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Agritopia
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Future Farms

Resocialising the Multi-purpose Farm

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The structural change in agriculture in Zürich Nord, in particular the number and size of farms, is exemplary for the trend throughout Switzerland. Over the last few decades, the number of farms has decreased, while those that have managed to survive have increased in size. In addition, the mechanisation and technologisation of agriculture has led to certain farms no longer being used. One consequence of this development is that agricultural buildings are no longer used. In Zürich Nord, many of these buildings are now used for storage. This situation raises the question of how the old farms can be reactivated and how their potential can be exploited. What do the future farms in Agritopia look like?

Abandoned Farm Buildings



Industrialisation and regulations
endanger the multi-purpose farm.

It's a warm late summer's day as we set off on our bikes from the studio in Seebach in the direction of the Katzensee. Passing old industrial plants that have settled in Zurich North, we cross the Affoltern train station. Behind the tracks, the landscape opens up. Biking through old agricultural buildings that have blended into the town, we approach the A1 highway. After a short rise and a view of the hamlet of Katzenrüti reveals itself. Surrounded by green fields, the hamlet seems to be frozen in time, contrary to the town in the background.



The hamlet of Katzenrüti. Source: Tamino Hertel, 2023.

We get back on our bikes and head towards the hamlet. At the entrance to the village, the impression we have just gained is somewhat dampened. A farmhouse catches our eye. It that has not been used for years, is overgrown with plants and already marked out for demolition.



Next to it is the largest building in the hamlet, which seems to be a stable. We walk around the brick house and are surprised to find a new stable right beside it. We wonder why the farmers built a new stall and what the large barn is used for nowadays. The gate is open and we get a glimpse inside. The animals have moved out and are replaced by machines and loaded euro pallets.



A glimpse Into the former stable. Source: Tamino Hertel, 2023.

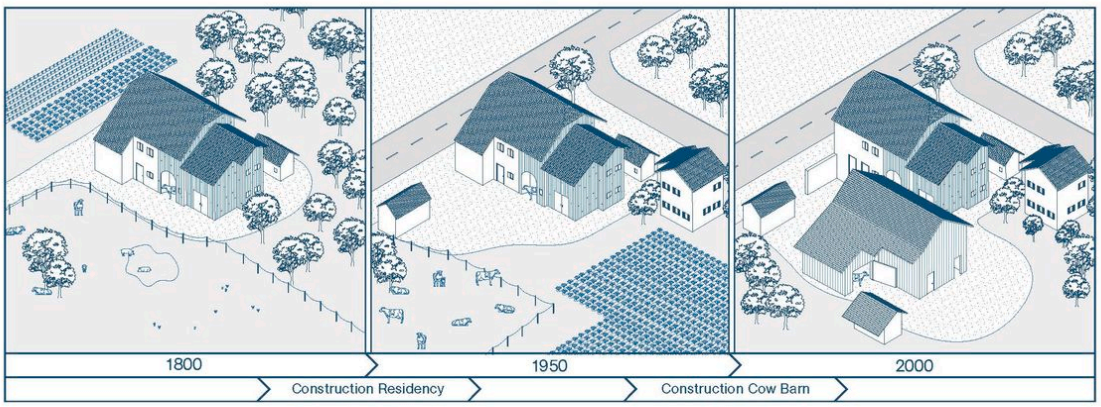
Why are new houses being built while the old ones are falling apart? How did this situation come about? Local farmer Martin Gass tells us the story of his farm, which is emblematic for many farms in the region. The transformation of his farm is directly linked to changes in agricultural practices:



Gass farm dating back to 1780, extended
in the 1980s. Source: Tamino Hertel, 2023.

The industrialisation of agriculture from the 20th century onwards required machinery that allowed cultivating larger fields. As the fields grew, so did the farm. The multi-purpose farmhouses, which combined living, working and stable under one roof, no longer meet the requirements of modern agriculture. They are too small for the ever-growing farms and cannot keep up with the process of mechanisation and automatisation. As a result, the agricultural business moves into specialised, monofunctional buildings and the farmhouse becomes unoccupied. The possibility to transform the now unused building is regulated in the Spatial Planning Act. It determines that buildings in the agricultural zone can only be converted when their use remains agricultural. Consequently, the old buildings are often used to store the large machinery.

In the process of relocating the agricultural functions, the residential part of the multi-functional farmhouses remains inhabited, until refurbishment is required. However these 19th century buildings are often under heritage protection, which sets high demands on renovations with the aim to preserve the townscape. Such a restoration process comes with extreme costs. Like many other owners, the Gass family could not afford to renovate their house that dates back to 1780. Thus they were forced to build a new residential house, while the old farmhouse is falling apart. Pro forma, they undertake some “renovations” themselves in order to delay the decay as much as possible.



