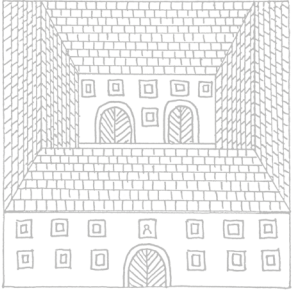
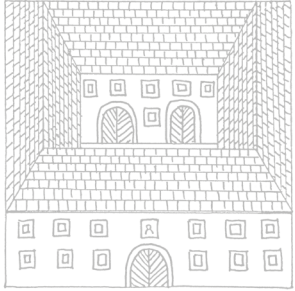
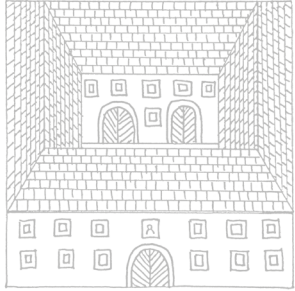
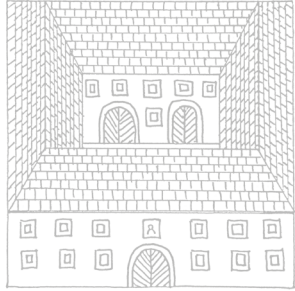
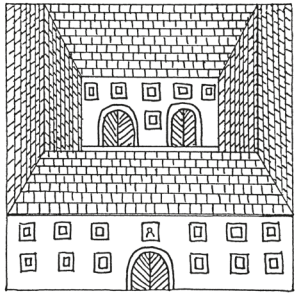
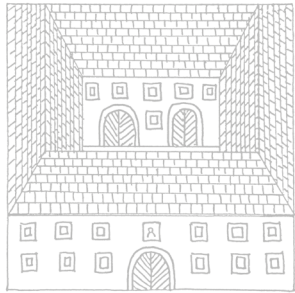
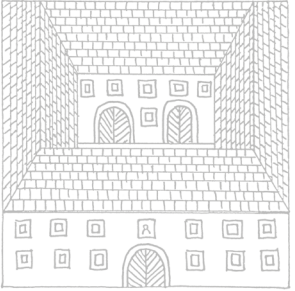
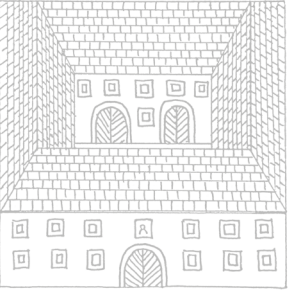
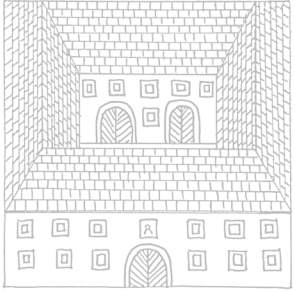
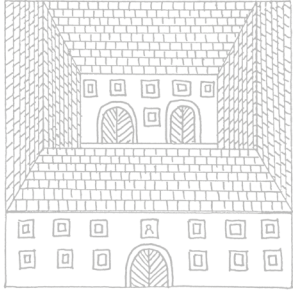




Barbara Ürmössy (1999) is a Hungarian-born Cambridge (2018-2021) and EPFL (2022-2024) educated architect currently based in Switzerland. She has previously worked in ideas-led internationally and regionally acclaimed architecture offices, such as Herzog & de Meuron and BORD Architecture Studio.

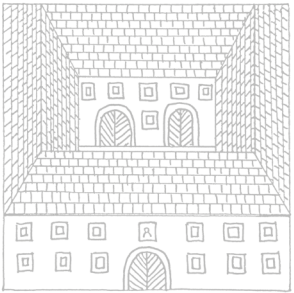


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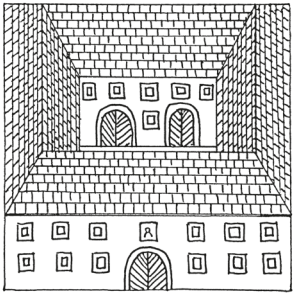
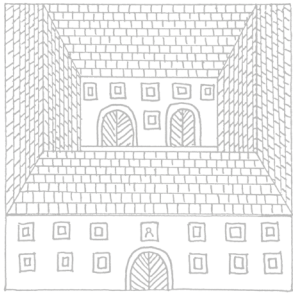


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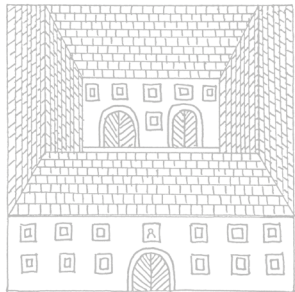
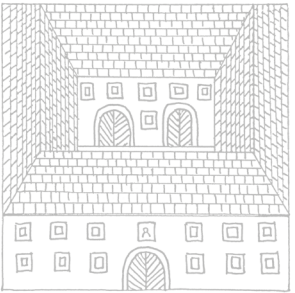
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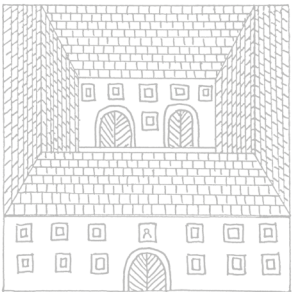
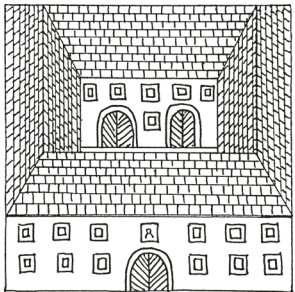


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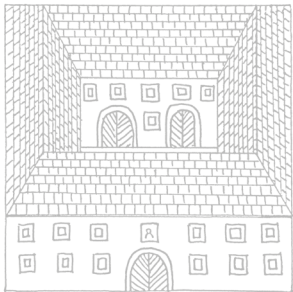


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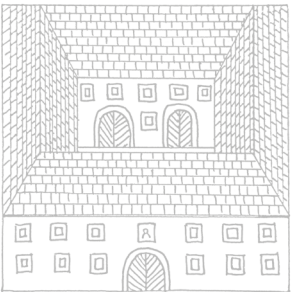
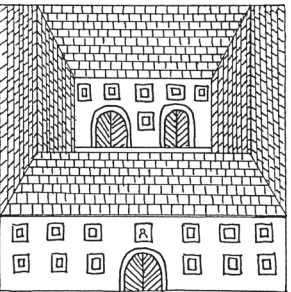


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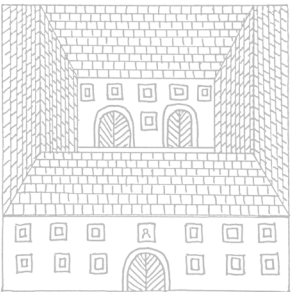
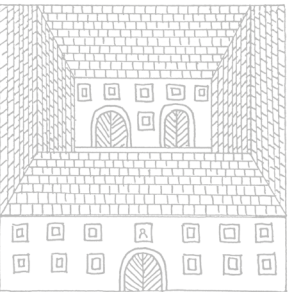
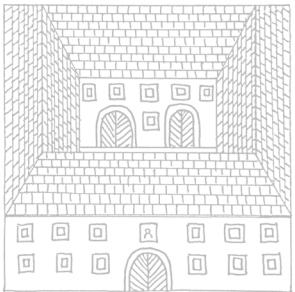
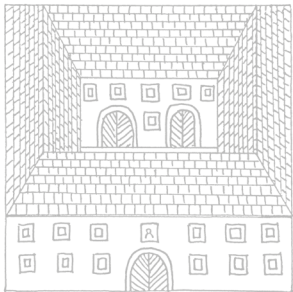
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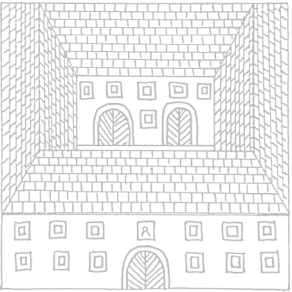
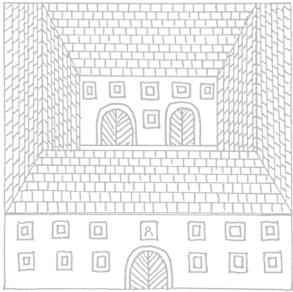
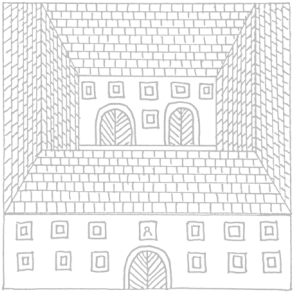
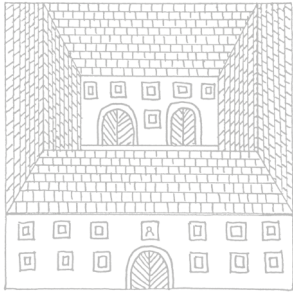


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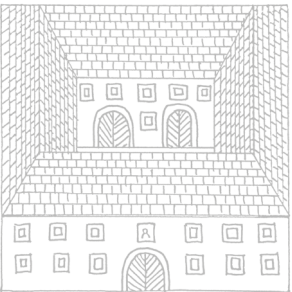
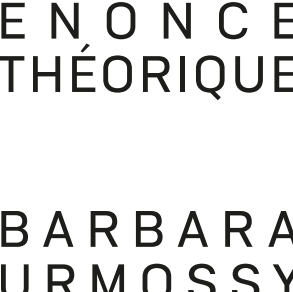
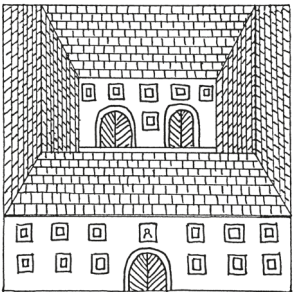
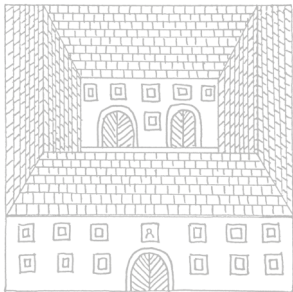
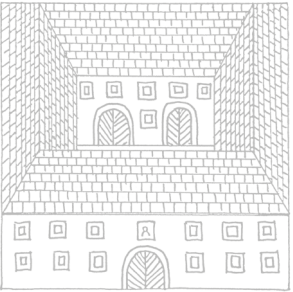
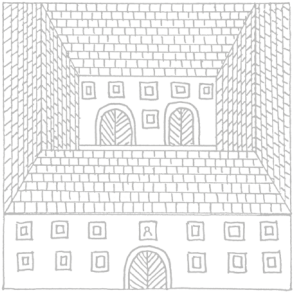
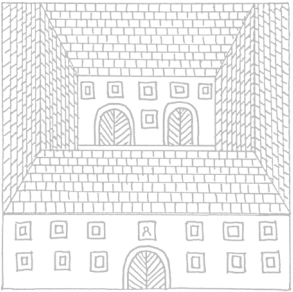
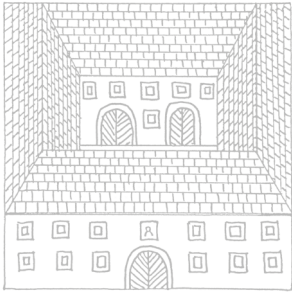
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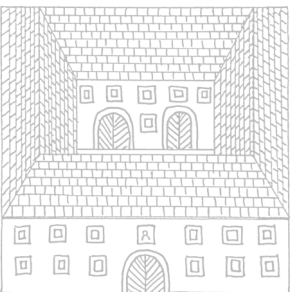
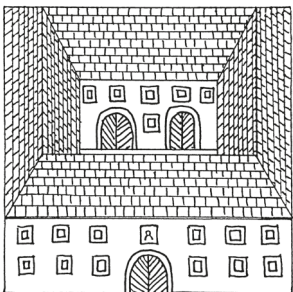
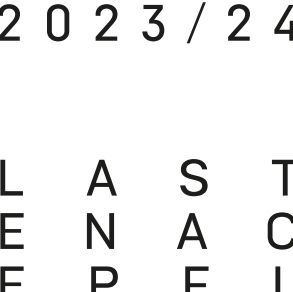
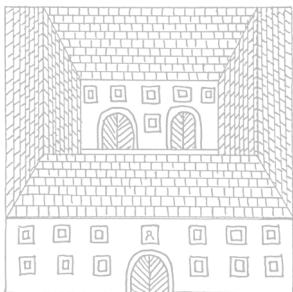
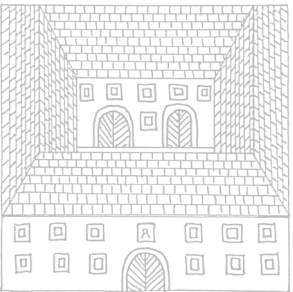
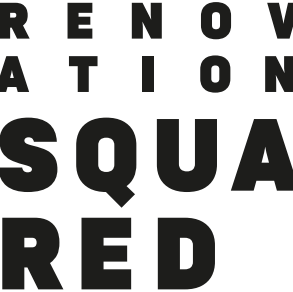
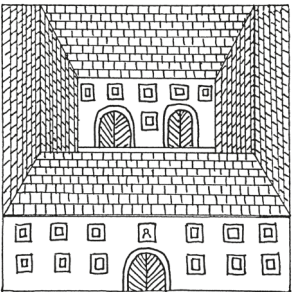
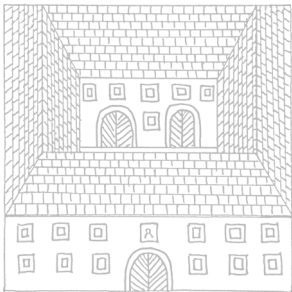
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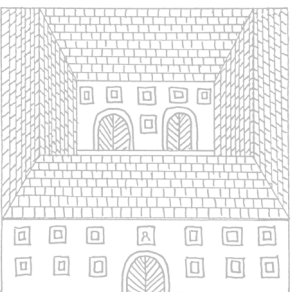
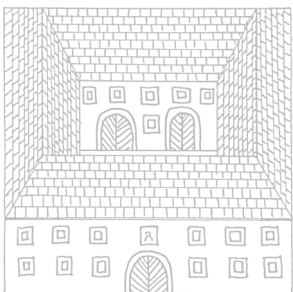
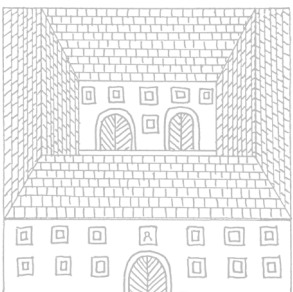
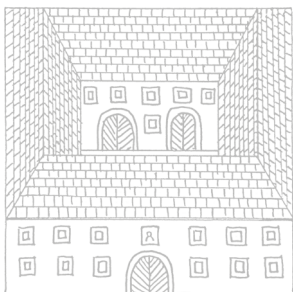
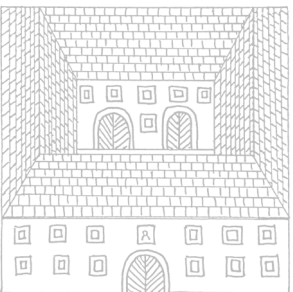
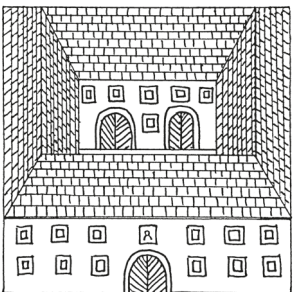
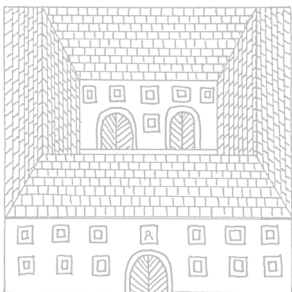
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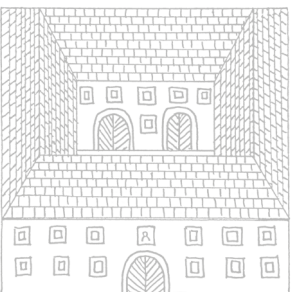
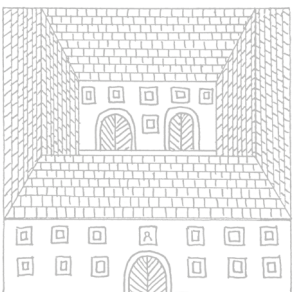
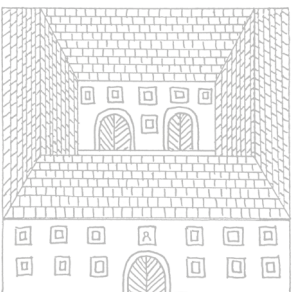
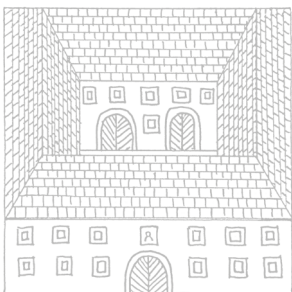
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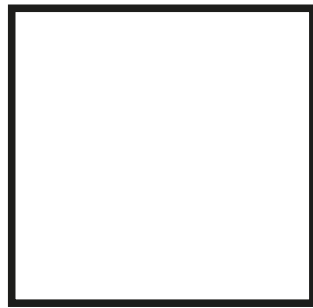
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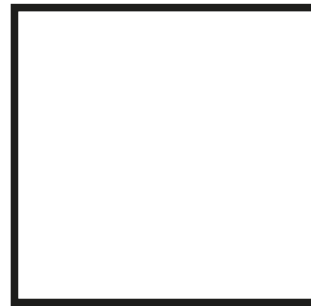
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H O E F E**



Enoncé Théorique 2023/24

EPFL ENAC Master in Architecture Master Project Cycle

Directeur pédagogique: Emmanuel Rey | Second professeur : Jeffrey Huang | Maître EPFL: Clément Cattin

2023/24, Barbara Urmossy

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This book is dedicated to:

Herr S. Augl,
Herr R. Harreither,
Frau B. Huber,
Herr R. Födermayr,
Herr V. Lenz

who all contributed to this research by
agreeing to a personal interview,
as well as recommending sources,
and facilitating the locations for
photos and plans.

