

# *strata*

Process Documentation  
Master Thesis  
Auf dem Höli, Aargau

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## SCHERZ

*Scherz is a small village in the canton of Aargau. Its village character is defined by steep roofs that were formerly thatched with straw, the surrounding Birrfeld plains, and the Scherzer Brook with its mill.*

*At the edge of the forest there once was a large wetland, as the clay-rich soil of the village prevents the brook's water from draining away quickly, causing slow runoff. When the surrounding fields were drained after World War II, this led to a significant transformation of the area and the disappearance of the "Büseligras," the local species of cotton grass.*

*The natural presence of spring water, moraine clay, gravel, and iron ore greatly influenced the activities of the inhabitants. Initially, the villagers produced grain and cheese, later bricks, and also mined the ore in the forests. With the steady decline of farming, the village has developed over recent decades into a commuter town.*







*The Höli settlement was developed in several phases from 1974 onwards by the architects Fosco Fosco-Oppenheim Vogt. The project is based on the communal idea of urban living in a rural setting.*

*From this emerged a concept of communicative living, which is clearly reflected in the architectural design. Transitions between private and semi-private outdoor spaces are deliberately subtle. For example, the entire ground floor is highly permeable, visually connecting adjacent living spaces with the Dorfhaube – the communal heart of the settlement. The shift from private to semi-private is marked only by a few steps at the entrances, leading residents – whether intentionally or not – to take part in one another's everyday lives.*

*Over the years, a variety of social dynamics have developed, such as communal dining on the terrace, which strengthens the bond between neighbours. New residents are closely integrated into the community. They plan, design, and manage the*

## AUF DEM HÖLI

*settlement collectively. Projects such as laying paths, building a shelter, or constructing a communal pavilion are carried out together.*



## CONSTRUCTION

As financing was challenging during the economic crisis, the buildings were constructed as cost-effectively as possible. They follow the principle of a “bare shell” that is habitable, with the expectation that residents would complete the interior fit-out independently at a later stage. Walls remain unplastered and concrete floors were only polished.

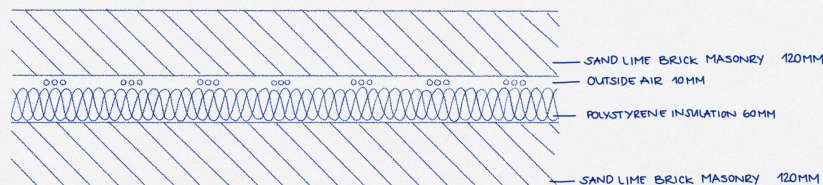
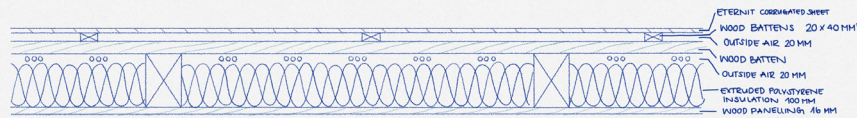
The houses are organised using a partition wall construction method, which depends on the load-bearing capacity of the concrete slab. This results in narrow rooms with a width of 2.74 metres. Selected lintels were installed in the masonry to allow for subsequent subdivision or extension.

Although the buildings and their insulation were considered forward-thinking at the time, their thermal insulation no longer meets today’s standards. The double-leaf calcium silicate masonry contains only 6 cm of insulation, and especially the basement rooms lose heat to the ground, as they were originally designed as cellars

but are often used as heated living spaces.

To reduce heating demand, some families have already installed insulated or triple-glazed windows, and some roofs have been retrofitted with an additional layer of insulation.

Additionally, the smooth surfaces of the floors and walls affect the thermal comfort of the occupants. They often feel cooler than they actually are and conduct body heat away more quickly than other materials upon contact.

