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Soil, Water, Labour
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Land Consumption

Preserving Land for Urban Agriculture in Zurich

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The potato is a good example of an agricultural product that has disappeared from our fields with the consumption of agricultural land by urban expansion. After their intense presence in Switzerland during the Second World War, potato fields are now a rarity. This change is particularly noticeable in the Glatttal, an area that has been characterized by urbanisation for decades due to large infrastructure projects. At the same time, an uncontrolled shift in thinking appeared: the dream of living surrounded by “nature”. To this day, the city of Zurich has not stopped growing. Only small residual areas with productive use are left. But these are absolutely in danger of disappearing due to the new efforts for inner densification. Different forms of urban agriculture are specifically adapted to local conditions, and they can be protected from further overbuilding in various ways.

Disappearance and Reappearance of Agriculture in the City

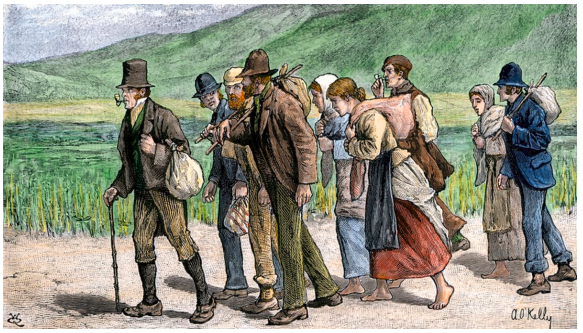


Potato was and is still a staple food. The advantage of potato is that it is easy to produce. Everybody can cultivate potatoes in their private garden. The tuber was highly important in Switzerland during crises and even now it is held within the country with all its might. Potato is rarely seen to be produced in Switzerland despite its importance. What is the reason for it?

How the Potato Conquered the World



1590: The first tubers in Switzerland came from Alsace and Ireland. Source: Historisches Lexikon der Schweiz, 2017.



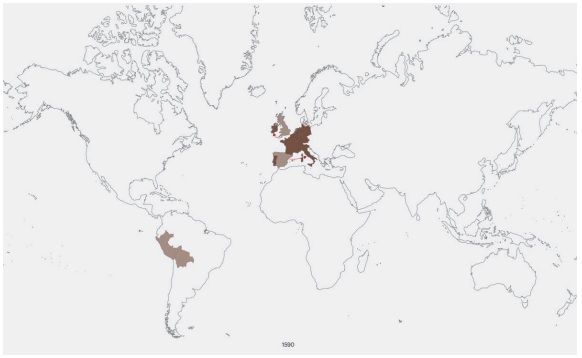
1719: Immigrant families from Northern Ireland went to New Hampshire with seed potatoes. Source: Planet Wissen, 2019.



After 1950: Industrial processing of potatoes. Source: Schweizer Bauer, 2020.



1570s: Spanish and British conquistadors brought potatoes from Andes Mountains to Europe. Source: Mary Evans Picture Library, 2018



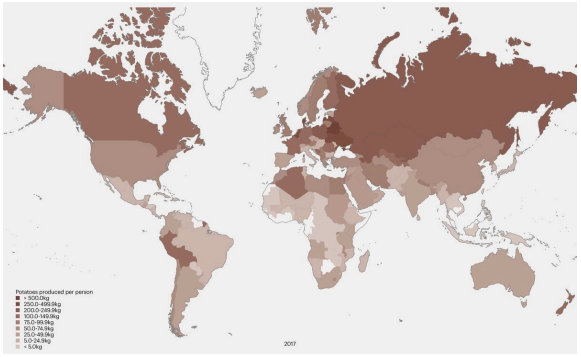
How the potato expands all over the world. Source: Historisches Lexikon der Schweiz, 2017



How the potato expanded all over the world. Source: Historisches Lexikon der Schweiz, 2017

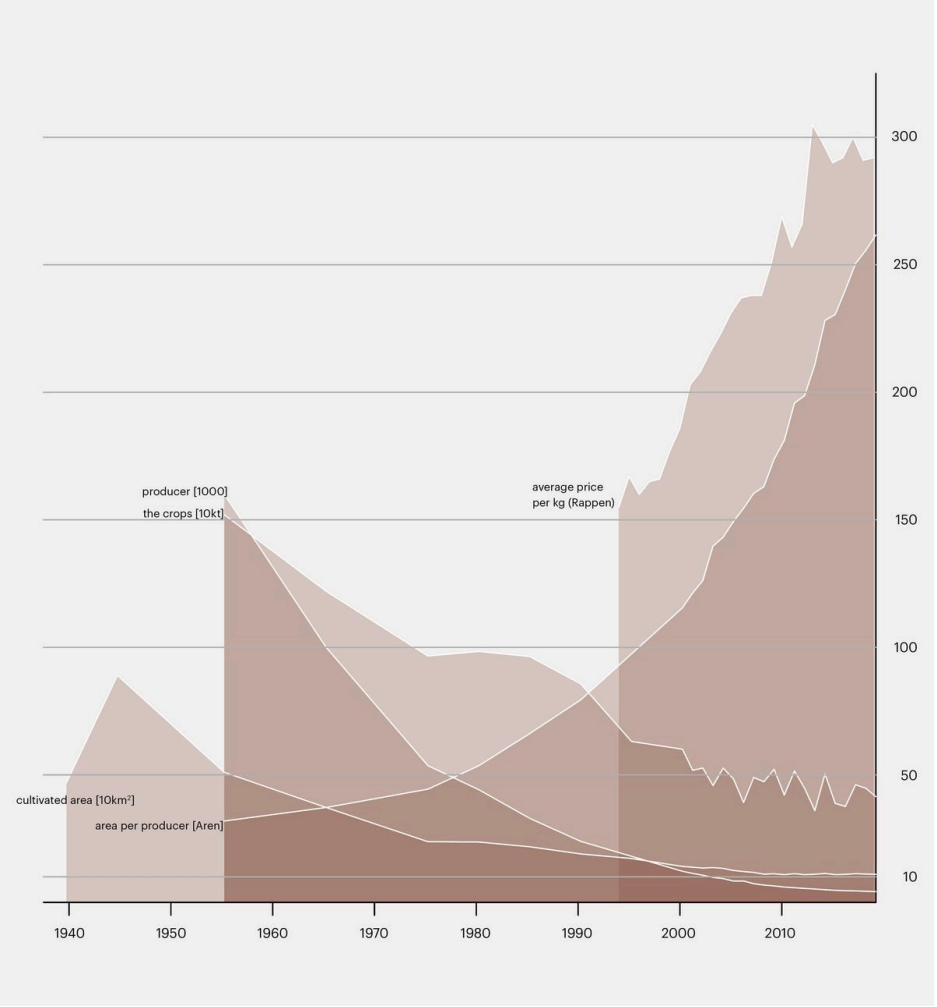


How the potato expanded all over the world. Source: Historisches Lexikon der Schweiz, 2017



How the potato expands all over the world. Source: BauernZeitung, 2020

The history of the potato goes way back. In the 1570s the Spanish and British colonies imported potatoes from the newly discovered South America. It has been cultivated in the high Andes for over 6,000 years. In Europe, the Spanish brought the tuber to Rome and the English to Ireland. Until then, the Europeans had little knowledge about the new vegetable and they used it mainly as an ornamental plant, because of its poisonousness.
In the 1590s, the potato spread further throughout Europe and reached Switzerland via Alsace and Ireland. Only at the beginning of the seventeenth century after a hunger crisis, the potato established itself as a staple food in Europe and spread to Africa because of the colonisation.
In the 1630s, the potato arrived in China. It was mentioned the first time toward the end of the Ming dynasty, and the imperial family consumed it as a delicacy. Some decades later, Europeans introduced potatoes in India, and from there it spread throughout Asia. Because of the potato rot and the resulting famine in Ireland, many families immigrated to New Hampshire on the American continent and brought the potato thereby to North America.
During the Second World War the potato became the most important food in the population's food supply thanks to the Plan Wahlen. As food was becoming scarce, people began to cultivate every available spot, especially with potatoes, as they were best suited for this purpose due to their robustness and ease of processing.
Industrial processing into potato chips and potato puree flakes began in Switzerland after 1950.



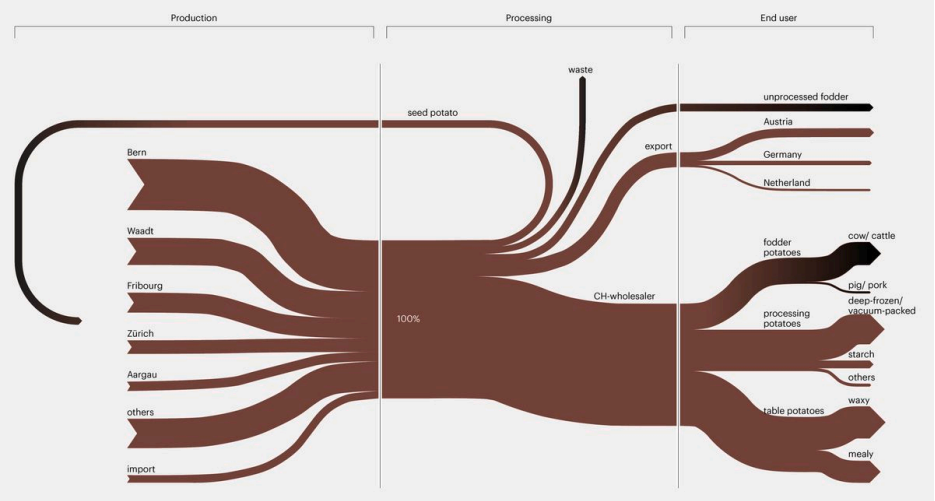
The cultivated area of potato had a peak during the Second World War. However, since then it decreased dramatically. Source: Statista 2020.



With the *Anbauschlacht,* the whole country produced potato to a great extent. Source: SRF, 2019.

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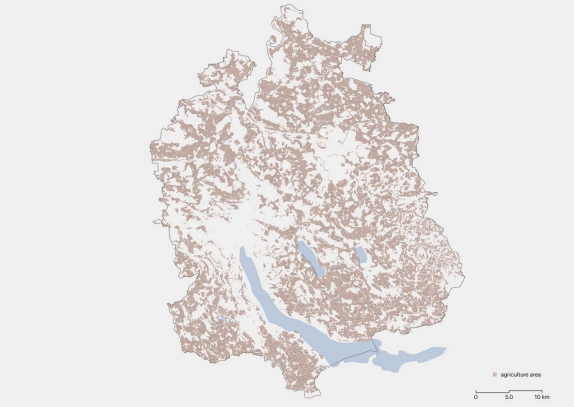
Looking deeper into Switzerland, after a peak during the Second World War, the area of potato cultivation and number of producers has decreased over the decades. The area per producer however has increased: due to mechanical processing only the production on extensive fields is worthwhile. This trend applies to all kind of farmers. The price of the potato has increased, but has been falling a little in recent years, which is a problem for many farmers. The cost of production is also relatively high for farmers because of the machinery. In order to pay off the cultivation, the state makes direct payments.



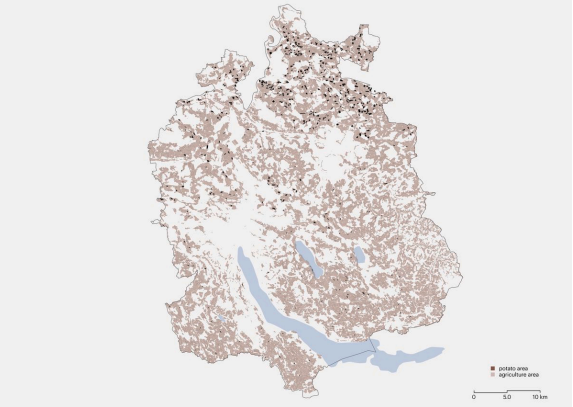
The Sankey diagram of the potato in Switzerland shows how the potato is kept in the country. Source: Agrarbericht, 2020.

In Switzerland, potatoes are mainly grown in Fribourg, Bern, and Vaud. Apart from small imports, most potato production is kept in the country. A small part of the whole production is exported, mainly to Austria.
The harvested potatoes are mainly marketed as table potatoes. However, there are still many which are further processed into vacuum-packed potatoes, french fries, or chips. A few are also used for the next potato production and serve as seed potatoes.
The production chain of the potato is divided into a few steps. An important aspect is the losses in almost every production step, which are mostly processed further to biogas or animal feed. Only very little ends up in waste.