Additionally, dedicated to:

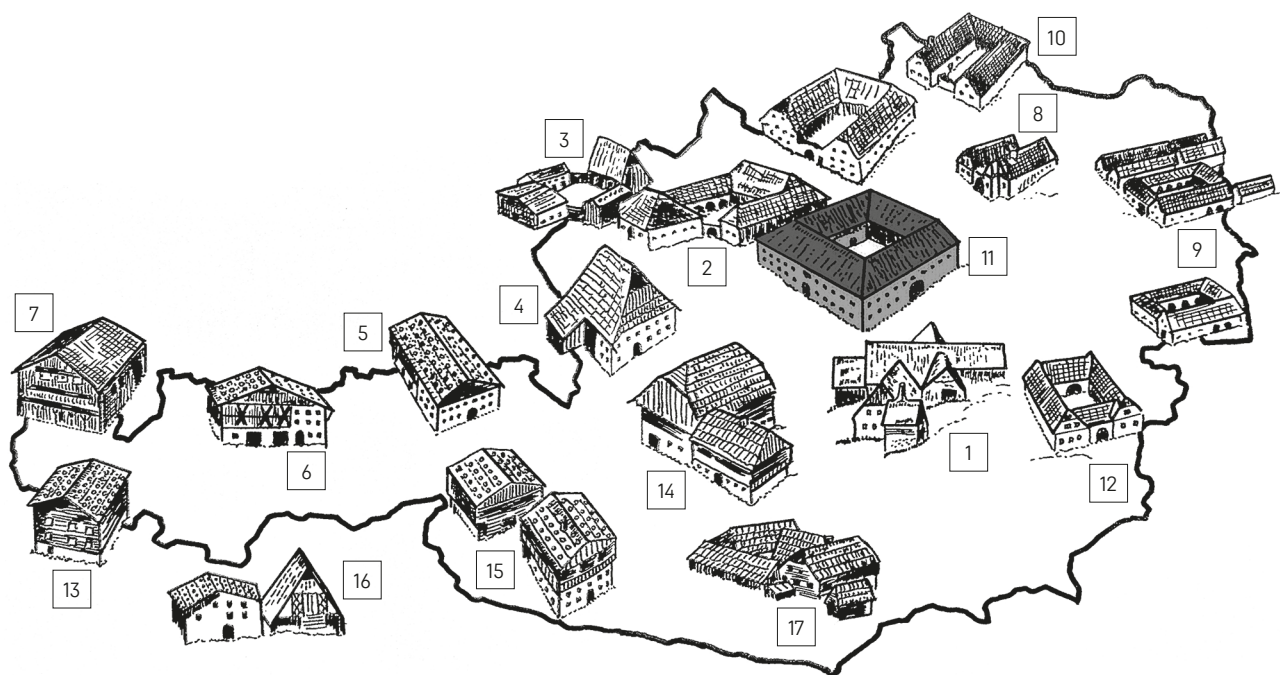
my grandparents, Károly & Renate Tömpe,

who let me stay with them during my
research and who enthusiastically supported
me during my stay in Oberösterreich.

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| 2. | Hausruckhof | 9. | Vierseithof |
| 3. | Innviertler Vierseithof | 10. | Dreikanthof |
| 4. | Oberösterreichisch-salzburgisches
Einheitshaus | 11. | Vierkanthof |
| 5. | Tirolisch-oberösterreichisches
Einheitshaus | 12. | Obersteirischer Vierkanthof |
| 6. | Mitteltirolerisches Einheitshaus | 13. | Westalpiner Paarhof |
| 7. | Bregenzerwälderhaus | 14. | Ostalpiner Paarhof |
| | | 15. | Inneralpiner Paarhof |
| | | 16. | Kärntner Ringhof |

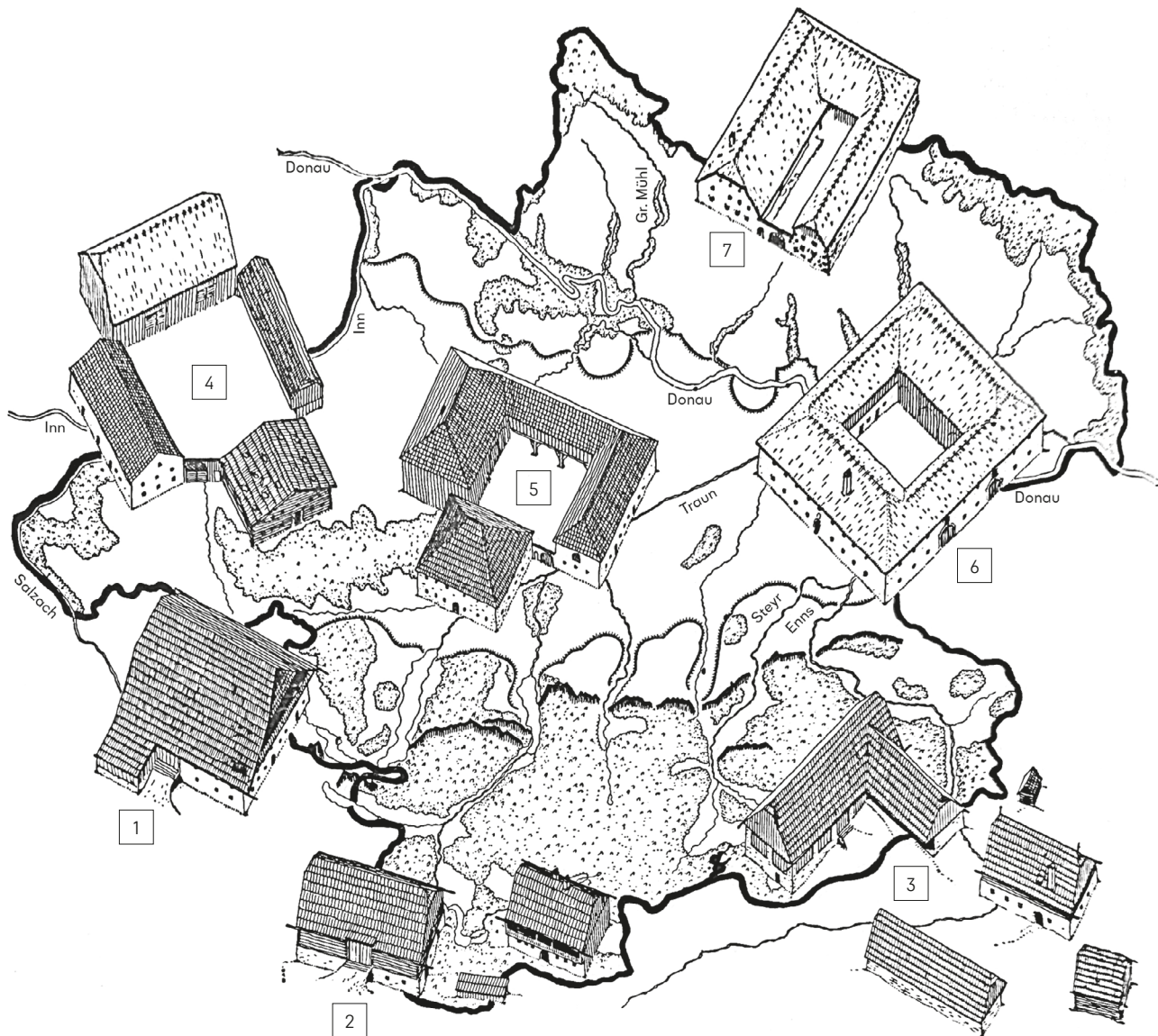


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Figure 01.01
The many different types
of traditional farmsteads
in Austria
(Cerny, 2012:36-37) edited
by Ürmössy, B. (2023)

DECLARATION MISSION STATEMENT

This *Enoncé Théorique* focuses on revitalising the Vierkanter building typology – a traditional farmstead found in the region of Upper-Austria. This academic paper starts by analysing the Vierkanter's history. Then, problems are identified concerning local building regulations, a detailed sociological analysis of the demographics of Austria – and to a lesser extent the Developed World – as well as social isolation. Positive examples are shown for resilience in communities and current forms of multi-generational co-habitation. From a synthesis of these issues a solution is proposed through a co-habitational refurbishment project in a Vierkanterhof.



1. Mittern - Einhaus, Westsalzkammergut und Altergau
2. Paarhof, Salzkammergut
3. Gruppnhof, Eisenwurzen

4. Innviertel Vierseithof
5. Hausruckhof (Halbvierkanter)
6. Oberösterreichischer Vierkanterhof
7. Mühlviertler Dreikanterhof



0 5 10 15 20 25km

FOREWORD

PERSONAL MOTIVATIONS

Figure 02.01
The types of farmsteads in
Upper-Austria
(Heckl, 1949:66) edited by
Ürmössy, B. [2023]

The Vierkanterhof as a building typology has long since fascinated me. Due to its long and complicated history, as well as its current dilapidated state, it seemed like the ideal subject of a semester-long academic study and later a semester-long refurbishment project planning. This *Enoncé Théorique* points towards a possible use for the future to salvage this interesting piece of European architectural history from the brink of total destitution.

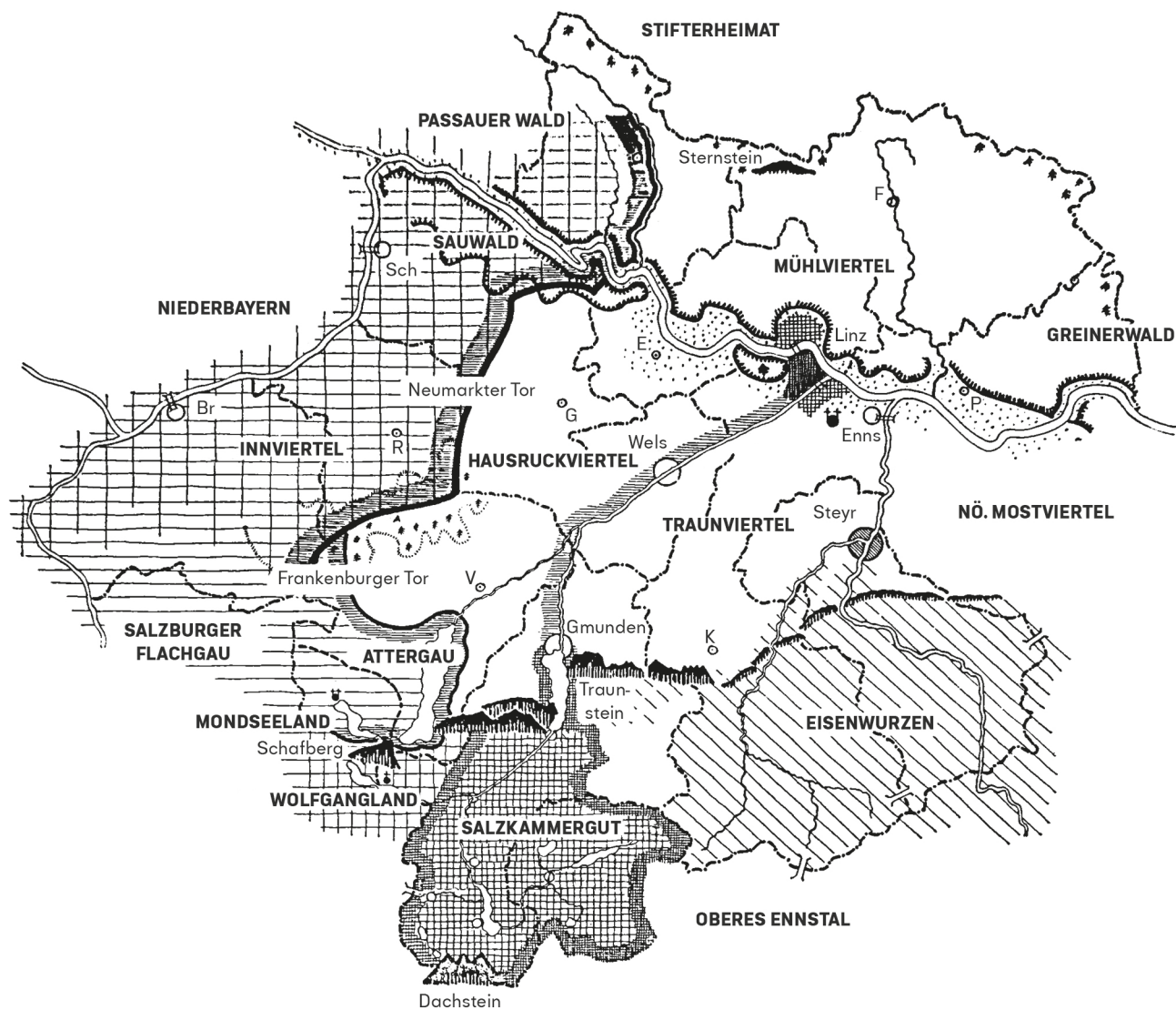
My interest in this building typology comes from the time I spent at my grandparents' house in a small town in Upper-Austria. Once one exits the motorway around Linz and starts driving around on the roads in the countryside between Linz, Enns, Steyr and Wels, the landscape becomes occupied primarily by one building-typology: the Vierkanterhof. These thirty-by-thirty meters fortresses seem evenly distributed in the rolling hills and versatile agricultural land of the region. Some are still used by the family that owns the surrounding land, some have been converted into museums, guest houses and wedding venues – but most of them are unoccupied, and are slowly but surely falling into ruin.

Parallel to this, Linz is a bustling industrial center for Austrian steel and chemical manufacturing, with a competitive edge in the IT sector and multiple colleges and universities. Both the population of Linz and that of the surrounding countryside

is on the rise, and new housing developments are being constructed to meet this demand. In the past twenty-five years Austria has experienced a demographic shift due to migration both from within and from outside of the EU, and for better or worse, this brought a completely new set of challenges to rapidly growing urban agglomerations. An increased demand for housing led to a peak in the price of real-estate, which along with affordable commuting options, makes the countryside more attractive for settling, especially for retirement or for families with young children.

Coincidentally, while the Vierkanterhof is slowly collapsing, and the housing market is at its most competitive, the Austrian government is supporting the renovation of old structures with an unprecedented amount of financial aid. However, there are two issues. One is time: the owners must act imminently, as once the buildings on their land in the agricultural green zones collapse, no structure can be built back in their places. The second is a convincing proposal: to bypass strictly limiting legislation, a novel, well-argued proposal is called for, which would leave not only the developers but also the local authorities satiated and convinced of their good deeds. This *Enoncé Théorique* aims to show the immediacy of this problem and propose a solution that would satisfy both owners and authorities.

Due to personal interests, this *Enoncé Théorique* will also dedicate considerable effort to describing social phenomena which will be regarded as challenges alongside the chapters describing the Vierkanterhof. Many of these phenomena stem from current demographic trends spanning continents and cultures. Whether it is migration, childlessness, social isolation, loneliness, commuting or a changing work environment, this academic work is not concerned with passing judgement on individuals and their specific choices regarding their own life. This writing is concerned with honestly identifying patterns in data. Once potential future problems emerge from the publicly available datasets, it tries to provide architectural answers to combat these, should they arise.



0 5 10 15 20 25 km

Figure 03.01
Parts of Upper-Austria
(Heckl, 1949:66) edited by
Ürmössy, B. [2023]

INTRODUCTION

The Vierkanterhof is a building typology that is unique to certain parts of Austria with little variation. Although it can be found in a somewhat larger area, this academic investigation will restrict itself to the region between Linz, Enns, Steyr and Wels. The study is limited to this region specifically, as historically these farmers were the richest due to their proximity to the monastery in Sankt Florian and their privileged status among other farmers. Later, as the economic situation of the farmers in the surrounding regions improved, to reflect their new financial standing, they too constructed grand homes to express their new status.

Due to its intriguing geometric form, the Vierkanterhof has been the subject of lengthy academic endeavors since the advent of scholarly traditions as we know them today since the mid-19th century. This academic work is by no means a challenge to these chronicles but is also not parading itself as their newest reiteration. This *Enoncé Théorique* concerns itself with history to understand the value of traditional forms, and to propose an intelligent way of morphing them to meet challenges from the future.



CONTEXT: HISTORY OF THE VIERKANTER

Figure 04.01
Vierkanter in the landscape;
Jagdaufstand
St, Valentin 1704;
[Museumverein Lauriacum
- Enns, um 1720]

Heckl, R. [1949]
Baufibel

Before commencing the enquiry into the history of the Vierkanterhof, it is vital to accurately delineate what this building typology is. Although the typology itself has roots many centuries in the past – at least six hundred years according to Rudolf Heckl [Baufibel, 1949] – the term “Vierkanterhof” is relatively new: it was coined in 1893 by Gustav Bancalari [Cerny, 2012, p.35]. The numerous prominent Austrian architectural historians who have dedicated themselves to the investigation of this history have all provided definitions, some more acutely worded than others. Most recently, H. Cerny [2012] in his *Vierkanter – Wahrzeichen des Mostviertels* has described the Vierkanterhof as the following:

Cerny, H. [2012]
Vierkanter – Wahrzeichen
des Mostviertels, p.34

Der Vierkanthof ist dominierendes Symbol und markantes Wahrzeichen der Mostviertel Kulturlandschaft. Er gilt wegen seiner architektonischen Qualität und seiner beeindruckenden Ausmaße als die vollkommenste Gehöftform Österreichs.

Translated to English, this means “The Vierkanthof is the dominant symbol and striking landmark of the Mostviertel cultural landscape. Because of its architectural quality and its impressive dimensions, it is considered the most perfect farmstead form in Austria.” Of course this is a highly subjective definition where “the most perfect” description is awarded mostly because of the near-square geometry, the rhythm and

uniformity of the windows and the similarity of all four façades to one another.

However, the Vierkanterhof is not just an aesthetic dimension of façades and overall geometry in plan. The internal organisation of the plan is just as important. Pöttler and Pammer summarise the several definitions given by others the best when they succinctly write the following:

Der Vierkanthof ist demnach ein zweigeschossiges Gehöft, bei dem vier Trakte, nämlich Wohnhaus, Stall, Stadel und Schuppen, im Geviert mit gleicher First- und Traufenhöfe um einen Innenhof zusammenbaut sind, so das sie einen vollkommen geschlossen Gebäudekomplex bilden.

Pöttler, V. H.
and Pammer, J. (2000)
Oberösterreichische
Heimatblätter.
Sonderpublikation, p.3

“The Vierkanthof is therefore a two-story farmstead in which four wings, namely a house, a stable, a barn and a shed, are built in a square with the same ridge and eaves around an inner courtyard, so that they form a completely closed building complex.” This courtyard-house building complex provided efficiency to the inhabitants, as all their livestock, food and agricultural equipment was located nearby. Situated in the countryside, often as a solitary building, this fortress-like quality also provided the inhabitants with safety when doing work outside in the courtyard.

The Austrian Vierkanterhof is also strongly linked with the Austrian *Bauern*. The German word *Bauer* is translated as “farmer” or “peasant” in English verbatim, however, this is not the accurate etymological meaning. *Bauern* in the Austrian tradition were middle to big agricultural landowners with many “employees” toiling both within their households and tending to their land. In an English terminology, they were akin to the “gentry” who owned land, lived in *quasi-bourgeois* circumstances, and had employees themselves. Naturally, not all Austrian farmers were wealthy, and not all Austrian farmers resided in Vierkanterhöfe, but all Austrian *Bauern* whose means allowed them to erect Vierkanter were well-to-do.