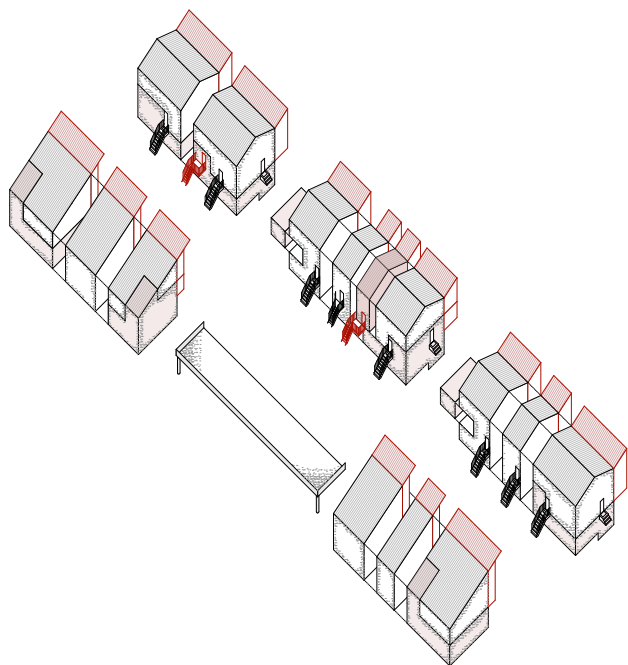
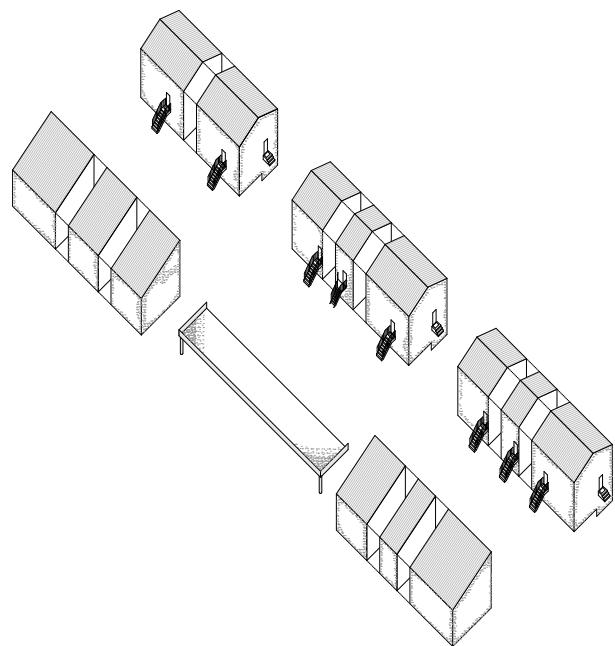






*To double the number of residents in the settlement, the existing building stock already provides sufficient floor area. Alongside a reorganisation, a new spatial layer is added to the south-east façades of the buildings. This allows the living space to gradually extend outward into the garden and functions simultaneously as an insulating buffer. It offers a significant added value for residents while also improving the building's thermal performance.*

*Inside, heat-capturing curtains enable individual regulation of warmth across different zones.*



*Through reorganisation, the existing houses are subdivided into two or more units.*

*Thanks to their flexible structure, these buildings can be divided with minimal intervention using partition walls. In particular, the currently under-used basement levels of the gabled houses offer potential for additional bedrooms.*

*Access remains as before – via the Dorflaube – with some units sharing the same staircase. Living and dining areas are located on the ground floor, while bedrooms are situated either upstairs or in the souterrain and are reached via the existing internal staircases.*

