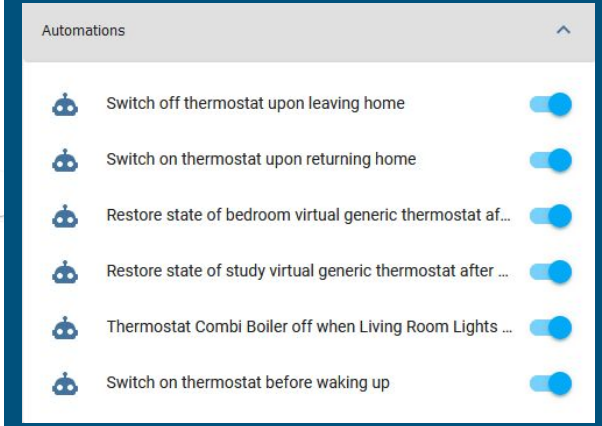
Using Sweet Home 3D* to design the internal layout incl. Rooms, insulation and services.



*Free, open-source interior design app, available at: http://www.sweethome3d.com/

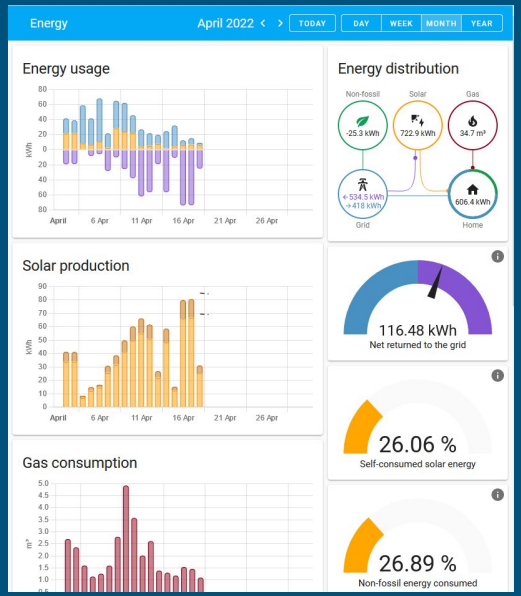
Planning For A *Smart* WikiHouse

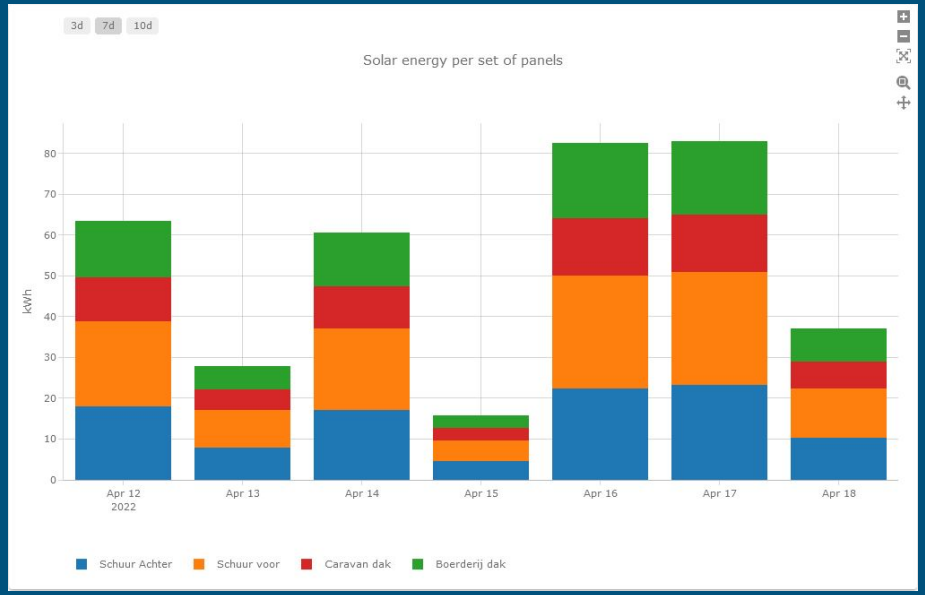




Building Home Assistant integrations.

Planning For A *Smart* WikiHouse





Incorporating solar panels for our energy usage.

And that's where we are now

To be continued

We still need to:

- ↪ Finalise home design plans
  - Explore Passivhaus and similar sustainable building standards and implement these in our designs;
  - Design and test more smart home integrations;
  - Optimise chassis layout based on sloping roof, stairs and potentially skylight windows once available;
  - Finalise an internal layout;
  - Create a full cost breakdown;
  - Etc…
- ↪ Speak to Councils about planning permissions
- ↪ Find and purchase land