The Gass family and their farm are no exception. After our trip to the hamlet of Katzenrüti, we began to analyse the use of the buildings. It turns out that behind many of the facades, there is storage to accommodate the needs of industrialised agriculture or the building is completely empty.

The Potential of Multi-Purpose Farms



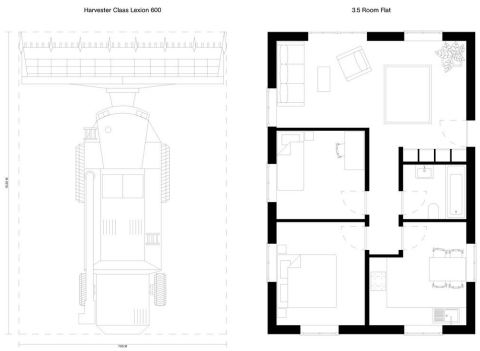
Today, the local company Kuhn offers rents out machinery as a service to other farmers. For the common vision Agritopia, we expand this model.

Because the farmers do not need private tractors on every farm, there will be two hubs where agricultural machinery is parked. In Agritopia, animals will graze on pastures instead of being locked up in their barn [https://topalovic.arch.ethz.ch/Courses/Student-Projects/HS23-Animal-Landscapers]. Both developments will free up further barns.

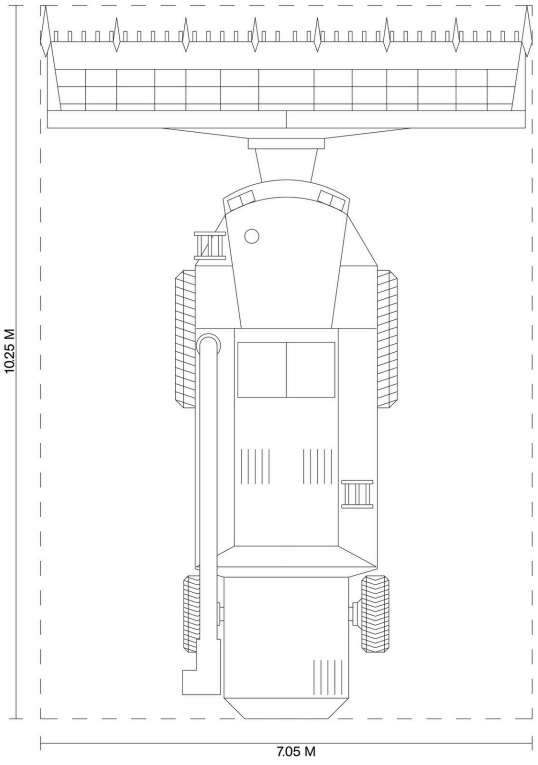
In Agritopia, there will be smaller fields that require more handwork and thus more workers. These will be housed in the empty buildings, to be converted and repurposed, which will allow the workers to live affordably and in proximity to their workplace. With these new homes, the population on site will grow from 1800 to 2300 people, and all future 490 part-time farmers will be housed on site. This increase also warrants improving the local services.

The municipalities will buy the buildings, but the LandarbeiterInnen Kooperative (LAKO) will manage the renting. The housing will be intended for people who have an interest in agriculture, a desire for social interaction, and self-initiative. Each resident will have to do some kind of farm-related work.

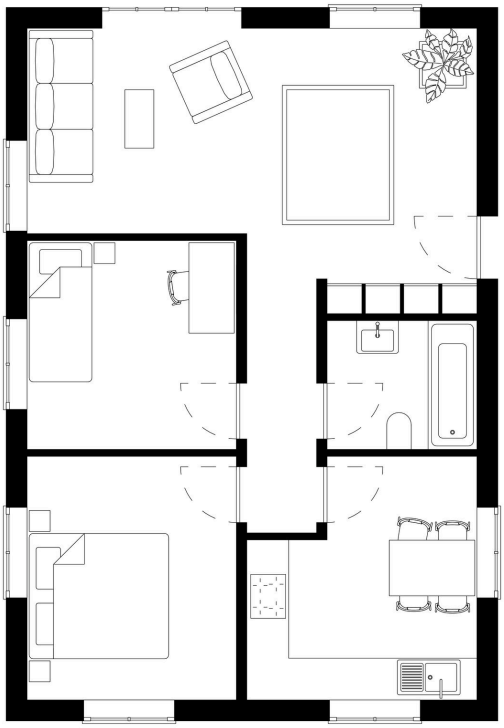
Size Comparison of the Space for Machines and for Living



Size Comparison Between a Harvester and a Small Apartment. Source: Tamino Hertel, 2023.