Thus, as the characterization of the Vierkanterhof both in overall geometry and internal organisation has been accurately defined, its developmental process throughout the past centuries can be addressed. This history has been well documented by scholars since the term “Vierkanterhof” was first used in 1893. A short summary of this history can be found in the following sub-chapter.

The Vierkanter

history of a housing type linking with Austrian history

H. Cerny [2012]
Op. cit., p.47

From approximately the Middle Ages onwards [12-14th centuries] there were mentions of *Siedlungen* [settlements] in the countryside in official records. However, these concerned themselves more with the size and number of inhabitants rather than the housing-form. This was probably the case mainly because of the utility of the information collected: being able to accurately assess the productivity of the land and the approximate yield of taxation was more of value than the exact form of living. Additionally, from archaeological evidence it can be inferred that the form of the houses was always changing to reflect the number of inhabitants and livestock, the type of produce that was planted in the fields and much more.

H. Cerny [2012]
Ibidem., p.54-55

From archaeological findings, it is clear that until the Early-Modern period, farmers were living in one-room-log huts with their whole family, including their livestock. As the activities became more specialised, new buildings appeared next to the original hut. These buildings could include but were not limited to *Stallungen* [stables], *Stadel* [stalls], *Feldkästen* [field cages], *Scheunen* [sheds], *Schuppen* [sheds], *Backofen* [ovens], *Dörrhaus* [drying houses] and *Bienenhaus* [bee houses]. These buildings served different purposes: *Stallungen* were used for keeping horses, cows, sheep and other animals; *Stadel* were used for storing hay, straw and other fodder; *Feldkästen* were used for protecting crops from birds and insects; *Scheunen* were used for storing tools, equipment and raw materials; and *Schuppen* were used for drying goods or curing meat.

SALAPERG

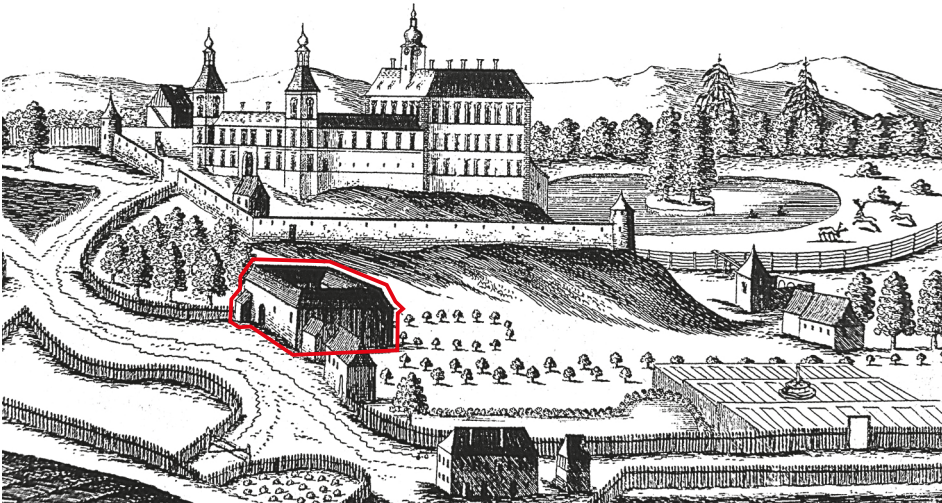


Figure 04.02
Renaissance Schloss
Salaberg with a Meierhof
in the foreground, the
first forebearer of today's
Vierkanter, circa 1672
[Vischer-Stich, 1672] edited
by Ürmössy, B. [2023]

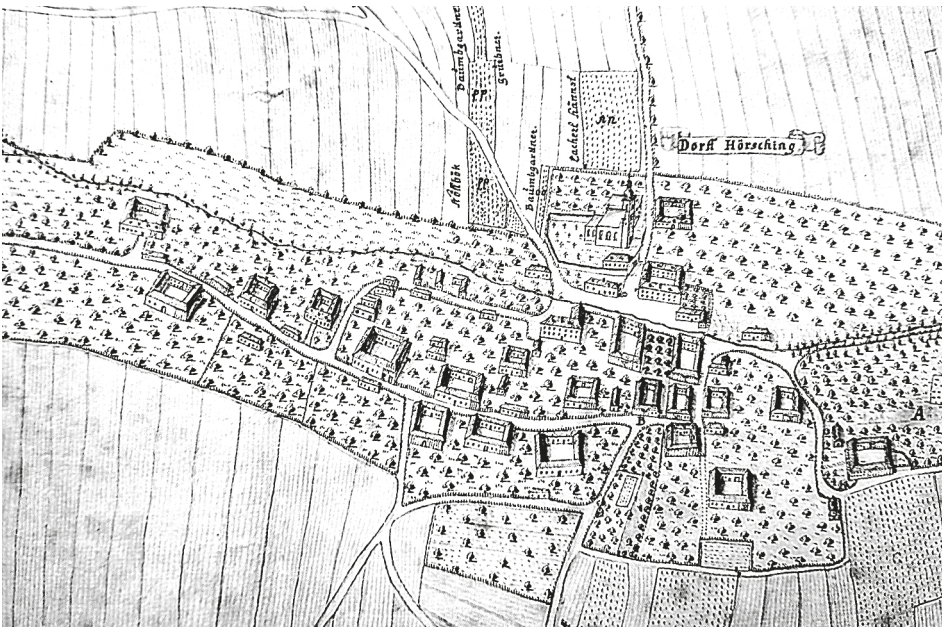


Figure 04.03
Cadaster drawing of
1730 of the Vierkanterhof-
village Hörching
[Planmappen-Sammlung,
1730] edited by Ürmössy,
B. [2023]

- H. Cerny [2012]
Ibid., p.56
- Pöttler, V. H.
 and Pammer, J. (2000)
 OÖ Heimatblätter.
 Sonderpublikation, p.45
- H. Cerny [2012]
Ibid., p.56
- Ibid.*, p.60
- Ibid.*, p.61
- At this time, during the late Middle Ages, a notable invention appeared in plan: a central corridor (*Mittelflur*) ran through the depth of the house, dividing it into two sides. One side became two rooms: the kitchen with the fireplace and the smoke, and the other the "Stube", a heated living room with a big table and seating where the whole farm could gather. The other side gave home to stables where the most important animals could be kept (usually horses) along with storage area. Later on, a cellar was added beneath the whole house, while *Mägde* (female household help) were sleeping in the attic next to the hay storage. The roof was covered 20 cm deep using rye straw (readily available from animal feed), which provided rain-proofing and insulation at the same time.
- This three-part basic house unit is the heart of the traditional Austrian *Bauernhof*, which from as early as the 17th century onwards was built from masonry (either clay brick or quarry stone). This is notable as firewood was always scarce in the region (the Enns forest was cut down early on), thus fired brick was an expensive and rare commodity. The insistence on using masonry construction despite this highlights the importance of and rigidity of this use-structure. Later, the *Mittelflur* also allowed easy access to an internal courtyard, fenced off between the different solitary farm building arranged in a loose group.
- What is known today as the *Vierkanterhof* had its roots in a housing type known as the *Meierhof* at this time. *Meierhof* means "tenant farm:" a building that was occupied by the administrator of a noble or ecclesiastical estate. Its name comes from Latin and means "larger estate". Some farmers started administering the taxes and finances of the Stift Sankt Florian and Stift Kremms (monasteries) and other religious feudal lords in the region. As a result, they amassed great wealth and could build farmsteads made up of different building elements. Over time, these consolidated into four "*Trackten*" (wings):
1. *Meierhaus* (inhabited house) with *Stube* (living room), *Kammer* (sleeping chamber), kitchen, dining room, dairy cellar, cowshed;
 2. Cattle and horse stables, guest stables, carriage and equipment shed, mill press;
 3. Stalls for small livestock (sheep, goats), *Gesindewohnungen* (apartments and rooms for household help);
 4. And barn, grain storage.
- From the 16th century little by little these *Meierhofs* and *Zehenhofs* (tithe farm or estate) received their houses and the adjacent lands as hereditary properties as opposed to the usual feudal-loan system where they could not be inherited. These farmsteads often had more than 100 Joch *Ackerland* attached to their estates, where 1 Joch equals 5'755 m². Through this hereditary legal status, some farmers in

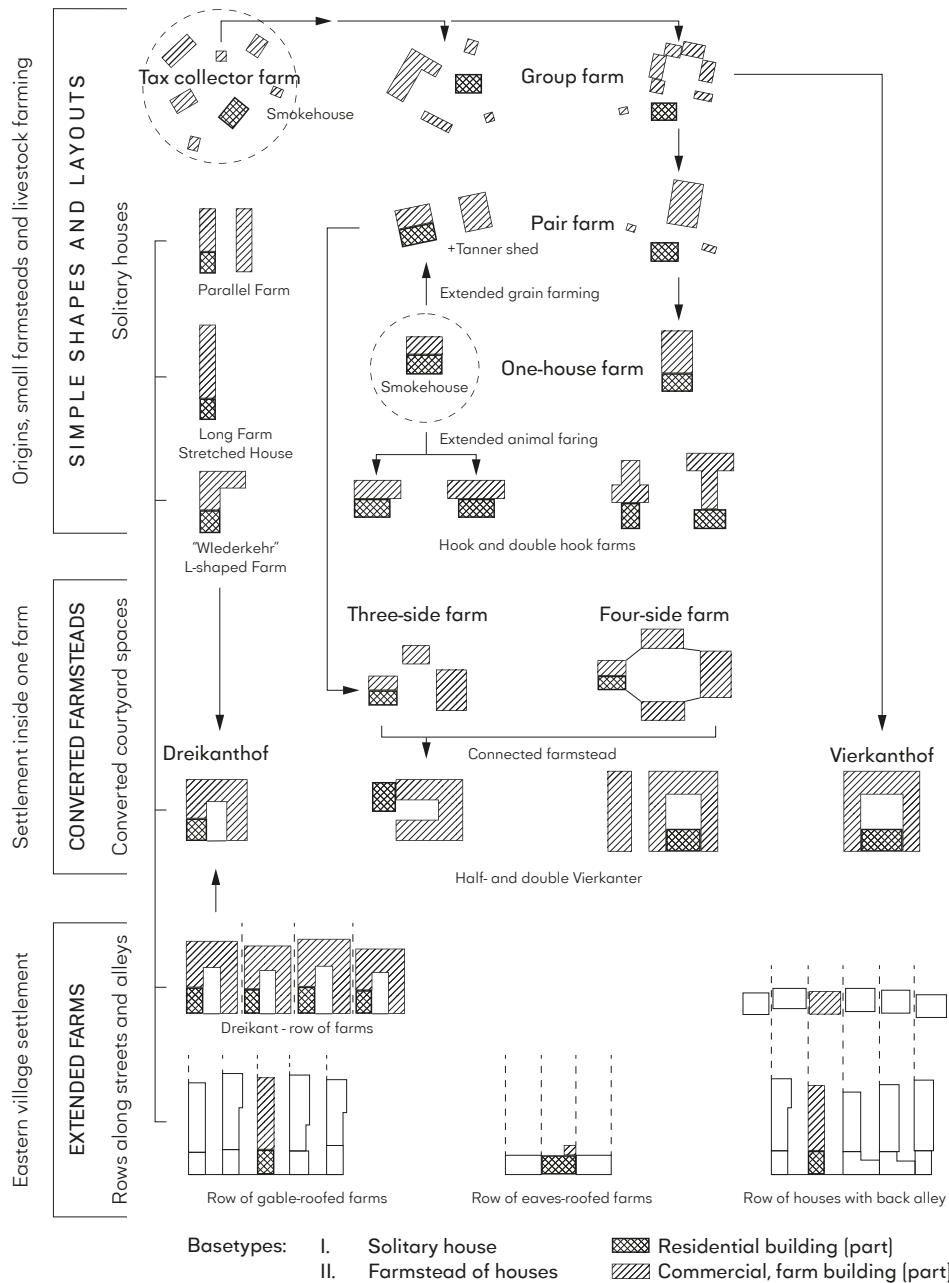


Figure 04.04
Types and evolution of
farmsteads in Austria
Source:
(Heckl, 1949:64) redrawn by
Ürmössy, B. (2023)

the region started amassing great fortunes and became known as the "*Florianer Bauernadel*" ["farmer-aristocracy of St. Florian"; a *quasi-gentry*].

Ibid., p.87 The prominent financial status of the *Florianer Bauernadel* was cemented further during the 19th century due to three main reasons. Firstly, the *Theresianisch-josephinischen Agrarreformen* (agrarian reforms of Maria Theresa and Joseph II) from the second half of the 18th century started to bear fruit. The reorganisation of agrarian production; new, more efficient crops such as the potato and orchards as well as better tools improved yields significantly, meaning that farmers could produce for profit.

Ibid., p.87 Secondly, after the 1848 revolutionary wave in Europe, the peasantry of the Austro-Hungarian Empire was liberated through the *Bauernbefreiung*. What this meant in effect was that the taxes the farms had to pay were reduced and simplified, while other services to the feudal overlords ceased to exist (e.g. working on the lord's *demesne*). Overall, the *Bauern* had more material goods, energy and opportunity to produce for profit.

Ibid., p.112 Thirdly, the positive economic effects of the industrial revolution reached this region of Austria as well. Between 1858 and 1872, the *Kaiserin-Elisabeth-Westbahn* and the *Kronprinz-Rudolf-Bahn* [strategical railways] were constructed. Naturally, building a railway required manual labour, and as this was an imperial undertaking, it was relatively well-paid. Field-hands, horses, cattle as well as carriages were all involved in bringing the two new major train routes to life. Additionally, some 2000 seasonal migrants appeared in the region along with the construction of the railway: expert Italian builders who needed lodgings, clothing and alimentation – all of which was possible new revenue for the farmers.

Ibid., p.112 Parallel to this capital flowing into the region, the train company operating the route became responsible for the insurance of the *Bauernhöfe* located along the railway lines – but only if they were roofed using ceramic tiles instead of hay. Naturally, this served as motivation to rebuild existing structures. And to rebuild them bigger!

Ibid., p.61 At this time, a huge, new, tall and geometric Vierkanterhof became an object of *bourgeois* pride among the more entrepreneurial farmers. As the construction of the railway lines came to completion, the newly liberated handymen found new employers in the farmers, who increasingly called themselves "*Wirtschaftsbesitzer*" [business-farmstead owners] instead of "*Bauern*" [farmers]. The usual practice was to first completely demolish the older structures made of sun-dried clay bricks, adobe and wood. Then, the new roof was erected, supported on wooden posts.

Ibid., p.119

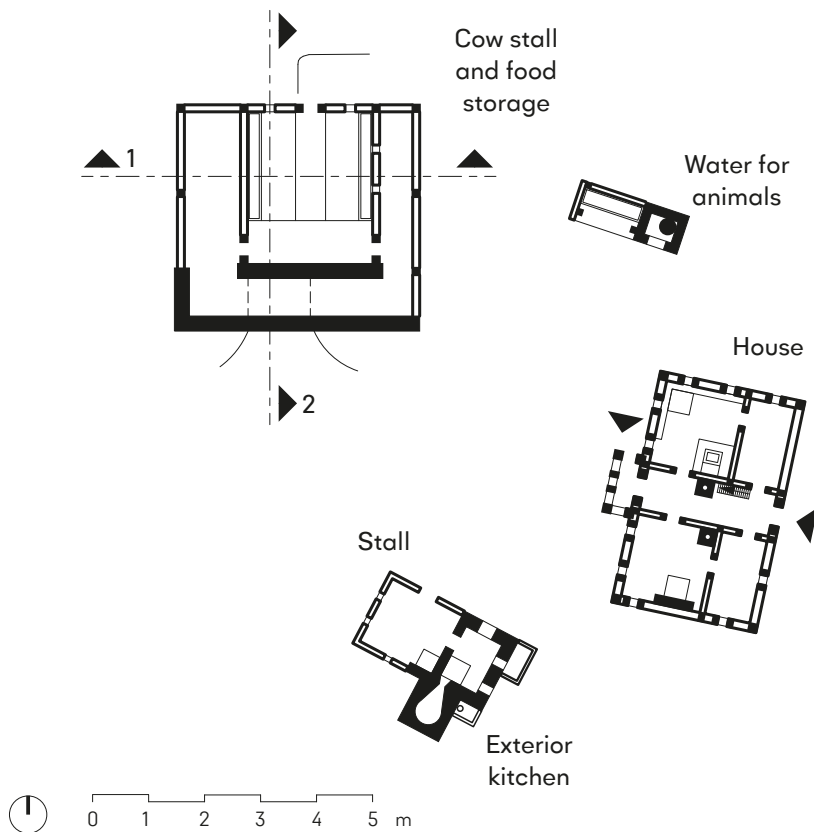


Figure 04.05
Evolution of farmsteads,
Group farm plan
[Heckl, 1949:69] redrawn by
Ürmösy, B. [2023]

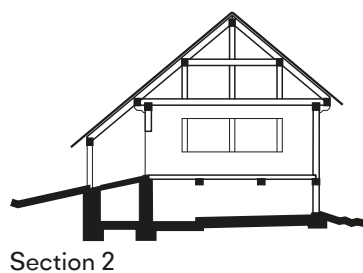
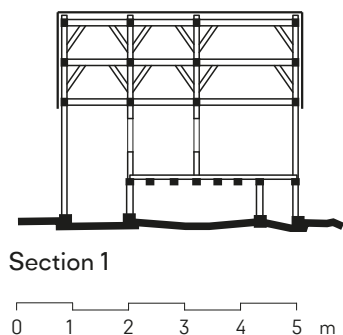


Figure 04.06
Evolution of farmsteads,
Group farm section
[Heckl, 1949:69] redrawn by
Ürmösy, B. [2023]