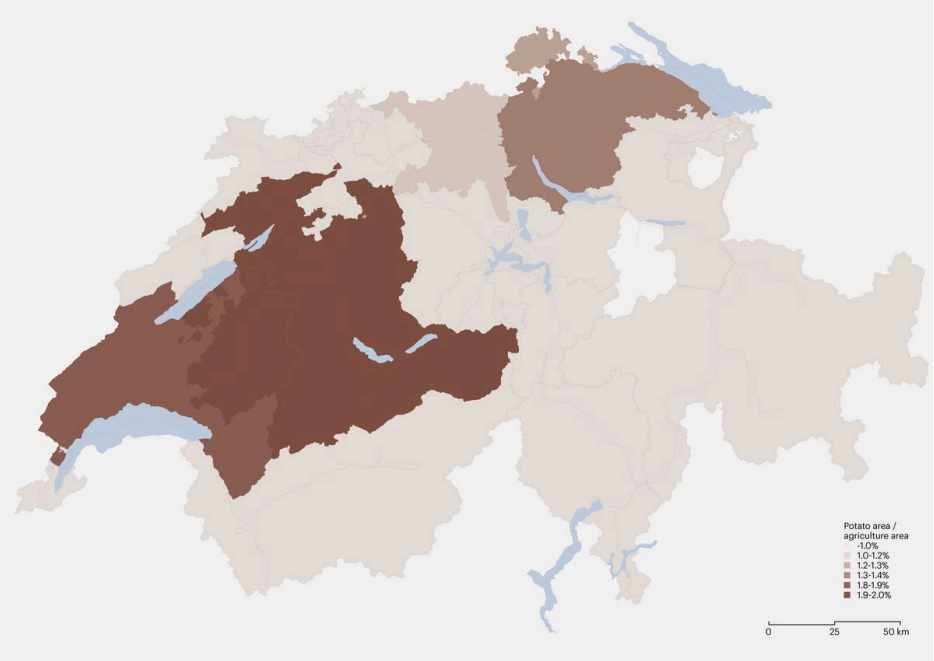
Potato Production in Zurich Is Decreasing Ever Since



The closer to an urban centre, the less agriculture land there is. Source: GIS-ZH, 2020.



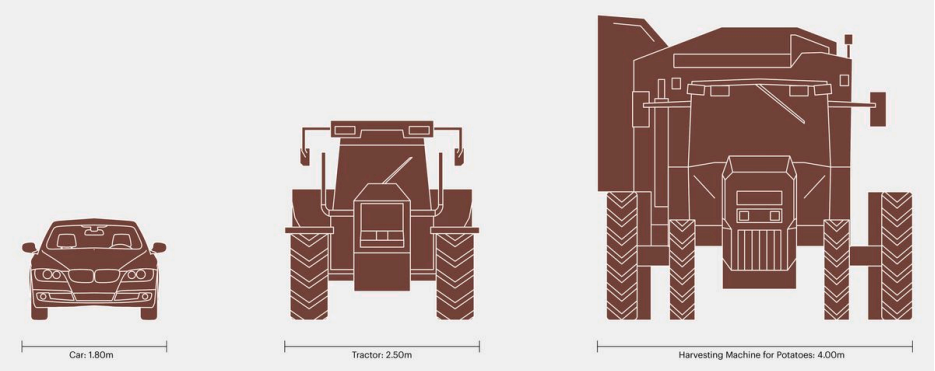
The potato production in the canton of Zurich represents a small part of the country's total production. Source: GIS-ZH, 2020.



Potato is mainly cultivated in Fribourg, Bern, and Vaud. Source: swisspatat, 2019.

The canton of Zurich accounts for a rather small part of the potato production. But in comparison to other cantons, Zurich is not the least productive one when it comes to potatoes. This shows that potato production is in general rare in Switzerland and besides several financial reasons there os also others for it. It is also to mention that the map shows just one year, because the cultivation area of potato changes over the years due to crop rotation. The farmers cannot plant potatoes on the same field every year because of nutrients, pest, and weed pressure. But what is also noticeable on the map is that there is little agricultural land in the big towns. One reason are the big machines, as a farmer we met said:

“The potato cultivation in this remaining area would not be worthwhile, as the logistics and transport would be too laborious.… The harvesting machine is also way too big for the streets.… If we grew potatoes, it would be right next to our farm.”—Alice Klöti



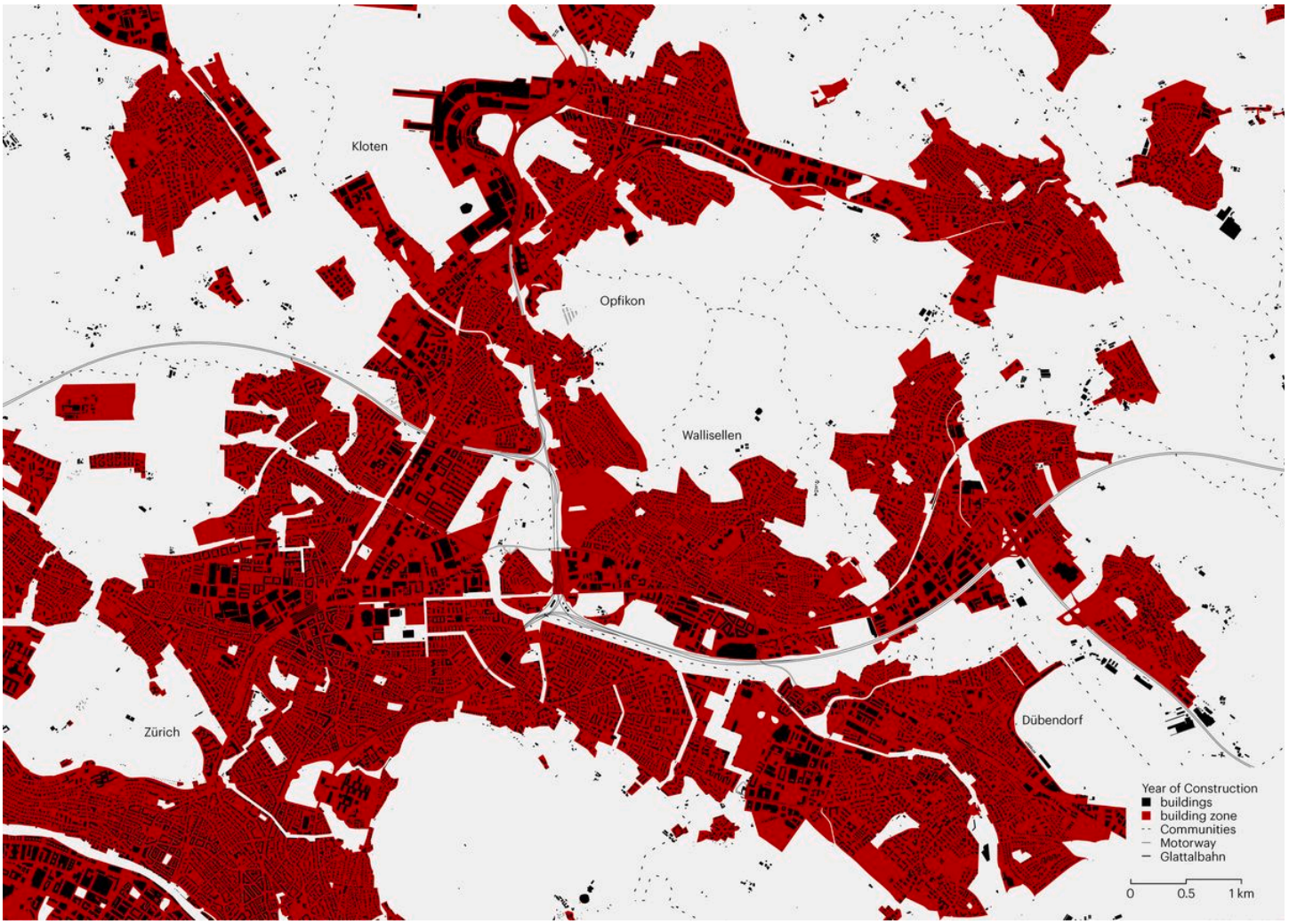
Mechanisation of potato production leads to big machines which need big fields rather than the small fields available in cities.

Potato production and agricultural land in general decreased not only because of heavy machinery and the need of big coherent production fields, but also because of urbanisation. Here it is important to mention, that not only the building in construction zones is rising rapidly, but also the building in agriculture zones. Because of the increasing mechanisation, farms need more space to store their machines. This minimises the area used for agriculture—even though it is not that easy to get permission to build in agricultural zones.

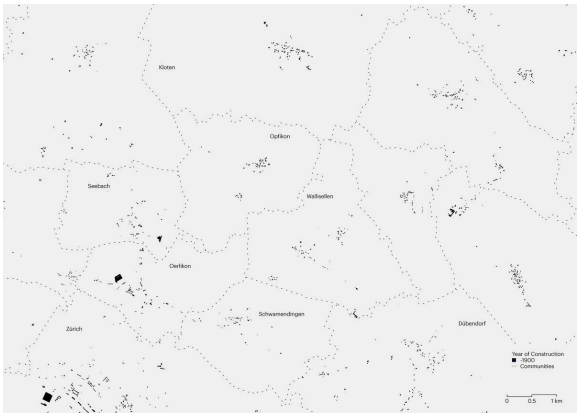


Farms need more space due to mechanisation and therefore, the cultivated land decreases. Source: Bundesamt für Raumentwicklung ARE, 2019

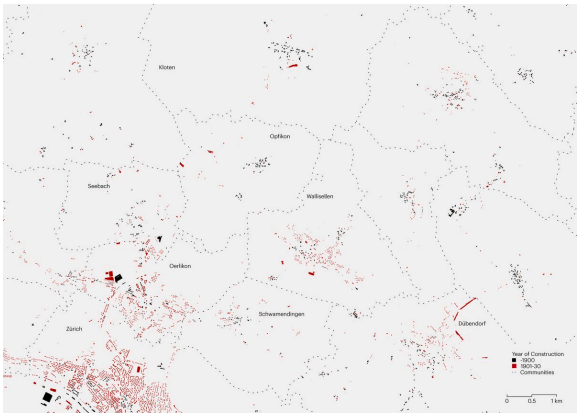
The Transformation of the Agricultural Land in the Glatttal



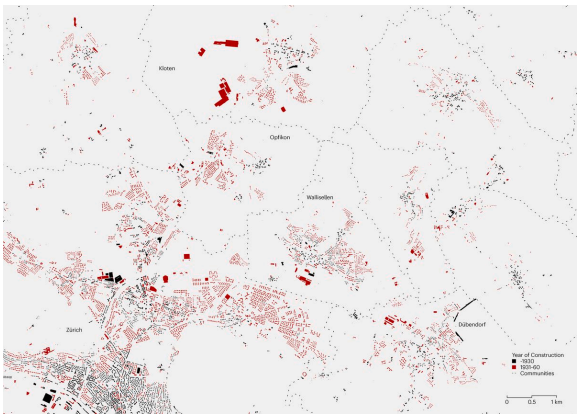
The region of Glatttal has a great importance when it comes to urban developement in Switzerland. It is located next to Zurich and the communities of Kloten, Opfikon, Wallisellen, and Dübendorf belong to this region. An incredible growth and economic importance are characteristic for this region. Over the last forty years, the population has been growing extremely fast. Good infrastructure links such as motorways, public transport, and the airport favour further growth. Farmers are experiencing these transformations of the territory as there is less and less land available for agricultural uses.



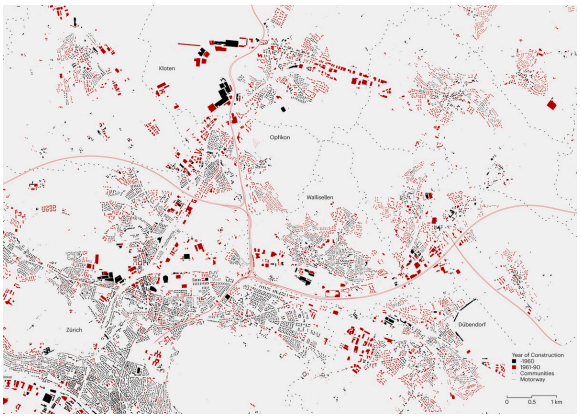
Glattal until 1900. Source: GIS-ZH, 2020



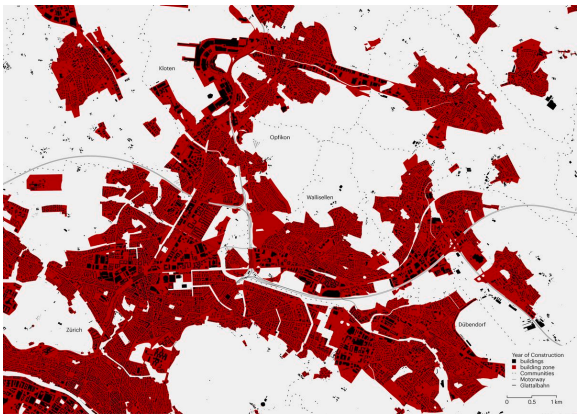
Glattal until 1930. Source: GIS-ZH, 2020



Glattal until 1990. Source: GIS-ZH, 2020



Glatttal until 2020. Source: GIS-ZH, 2020



Glattal in the future. Source: GIS-ZH, 2020

How the War Changed the Land Consumption

Until 1900, there were already two agrarrevolutions. The first revolution (1700–1850) ended up the three-field crop rotation, which did not allow intensive livestock farming. They changed from crop cultivation to livestock farming and dairying. Due to this change, they had to increase the import of crops, which had consequences. The second agrarrevolution was then about mechanisation, but working animals were still used.

During the First World War, they had difficulties of supply because of this mentioned change to dairying. That is why they extended the crop cultivation and researched more about crops after the war. Thereby, dairying had to decrease. The only goal was to be self-sufficient and it was still a big topic in the Second World War. The program Plan Wahlen was to get Switzerland self-sufficient. In this period, the potato was on the new daily menu, because of its simplicity in harvesting and further production and because of its richness in nutrients and carbohydrates.
So, the arable land was doubled during the Second World War. Even the Sechseläutenplatz in Zurich was not spared from the mentioned Anbauschlacht. However, the surface decreased afterwards again. Looking back the whole idea was more about propaganda and creating solidarity among the population than to increase productivity. There were even products imported from allied countries, so the self-sufficiency was also more an idea than reality. People began to farm together, as a closed community, wherever they could and by this, they survived the war.