Harvester Claas Lexion 600

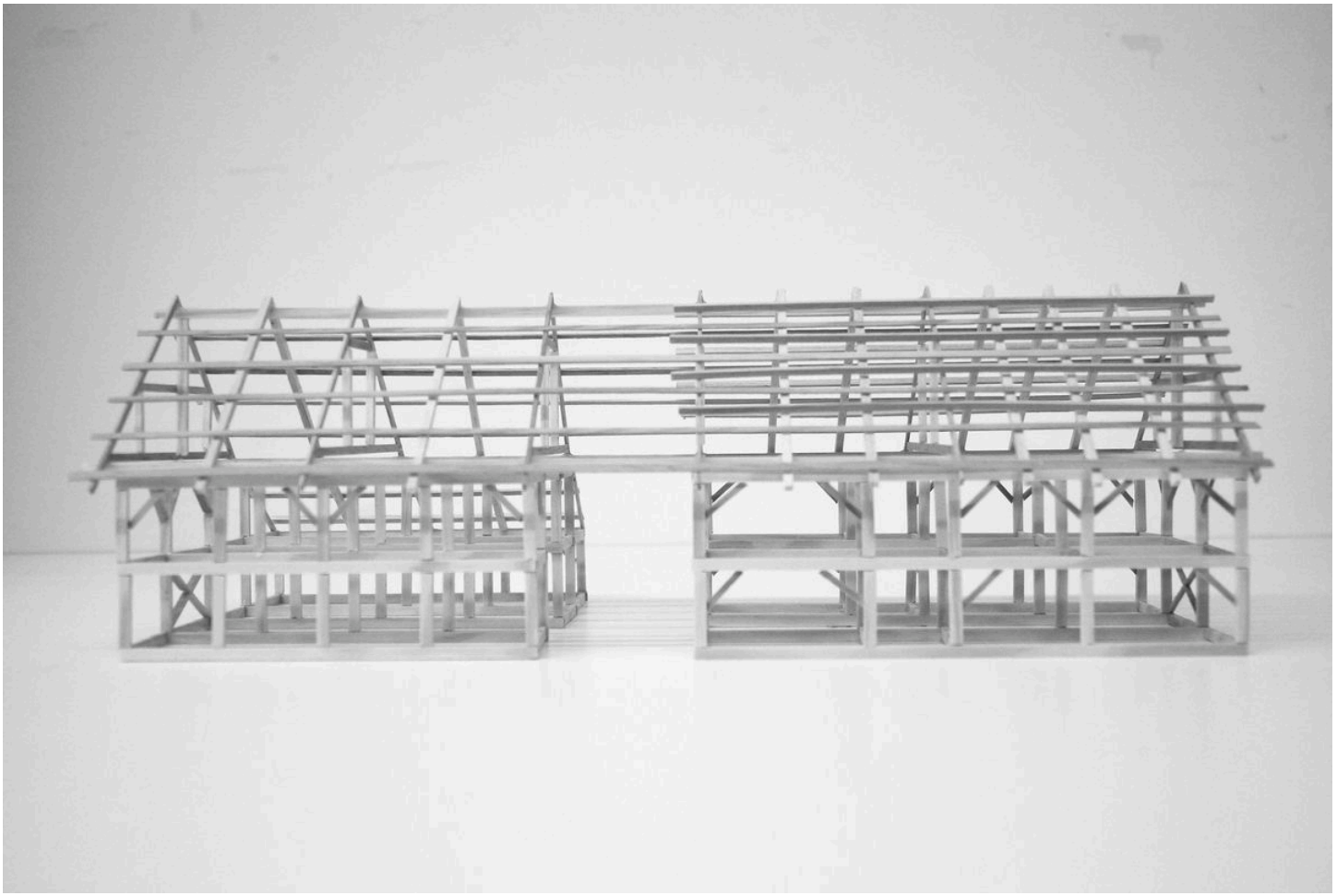


3.5-room flat



Centrally-rented machinery in Agritopia. Source: Zan Kocunik, 2023.

The Agrihouse: New Homes for Part-Time Farmers



Converting the Zurich farm house typology into new homes.