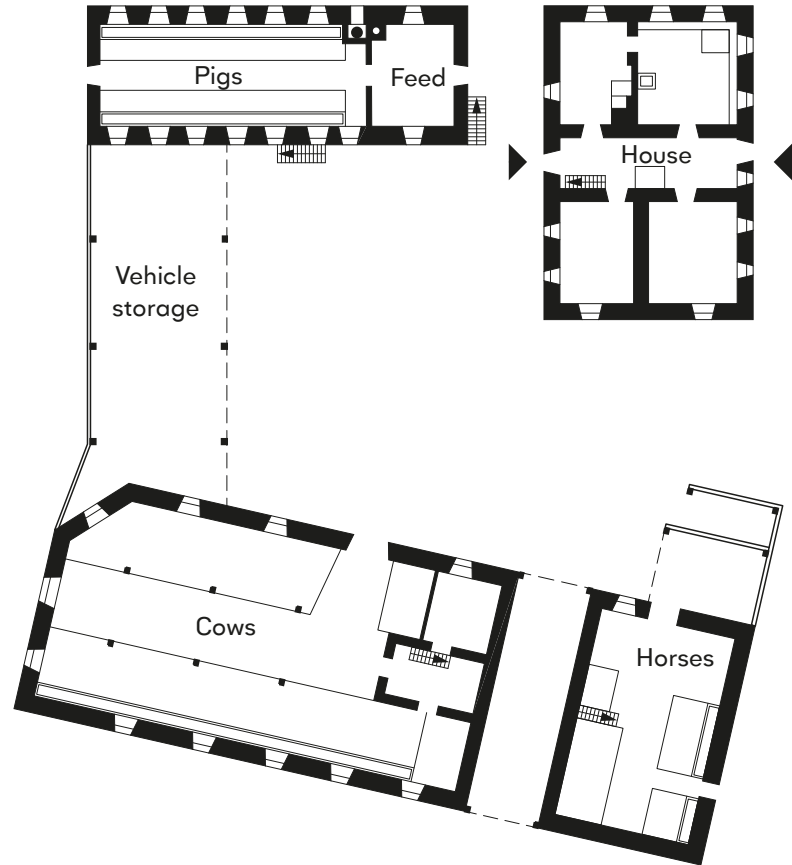
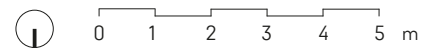


Figure 04.07
Evolution of farmsteads,
Pair farm plan
(Heckl, 1949:69) redrawn by
Ürmösy, B. [2023]



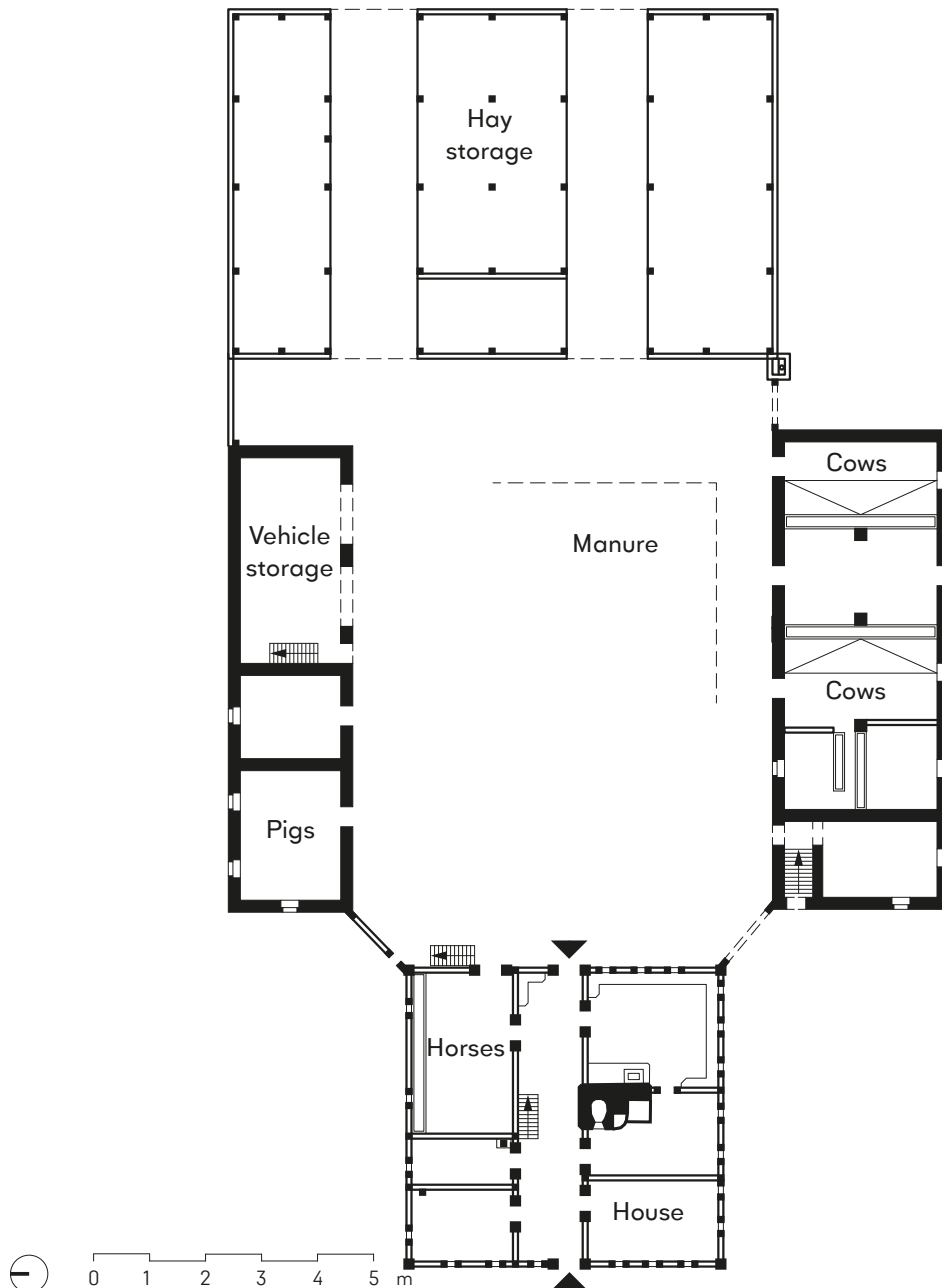


Figure 04.08
 Evolution of farmsteads,
 Four-side farm plan
 [Heckl, 1949:71] redrawn by
 Ürmösy, B. [2023]

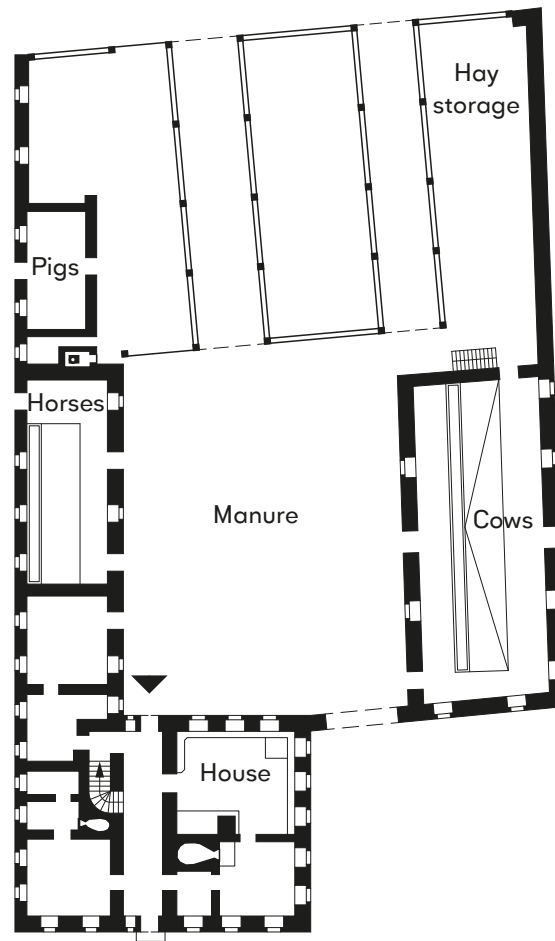
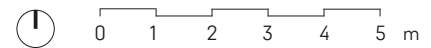


Figure 04.09
Evolution of farmsteads,
Half-Vierkanter farm plan
(Heckl, 1949:71) redrawn by
Ürmössy, B. [2023]



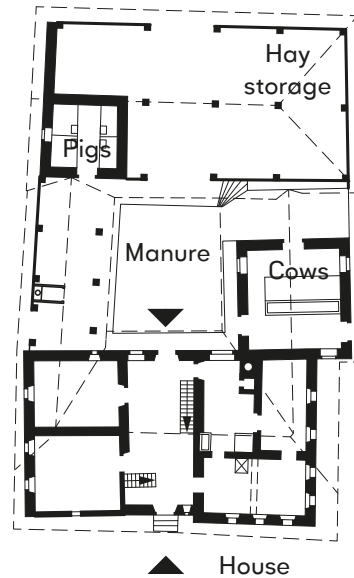


Figure 04.10
Evolution of farmsteads,
Early Vierkanter farm plan
(Cerny, 2012:51) redrawn by
Ürmössy, B. (2023)



0 1 2 3 4 5 m

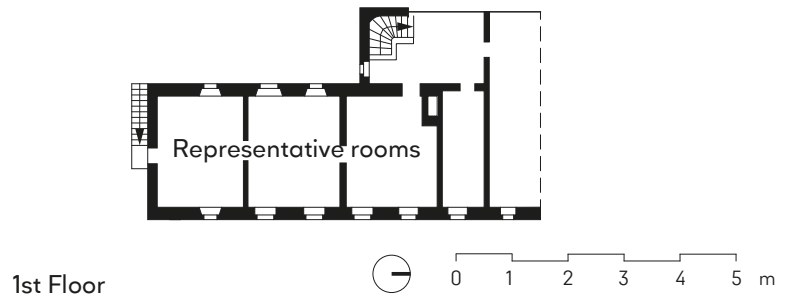
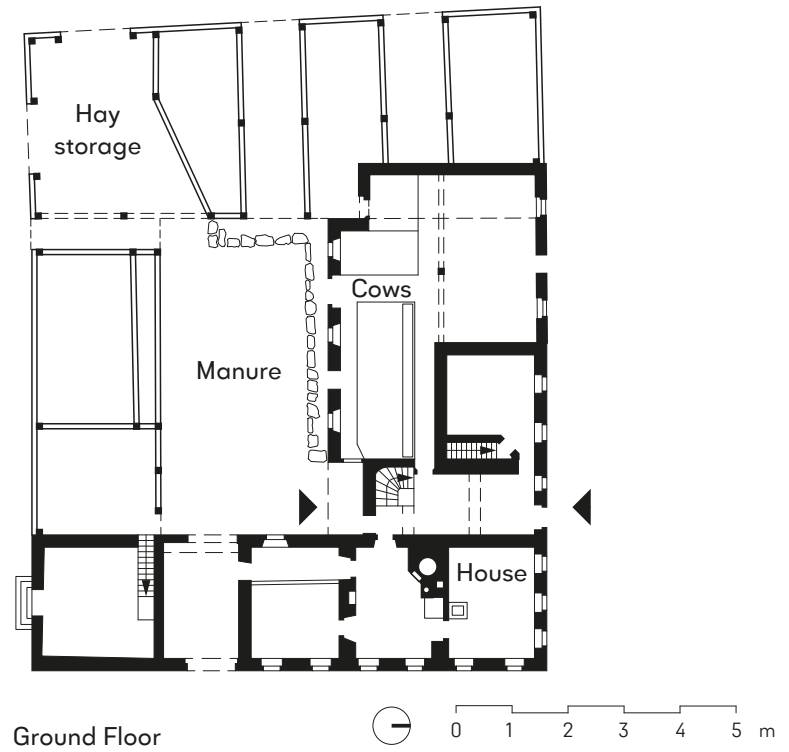


Figure 04.11
 Evolution of farmsteads,
 Early Vierkanter farm plan
 [Cerny, 2012:53] redrawn
 by Ürmössy, B. [2023]

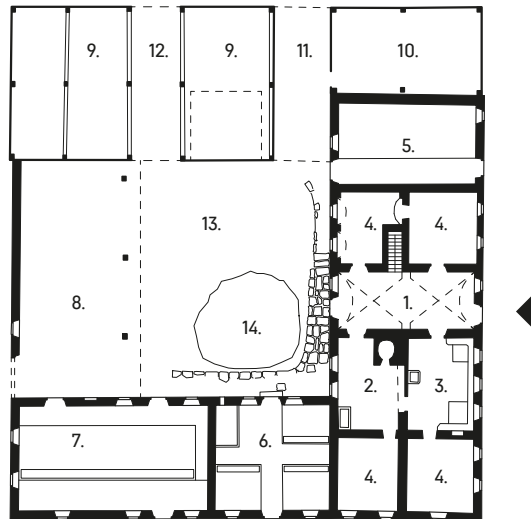


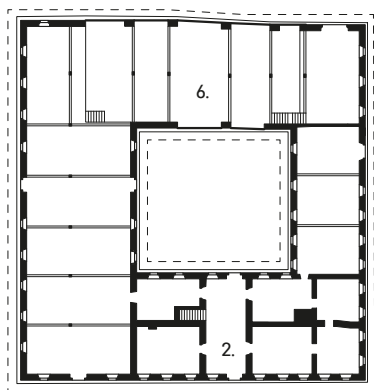
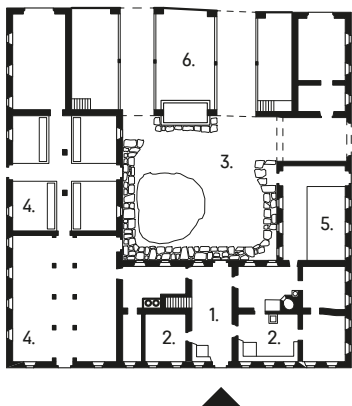
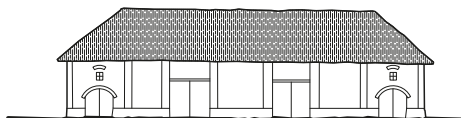
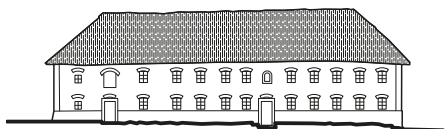
Figure 04.12
Evolution of farmsteads,
“final” typology Vierkanter
farm plan; @1:500;

1. Mittelflur
2. Kitchen
3. Stube
4. Room
5. Horses’ stall
6. Pigs’ stall
7. Cattle’s stall
8. Garage
9. Hay storage
10. Animal feed storage
11. Entry through barn
12. Exit through barn
13. Courtyard
14. Manure



0 2.5 5 7.5 10 12.5 m

- Ibid., p.150 This enabled the builders to then work all year-round unobstructed by the elements. Such renovations could take three generations to complete, so most of the Vierkanterhöfe today achieved their current form at the beginning of the 20th century.
- Ibid., p.134 The Vierkanterhof today was in most cases built from brick, the building material most widely available in the region. The little ponds distributed around the region near houses are the reminder of this: the clay for each house was excavated from the agricultural land attached to the property. This local, hand-made quality was also the reason why the characteristic stucco-façade became wide-spread: the clay had varying quality, and some worse-quality bricks needed to be hidden and covered up by colourful paints, geometric patterns and elaborately painted religious scenes. Later, when the families were no longer "*Bauern*" but were instead "*Wirtschaftsbesitzer*", it became vital to express this industrialist positioning in architecture as well: the local stucco was painted over using plaster.
- Ibid., p.129
- Ibid., p.169
- Ibid., p.198-199 The quality of the rooms inside was also transformed. The *Mittelflur* (central corridor) lost its clay floor and was covered in stone tiles or wooden planks. The interior height was many times raised to three meters or higher. Overall, the plans were "straightened" to near-rectangles or near-squares. Windows on the façades were introduced at rhythmic, regular intervals. From the 1870s onwards they became big in absolute terms (circa 1 m in width and height) and let in a substantial amount of light.
- Ibid., p.140, 252 Several houses employed not only the builders, but also a local *Baumeister* (master-builder) to draw the floorplans and supervise the works. Where the builders were given freedom was the façade: the decorative brick- and stucco-work was decided on and created entirely by the Italian workers, many of whom were originally from the Friuli region. Comparing the brickwork found in the region to that exposed on the Vierkanter, one can but notice the stark Mediterranean influence.
- Ibid., p.148-150
- After this time period, the way agriculture operates as a business started to change radically, a process that continues even today. As these enormous buildings became a relic, modifying them was and is increasingly considered a financial burden. Thus, many of them remain in their original state: unchanged layout and overall appearance. The Vierkanterhöfe are a typology that were perfectly adapted to serve their time and use, with many purpose-dedicated spaces. To understand what these were and how they were used, it is most efficient to turn to a preserved farmstead-museum, such as the *Sumerauerhof* Vierkanterhof Museum.