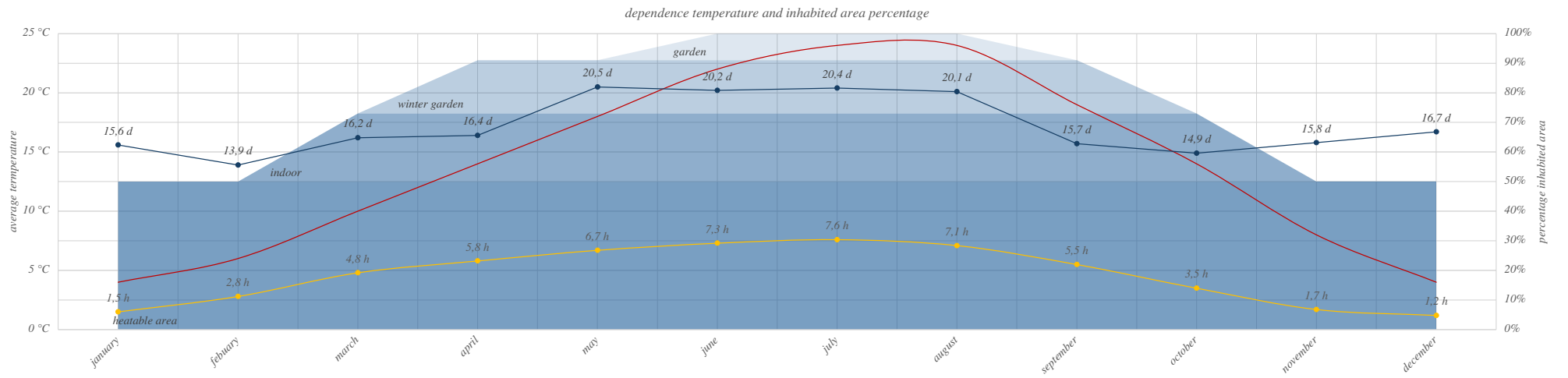
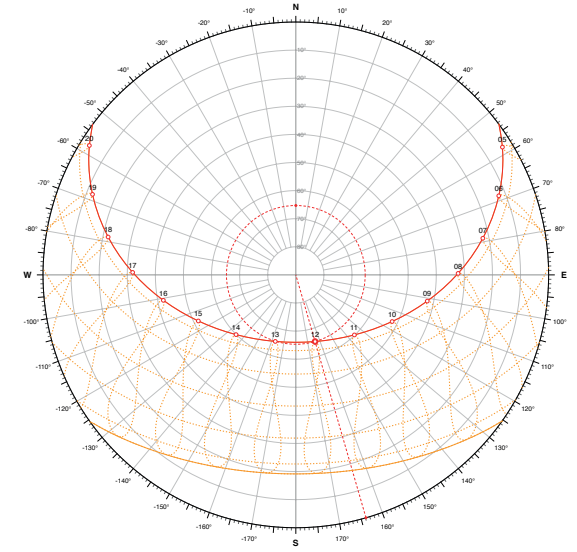
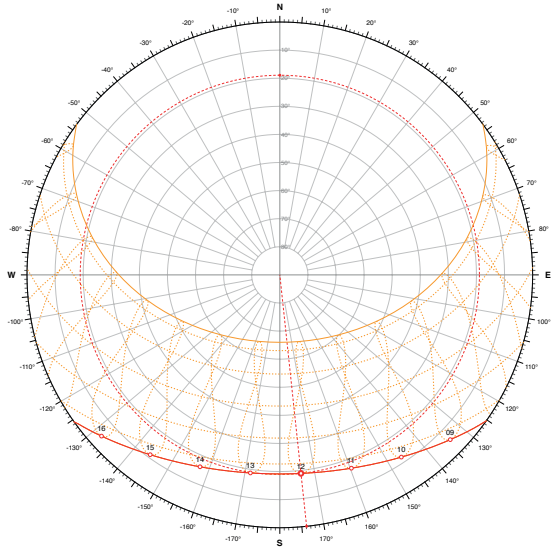
*New partition walls are constructed from clay bricks, which provide good sound insulation even at relatively low thickness.*

*A new winter garden layer creates additional space, extending the living area outward according to the seasons.*

## REORGANISATION

amount of	units	people	m <sup>2</sup> pp
1974:	14	49	45.6 m <sup>2</sup>
2025:	14	30	73.0 m <sup>2</sup>
2050:	23	83	32.25 m <sup>2</sup>