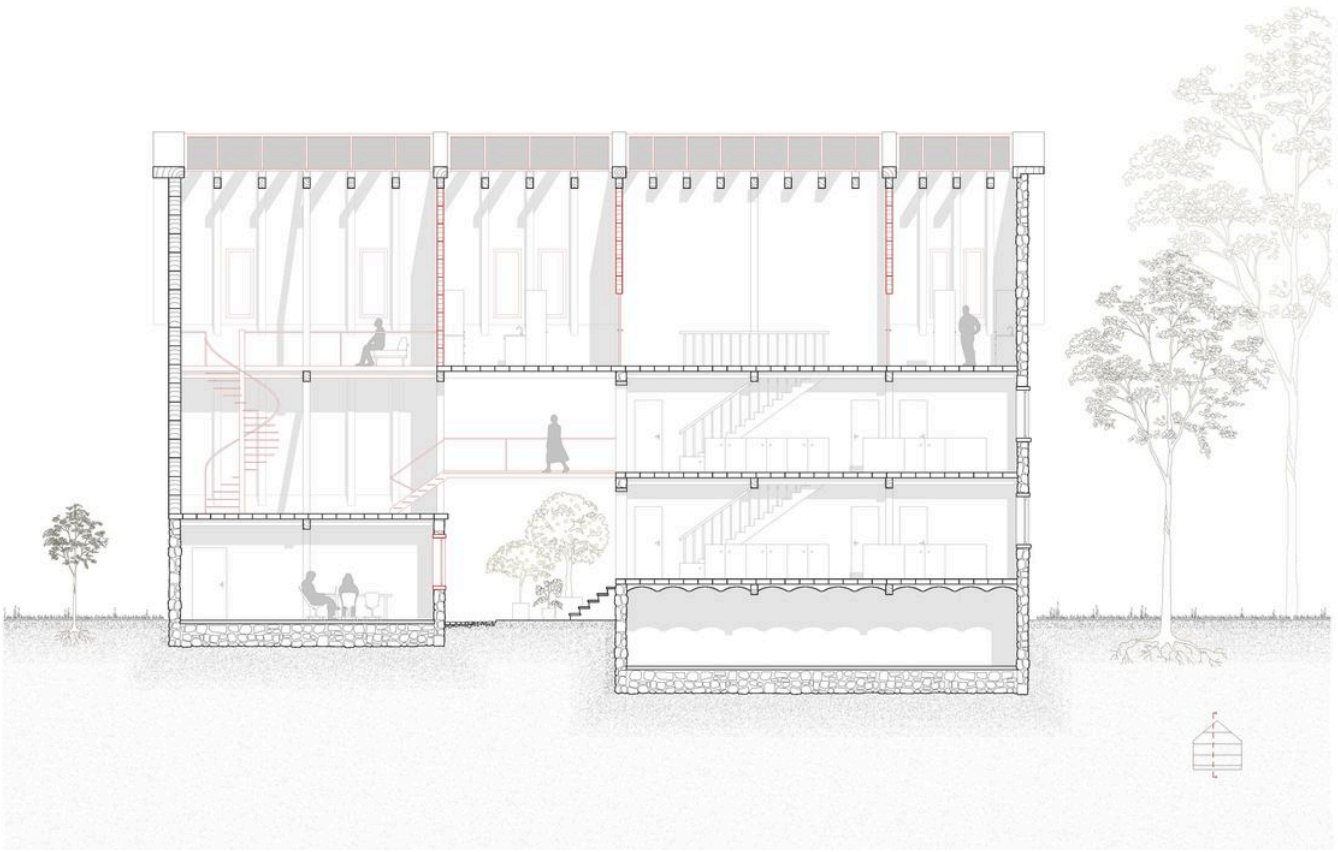
There are about 300 houses on our site that have lost their original purpose. The majority is older than a century and corresponds to the Zurich farmhouse typology. As such, they are characterised by multi-functionality and adaptability. A column grid creates these qualities and organises the typology in 3 distinct parts: the residency with clearly separated rooms and the kitchen in the center, the stable as a shelter for animals, hay, and produce, the tenn in between, as a passage for the agricultural routines. Thanks to their flexibility, small interventions can turn such farmhouses into homes for part-time farmers.

We want to demonstrate this new way of living by converting a specific building into an Agrihouse. It has been standing at the edge of Katzenrüti since 1897. Over the past years, it has been empty, and nature has started to reconquer it. There are plans to replace it with a new building, but elements like the historic staircase have been disruptive.



Building at Katzenrüti to be transformed into an Agrihouse. Source: Tamino Hertel, 2023.

The concept of our conversion is to take advantage of the existing structure and room layout with sensible actions. This allows the building to adapt to a new way of living. The connection to agriculture is much closer, and residents are both farmers and employees in regular jobs elsewhere. The multi-purpose house can now hold at least twenty people with a high diversity: singles and couples in the cluster and families in the attic apartments.