0 4 8 12 16 20 m

Figure 04.13
Example plan of a typical
Vierkanterhof; @1:750;

1. Mittelflur
2. Living quarters
3. Courtyard
4. Cattle's stall
5. Horses' stall
6. Storage

(Cerny, 2012:48-49)
redrawn by Ürmössy, B.
(2023)

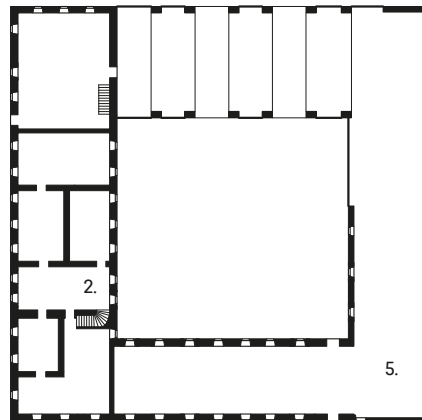
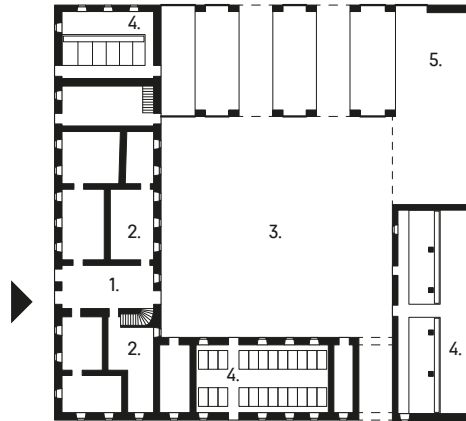
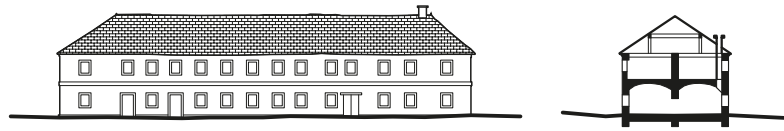


Figure 04.14
Example plan of a typical
Vierkanterhof; @1:750;

- 1. Mittelflur
- 2. Living quarters
- 3. Courtyard
- 4. Stall
- 5. Storage

[Cerny, 2012:180] redrawn
by Ürmössy, B. [2023]



0 4 8 12 16 20 m

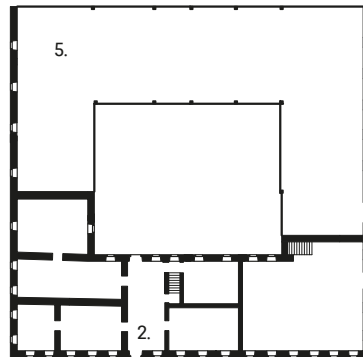
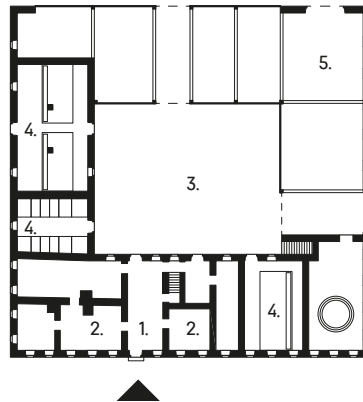
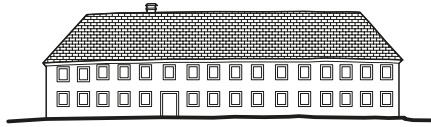


Figure 04.15
Example plan of a typical
Vierkanterhof; @1:750;

1. Mittelflur
2. Living quarters
3. Courtyard
4. Stall
5. Storage

[Cerny, 2012:181] redrawn
by Ürmössy, B. [2023]



0 4 8 12 16 20 m

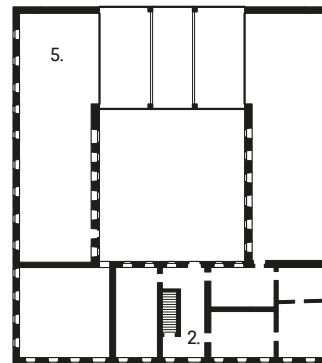
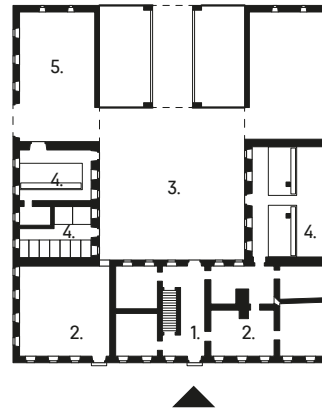
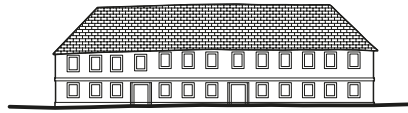


Figure 04.16
Example plan of a typical
Vierkanterhof; @1:750;

- 1. Mittelflur
- 2. Living quarters
- 3. Courtyard
- 4. Stall
- 5. Storage

[Cerny, 2012:181] redrawn
by Ürmösy, B. [2023]



0 4 8 12 16 20 m



Figure 04.17
 External street facade
 of Sumerauerhof
 Vierkanterhof Museum
 (Ürmössy, 2023)



Figure 04.18
 Internal courtyard
 facade of Sumerauerhof
 Vierkanterhof Museum
 (Ürmössy, 2023)

Spaces of the Vierkanterhof illustrated through the Sumerauerhof Museum

Mittelflur

Unheated corridor connecting the exterior façade to the inner courtyard. On one side is the kitchen and the *Stube* (living room) and on the other side are the *Kammer* (rooms) and the *Speichertrakt* (storage wing). Also, there is a staircase to the First Floor. The corridor usually has an arched roof with stucco decoration.

Ibid., p.198-99 It was originally situated on the North side of the house, as the south side, sun and warmth were designated to the animals as their well-being was the most important.

Kitchen

It is to one side of the *Mittelflur*, next to the *Stube*. It is a huge, "industrial" size kitchen, quipped with an open fireplace and oven to feed twenty-thirty people daily. It mostly has storage and adequate tables attached to it. The kitchen was facing the courtyard so the *Bauerin* (wife of the owner) could supervise those who were working in the courtyard.

Ibid., p.204

Stube

It is to one side of *Mittelflur*, next to the Kitchen. It is the living room of the whole community. Equipped with a large enough table so that the family (owners) as well as the *Gesinde* (workers) could all eat together. The table was paired with benches, not chairs. Additionally, it was equipped with a clothes-drying-thread and a *Kommode*-sofa where people could relax. There were also religious images and portraits above the table in the corner.

Ibid., p.204

Rooms on the other side of the Mittelflur

The *Mägdekammer*, the maids' room or cow girls' room. The *Speis*, the kitchen pantry. The "*Saukuchl*" (*Futterküche*), animal feed storage. *Presskammer*, fruit-press room.

Ibid., p.205

Courtyard

Originally used as the "*Dungstätte*" (manure collection point) as animal excrement was vital fertilizer. The middle of the courtyard was also the point closest to the stalls as well as the farm vehicles. The *Gredn* (pathway) ran the perimeter, connecting parts. Is long since not used for this purpose: today the inner courtyard is a relaxation zone.

Ibid., p.214

Rooms on First Floor

Originally called "*Schönen Stuben*" (nice, representative rooms), that were originally seldom used, only to entertain guests. These rooms were located directly above the *Mittelflur*, the *Stube* and the *Kitchen*. These were also unheated rooms, as they were far from the kitchen and the fireplace. Later these were transformed and used as bedrooms. Above the animal stalls and stables, rooms and later apartments were furnished for the *Gesinde* as well, separated by gender.

Ibid., p.208



Figure 04.19
Doors of the facade
of Sumerauerhof
Vierkanterhof Museum:
[Left] main granite door
for carriages; [Right]
entrance of the *Mittelflur*
(Ürmössy, 2023)



Figure 04.20
Windows of the facade
of Sumerauerhof
Vierkanterhof Museum:
[Left] window on street
facade; [Right] window on
"back" facade
(Ürmössy, 2023)

Attic

Ibid., p.208, 214
Empty, undivided space used for the storage of hay, meat, fruits, vegetables, plates and dishes, utensils, flour etc.

Stalls and stables

Ibid., p.214-215
The location of the stalls and stables were determined by the type of animal designated to the spaces. Horses were the most prized out of the livestock, and they were closest to the *Mittelflur* and *Kitchen*. They usually also housed a separate room for the man looking after the horses. Then came the pigs and other smaller livestock. Furthest away were the cattle, as they required the least amount of attention.

Vehicle storage and parking

Ibid., p.214-215
Opposite the living quarters, the "garage" was a semi-open covered space with an imposing, tall entrance door, framed in marble.

Storage of hay

Ibid., p.216
Also further away from the living quarters [far from the fire], usually built from a very light wooden frame with thin, wooden planks as walls. The most important part of this building element is the roof that keeps the hay dry.

Figure 04.21
Facade of Sumerauerhof
Vierkanterhof Museum:
(Left) window on courtyard
facade with fire-proofing
latch covering; (Right)
Sgraffito decoration
technique on *Backhaus*
next to the Vierkanterhof
(Ürmössy, 2023)

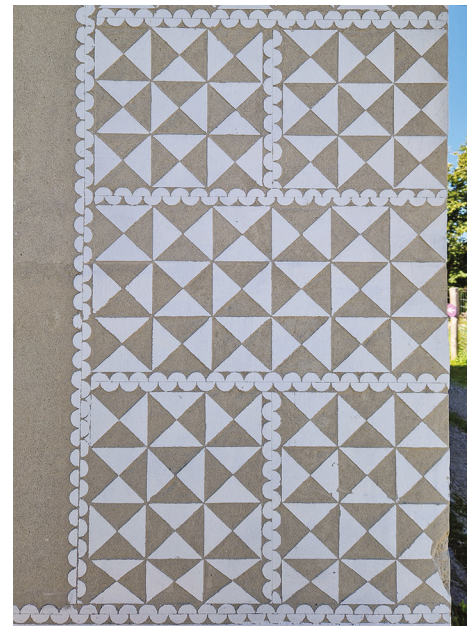




Figure 04.22
Exterior facade of
wooden light-structure
barn and vehicle storage
of Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)



Figure 04.23
Old stalls being converted
to retail and office
space at Herr S. Augl's
Vierkanterhof in Leonding
(Ürmössy, 2023)

Figure 04.24
Cattle's stables
at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)



Figure 04.25
Horses' stables
at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)





Figure 04.26
Mittelflur in "Straußhof"
Vierkanterhof of Herr R.
Födermayr
(Ürmössy, 2023)



Figure 04.27
Mittelflur with
decorated ceilings in the
Vierkanterhof of Herr S.
Augl in Leonding
(Ürmössy, 2023)

Figure 04.28
Stube (living room)
at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)



Figure 04.29
Kitchen at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)





Figure 04.30
Traditional apple and pear
cider making equipment
at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)



Figure 04.31
Traditional apple and pear
cider making equipment
at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)

Figure 04.32
Traditional furniture
pre-1800 at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)



Figure 04.33
Traditional furniture
pre-1800 at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)





Figure 04.34
Traditional furniture
post-1800 at
Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)



Figure 04.35
Traditional furniture
post-1800 at
Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)

Figure 04.36
Contemporary exhibition
setup at Sumerauerhof
Vierkanterhof Museum
(Ürmössy, 2023)





Social life in a Vierkanter

how people co-existed in these houses | inspiration

Figure 04.37
Födermayr family portrait
from turn of 19-20th
centuries
(Meindl, 1989)

Interview with
Herr S. Augl [2023]

In our current world where most people either live within their nuclear families, with a partner, or increasingly more often alone, it is perhaps strange to think that up until WWII, people in the Vierkanter lived and worked closely together with twenty-thirty others. These communities were organised around the owner family, where grandparents, parents and children (three or four generations) lived together. They also had *Gesinde* (*Knächte* and *Mägde*; male and female agricultural workers), across all generations living within the same courtyard house. A model for “co-habitation:” they used one kitchen and one “living-room” area, and had small private apartments or rooms. They spent most of their lives in each-others’ company, working together. The children on the estate were brought up together by a community, which alleviated the burden of parenthood while also giving purpose to the elderly. The *Knächte* and *Mägde* were provided for also well into old age. This system changed after WWII, as people could achieve higher wages in cities, while the estates increasingly invested into machinery to work more cheaply and efficiently.

Interview with
Frau B. Huber [2023]

Since then, the mode of production and way of living has changed tremendously: after a lifetime of service to the family estate, the grandparents move out into a smaller building on the premises and let the next generation take over. As people are currently searching for meaning in the isolated contemporary world (and a use for their largely empty Vierkanterhöfe), the old co-habitational model could serve as inspiration when defining new models for cross-generational co-habitation and renovation.

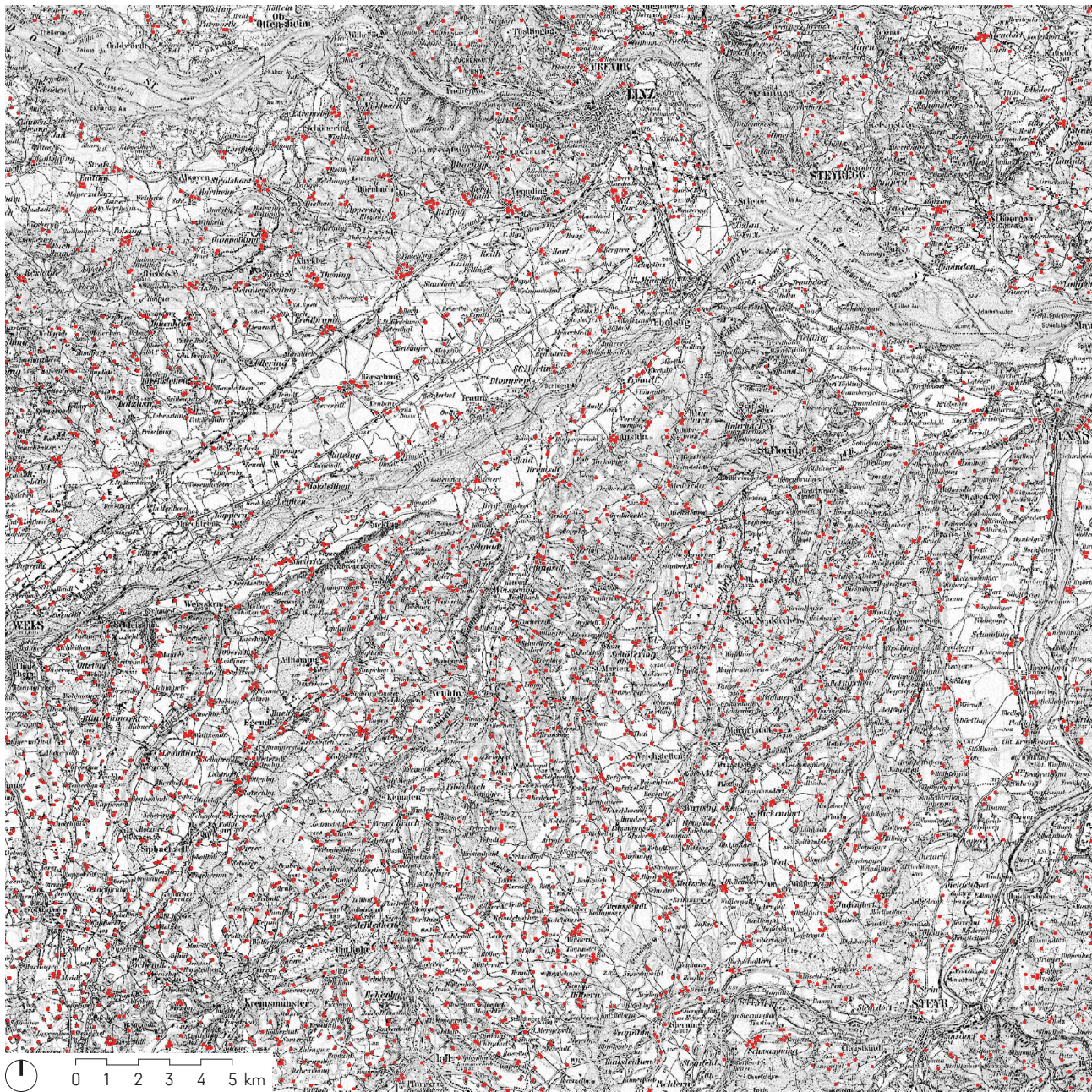
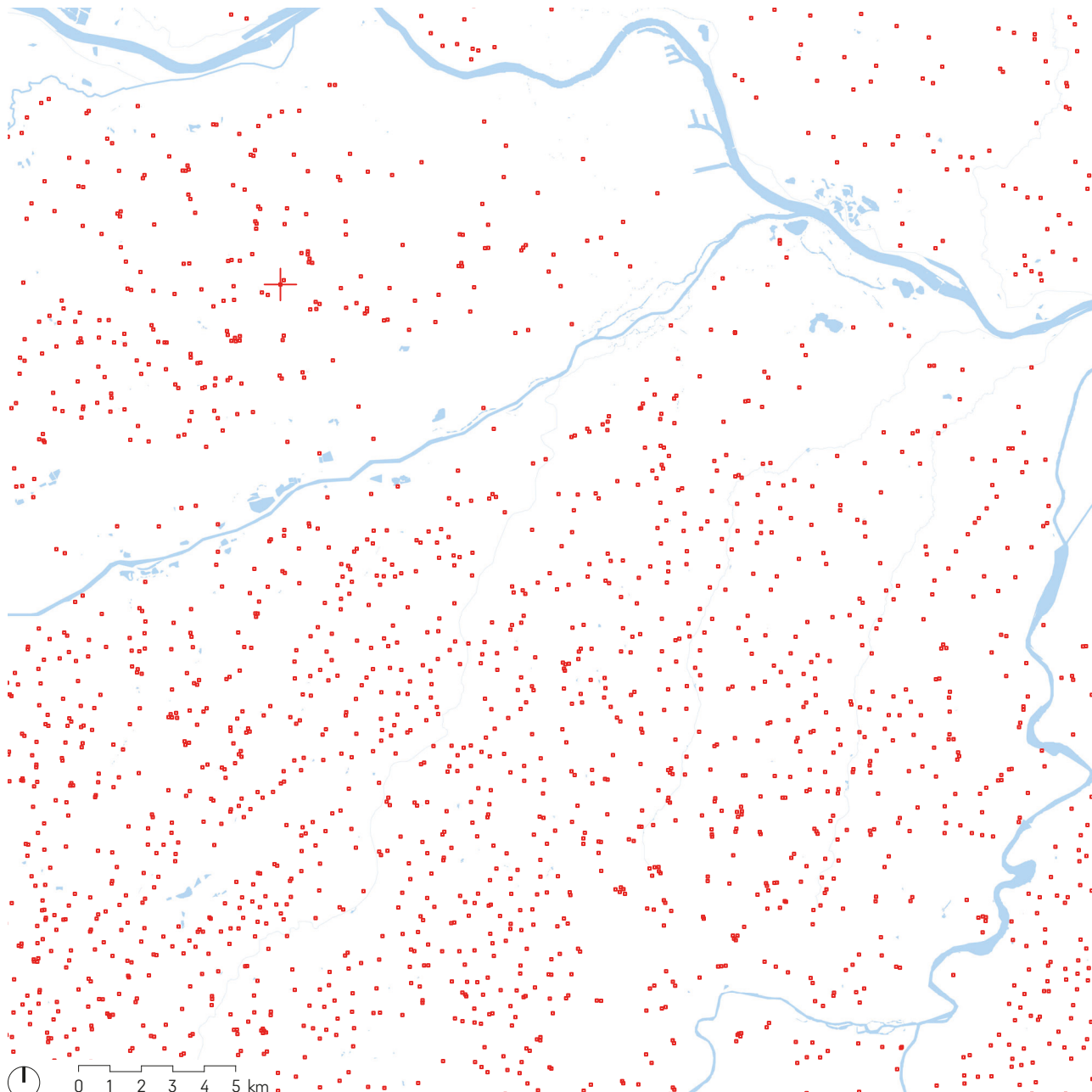


Figure 04.38
Mapping Vierkanterhöfe
on 1870s historic
cadastral map;
@1:200'000
[DORIS, 2023] redrawn by
Ürmössy, B. [2023]

When advocating for the reinvigoration of a whole region through one agrarian building typology, mapping the countryside becomes a central exercise. The distribution of the houses, their locations compared to grocery stores, kindergartens, schools, public transportation lines, electricity, internet and the sewage system become a vital question, as the attractiveness of these spaces [e.g. as future homes] largely depend on the answers given.

