

# Permaculture design – Skomakerhytta

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This design is done without having visited the site, or having spoken with people living there. It is done by looking at pictures, maps and by talking to people that have visited the site. It is certain that the design will change after more thorough observation before any work will start.



## ***Location and Climate***

This part of a property is situated in a nature reserve only a short ride from the very center of Norway's capital, Oslo.

The current garden area on the top is 0.12 hectare (1,2 mål or 0.3 acre) while the total property is 0.66 hectare (6,6 mål or 1.6 acres).

The property is south east faced with a steep slope to the east that ends in a several meter high precipice that effectively separates the east side of the property from the surrounding residential area.

In summer the days are long and it will never get entirely dark, but in winter it is opposite and the days are short and the night is long. Snowfall can happen from October to May, but it accumulates mostly December to



march. The east facing slope will receive a great length of sunlight throughout the summer.

Located in Norway close to Oslo along latitude 60, it belongs to the cool to cold temperate climate zone. The highest part of the property is around 200 meters above sea level. The closest official weather station is 8 km away, located by the ocean. Rain is common throughout the year and too much rain is often a bigger concern than too little. Temperatures below are shown in degrees celsius.

climate-zone.com	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Temperature	-3	-3	0	5	10	15	18	17	11	7	1	-3
Avg. Max Temperature	-1	0	5	9	15	19	22	22	16	10	3	0
Avg. Min Temperature	-6	-7	-3	0	6	10	13	13	7	3	-1	-5
Avg. Rain Days	10	10	7	14	15	16	12	13	14	12	12	11
Avg. Snow Days	14	13	10	6	1	0	0	0	0	0	9	13

### ***Special considerations***

\* The property is located within a «landskapsvernområde», a form of nature reserve, that might impose regulations that prevents us from doing what we want. Big ponds is one thing the owner don't want, but the cabin has high quality tap water.

\* The tenants and other contributors need to have a main place to live that is not on this property, due to the regulations of the site. They can, however, live there as long as they want as long as they are registered in the peoples register with another address.

\* It will be necessary to implement a food production system that requires little to no maintenance when established. The reason for this is that the owner is not willing to sign up for a load of additional work, and the future tenants may not be interested either. We will achieve this by extensive use of [plant guilds](#) and [food forest](#) with different perennial food producing plants. To obtain a yield before those systems start to produce, we will need to implement food production systems like polyculture vegetable gardens and animal systems like rabbits and [chickens in a paddock shift system](#). We will also have the possibility to fish in the nearby Dælivannet. There is a [CSA](#) located within walking distance.

\* The eastern part of the property with a steep slope has several terraces that has been used for vegetable production from before the vegetation grew back. There are several remnants of food plants still. The soil on the property is rich in humus, and the PH is probably good as there is mostly deciduous trees among the pioneer species that have overgrown the property the last 20-30 years. There is many hazel nut trees.

\* Along the west border and mostly within the property line is a popular hiking trail for people wanting to enjoy the magnificent nature in the area. They also have a view into the garden and the house, especially from late autumn when the leafs have fallen.

\* The popularity of the area for hikers is an asset as we can draw them to us. Situated so close to the biggest city in Norway we will also have a great opportunity to get interested people to visit, and also it will be relatively easy to find a market for any excess food production. Foreign [wwofer's](#) will have an easy time getting here.

## Zones

To conserve energy and make life comfortable we need a smart design. The permaculture zone system puts what we need to access most often most easily available for us. This chapter lays out suggestions to what may be done in each zone.



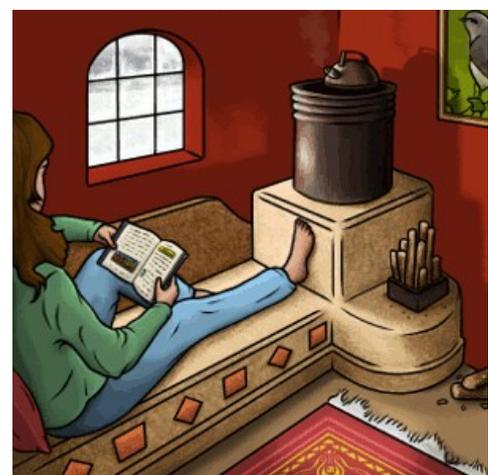
### Zone 0 – The house

The 40 sqm house is old and has a run down 60's interior, it is floor cold and very cold in winter. To reduce the amount of firewood needed to between 1/5th and 1/10th we would want to tear up parts of the floor and install a [rocket mass heater](#), which is *the* most effective way to heat up a home. See illustration to the right or follow link to learn more.