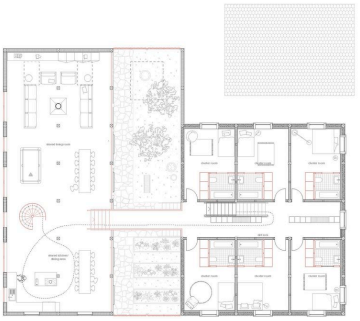


Section Agrihouse. Source: Jeffrey Barman, 2023.

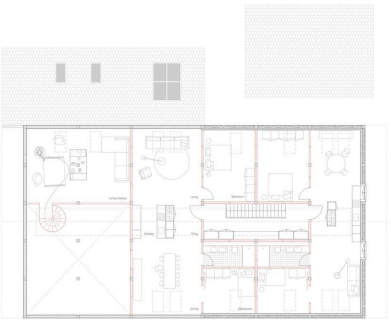




Floor plan ground floor. Source: Jeffrey Barman, 2023.



Floor plan first floor.



Floor plan second floor.



Glimpse into the former tenn of the Agrihouse. Source: Zan Kocunik, 2023.

It has been a long Friday of working on the late autumn fields, cultivating salad, carrots, and garlic. Finally, Julia makes her way home, through the hamlet of Katzenrüti, until she arrives at her Agrihouse. As she enters through the big doors, she is greeted by orange trees and tomatoes in pots. They are placed in the tenn, where it is warm, to protect them from the winter season. She waves to Robert and Katherine, two young adults working from home in the farm office on her left. Then Julia walks through the plant pots and into the staircase, where she takes her dirty work shoes and jacket off, stores them in her locker, and enters her clean bedroom.

After a while, Julia gets hungry and decides to head to the shared living space. As she walks up the old, squeaking stairs, she meets the smell of curry from the kitchen. Across the bridge leading out of the staircase and over the orange trees, Daniel, a work-tanned Italian in his 30s, is cooking a meal for all the flatmates. Everyone gathers around the wooden table under the high gable roof. They talk about the productive year and how they will miss the fieldwork. Now that winter is coming, the workload from the fields shrinks, and they will spend more time on their regular jobs.

After dinner, Julia and her friend Claude make their way up the spiral staircase. Up on the gallery, they can relax in the more quiet living room under the cozy, pitched roof. She grabs a book and sits in one of the colourful bean bags. From here, she has a rare view into the window that connects the cluster housing to one of the two apartments in the attic. As Julia reads on, the letters drift from the pages, and she falls asleep.

The Werkhof: A New Space for Maintenance Work

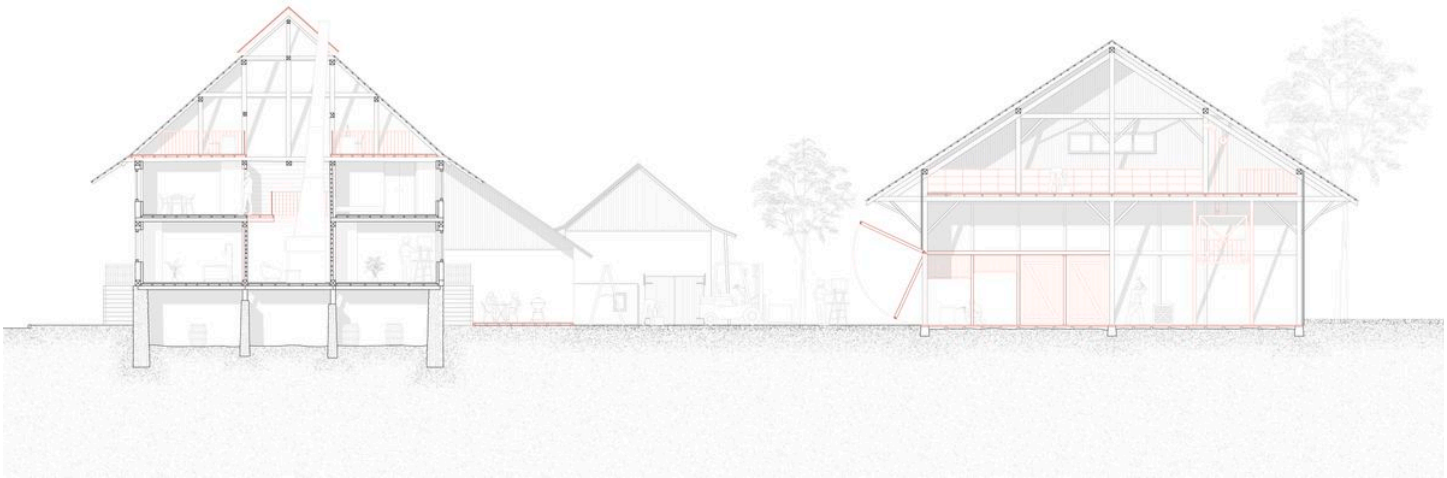


In Agritopia, a culture of maintenance will be promoted. The previous chapter has shown the potential of adapting and reusing the traditional farmhouse, but how such a conversion takes place will be key.