Firstly, an idea of the number of houses eligible for a refurbishment scheme became interesting: how many Vierkanterhöfe were there originally? About how many of these are still standing? How are they distributed: are they grouped, or do they congregate around roads, or are they dispersed? To be able to give a satisfying answer to these questions, old and contemporary cadaster maps must be consulted. Looking at *Figure 04.38*, the number of Vierkanterhöfe on the official cadaster map of the Austrian government of the region from the 1870s is exactly 4'126. Surveying the contemporary DORIS, Open Street Map and Google Maps satellite images of the very same area, from *Figure 04.39*, it can be inferred, that currently there are 3'037 Vierkanterhöfe in existence. That is a decrease of 1'089 Vierkanterhöfe or an astonishing 26.39%. And as the consensus in the population is that this is a superfluous building typology, it is likely to disappear almost completely from the landscape within the next fifty years.

DORIS Portal,
OSM, Google Maps [2023]



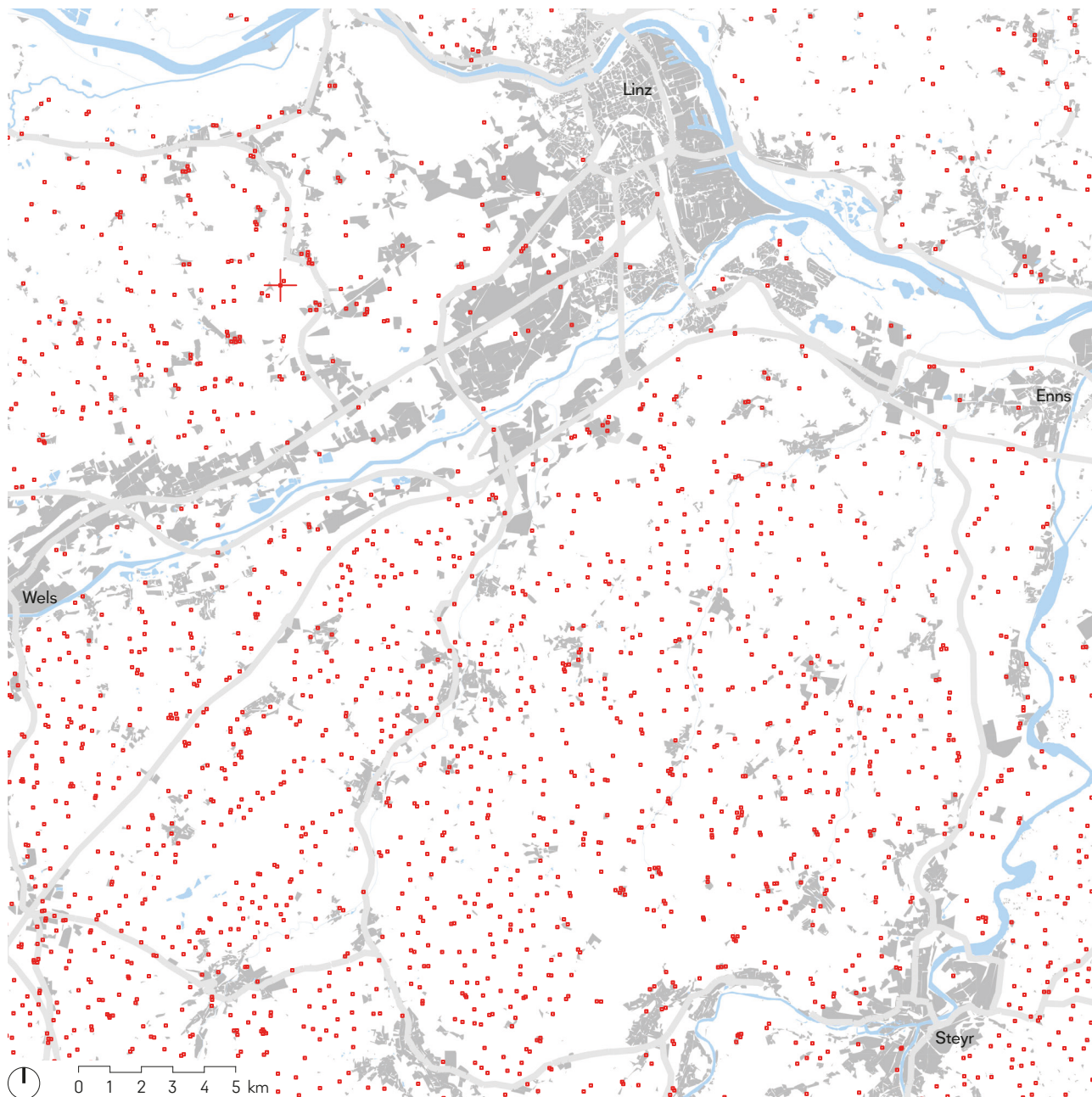


Figure 04.40: Vierkanter outside of settlements
[DORIS, 2023] redrawn by Ürmössy, B. [2023]

■ Vierkanter ■ Settlement ■ Roads

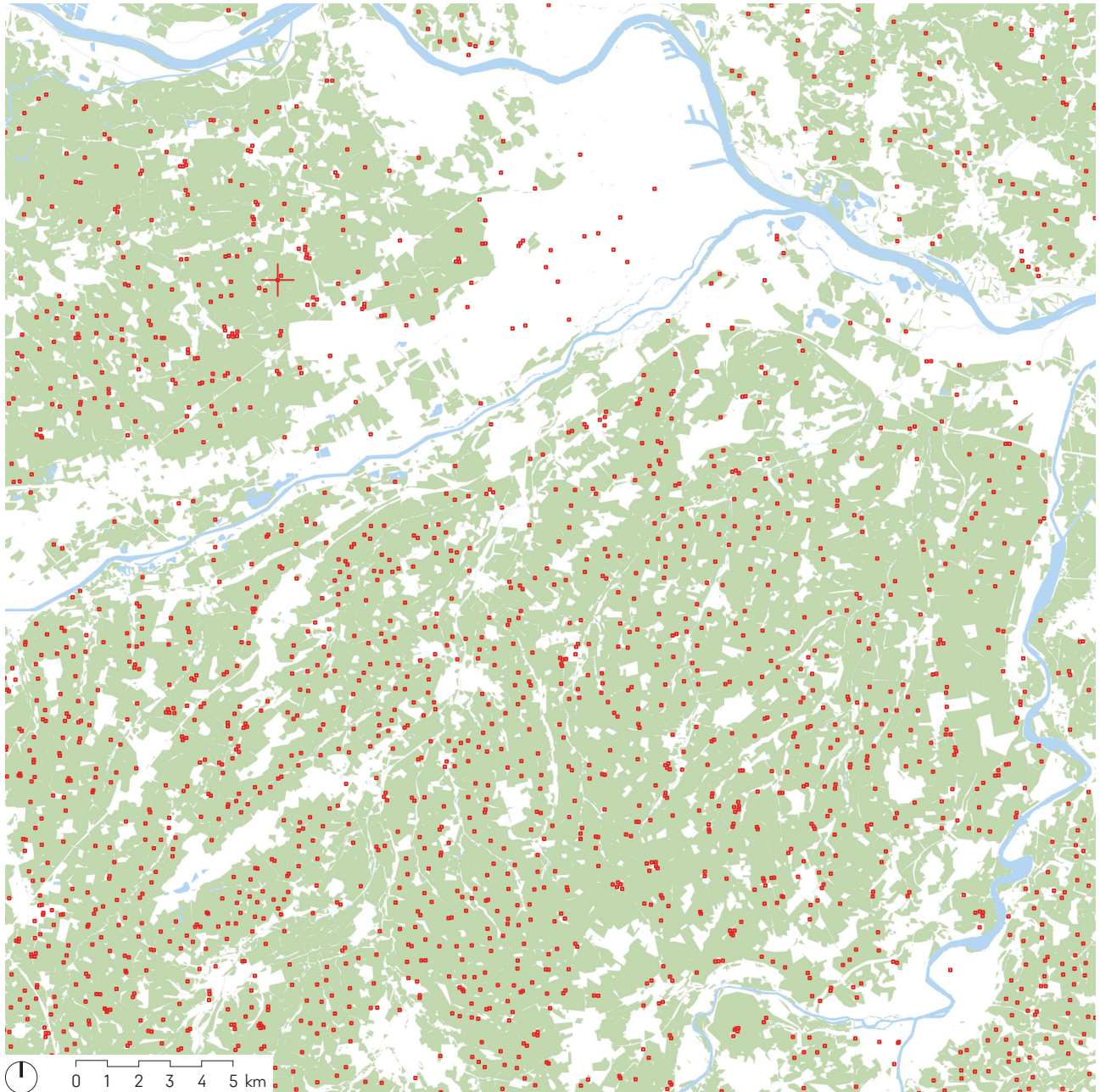


Figure 04.41: Vierkanter located in agricultural land
(DORIS, 2023) redrawn by Ürmössy, B. (2023)

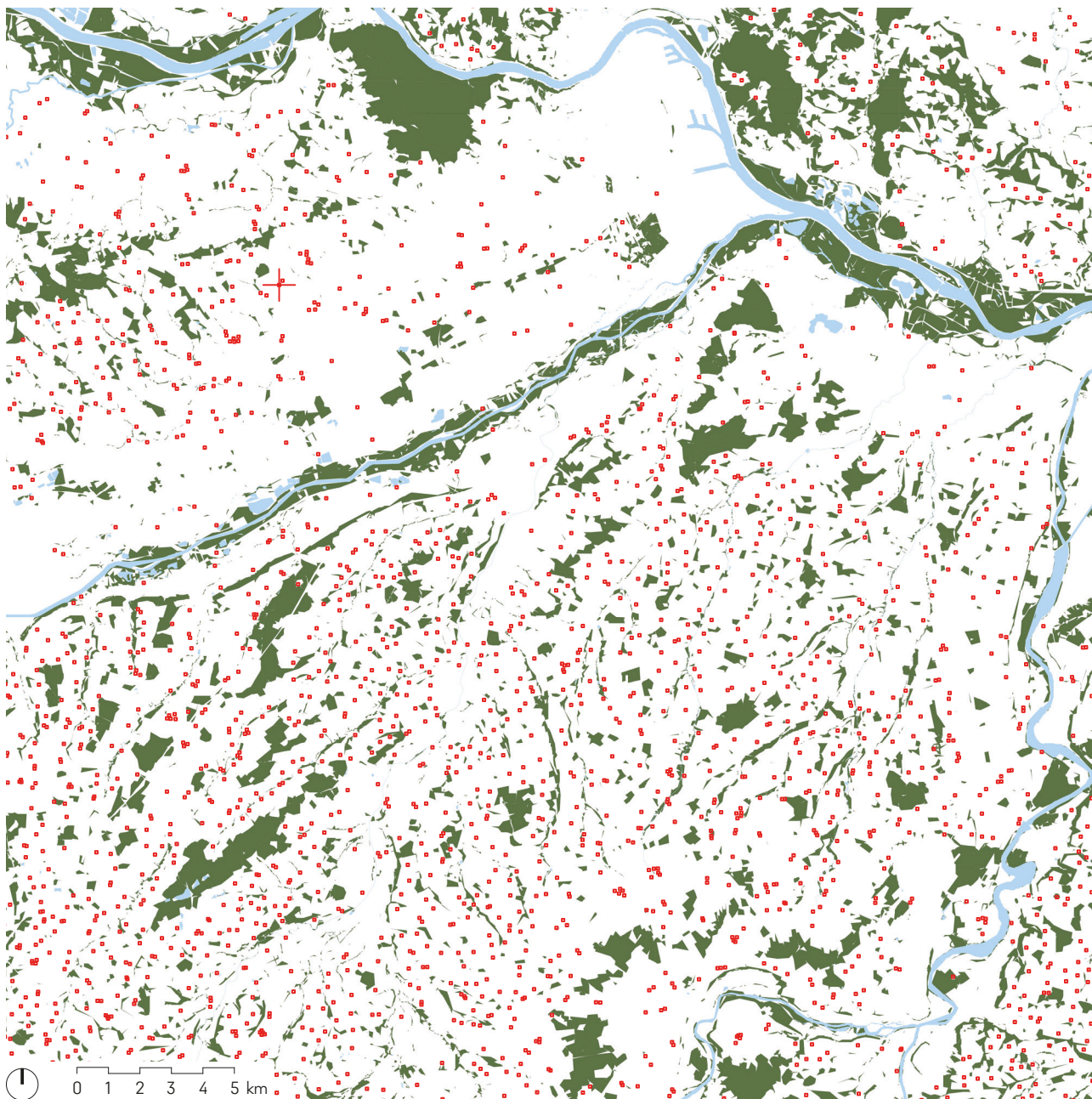
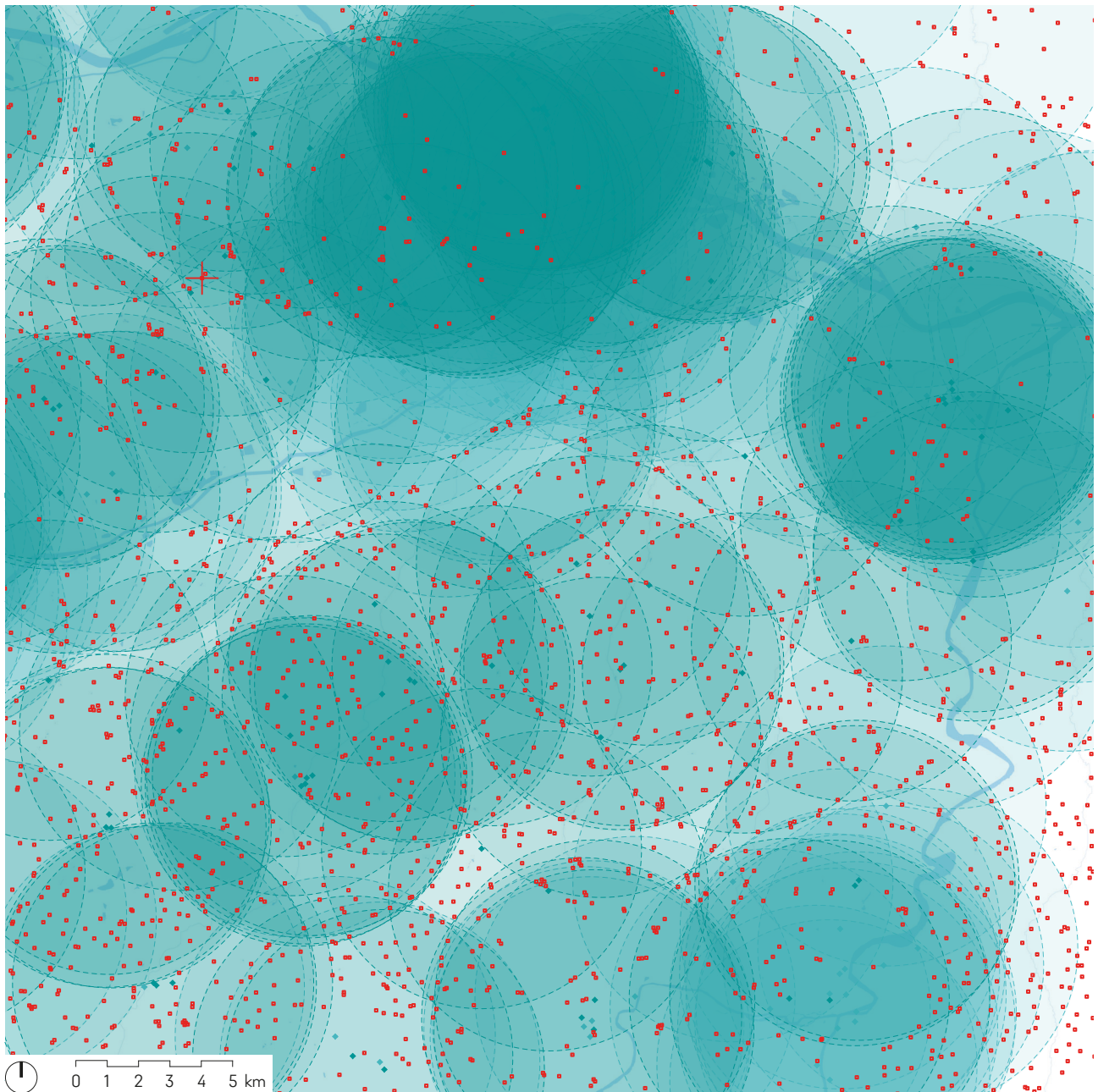


Figure 04.42: Vierkanter located outside of forests
 [DORIS, 2023] redrawn by Ürmössy, B. [2023]