After the two war the third agrarian revolution took place, which was about motorisation and chemistry. They could increase the cultivated area because they needed fewer working animals and consequently less fodder production. Fertilizer was also used more, and the agriculture orientated to a bigger market.



Opfikon had once a lot of agricultural land and fruit trees. Source: E-Pics, 1946



The village Opfikon grew to a town. Source: Google Earth, 2018



In front is shown Opfikon with the character
of a village and in the back is the big city

Besides the changes in agriculture, the building boom started after the wartime. Several residentials were built and Zurich expanded its borders due to the incorporation of other communities in 1934. Other towns got also bigger and the borders disappeared. Opfikon is a good example for the development of a village in this time. It was once an independent village and had a lot of agricultural land. In 1946, there were even many fruit trees. But due to problems with alcoholism, the government payed the farmers for every felled tree. Nowadays however, they have too little fruit trees and try to increase the amount again. As the city expanded it border several villages were included into the city and had to change their townscape. Not every village could transform. Opfikon has still a part with the character of a village even though it is next to the city. Furthermore, the number of farms decreased but the farms simultaneously got bigger and the small plots merged to bigger ones. Mostly, just big farms survived and this trend is continuing.

Infrastructure Leads to Growth



The aiport in Kloten was built on a big swamp. Source: E-Pics, 1953

Infrastructures such as the airport in Kloten had a great impact on the agricultural land, as it decreased there rapidly. In 1953 the airport Zurich was built. Before that, there was “just” a big swamp, as the government would say, and it was surrounded by many agriculture fields. Today, it is the biggest airport in Switzerland, and to this day new building have been emerging around this infrastructure. The city of Kloten has an important international economy. Even the amount of workers is equal to its residents, which is rarely in such agglomerations. The newest project is the Circle, which creates a bigger urban centre around the airport, with even a hospital and several other functions. It takes more and more agricultural land in, too.

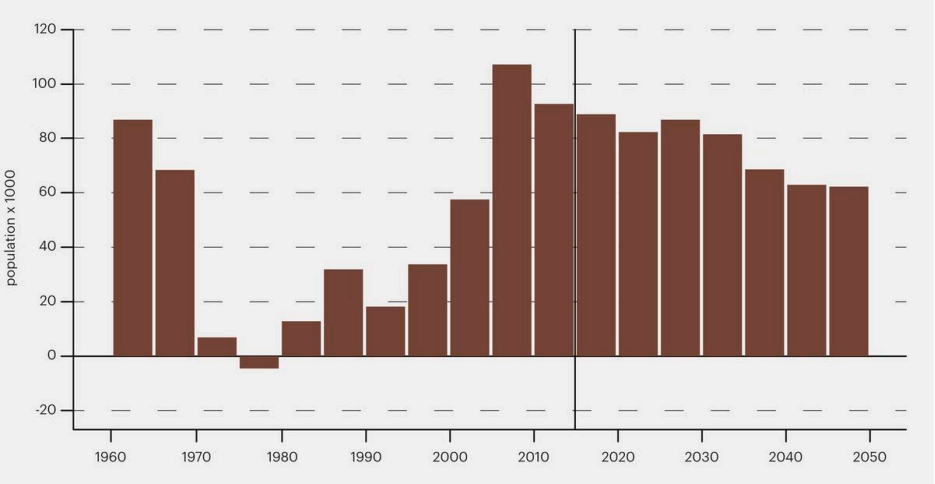


Farms had to move due to the new motorway. Source: E-Pics, 1964

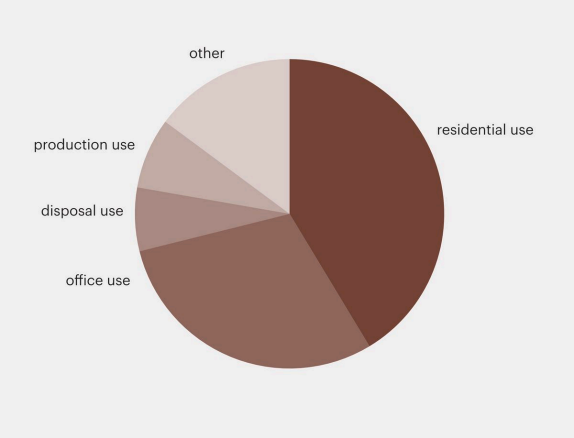
In 1970, the motorway A1 was built. In the same way as the airport, a lot of farms and agricultural land had to be moved away. Infrastructure often cuts into landscapes but does not give anything back. Big infrastructures such as these are always the task of the federal council. Therefore, less important things for the general public, such as farms, could been easily moved away. This did not stop since then, because Switzerland has to be the best-connected country. Infrastructure is often a trigger to population growth and consequently, there will be built more. It is like a vicious cycle: when the population grows, the infrastructure needs to react and needs to relieve the existing one, by building new. With that, the transportation is easier which brings a bigger sprawl of people with it, and with the ongoing population growth the infrastructure needs to expand again.

After 1990, people started to think about the environment and what are the best agricultural methods. The Chernobyl disaster caused a big harm on the vegetable production in 1986. IP-Suisse was established in 1989 and aims to an environmentally friendly and animal friendly agriculture in Switzerland. The research focuses on developing gentle production methods and improving the quality of crop, too.

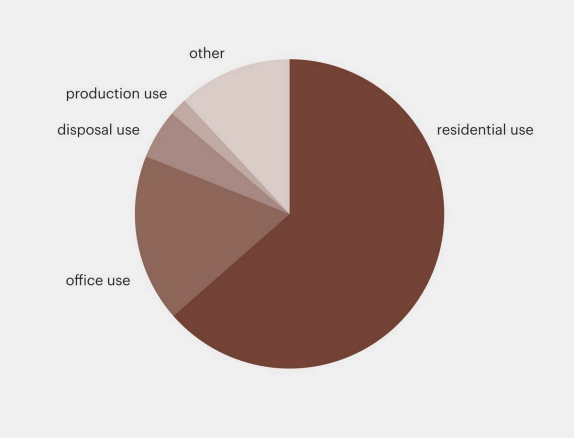
Population Increase



The population grew dramatically in the canton of Zurich since 1990. Source: Statistisches Amt Kanton Zürich, 2020

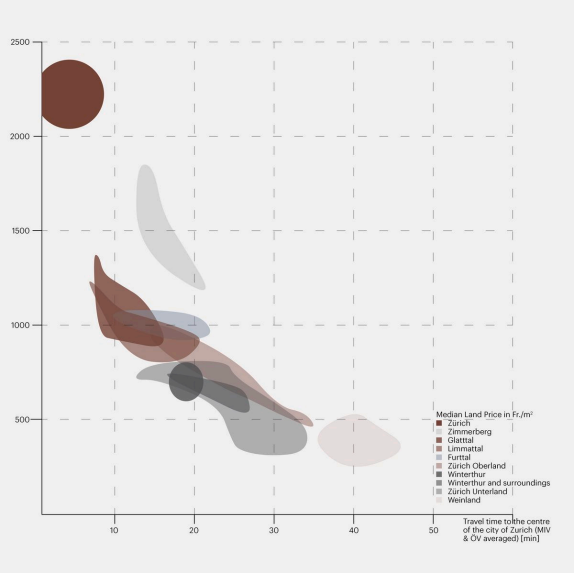


Uses of buildings constructed between 1970 and 1980. Source: Stadt Zürich, 2020.

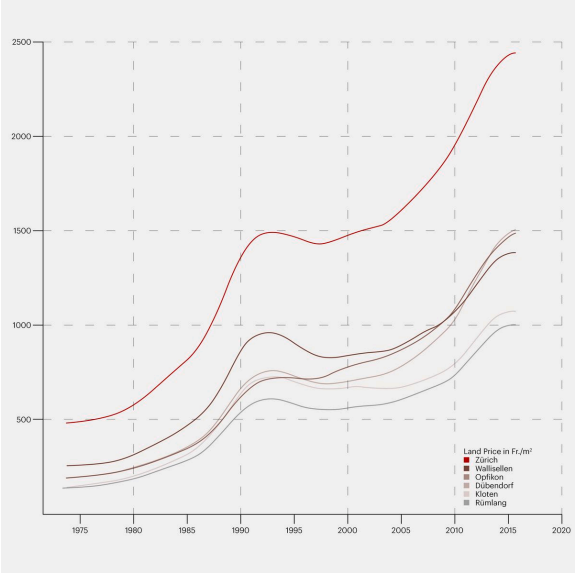


Uses of buildings constructed between 1980 and 2010. Residential use doubled since 1980. Source: Stadt Zürich, 2020.

Since 1980, the agricultural land was still getting smaller because of the city's growth. The significant population growth is a reason for this massive overbuilding. This is linked to a change of agriculture zone into building zone, especially in the 1990s. This trend is not going to disappear in the next few years. In contrast to the past, people claim bigger living space, which increases the buildings area, too. In this time was also, in contrast to the other forces, an unplanned shift in the thinking of the humans. People had the dream of a private home in the periphery and in the green, with an own garden. With that, the suburbs got bigger and bigger and the agglomerations such as the Glatttal became more and more important. Today, there are much more buildings and less agricultural land. However, since 1972, the principle has applied in Switzerland that buildings zones must be separated from non-building areas. There is therefore a general construction ban outside of building zones. Without this construction ban, urban sprawl would have continued in Switzerland.



The closer the plot is to Zurich, the higher is the land price. Source: Statistisches Amt Kanton Zürich, 2017



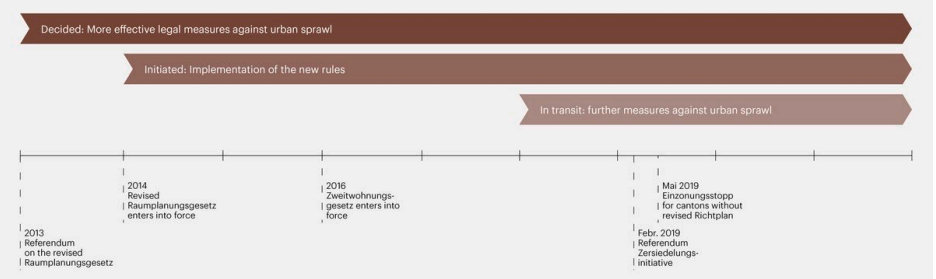
The land prices in the different communities increased equally. Source: Statistisches Amt Kanton Zürich, 2017



The Glattalbahn connects the airport with the city of Zurich since 2010. Source: wymp.ch, 2011

An important reason for the pressure on agricultural land in the city is the contruction of building land by zoning and the associated land prices. In the 1990s, a great deal of land became building land in Zurich, which is why land prices fell afterwards. An important influence on land prices is the travel time to the centre of Zurich. The faster you reach the city centre, the higher is the land price. Therefore, the Glattalbahn was an important indicator. The Glatttal is nationally and internationally connected due to the airport, manifold public transport and access to the motorway. The capacity was even though not enough. Therefore, the government announced a new tram line which connects the agglomeration and the city and increases the capacity of transportation. In 2010, the Glattalbahn was finished and connects mostly working places. Again, the infrastructure is a trigger, that the town will be denser and even companies are more attracted to stay there. Through the increasing need of construction plots the land prices increased drastically in the past. It is noticeable that the land prices around this region increased simultaneously. This rise affects only the building zone, but since most of the agriculturally used plots in the urban area are surrounded by building zones it affects also them.
After turning agriculture zones into building zones, it was almost impossible for farmers to hold their plots for agricultural use because of the extreme rise of the land price.

Shift to Inner Densification

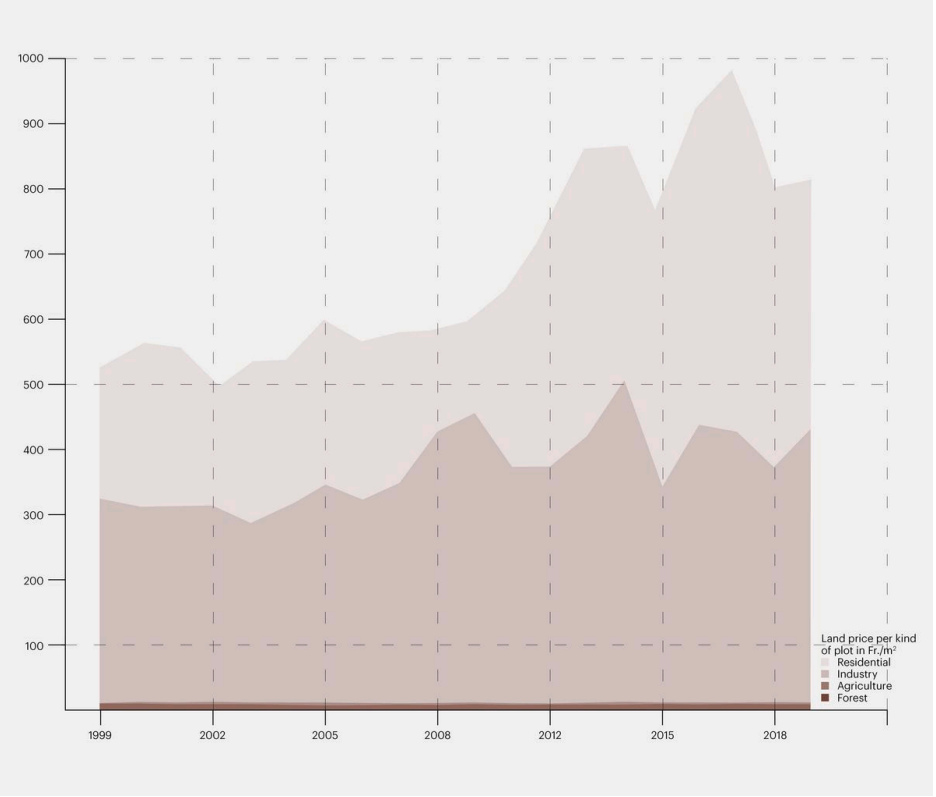


There are already several initiatives to stop building on agricultural land. Source: Bund, UVEK, 2019

Since 2013, there was again a shift in the public opinion. People began to realise, that this development needs to stop in order to not urbanise the whole country. There are several initiatives against the movement of overbuilding agricultural land. Examples are the Zersiedelung Stoppen initiative and the Landschaftsinitiative. This movement lead to a higher pressure on the existing building zones, because nothing new can be zoned in. Therefore, the land prices rose again. Building land prices is subject to strong fluctuations. The land prices in the case of forests and agricultural zones are stable, because of the Federal Law on Rural Land, which is intended to prevent speculation and only allows farmers to buy this land. It prevents from the translation of the development of the land prices in the construction zones into the prices of the land in the agricultural zone. It has thus fluctuated only around CHF 6 (agricultural zone) and CHF 1.5 (forest) for decades.