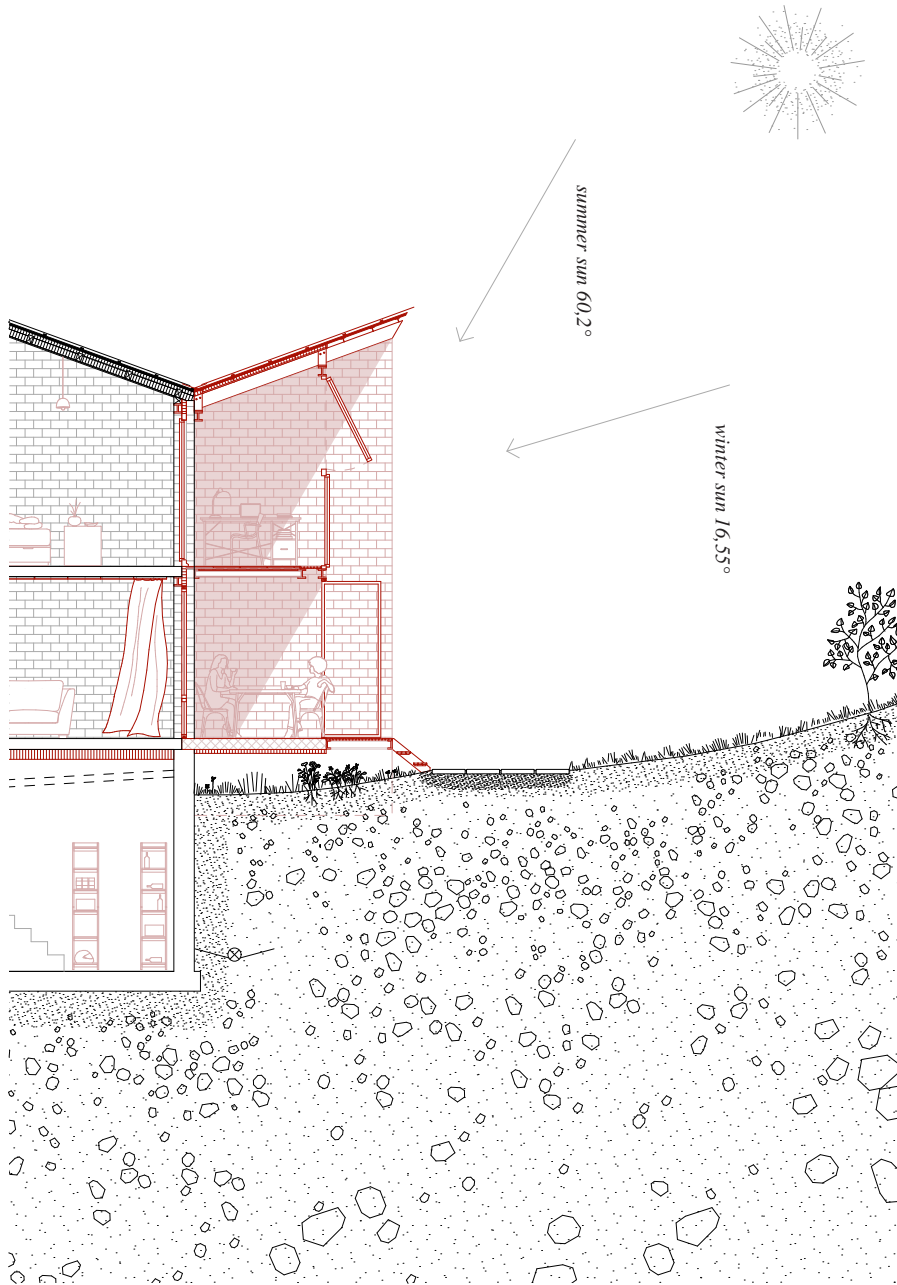


## WINTER GARDEN

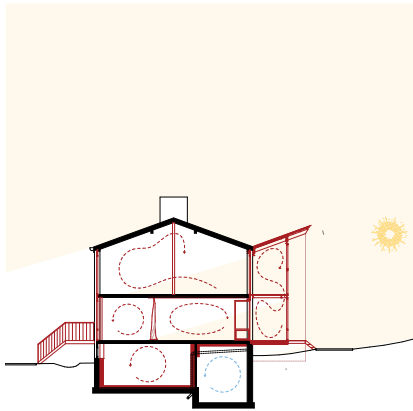
*The two-storey winter garden faces south-east, capturing sunlight from the early morning until early afternoon.*

*The roof form echoes the angle of the existing structure and opens upward to maximise solar gain in winter and spring. In summer, the roof and the intermediate floor on the first level function as a brise-soleil, shading the façade and preventing heat gain.*

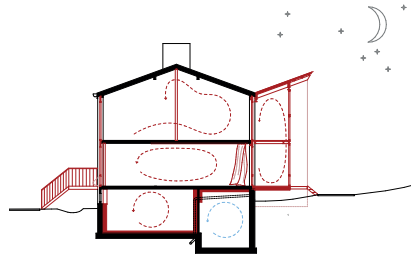
*The structure of the winter garden follows the rhythm of the existing building's bays. The extension is built from clay bricks, which act as thermal mass to help regulate the indoor climate of the winter garden.*