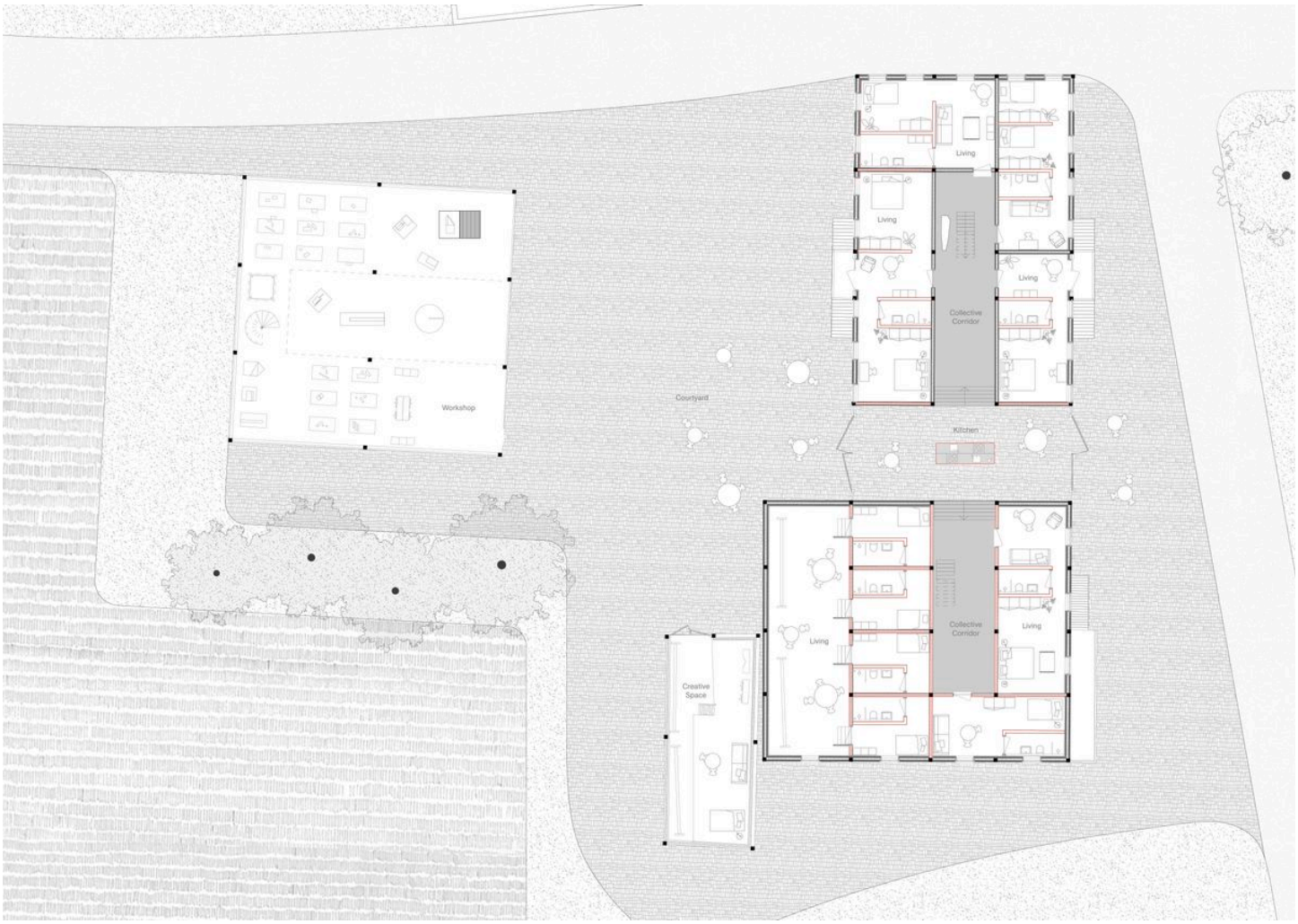
Traditional construction must be respected while remaining affordable. However, the area is still oriented towards agriculture, meaning there is a need and ambition to repair and maintain agricultural machinery, not just the building mass.

Diverse craftsmanship is required to bring the maintenance and repair culture to life. In Agritopia, experts of different craftsman disciplines live under the same roof in a Werkhof. It ensures efficiency and knowledge exchange and results in better quality as well as lower costs of maintenance and repair.