The higher pressure on the existing building zone can also be seen in the latest decision by the government council: The decision to amend the General Building Ordinance (ABV). The change in the ordinance affects the permissible duration of shadows cast by high-rise buildings. The rule means to not provide shade for longer than two hours on a mid-winter day. In the future, it should be three hours possibly. This makes it easier to place buildings with a height of more than twenty-five meters in suitable locations. However, it is also a big change for the city itself and for the remaining free spaces, which will be mostly shaded. To that, agriculture is less possible in the dense city. Therefore, vertical farming could be a solution. Crops could grow in multi-story buildings and the city can grow higher, too. In some cases, vertical farming is already realized, but mostly in smaller scales. However, the right lightning is still a problem. Artificial light is mostly expensive, and the results are often not comparable to cultivation in sunlight. LED could be a solution.

In the near future, the ongoing development will not change. Although the boundaries of the construction zones have been sealed for several years, there are still free spaces left, which will be overbuilt sooner or later. Land is profitable and with that the air to breathe is getting scarcer in cities developing like the Glatttal. But is there still a future for unbuilt areas?
The Richtplanung is trying to set the right conditions for a good city development, but reality is often different and also a Richtplan needs to be improved.



The agriculture zone has a stable land price.
Source: Statistisches Amt Kanton Zürich, 2018.

211.412.11

Bundesgesetz über das bäuerliche Bodenrecht (BGBB)

vom 4. Oktober 1991 (Stand am 1. Januar 2014)

Die Bundesversammlung der Schweizerischen Eidgenossenschaft,

gestützt auf die Artikel 22ter, 31octies und 64 der Bundesverfassung[1], [2]
nach Einsicht in die Botschaft des Bundesrates vom 19. Oktober 1988[3],
beschliesst:

1. Titel: Allgemeine Bestimmungen

1. Kapitel: Zweck, Gegenstand und Geltungsbereich

1. Abschnitt: Zweck und Gegenstand

Art. 1

[1] Dieses Gesetz bezweckt:

a. das bäuerliche Grundeigentum zu fördern und namentlich Familienbetriebe als Grundlage eines gesunden Bauernstandes und einer leistungsfähigen, auf eine nachhaltige Bodenbewirtschaftung ausgerichteten Landwirtschaft zu erhalten und ihre Struktur zu verbessern;

b. die Stellung des Selbstbewirtschafters einschliesslich diejenige des Pächters beim Erwerb landwirtschaftlicher Gewerbe und Grundstücke zu stärken;

c. übersetzte Preise für landwirtschaftlichen Boden zu bekämpfen.

[2] Das Gesetz enthält Bestimmungen über:

a. den Erwerb von landwirtschaftlichen Gewerben und Grundstücken;

b. die Verpfändung von landwirtschaftlichen Grundstücken;

c. die Teilung landwirtschaftlicher Gewerbe und die Zerstückelung landwirtschaftlicher Grundstücke.

AS **1993** 1410

1 [BS **1** 3; AS **1969** 1249, **1996** 2502]. Den genannten Bestimmungen entsprechen heute die Art. 26, 36, 104 und 122 der BV vom 18. April 1999 (SR **101**).

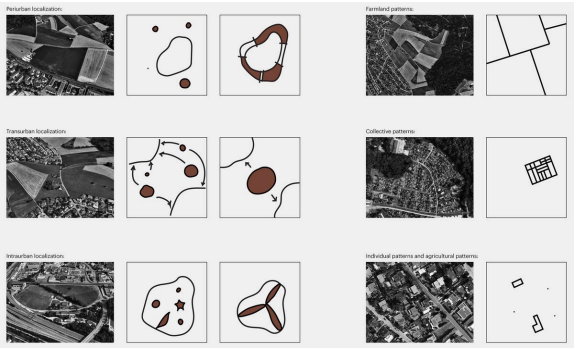
2 Fassung gemäss Anhang Ziff. 3 des Gerichtsstandsgesetzes vom 24. März 2000, in Kraft seit 1. Jan. 2001 (AS **2000** 2355; BBl **1999** 2829).

3 BBl **1988** III 953

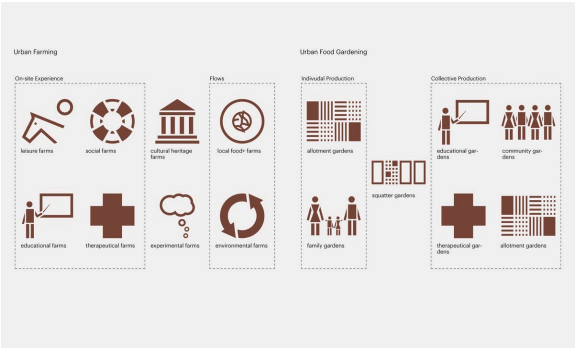
The Last Pieces of Urban Agriculture - Five Case Studies



The disappearance of agricultural usage has left small pieces of memory in the urban structure. Some groups try to preserve it, but does this type of productive land still have a future? Or does it have just a symbolic meaning as the Plan Wahlen during the Second World War?



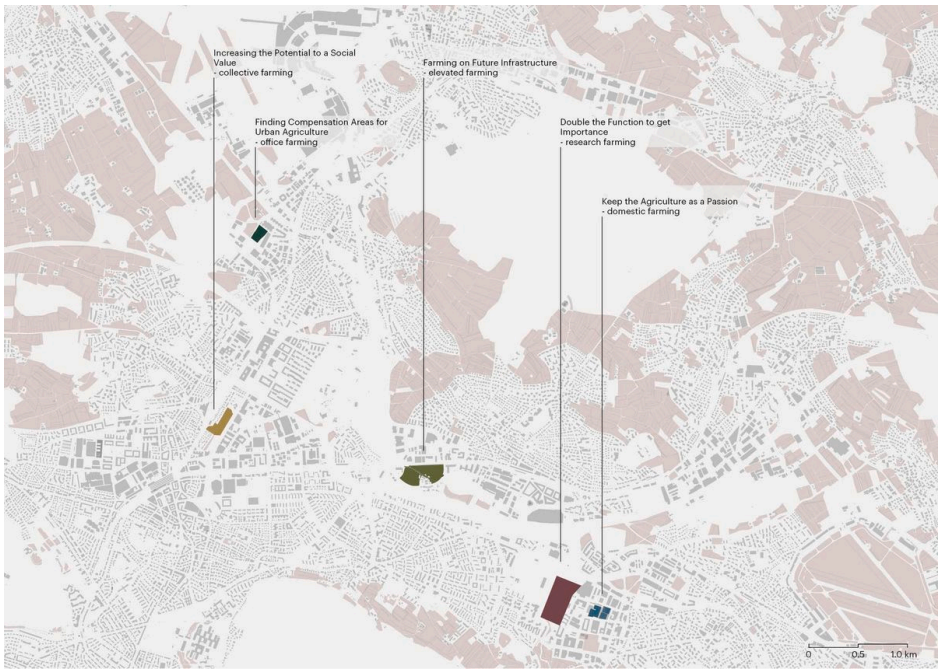
There are different in localization and pattern in urban agriculture. Source: Urban Agriculture Europe, 2016



Urban farming and gardening must be distinguished. Source: Urban Agriculture Europe, 2016

Urban farmland is not defined by the fact that it is in the city, there are different variations: in their location they differ whether they are on the edge, between or in the middle of the urban area. There are also differences in their size: the largest scale is the usual large agricultural areas, the middle scale is the allotment gardens and the smallest scale is the individual gardens, such as house gardens. Urban agriculture is mostly defined by having a connection to the city, whether geographically or functionally. In addition, urban farming must be clearly separated from urban gardening, both of which have different variations. But all types are in a way connected to people and to a bigger community, and they try to bring the topic of agriculture or gardening to a wider public.

Agricultural usage in urban areas is possible under different judicial conditions. Even the land must not be in an agricultural zone. However, the conditions do not make usage easy. In order to investigate the phenomena and problems of urban agriculture, there are selected case studies, which represent residual areas of agriculture in urban space and are located along the Glattalbahn. They are all located in different zones and under great pressure due to the mentioned sharp rise in land prices, There is a complex system of land ownership, zoning, transfer, and legal situation, which then lead to a specific use of the land. There are many possibilities but the key players are definitely the state and the parties with a lot of financial power. Each of the case studies has taken a certain path, but all face the future of being overbuilt. Because of their small size and their increasingly rare occurrence, the remaining areas are very context-dependent and with that, all have their own story.



Five different case studies, located in the Glatttal

Farming on Future Infrastructure

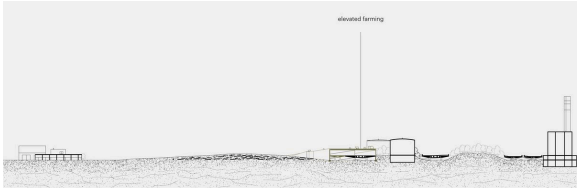
This remnant of agriculture is located directly next to the highway A1, which leads directly to the city centre of Zurich, and for which reason there is a lot of traffic all day long.
It is one of the only remnants of agricultural land in the Glatttal, which is still located in an agricultural zone and is defined as a Fruchtfolgefläche. Fruchtfolgeflächen are the most valuable agricultural land in Switzerland. It designates soil which is particularly suitable for agriculture. These areas must be compensated if they are overbuilt. However, if the area is smaller than 2500 m2 this is not the case. Both signify, that this land is protected, because it is generally not allowed to build in agriculture zones and Fruchtfolgeflächen. You may think this this protection is enough, but this is wrong. It already begins with the limitation of minimum 2500 m2 area to count for a compensation, which means, that minor losses, even if there will be every few years a little bit more, will not be compensated. But there are even more reasons, why this protection is not enough, as you are going to see.



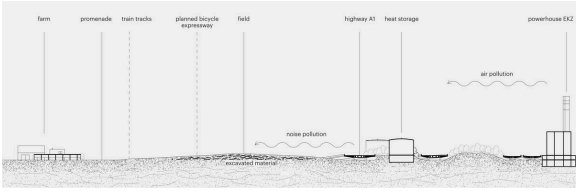
State owned facilities represent a great pressure on agricultural land

“I farm in an agricultural zone and on a crop rotation area. Nevertheless, the canton can, as a higher right, expand the tracks in my territory and build a fast-track bike route.”—Thomas Rinderknecht

The so-called Beef-Ranch is the last farm in Wallisellen. Once, the land was used up to the river Glatt. However, the state built the motorway next to the farm in the 1970s. This is why Thomas Rinderknecht had to compensate these areas in the outskirts. As a result, his fields are distributed all over the Glatttal. The state led putting some excavated material from the construction of the motorway on the agricultural land. Nowadays, the land is still usable because they put enough fertile soil on top of it. Even though agricultural zones are protected by law, the state has the higher right to overbuild the land. So later, they built also the powerhouse and its storage room on the agricultural land. The latest projects are to add rails and a bicycle expressway. Farmers have mostly no lawful means to change anything. You have the right to make an appeal against overbuilding, but there is never a chance to reach something with that, as Rinderknecht said. Infrastructures are always more important for the state, because of its necessity for the general public.