■ Vierkanter ■ Forest



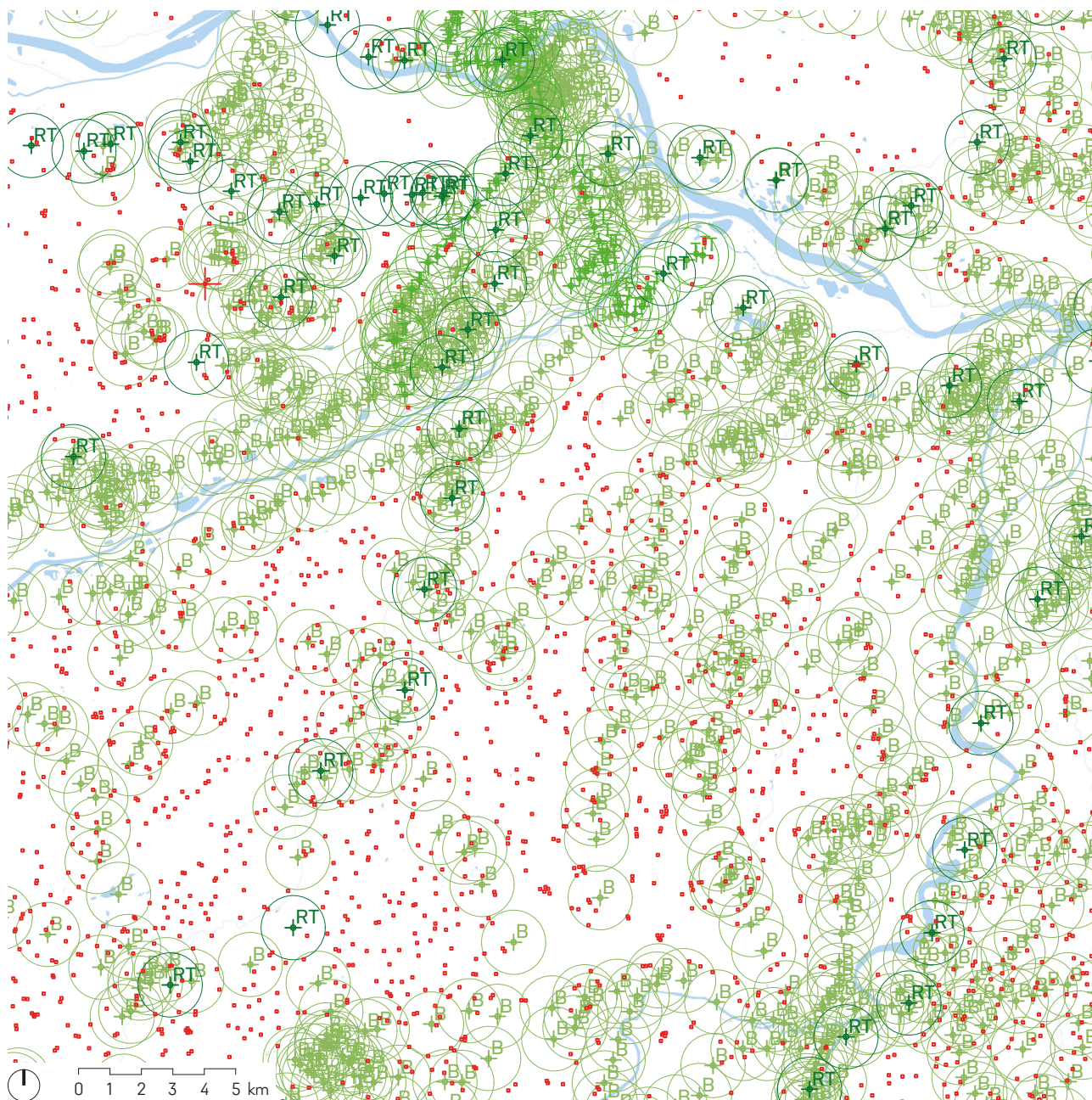
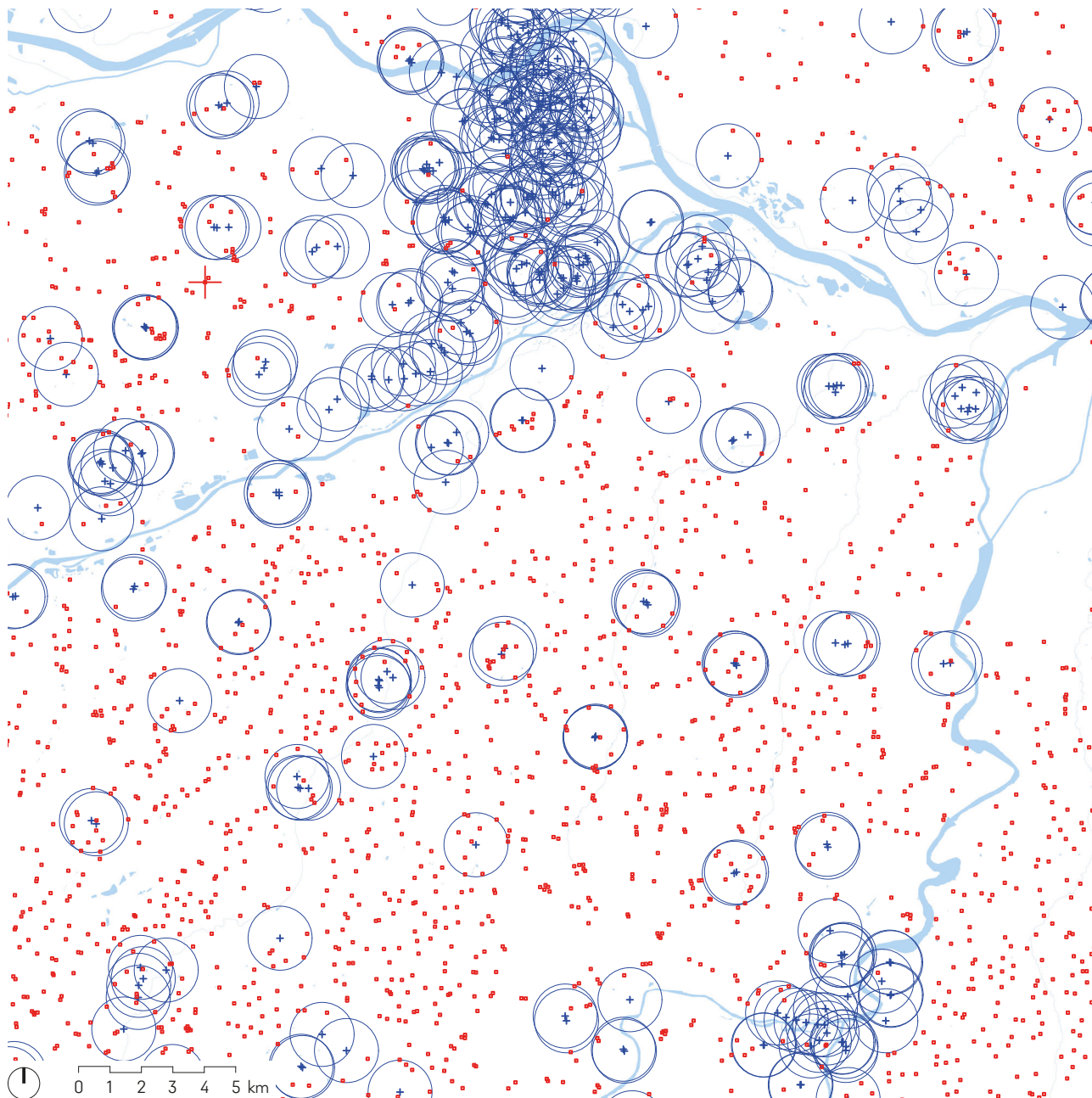


Figure 04.44: Vierkanter vs public transp. 1 km away on foot
 [DORIS, 2023] redrawn by Ürmösy, B. [2023]

★ B; bus ✕ T; tram ★ RT; regional train



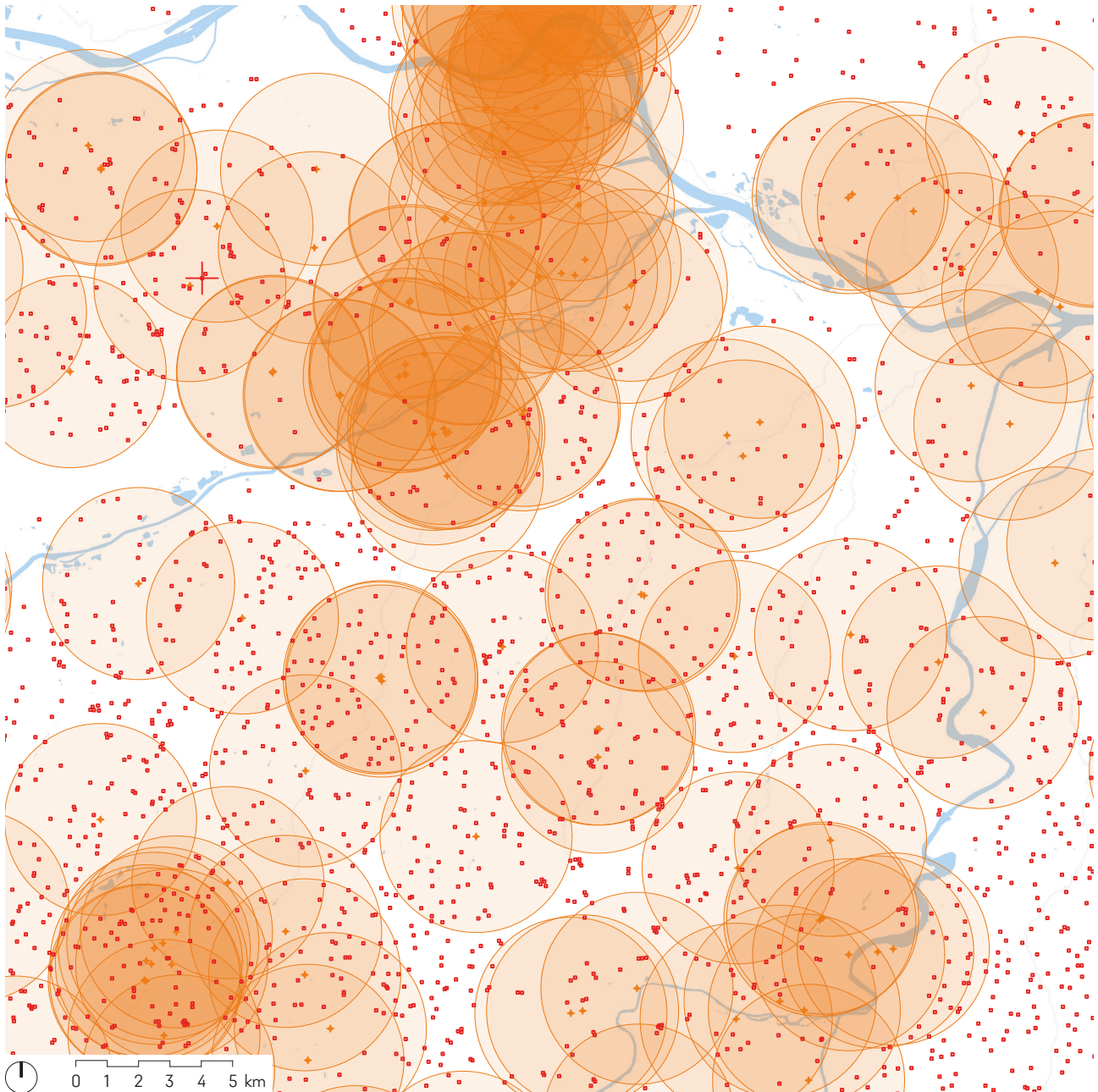


Figure 04.46: Vierkanter vs schools 10 minutes away by bicycle
(DORIS, 2023) redrawn by Ürmössy, B. (2023)

■ Vierkanter ◆ School

Looking at the distribution of these buildings, one can say that they are almost completely evenly distributed in the landscape, most likely positioned at the center of the estate belonging to each house. The only exceptions are the waterways (e.g. River Danube, River Traun, River Enns and the smaller ponds dotted all across the fields. Additionally, as the Vierkanterhof is a rural typology, it is not found on land historically belonging to cities, industrial production, the current Linz International Airport and in land designated as “forest”.

Statistik Austria (2023)
Stock of motor vehicles

To assess the viability of a large-scale refurbishment scheme, it is important to survey the availability of grocery stores, kindergarten, schools and public transportation lines to the average Austrian were they to be randomly allocated lodging at one of these buildings. In later chapters it will be calculated exactly, but for now it should be noted that from the number of adults and passenger cars it can be inferred that all adults living in Austria in October 2022 (the date of the most recent nationwide survey) who wish to own a car, do. This means, the available modes of transportation for the average Austrian should be the car, the public transportation system, the bike and walking.

DORIS Portal,
OSM, Google Maps

For alimentation, almost all Vierkanterhöfe are within a 5-minute drive radius of big grocery store chains (e.g. SPAR, Billa, Lidl, Hofer etc.), and absolutely all are within a 5-minute drive radius of some kind of shop that sells food products (e.g. farm in-house boutique of fresh dairy products; BIO-shops etc.). Almost all Vierkanterhöfe have a nursery school or a kindergarten within a 5-minute drive radius. Otherwise, if the aim was a 5-minute walk, the coverage would be less than ideal. However, in this case, when advocating for a co-habitational model, childcare until becoming school-aged for young children would be included. Consulting the maps, almost all Vierkanterhöfe are within a 10-minute bike-route radius from schools and secondary schools, which would be the appropriate distance if children are expected to autonomously organise their transportation there and back home. As far as public transportation is concerned, the region is surprisingly well served by regional trains and bus lines, however, due to the dispersed nature of Vierkanterhöfe, many are not conveniently serviced.

If one insists on not using the car in the future and would wish to devise a public-transportation method, smaller shuttle-buses could be organised between regional centers and grocery stores every half an hour or so. Until 15 minutes before departure, one could sign up using an application, would be collected by such buses at the address provided online, and delivered to the pre-determined end-destination (regional center, grocery store or hospital).

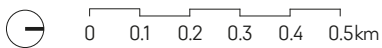
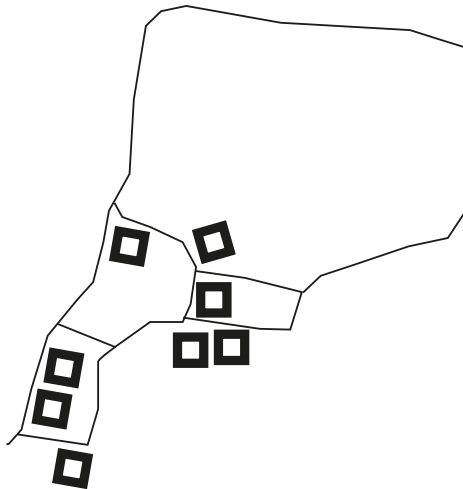
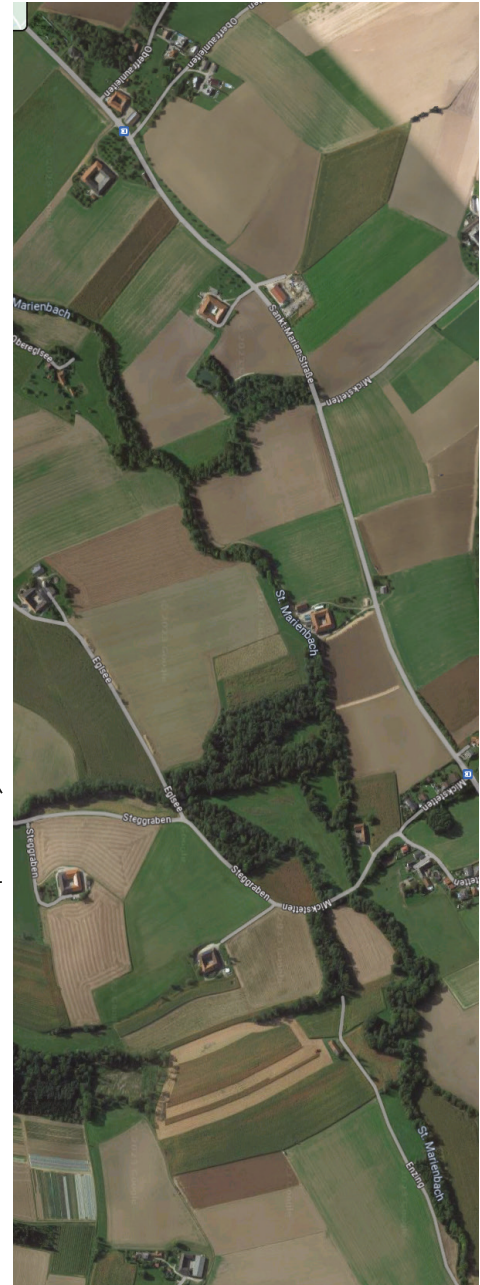
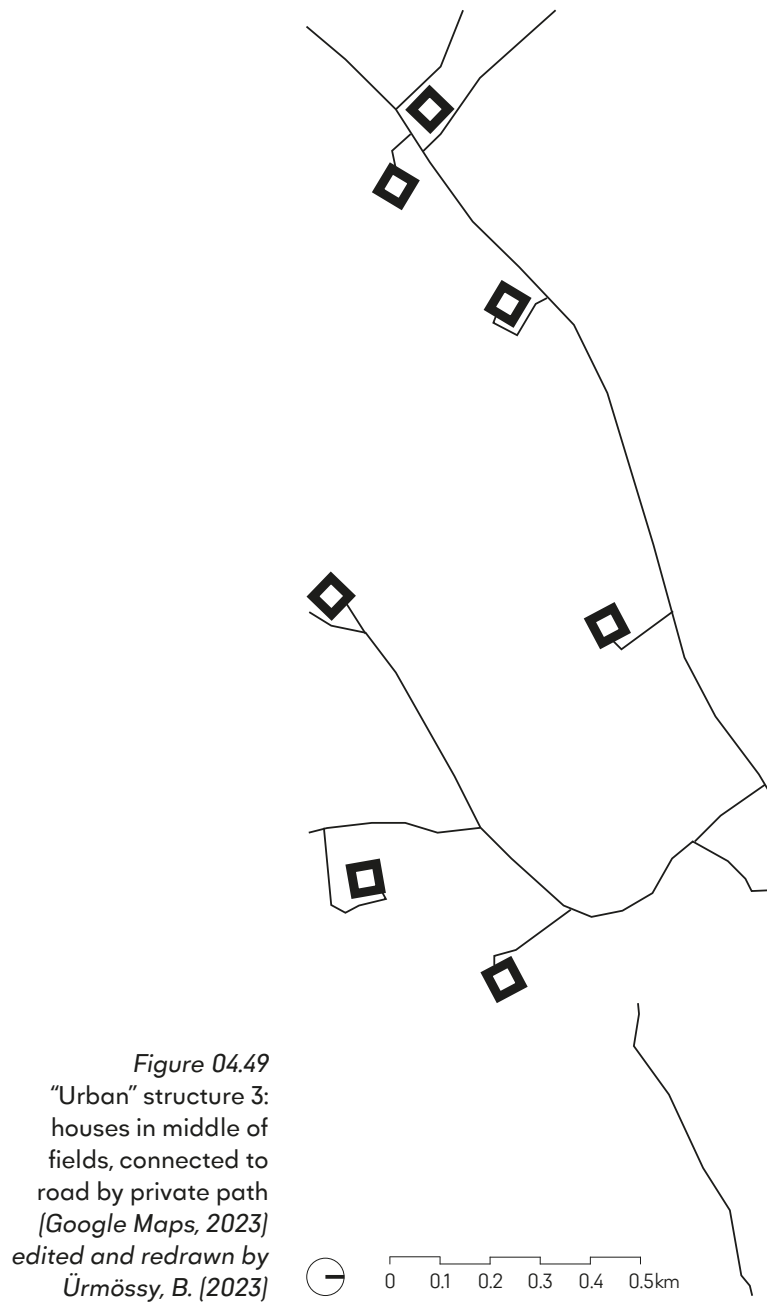


Figure 04.48
 "Urban" structure 2:
 houses in a cluster
 arranged near main road
 [Google Maps, 2023]
 edited and redrawn by
 Ürmössy, B. [2023]



Zooming in on these maps, one can identify three possible patterns on where the Vierkanterhöfe are located compared to the major roads. One option is where the Vierkanterhöfe were built first and were connected by roads that were constructed later. Another option are houses that are grouped together along one big road or crossroads. Here, it can be inferred that either one of the houses or the road was constructed first, and the other Vierkanterhöfe were constructed in the vicinity for convenience of location. Finally, there are cases where the Vierkanterhöfe all connect to a main road using their own little private roads. In this case it is likely that one established thoroughfare (road) existed since prehistoric times, and the Vierkanterhöfe were constructed later conveniently close but also far enough removed from the road not to be bothered by traffic.