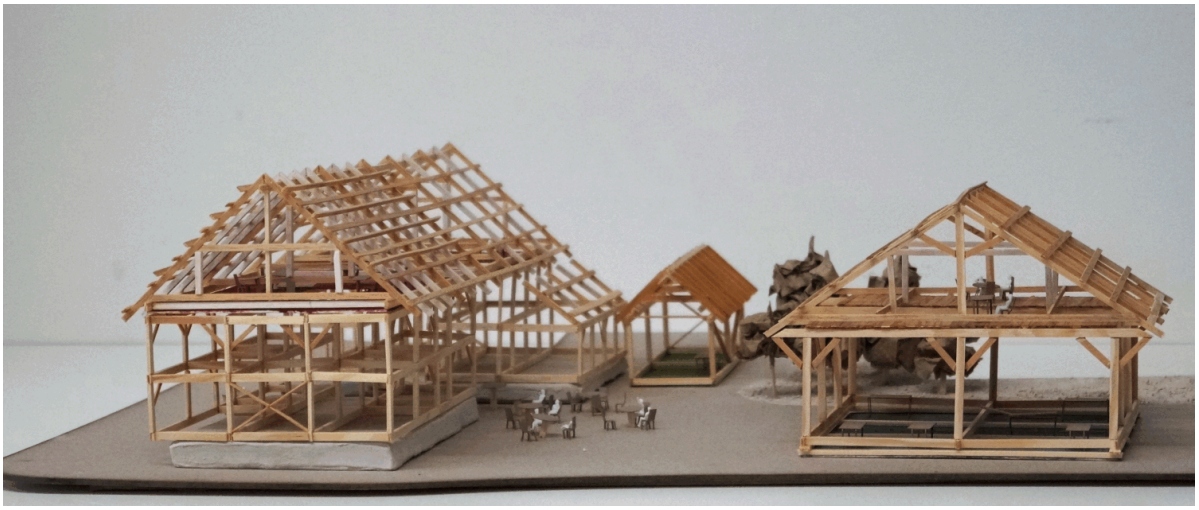
One *Werkhof* is established at the edge of Seebach. A cluster of buildings is repurposed to accommodate living and working around a square with a public character. The conversion of this Werkhof aimed to preserve the historic structure. The ground and first floor are conceived for living and the attic serves as a coworking space. The Tenn becomes a social gathering place around a central kitchen, which opens to the square. Said square intertwines living and working, as it is enclosed by the residential house and the workshop. In the workshop, craftsmen repair the tools and machinery. In calm hours, the space becomes a public service and a place for interaction and knowledge exchange. Visitors can follow their interests by interacting with others or quietly taking care of their own repairs.



Section Werkhof. Source: Zan Kocunik, 2023.



Floor plan ground floor. Source: Hassan Ayaz, 2023.





Collage of the future Werkhof. Source: Tamino Hertel, 2023.

Katzenrüti: Resocialising a Hamlet



The concept for Katzenrüti, the largest hamlet on the site, builds on public social spaces and giving back to the community. The addition of new functions to Katzenrüti underlines the centrality of the hamlet and enables it to meet the social needs of the new residents.

The previously scattered public spaces in the heart of Katzenrüti are united to create the hamlet square. The eastern part offers a wooden structure with plenty of chairs under the trees to encourage social interaction. On weekends, a traditional market takes place here.