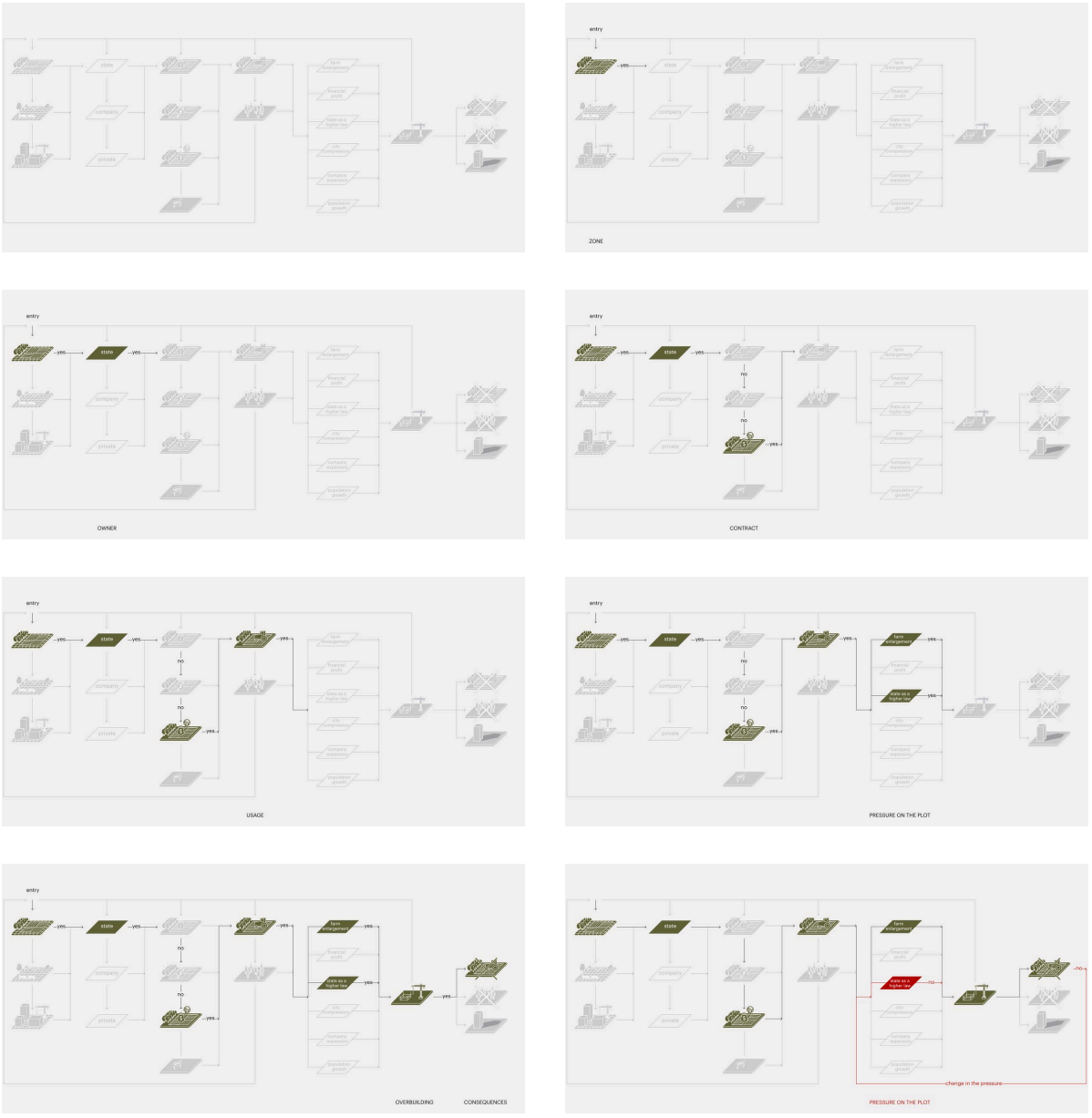


Section of Beef-Ranch and its surrounding, possible future



Section of Beef-Ranch and its surrounding, of today

A Pachtvertrag (lease contract) is a contract between the landowner and the farmer. This contract lasts six to a maximum of nine years before it can be sometimes extended. After the seventh year of the lease, the lessee is also assigned a right of first refusal. The rent is between CHF 2.6 and CHF 6.2 per are and year, depending on the type of production and the quality of the soil. In this case the farmer Thomas Rinderknecht has a lease contract with the municipality of Wallisellen for nine years. It is still unclear to him, what will happen after the contract expires. The field is very valuable to him, as a large enough outlet for his cows is urgently needed, so the pressure from the state is clearly noticeable. However, another pressure on the field comes from his side as well. Since no other place is available nearby, a few years ago it was necessary to expand its farm on this area, which also meant less grazing area.
With such small residual areas in urban context, the surrounding is even more important. The influences come from all sides. Here, the infrastructure is clearly an element that influences the place.



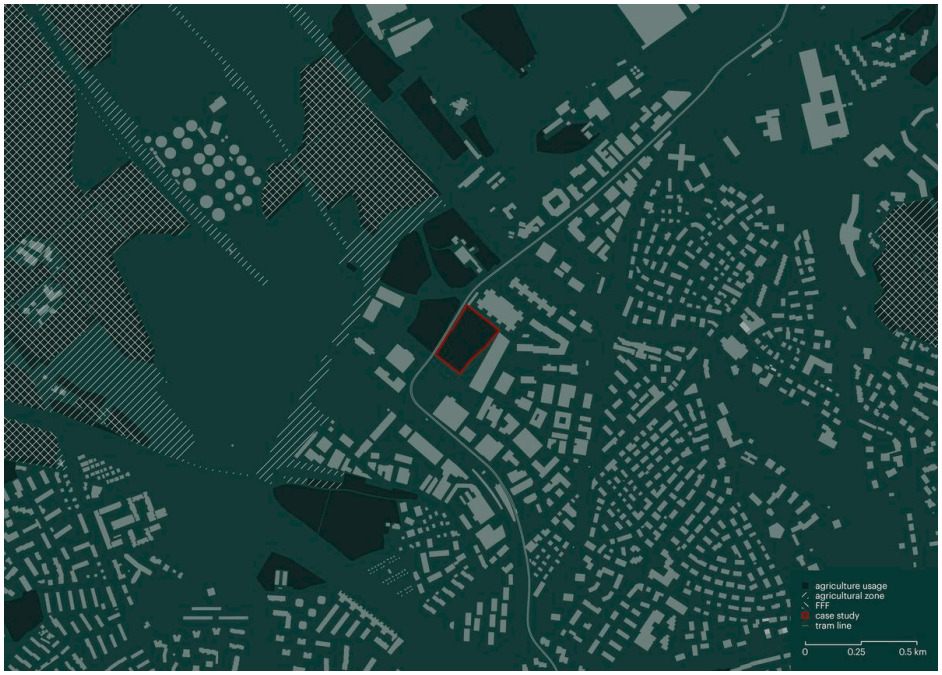
Intervene: Minimise the consequence
by a change in the pressure

As the city and its infrastructure continue to grow, compensation would be the solution. For example, motorways could be covered. Thus, the area is used twice. Down the cars and up the productive agriculture. This tool is nothing new, vertical usage becomes more and more important all over the world. The difficulty with this tool are the high costs. They are often compensated through the profit of the overbuilding. So, a connection with a profitable investment is necessary, but the effect that air and noise pollution could be prevented, would also be a advantage for a connected overbuilding. And the urbanisation could go closer to the infrastructure.
What happens, when we think this idea one step further? Can it be financially possible to elevate such agricultural areas, to still provide infrastructure? Is there a possibility to offer a soil, which is fertile enough?
With this tool the pressure of the state on the field can be limited and the agriculture has still a future.



Visualisation: Elevated farming by expending
the cow pasture over the extended motorway

Finding Compensation
Areas for Urban Agriculture



Location of the "Bäuler" field, Rümlang. Urban agriculture is too little protected

This plot is located in a building zone and is thus neither protected by the agricultural zone not by the Fruchtfolgefläche as it was in the previous field the case. Furthermore the field was split up into two fields, because of the construction of the Glattalbahn. Today the station “Bäuler” is located directly between the two fields.



The agricultural land is next to the Glattalbahn,
which makes the place well accessible.

„This area has already had some temporary uses in recent years, such as an installation space or parking spaces. After that you had to rebuild it to use it again for agriculture, but the consequences in the soil are noticeable. You can see how the seeds do not get as good everywhere."—Jörg Altorfer

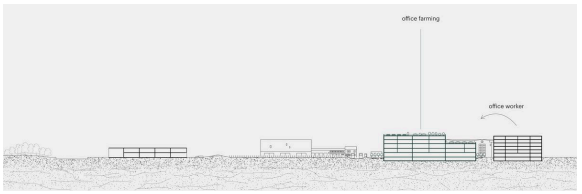


Agriculture as the main use.
Source: Google-Maps, 2020

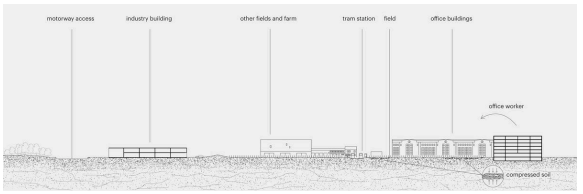


Parking as a secondary use.
Source: Google Maps, 2020

This field stands out especially because of its diverse temporary uses. Among the use for crops, it was also often used for parking or other secondary usage. Therefore, the soil got compressed and it is not that good anymore. The farmer must regenerate the soil every time after there was a secondary usage. Even the plants do not grow equally anymore, and the harvest is rather poor at some spots. Until this year, the land was used for agricultural production, but the company decided to build a new computing centre there. They have started the construction now, which means more productive land will disappear if there is no compensation possible.

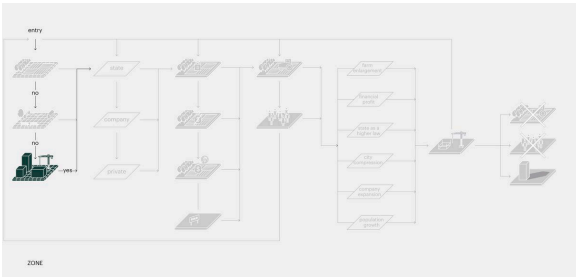


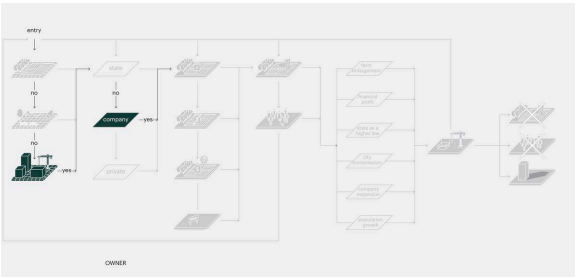
Section "Bäuler" field and surrounding in the possible future

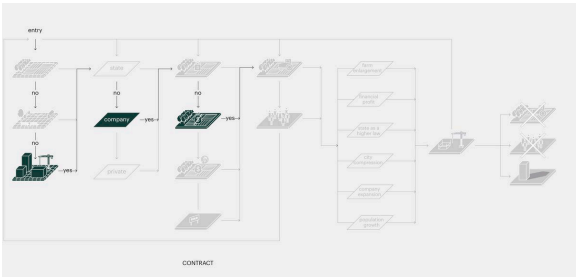


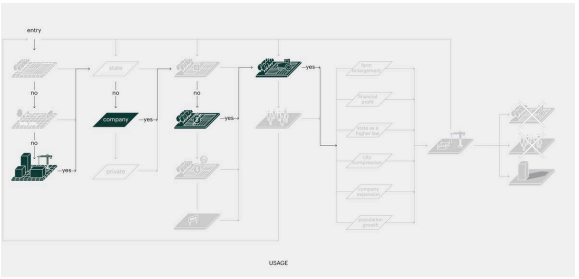
Section "Bäuler" field and surrounding

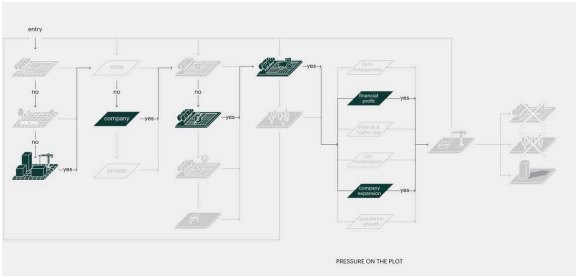
A few decades ago, the land was still located in an agricultural zone and was managed by another farmer who had a lease contract with the Canton. In the 1960s, the plot was transferred into building zone. Later, the area was bought by a company and has been managed since then by the farmer Jörg Altorfer. He has a Gebrauchsleihe on this area. The Gebrauchsleihe (rent for use) is a contract between the landowner and the farmer, whereby an attempt is made to avoid being tied to the land for a longer period. The landowner makes the land available to the farmer for cultivation free of charge but can use it at any time for his own interests, for example to build over it. Although Altorfer's farm is located kilometres away and the soil is rather poor, it is still worthwhile for him, but only for the reason that the area is free. The field is located in a more industrial area, with the farm of the former farmer next door. The large number of office buildings and industrial uses make the place not very lively. Due to the location of a station of the Glattalbahn directly next to it, it has a great connection to the public transport and is thus a good location to expand the company.