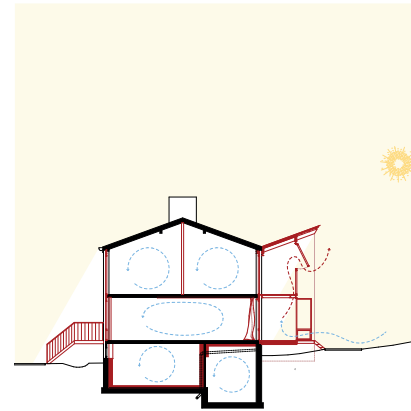
solar charging



winter day

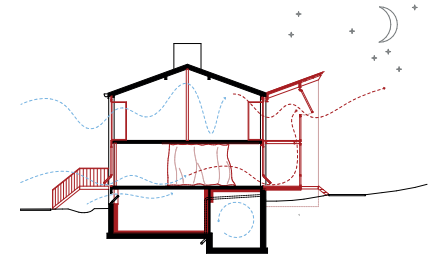
insulating layer

winter night



brise soleil & buoyancy ventilation

summer day



cross ventilation

summer night

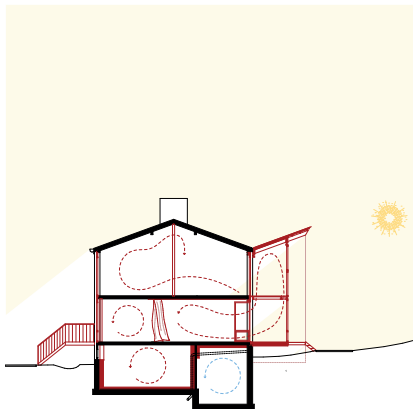
## DYNAMIC INSULATION

*The winter garden also provides an insulating function by creating an additional air layer between inside and outside.*

*Winter – Together with heat-retaining curtains, residents can separate warmer and cooler zones and heat them differently. The curtains also help retain warmth generated, for example, during cooking, for a longer period.*

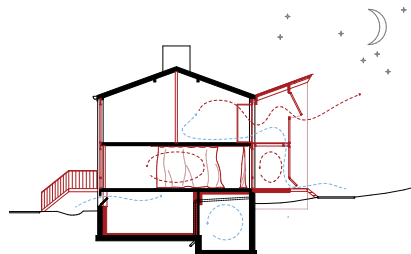
*Spring – As the winter garden begins to warm up, the heat can be used as a supplementary source of warmth, reducing overall heating demand.*

*Summer – During the day, the winter garden becomes a connecting element between inside and outside. At night, thermal uplift enables effective cooling of the interior spaces through cross-ventilation.*



heat exchange

spring day



partial ventilation

spring night













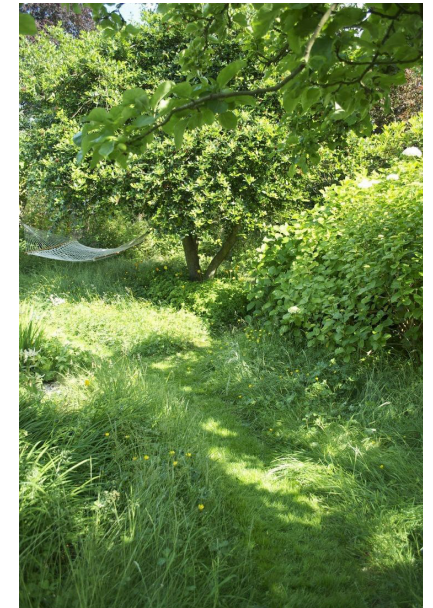
## GARDEN

*Due to increased densification, the garden increasingly becomes part of the living space and a key asset for residents. This renegotiates the existing relationship between private and shared outdoor areas.*

*The Dorflaube (village loggia) of the settlement has until now served as the communal space – often a playroom, sometimes a dining room, and quite frequently a living room. A new intermediate zone between the private garden and the public loggia creates a fluid transition.*

*With the changing seasons, daily life gradually shifts from the private interior through the winter garden into the open air. The further one moves outwards, the more public – and the more richly planted – the garden becomes.*

*The area along the property boundaries and between the houses becomes a secondary circulation route and a shared space to pause and linger. Small niches and seating areas, as well as individual cultivation plots for each flat, are integrated into this zone. This layer*



*becomes a space of interaction – a meeting ground for people, animals, and plants alike.*

*To supply the cultivation gardens, rainwater from the rooftops is collected in storage basins. Due to the poor permeability of the soil, excess water is diverted into existing drainage systems to prevent flooding.*











*In the context of increasing densification – both in existing structures and new developments – threshold spaces are gaining in significance. They are often not rooms in the conventional sense, yet they are always present: as transitions, as connections, as silent mediators – between zones, between functions, between people – and ought to be designed with the same care and attention as the spaces they link.*

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