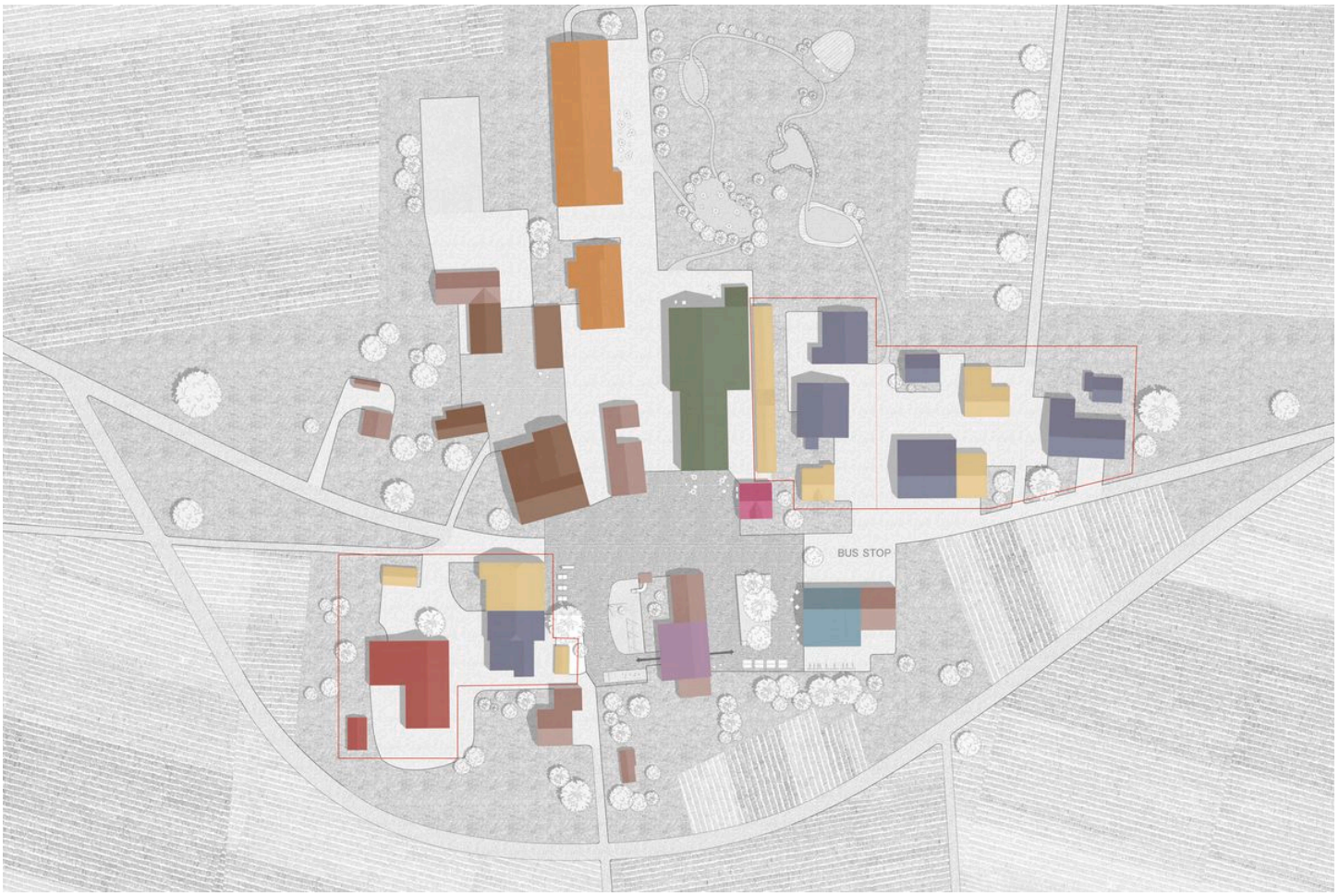
The square is enclosed by public buildings: the LAKO administration, the farm office, which is a co-working space for part-time farmers, and the kindergarden. The tenn through the kindergarden's building has been turned into a passage to connect the square's two sides. The western part offers activities for local people, as well as visitors. It consists of a playground, table tennis, and boccia. The new hamlet square is free of traffic, a single unit with two social realms.

In the north, Katzenrüti's largest building defines the square. Its existing grocery store has been preserved and expanded. The vast rooms in the back of the barn are turned into the assembly, where covered gatherings and events like theatres take place. The assembly opens up to the educational garden in the north of Katzenrüti. It consists of 5 islands that have unique social and educational purposes. The garden is public but designed with the students of the food group in mind. The adjacent school building has a canteen, professional kitchens, and storage rooms. Close to the school, there is a Werkhof. A private road connects it to the main street, allowing heavy machinery to arrive for repairs.

Although Katzenrüti holds several public functions, the hamlet retains its agricultural character. Besides the stable of the animal group, the three farms have been preserved and turned into farmsteads. These consist of the farmer's house, one or several Agrihouses, and small storage for tools.



Site plan Katzenrüti. Source: Jeffrey Barman, 2023.



Site plan of Katzenrüti and its functions. Source: Jeffrey Barman, 2023.

- Agrihouse
- House farmer
- Werkhof
- Assembly and farm shop
- Animal farm stable
- Future food school
- Lako administration
- Farm office
- Kindergarten
- Farmstead



Agritopia of Zurich North. Source: Zan Kocunik, 2023.

New social services

New Agrihouses



Square in Agritopian Katzenrüti. Source: Hassan Ayaz, 2023.

This work by Jeffrey Barman, Hassan Ayaz, Tamino Hertel, and Zan Kocunik was created as part of the design studio Agritopia at ETH Zurich in Fall 2023. The PDF is intended for educational purposes only. Its commercial distribution is strictly forbidden.

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