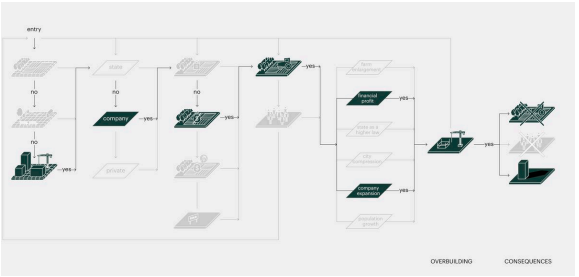


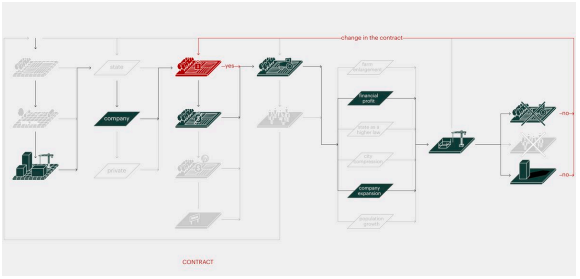






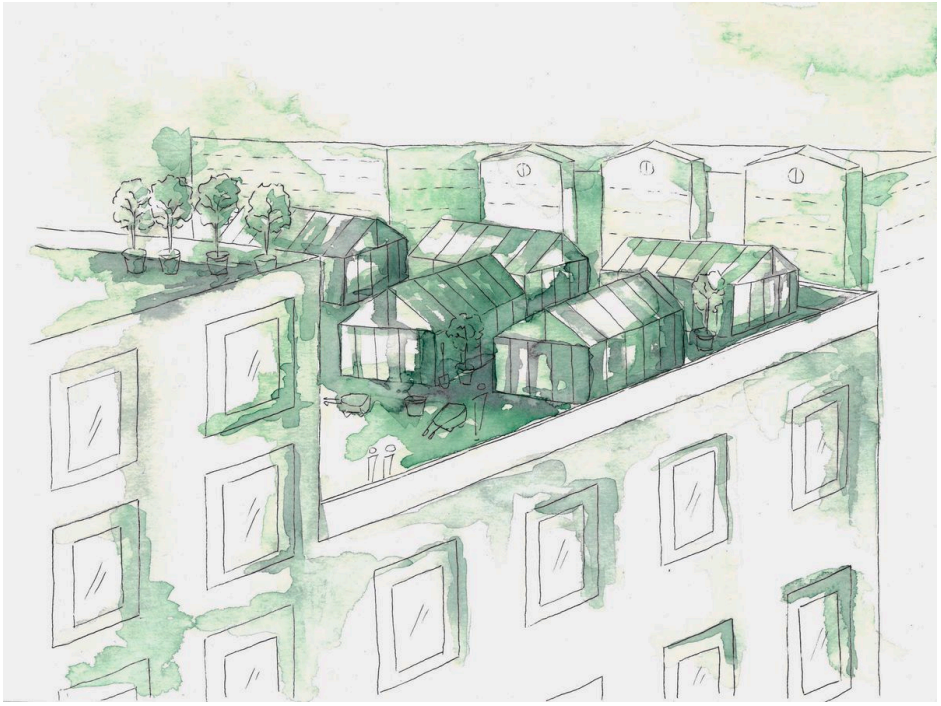






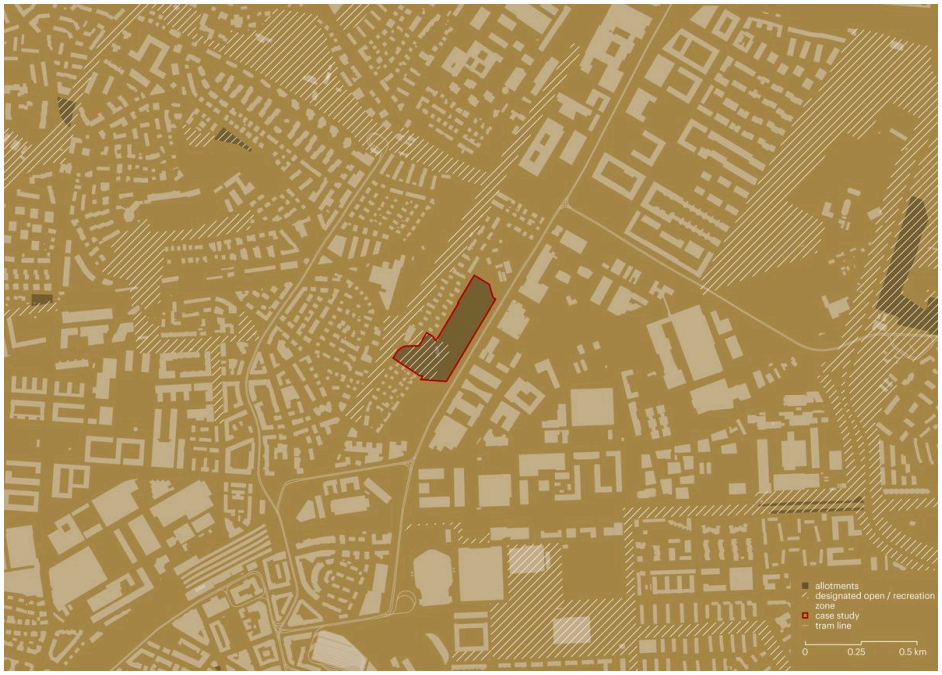
Intervention: Minimise the consequence by a change in the contract

Because the soil is anyway not good. A solution is to farm on the roof. In this way, the cultivated area would not disappear completely and if it is privately owned by the company it can be used by the employees. Being outside and doing physical work is important, especially for employees in this office working conditions. It prevents them from mental and even physical problems.
Roof farming exists already and is also a good solution against the shading by surrounding buildings which enables the plants to grow better.



Visualisation: Compensation on the roof of the office building

Increasing the Potential to a Social Value



Location of the allotment garden, Zurich. Allotment gardens as placeholders for future construction

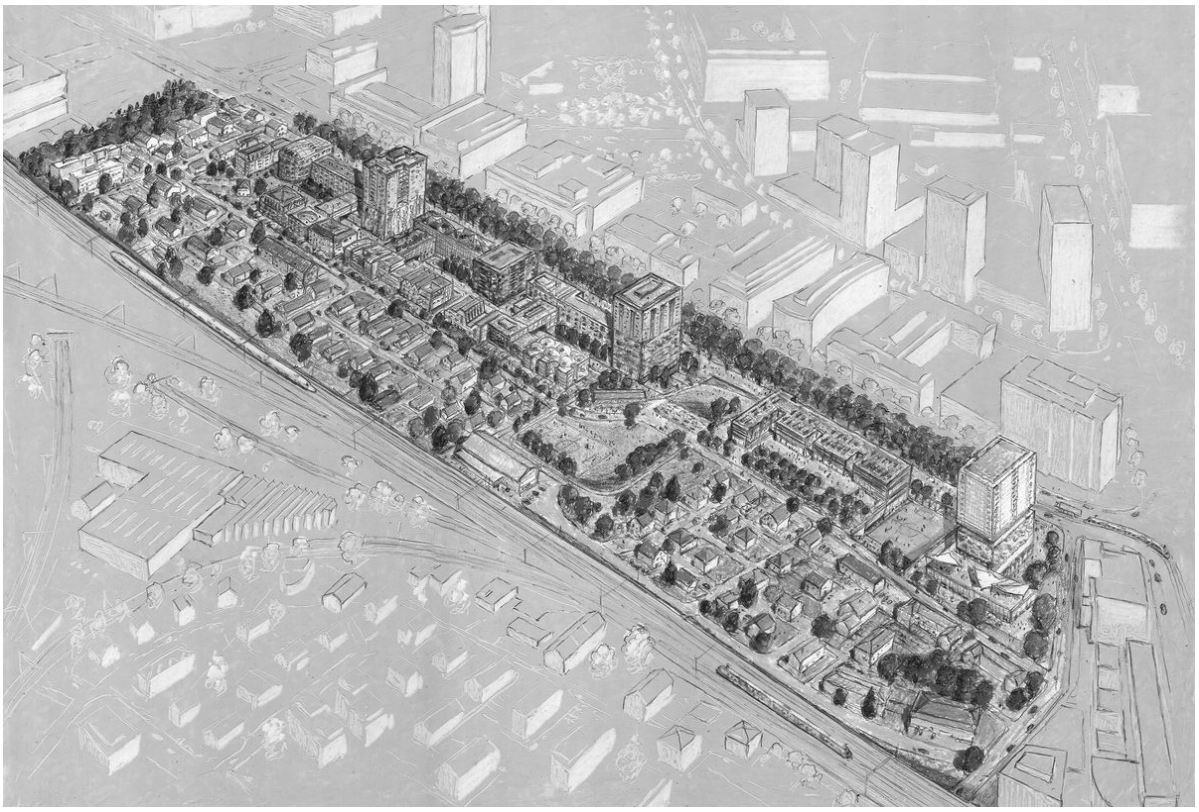
Since the early 1860s allotment gardens can be found almost in every city in Switzerland. They served a possibility for the own production, despite the strong urbanisation and are still very popular with the inhabitants. From the perspective of the city, allotment gardens are in general just placeholders for future overbuilding and the locations are therefore just temporary.
More and more of these gardens are located in construction zones and are tending to be built over, such as this allotment garden in the Thurgauerstrasse. Especially this garden was subject to a big debate in the past few months and will now be overbuilt. But was there a possibility to prevent this development? Can other allotment gardens be protected?



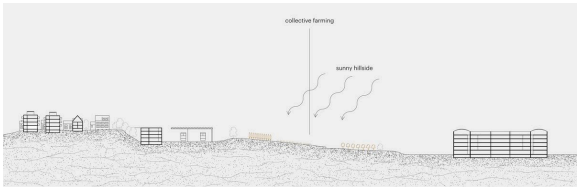
The allotment garden at Thurgauerstrasse is going to be overbuild with high-rise buildings

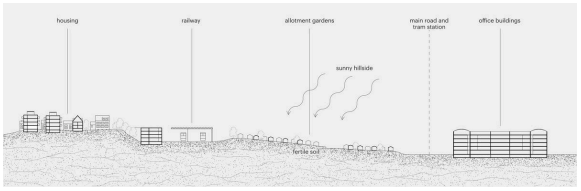
“The vote is adopted anyway.”— A resident

The plot is owned by the City of Zurich which leases the land to an association. This association then passes on small garden plots to the community to use them for their own purpose. The allotment garden at Thurgauerstrasse is at the moment used for a lot of people. Unfortunately, the land is also one of the last large building reserves in Zurich and it is not protected because it is not in an agricultural or recreational zone. Now, the city wants to overbuild the area. They published an illustration from Matthias Gnehm, which was criticised. It shows a vision too idyllic and extenuating the idea. The neighbourhood is against the design plan because the idea is to have high-rise building. So, the neighbours would have more shadow. The city included the people into the discussion, but it did not change much. In November 2020, the community voted about the design plan and it was adopted.



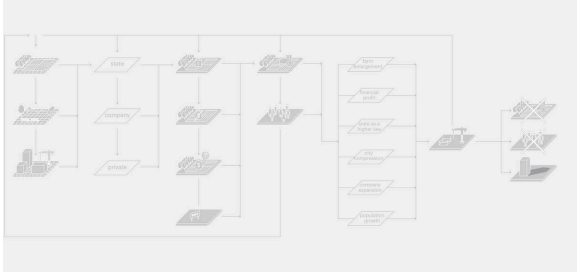
The city published this idyllic and extenuated vision. Source: Stadt Zürich, 2020

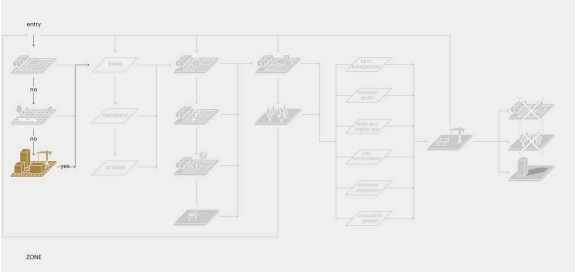


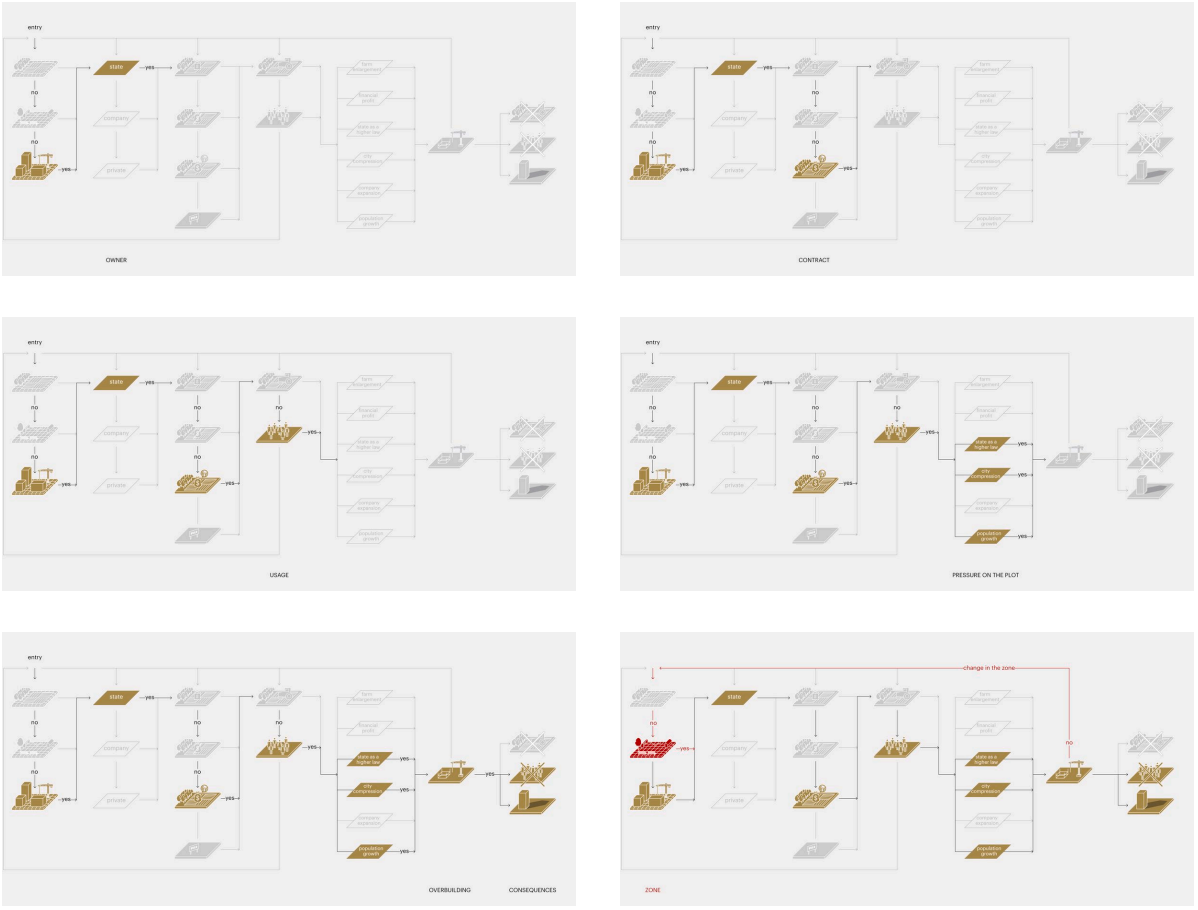


The city published this idyllic and extenuated vision. Source: Stadt Zürich, 2020

In the last years, the towns are growing rapidly. Due to this trend the city must grow in the centre and get denser. Therefore, more green spaces are going to be overbuilt. The pressure comes from everywhere: the population growth leads to the need of more residential space, and because the plot is owned by the state, he has the higher right. So, the overbuilding is the only future.
But the place has great potential to be used collectively. Through the residential area and the many office buildings it has many people nearby and can also easily be achieved by others, due to the tram station next to it. The soil is, moreover, of good quality and due to its location on a slope it also has a lot of sunlight.