The house has both tap water and a toilet, but in order to follow the design principle of produce no waste, we should install a greywater system and composting toilet.

Kitchen waste goes to chickens or pigs - if we are allowed to keep the latter.

On the south end on the house, there is a door exiting from the living room. It would be interesting to put up a green house there so the exit from the living



room would become an entrance to a greenhouse.

## **Zone 1 – The garden**

In this zone we want to place what we need to visit most often outside the house, and we arrange nature to suit our needs. Here we will put:

- \* area for recreation and relaxation

The property has an fantastic location, with great surroundings and a great view. We will need to have a designated area for recreation and relaxation, where we can barbeque and play games. The lawn we will mow using a chicken tractor. They get fresh pasture, we get eggs and meat and short, lush lawn grass.

- \* culinary herbs for food

Only short distance away from the door we put some commonly used culinary herbs for food and tea.

- \* edimentals

Edible ornamentals – change the current ornamentals around the house and garden with edible perennial plants that looks nice at different times.

- \* fully mulched and tended vegetable garden with companion planting

Our main kitchen garden that we want to tend most often we will put in close proximity to the house. Here we can follow up daily and thin when needed and add more mulch and keep it under sight.

- \* combined rabbit and chicken house on deep bedding

Rabbit meat is effective to raise, and if we suspend the cages waist high above a deep litter floor, we can have chickens underneath. The rabbits benefits the chickens and the soil, the chickens take care of cleaning the rabbit dung. All we need to do is feed them and keep on throwing in some carbon rich material to bind the nitrogen from the droppings. And then empty out the compost once or twice a year. A deep litter system will also keep the chickens healthier and give them access to critters and vitamins that they wouldn't have with fresh bedding or worse.

- \* berry bushes

Some berry bushes here and there is nice, they will tend them selves.

- \* a simple greenhouse structure

To get a slightly longer growing season or grow vegetables that might not make it in our climate, possibly in connection to the south wall of the house.

- \* seedlings and cuttings for propagation

Seedlings and cuttings is necessary to do all the planting we want in all the zones, and we would want to keep them well tended, so we'll put them in zone 1.

- \* cob oven

Bread tastes better when baked in a cob oven, and also we're not depended on electricity to warm the oven in the house.

## **Zone 2 – a little bit further away**

In zone 2 we want to give nature regular little nudges here and there, but let her establish herself by mimicking natural systems. We use polyculture in plant guilds, by putting together plants that complement each other. Some fixate nitrogen from the soil in symbiosis with bacteria, others

accumulate nutrients from far down in the ground.

Most attention will be given to:

- \* main crop vegetable beds

We eat a lot of potato. A fair share of carrots and onions as well. Quite a bit cabbage, broccoli, cauliflower. We would also like to produce excess so we have the possibility to sell the surplus.

We will want to companion plant them and mulch them, maybe also with living mulch. We will actively remineralize the soil and feed the microorganisms and mycelia.

- \* underground green house

To get a longer growing season than in an above ground green house we will like to dig down and build a Mike Oehler style «invisible» underground green house with a cold sink.

- \* chickens will self forage in a paddock shift system

Chickens in a paddock shift system is healthier and happier chickens. We need to feed them less, and we get higher quality eggs.

- \* Also we will put in some small ponds if the owner OK's it at a later stage

- \* many species of perennial vegetables

We happen to know Norway's expert in perennial vegetables and he has 2000 species and willingness to share.

### **Zone 3 – where we don't go every day**

In zone 3 we will emphasize mimicking nature in a much larger extent. Food forest goes here, and here we will try to put in all beneficial plants that fulfill the layers in a forest. We may plant several fruit tree guilds. Zone 3 will also be used in a paddock shift system for chickens or other animals if we get to have them. This is also where we will put beehouses, tended with bee-centric perspective, with fewer visits than ordinary beekeeping.

### **Zone 4/5 – only sporadic visits**

While zone 4 is semi wild zone 5 is wild. Because of the steepness we may not be able to get to use it effectively, but maybe if we get enough done other places we will have enough wwoof-ing power to establish it as zone 3 in the future. We will probably use it sporadically in a paddock shift system for the chickens. Maybe plant some nut trees or fruit trees that grow tall and take a long time before yield.

### ***The Plan***

If the owner thinks this permaculture design is a good idea, we would like to establish an NGO to develop the site. The board will elect caretakers that will stay on site as much as necessary, within the limitations of the regulations. The caretakers responsibility will be to take care of the site and implement the permaculture design, as well as organize volunteers and workshops and courses.