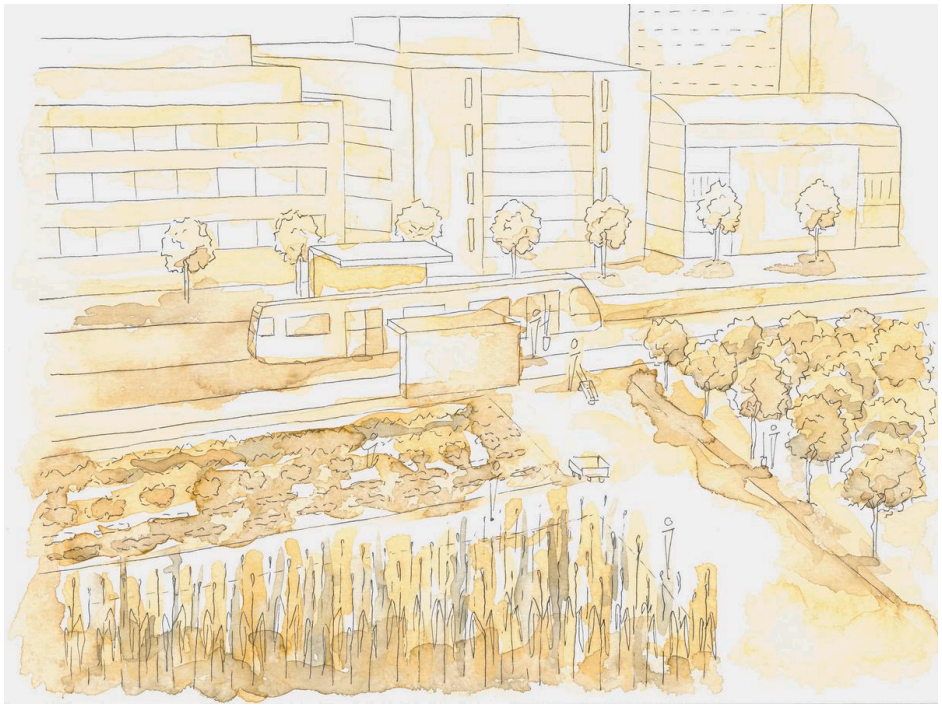


Intervention: Prevent from overbuilding by a change in the zone

In order to protect the site, the existing construction zone should have been transformed into a recreational zone. Recreation areas are generally supported by the city, as they are essential for its population. Open and social spaces are essential for a lively city and can only be achieved by not overbuilding everything. As Agnes Denes already showed in the 1980s, agriculture within the city arouses the interest of many and shows the importance of food in the city. The artwork is a paradox, a picture that does not fit in our eyes, but it could be the future. In order to ensure that the place also has a higher value for the general public, the use should be much more open. There are not just small private plots. It is rather that the whole community works together.



Wheatfield—A Confrontation, Agnes Denes, 1982



Visualisation: Collective instead of private farming

Doubling the Function to Get Importance



Location of the "Allmend", Dübendorf. No-building zone does not mean safety from overbuilding

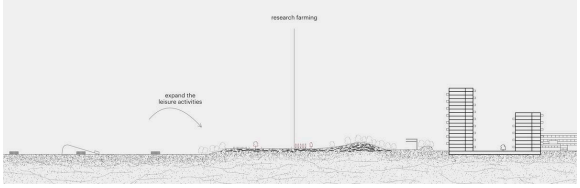
The “Allmend” is located just next to the train station in Stettbach, which became more and more an important centre in the past few years. Even though the Allmend is located in a no-building zone and cannot be built over directly, the infrastructure also represents a great deal of pressure. The state has greater power, especially when it comes to infrastructure.



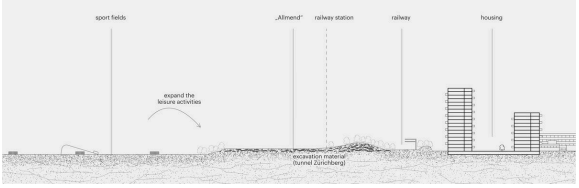
The "Allmend" in Stettbach is already used as a nature experiment

“Instead of artificially restoring the image of the fertile cultural landscape, a hilly landscape was modelled with gravelly and nutrient-poor excavated material.… which is a new barren underground, and the soil is a breeding ground of its own dynamic development: after an initial planting with few pioneering woods is developed an ecologically valuable dry steppe”—ASP Landschaftarchitekten AG

The “Allmend” of Stettbach with an ice-age moraine landscape is a nature experiment. In fact, it was created from the spoil dump from the tunnel through the mountain Zürichberg. Because of barren ground, rare plants began to grow here, which are even on the red list in Switzerland. The landscape was once agricultural area and now it is a meeting point for everyone. There are many residential housings around the park, and they use it for leisure, but also as a kind of nature protection to preserve this potential for biodiversity.

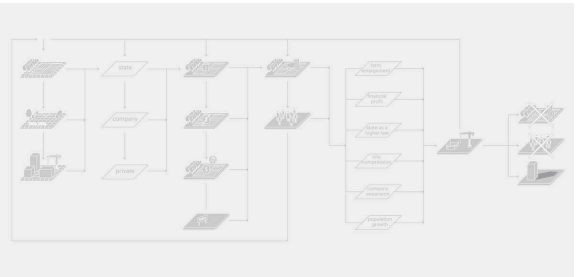


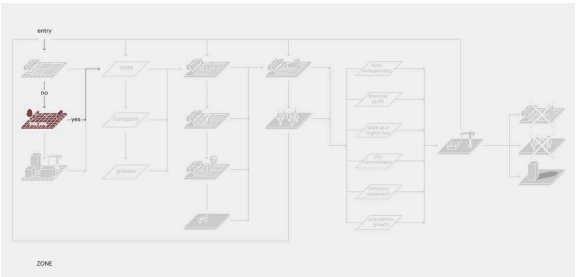
Section of the "Allmend" and surrounding, possible future

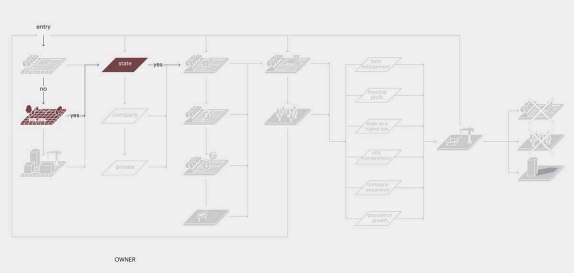


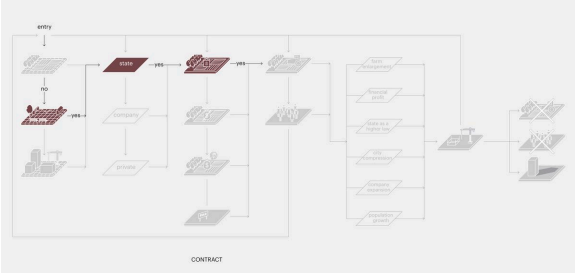
Section of the "Allmend" and surrounding, today

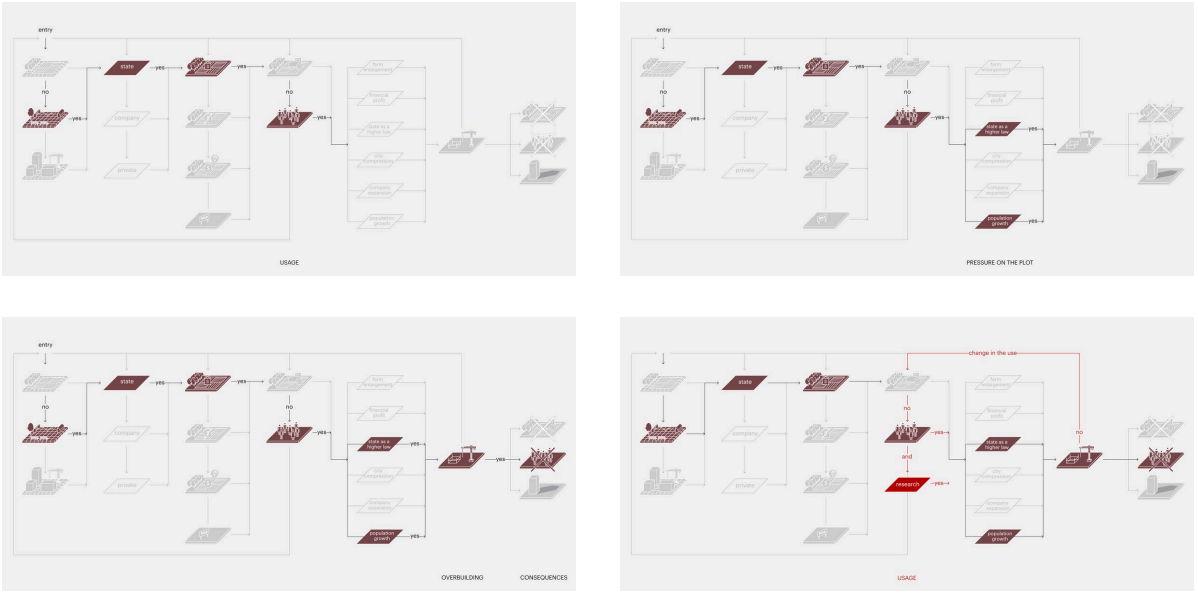
After building the railway station in 1990, the near environment began to develop. New buildings, especially residential ones appeared and even sport facilities were added. The whole area evolved into a new city centre, just at the periphery of Zurich. Due to the new train station, other infrastructures had to expand there to connect this place in all ways with the rest of the city. This development will not stop, and more space is needed to meet the requirements of this place.
The “Allmend” has many positive effects for the community and for nature and science. The plot is owned by the City and therefore the preserving for the citizens should be possible.











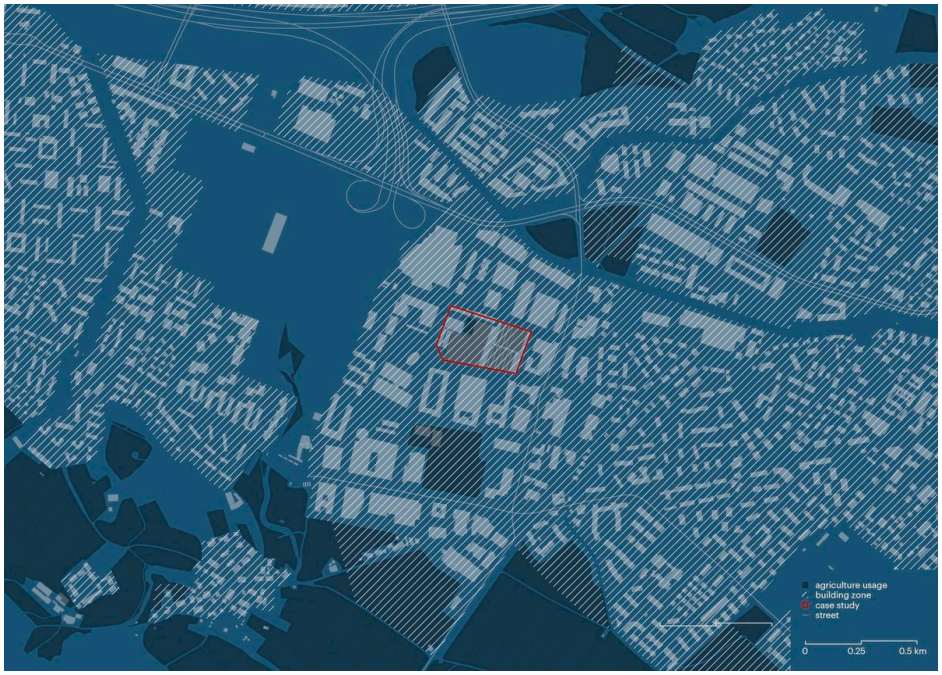
Intervention: Prevent from overbuilding by a change in the usage

To protect the park from disappearing, adding a function is one way to give it more meaning. Because the soil is so special, it would be a good opportunity to use the place not only for plant research but also for agricultural research. Special crops which cannot grow on a conventional ground could grow there.
The place can be used to bring the topic of agriculture and the science behind it closer to the public, to make the research behind our food transparent for everyone.



Visualisation: Research farming as a second use

Keep the Agriculture as a Passion



Location of Beerstecher, Dübendorf. Building zone should not mean that there is no agriculture

The disappearance of agriculture and the transfer of agricultural zones into building zones are subjective problems. Fortunately, it is not allowed anymore to change an agricultural zone into another zone. There are farmers who benefit from it and built their profit investment on their plot. The site is located even in a central zone in Dübendorf, where high-rise buildings are possible.



Once, there were two nurseries. Now, there is a nursery and a high-rise building

“When my grandparents came to this place, it was perfectly located, still rural but close enough to the city …. Today I feel out of place here, I could stay here, but I would like to change location as soon as possible and build something more profitable here, from which my children can also benefit.”—Thomas Beerstecher

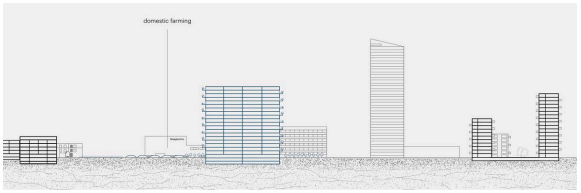
Located on this place is Beerstecher AG, a nursery and a family business since 1914. In 1946, they found suitable land next to a small farming village. The location was already close to the city at that time and so transport of goods was well possible under the conditions of that time.
Seventy years later, the village changed to a city and the company expanded. They found new land out of town. Because of the change, they do not fit anymore into the neighbourhood and they will probably overbuild their plot. It makes for them sense, especially when it comes to descent.
The turn from the early agricultural zone into the building zone, was also an indicator to find new arable land outside the city. But due to the fact that the land is privately owned by the family it is a great chance for them. Not like the second case, where the state-owned plot was sold to a company and the contract changed from a Pachtvertrag to a Gebrauchsleihe, which makes farming even more uncertain.



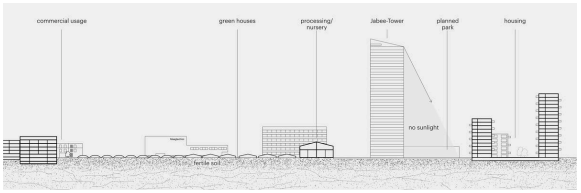
1946



2018

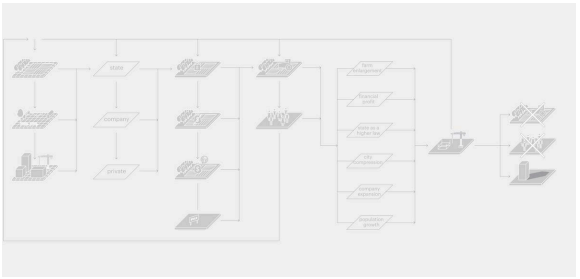


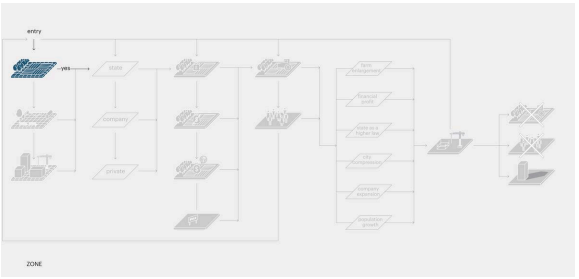
Section of Beerstecher and its surrounding, situation in the future

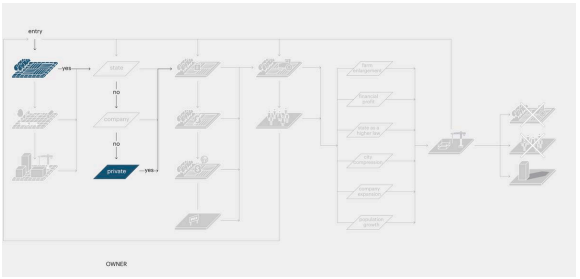


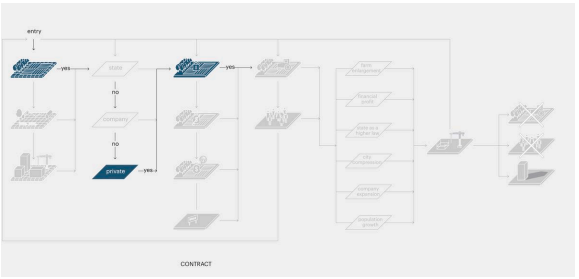
Section of Beerstecher and its surrounding, situation today

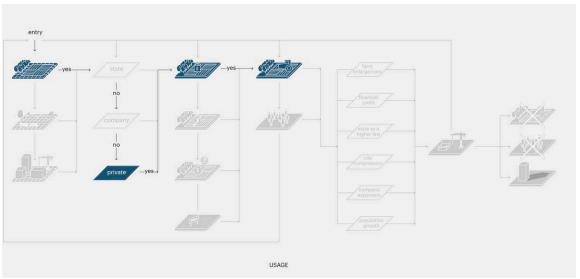
The future of the plot of Thomas Beerstecher can be easily seen at the plot next door. After Fritz Beerstecher, like his cousin, Thomas Beerstecher, cultivated the land next to him as a vegetable gardener, he decided to use the land in this central zone more profitably. The thirty-story tower was realized via a private design plan. The idea was to give the people something back, so they decided to also make public functions in this tower. Due to the high profit, the original general partnership became the joint stock company Jabee Tower AG. For Thomas Beerstecher the plot is still important for his vegetable company, because of the already paid green houses and the location of the vegetable processing there. But as soon as he finds a new place for the processing, he may follow his cousin.

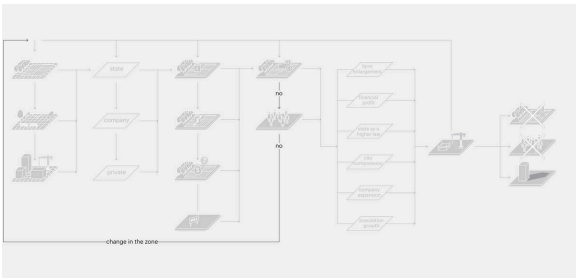


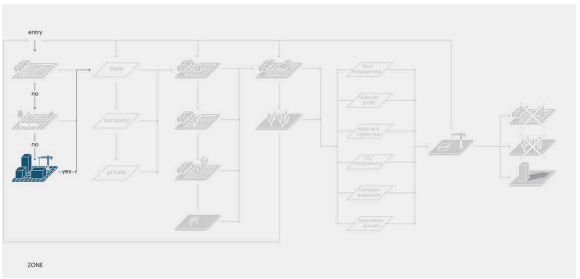


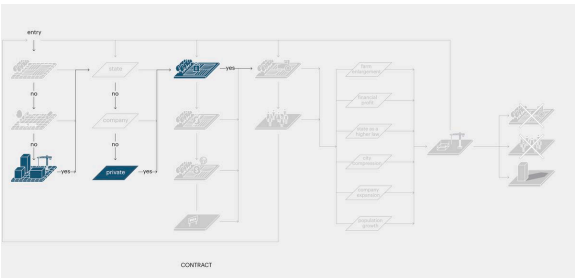


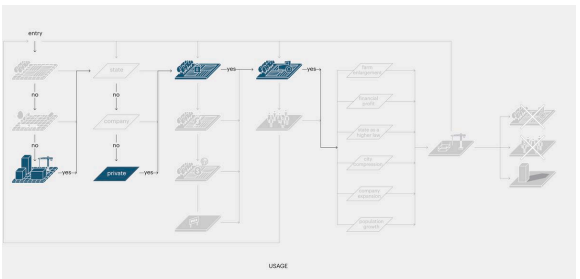


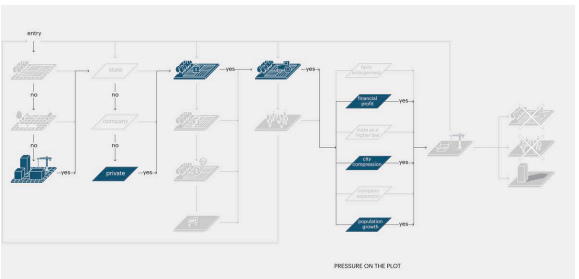


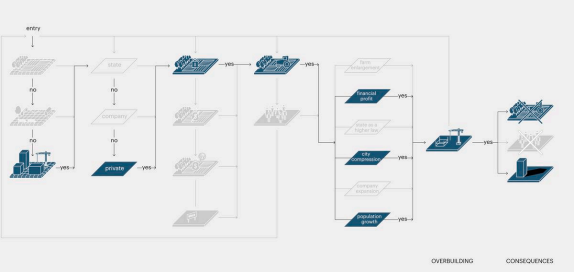


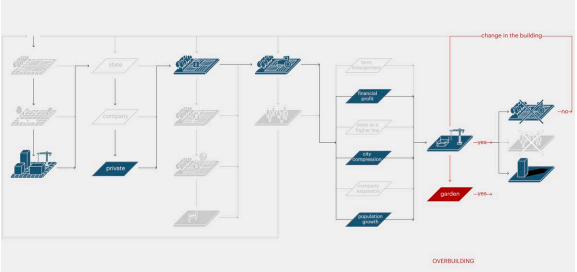




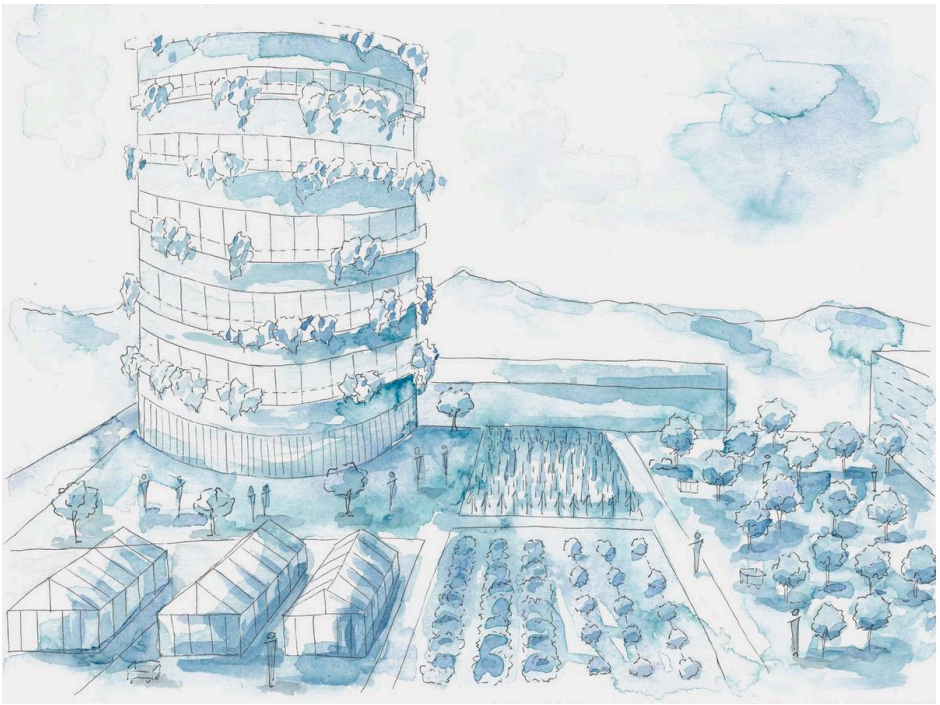








It is not always possible to prevent agricultural land from overbuilding, in some cases only the consequences can be reduced. The plot is private and the higher personal profit with a building is not to be surpassed. Subsidies, as for general farmers, could be used to prevent the complete disappearance of former farming. This could also be more integrated into the construction and thus the agriculture use can be continued in the horizontal or even in the vertical direction. This could be shared by the residents and would thus make the place livelier and people would feel more connected.



Visualisation: domestic farming by connecting
the new profit investment with the old agriculture.

Even though the small agriculture fields have a more symbolic meaning, it is important to preserve them and give them again meaning. Especially in a time when the pressure on the ground is increasing and cities are becoming more and more dense, it is important to keep free space. Good open spaces are created when they are used and thus become alive. The combination of leisure and agriculture not only opens up a broader understanding of the environment and the food we eat, it is also an enrichment for the mind and soul.

But this topic of the disappearance of agricultural land is nothing new. The swiss artist Jörg Müller showed this development in cities nicely in his first illustration in 1953, which made him well-known all over Switzerland. It shows a prototype of a generic site in Zurich which developed over the years and how every rural landscape will disappear one day. But Müller judged to hasty. He forgot about the residue places in the city and how they could develop. His picture from 1966 is in few cases still reality and can be developed in a different way to preserve agriculture in cities. With all the tools, mentioned in the five cases, a new prototype can be generated.

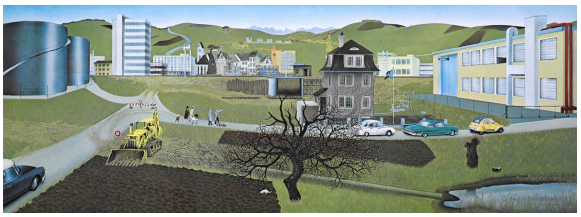




"Alle Jahre wieder saust der Presslufthammer nieder," Jörg Müller













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