Thus, even though from the maps it becomes evident that the Vierkanterhöfe are located in agricultural lands. They are surprisingly well connected to amenities and by means of transportation. As the next level of analysis, this academic paper will zoom in onto one estate and see how much land belongs to each house on average – and what this amount of land means in terms of sustaining people.

Spatial organisation

territory of each house | what can these sustain?

From the 18-19th centuries onwards, the *Bauern* of the Linz-Enns-Steyr-Wels region enjoyed considerable freedom and increasingly more land. This process of land-acquisition was further accelerated by the industrialisation of Austria since the 1848 *Bauerbefreiung* and the ever-shrinking circle of land-owning farmers in the country. For a farm to survive and remain in competition today, it has to be able to compete with economies of scale. Due to this strong selection bias, usually it is the Vierkanterhöfe with the bigger estates that survive into the present day. These are generally called *Großvierkanter* and *Mytteltype* [Big-Vierkanterhof and Middle-sized Vierkanterhof-type] depending on the size of the structure belonging to the land.

Oberösterreich
Portal [2023]

As mentioned earlier, a *Großvierkanter* usually has more than 100 Joch land, where 1 Joch equals to 5'755 m². Thus one house often has more than 575'500 m² land, which is 57.55 hectares of land. Calculating from another angle, the surveyed area for the maps for counting the number of Vierkanterhöfe roughly spanned 44 by 38 km, about 1'672 km². From this Linz takes up 278.9 km², Enns 34.3 km², Steyr 26.56 km², Wels 45.92 km², Linz International Airport 11.98 km² and Linz Industrial Complex is about 75 km². That leaves about 1200 km². From these about 15% are roads and other infrastructure, which leaves about 1000 km² green, agricultural land. In this area today, 3'037 Vierkanterhöfe were identified. If we assume that land is evenly distributed between the Vierkanterhöfe, no other farm-typology exists (as this is the dominant typology)

and that all Vierkanterhöfe are active in agricultural production, then on average each house has almost 33 hectares of land belonging to it.

Using contemporary standards of living and consuming, assuming a well-balanced diet as well as no purchase and consumption of external groceries, one needs about 2.67 hectares of land to sustain one adult human being. This diet would include vegetables, fruits, eggs (chicken), corn, meat (beef, chicken, pig), milk and dairy products (cow), wheat and grains, as well as the servicing pathways and storage facilities required for production. At this rate, the average 33 hectares' farm could house and feed more than 12 adults, while the big farms of 57.55 hectares could house and feed more than 21 adults. This number becomes even more if one considers that women consume less than men, and one adjusts the values for European consumption habits from North American data, as people's ecological footprint is considerably bigger in the USA.

However, this calculation is only a rough estimate that shows what the land can sustain and not a working economic model. Even if the people living in such a community would not purchase groceries from shops, they would still require clothing, cleaning supplies and public transportation tickets or petrol. Those would all require them to have an income, either from the fields or from external sources. Agricultural work is also a tedious and complex undertaking that requires immense dedication. Thus, one who works on the fields cannot also have other full-time employment. In the case of no external work, the self-sufficient inhabitants would need to produce for profit to acquire basic necessities for everyday life – which means there would be significantly less of them than the "ideal estimate". In the case of some inhabitants tending to the fields full-time and some working elsewhere full-time, the division of labour (providing food versus providing money) would get very complex, especially if the people in question have no familial relationship. Additionally, being active in agriculture is a considerable monetary investment up front (e.g. machinery) that also includes recurring expenses (e.g. pesticides, fertilizers, seeds, seasonal workers for harvests) that would need to be provided in such a self-sufficient community.

In conclusion, if a community decided to pursue an entirely local way of life in a co-habitational community, they would have a chance to achieve this for a group of between 10-20 people if their financial situation and external goods provision could be cleared up and agreed upon in advance.

Swanson, W. for www.permaculturalism.com
(2021)



DILEMMA OF THE VIERKANTER

Figure 05.01
Straußhof Vierkanterhof
from fields
(Fürst 2014)

The Vierkanterhof is an architectural relic of times long past: agrarian production has changed considerably since the age of horse-drawn vehicles, medium-sized cattle farms, mixed production and individual, human manual labour. The days of twenty-thirty people working on one farm, with both animals and plants are but a distant memory. Today, most farms, including in Vierkanterhöfe, are mono-cultures: either specialised on plant-based production or on keeping and breeding livestock. The team working in the farms has also been heavily downsized: it is usually the nuclear family owning the farm who do all the work, from seed to sapling to selling the final product.

Interview with
Herr R. Födermayr [2023]

This structural shift represents a dilemma for the Vierkanterhof: which way to go forward? These circa 2000 m² constructions were economical and fully used when they housed a large group of people, three types of large livestock [cattle, pigs and horses], agricultural vehicles and feed for the human and animal inhabitants of the farm. Currently, when most animals are long gone, the house is inhabited by one nuclear family and agriculture needs mostly large machinery, large sections of these houses stand empty. Another issue is that several families own multiple Vierkanterhöfe: what shall be the purpose of the second, or in some cases the third structure?

Ibid.



Figure 05.02
Bauernhofpension Herzog
zu Laah, Ansfelden
(Fürst 2014)

05.1

Renovations do exist

but are isolated cases

Interview with
Herr S. Augl [2023]

Although these are definitely the rarer cases, some Vierkanterhöfe do get renovated. As many younger people leave the farms to pursue their callings within cities, less and less families remain in the countryside. Thus, it is the families who remain active in agriculture and in the social life of the region who place considerable emphasis on restoring, looking after, and feeling pride in their local architectural heritage. And so they should. However, these renovation projects are not quick undertakings: each generation of the family changes one aspect to fit their liking. They redo the façade decorations, reorganise the living areas, introduce electricity, floor heating, insulation etc. Also, no-one is in a hurry: the additions one cannot do themselves, their children will surely be able to once they take over the family business, and with it the house.

Additionally, the lucky situation is that Vierkanterhöfe, although recognised as a heritage of the region, are not heritage protected buildings. According to Herr Stefan Augl, a local land owner and farmer, this is likely because the authorities would like the houses to remain, however, once they become heritage protected, maintaining them would become so expensive that no families would take the burden upon themselves. Instead, all people are given free reign over what they would like to keep, change, extend or demolish within their own structures. This comes with the benefit of freedom of taste, and to a limited extent use – but it also results in projects that lack a strong architectural intent, or a sense of direction and a moment of completion.



Figure 05.03
 Courtyard under
 renovation, exposed brick
 telling the history of the
 structure;
 Frau Huber's Vierkanterhof
 (Ürmössy, 2023)



Figure 05.04
 Bricks from the 1980s
 and 1990s with concrete
 floorplans and lintels;
 Frau Huber's Vierkanterhof
 (Ürmössy, 2023)

Figure 05.05
Old, handmade bricks
and adobe-wooden floor
construction;
Frau Huber's Vierkanterhof
(Ürmössy, 2023)



A perfect example of what is meant by this is the Vierkanterhof currently owned and inhabited by Frau B. Huber under Julianberg 16, AT-45508 Fischen. Currently, this structure is under renovation: Frau Huber is giving her daughter and her partner complete freedom to renovate the family Vierkanter. The house is being salvaged from almost complete destitution: a completely new roof structure is needed, the wooden planks supporting the floors need to be replaced and the different brick walls need stabilising. This comprehensive building site gives the visitor the rare opportunity to see the construction techniques that would usually be hidden behind layers of stucco decorations and coloured plaster.

It quickly becomes apparent that Frau Huber's house is a work of so many different people, from different eras, coming with different visions that it would be impossible to list them all. There are hand-made brick walls from the turn of the 19th and 20th centuries. In some places the original wooden and adobe flooring are also visible. Then, there are more regular manufactured bricks from the inter-war period. There are newer bricks from the 1980s or 90s. There are even concrete lintels and sections of concrete walls. And yet, Frau Huber is saying that on the afternoon of this visit, there are new builders coming to add yet again something new to the hodgepodge of building materials. This cacophony proves that indeed, there is little supervision from and limitations posed by the authorities regarding renovations.



Figure 05.06
Straußhof with three
other surrounding
Vierkanterhöfe, aerial view
(Fürst 2014)



Figure 05.07
Herr R. Födermayr
working on his fields
(Fürst 2014:84)

Example Project 01 – Renovation of Straußhof

Interview with
Herr R. Födermayr [2023]

The Födermayr family's Vierkanter called "Straußhof" is a good example of a renovation project, where the original function was mostly kept, albeit modernised. The Födermayr family is also interesting to study, as they have given recent Austrian public life prominent figures such as an Agrarian Minister, are held in high regard and are influential. The family founded the sugar factory in Enns in 1929. The Straußhof farm was used as experimentation ground for sugar beet. In 2007, Reinhard and Claudia Födermayr took over Straußhof from their parents, managing a total of three Vierkanterhöfe.

Fürst, I. (2014)
Neues Leben in Alten
Höfen, p.84-87

The fertile and successful sugar beet cultivation paved the way for specialization in arable farming at an early stage. Corn was already being grown at Straußhof at the end of the 1950s, and the flourishing branch of the business allowed mechanization to advance rapidly. This is how the farm has been run without livestock since the early 1960s. Due to the rapid mechanization in agriculture and the use of larger machines, it became necessary to create suitable storage space for them, as the premises of the square farm with its vaults were not suitable. The main issue were the height and width of the machines, as the traditional granite portals were not big enough. The vaulted ceilings of the ground floor are also supported by columns in the middle, which made manoeuvring with large-scale machinery indoors downright impossible. The neighboring farm "Voglsang" Vierkanterhof, which is also owned by the Födermayr family, now serves as accommodation for seasonal workers. The farm's barn also serves as straw and grain storage and to accommodate machinery.

Interview with
Herr R. Födermayr [2023]

The two Vierkanterhöfe "Straußhof" and "Voglsang" have been preserved in their original form. Reinhard Födermayr's parents have already invested a lot in drying out walls and maintaining the facade. There are still small, old windows in the service wing, and the renovated windows are also made of wood. The granite surrounds of the windows, doors and gates were also preserved. The magnificent stucco ceilings were painstakingly restored; the double-headed eagle is depicted in the stucco ceiling of the living room, a privilege from the time of the Austrian monarchy. The old stable buildings are also still preserved. Only the stables were removed and the floors were concreted, so that the rooms are now used as garages and storage rooms. Herr Födermayr is still relatively young, is full of momentum and is open to modernising both his farm and his Vierkanterhof. As others interviewed for this *Enoncé Théorique*, he wants his children to develop a passion for the landscape and the local heritage and take on his life's work. However, with a shrinking family, modernising agriculture and a growing economic output, he wonders what will happen to the houses not used by other farming-families for habitation and storage? In a world with less and less farmers, there is no need for more than three thousand agricultural Vierkanterhöfe.



Figure 05.08
Health- and adventure
Guesthouse "Grünbaur",
Wilhering, facade
(Fürst 2014)



Figure 05.09
Gasthaus und Zimmer,
Kirchmayrgut in Dörnbach,
aerial view
(Fürst 2014)

Example Project 02 – Health- and adventure Guesthouse “Grünbaur”, Wilhering

The farm “Stadlerhof” was run as an arable farm until the 1970s. A chance encounter led to a rethink at about 25 years ago: a family celebration was taking place when suddenly a stranger appeared in the courtyard and asked whether events were held here more often. The conversation with the family aroused his interest and he rented the farm for the first official event. This was a success, which started it all: Mrs. Stadler discovered her joy in the role of host and the requests for events steadily increased. There are currently around 50 individually styled festivities held at the farm each year.

The farm was renovated and adapted step by step into a stylish, festively elegant location for events such as weddings, company celebrations, seminars, private celebrations, etc. The heart of the event courtyard is the barn. This was completely re-roofed, the original roof structure was retained and renovated with old wood. The walls were insulated and rebuilt - a “barn within a barn” was created, which can now also be heated with infrared heat. There are decorated tables on the new, easy-care stone floor, there is a bar in the courtyard and a new kitchen for catering has also been installed. The barrel vault has been renovated and offers space for smaller groups.

In addition to the events, workshops relating to “school on the farm” and a gourmet drive-in as an “innovative farm shop” are also offered. This themed trail with information boards and exciting activity stations gives an insight into life and work in agriculture. As part of the Hofgarten Linz-Land, several herb seminars were held, which are now a regular and popular program item at the Stadlerhof four times a year.

Fürst, I. (2014)
Op. cit., p.130-131

Reading through *Neues Leben in Alten Höfen – Innovative Nutzungsbeispiele von traditionellen Vierkantern* (Fürst, 2014) one finds such guesthouses in several other former farm buildings. Families such as the Fischers of “Kirchmayrgut” in Dörnbach specialise on guestrooms for tourists as well as accommodation for seasonal and returning workers. Their transformation was more gradual than that of the Stadler family: from the 1970s until 2012 they replaced their cattle and the dairy farm over time with 14 guestrooms. The families face many hurdles when embarking on such an adventure, least of which is financial. The regulations for most of these Vierkanterhöfe place them in the Green Belt in Linz-Land, reserved for agricultural production. The authorities can be lenient if a “convincing” idea is presented to them – however, competition with already existing industries is heavily regulated and guarded against. One cannot receive permission to begin activities in an

Ibid., p.126-135

industry that is already present in the immediate surroundings.

Running a successful event hall and offering accommodation was a clever investment for the Stadler and Fischer families that happened at the right moment in space and time. They found an empty niche on the market and capitalised on it. Today, their neighbours would have it harder: Austria boasts similar event venues and guest houses by the dozens in all rural areas of the country, so competition is fierce while entering the market is nearly impossible. Even though converting a Vierkanterhof into a hotel and conference center sounds like a genius idea, can a 40 km by 40 km big area support 3000 of them?

Interview with
Herr R. Födermayr (2023)



Figure 05.10
Gasthaus und Zimmer,
Kirchmayrgut in Dörnbach,
restaurant
(Fürst 2014)

05.2

Viability

on legislative and financial terms | owners' influence

DI Zaussinger, Ch.
(2015) Presentation
*"Überblick über rechtliche
Rahmenbedingungen
in der Raumordnung in
Bezug auf die Umnutzung
landwirtschaftlicher
Gebäude";*
Landwirtschaftskammer
Oberösterreich

Rechtsinformationssystem
des Bundes [2023]
Raumordnung im Land
Oberösterreich

The dilemma whether the Vierkanterhöfe could or should be saved is not hidden and not new in the Oberösterreich region: the owners as well as the *Landwirtschaftskammer Oberösterreich* [Chamber of Agriculture, Upper-Austria] devote considerable effort to propagate possible solutions to the population. As the houses are largely situated in the countryside, they usually fall into two legal land-usage classifications: one is the *Grünland* ["green land"], the other is the *Dorfgebiet* ["village area"]. Out of these two, the *Grünland* is more lenient and offers more possibilities.

The *Grünland* areas have clearly formulated limitations as written in the *Grundlagen im oberösterreichischen Raumordnungsgesetz* ["Fundamentals of the Upper-Austrian Spatial Planning Act"]. Firstly, according to §30 [5] here only buildings and facilities that are necessary to use the land as intended may be built. However, §30 [6] regulates that existing agricultural and forestry buildings (and even parts of buildings) may also be used for non-agricultural purposes – but the construction of new buildings or additions to existing buildings specifically for non-agricultural purposes is not permitted. §30 [7] says, that maximum 4 residential units can be constructed, nevertheless, this is where the regulations become a question of interpretation. Even the *Landwirtschaftskammer Oberösterreich* explicitly states that one spacious apartment for the owner, his family and ten or more private rooms that form part of a guest house; one apartment for the retired grandparents; and two

other apartments rented out to the employees working for the guesthouse would still only be regarded as four residential units. Additionally, through convincing ideas, the authorities are open to giving private persons or enterprises special designations (*Sonderausweisungen*) to be able to create more than four independent residential units. The situation is similar in the *Dorfgebiet* areas as well, with the difference being that the four residential units limit cannot be increased.

Ibid.

Additionally, even though the owners of the Vierkanterhöfe are not called “*Florianer Baueradler*” anymore, they still hold influence in the region. Owning two or three of these farmsteads can easily mean being in charge of 100-150 hectares of agricultural land, which in Europe places one in the “large landowner” category. This alone would grant the owners of Vierkanterhöfe local influence. However, due to the long-standing prominence of these families (such as the Födermayrs), many of them have financed local factories and rose to political power. This grants their projects even more momentum on a municipal level, whose signature is needed to erect new structures – or change regulations to better fit their long-term goals.

In addition, the Austrian state is also heavily subsidising certain building projects, one of which is highly compatible with the conversion and renovation of Vierkanterhöfe. The Land Oberösterreich is giving out grants for “the renovation of buildings [...] and the creation of apartments in buildings that were not previously used for residential purposes [according to the Upper Austrian Residential Building Renovation Ordinance II 2020” – *Oö. Wohnhaussanierungs-Verordnung II 2020*]. As part of this subsidy, up to 24% of the total renovation cost can be claimed back from the state. In order to be eligible, the renovation has to fulfil reasonable environmental requirements (e.g. for energy usage, the buildings have to be placed in at least the 4th category out of six) as well as use environmentally conscious insulation materials. Also, reasonable sized flats of 90-150 m² are supported. In a *Großvierkanterhof* with about 2400 m², calculating with about 20 apartments with an area of 100 m² each would be reasonable. Taking the conservative estimate, the maximum state support per square meter would be 850 + 20 = 870 EUR, totalling up to a 1740'000 EUR lump-sum grant from the government. This means that the state would support 24% of a maximum 7250'000 EUR renovation budget – which should be enough funds for such an undertaking.

Land Oberösterreich
(2020)
Sanierung und Erweiterung von Wohnhäusern mit mehr als 3 Wohnungen,
www.land-oberoesterreich.gv.at

As about 8 million EUR is quite a big sum of money, the farmers are looking for a profitable venture that is also a “worthy pursuit”. For them, profits are not necessary straight away, and the transformation could also be gradual: “my son[s] will take over the farmstead and finish [this renovation work; my ventures] for me”. In this mindset, there is no real sense of urgency, and the stress is on quality and legacy: doing good for the family business or the wider community is the main focus.

Interview with
Herr S. Augl [2023]

05.3

Number of Vierkanter

then vs. now | time's up!

As established in *Chapter 04.3 Geography* the number of Vierkanterhöfe in the Linz-Enns-Steyr-Wels region has diminished from about 4150 to about 3000 during the last 125 years. As the "Vierkanterhof" as a typology is not protected, is in its current form obsolete, and there is no real motivation to save every single house, this number is expected to diminish further. From an architectural history standpoint, this would be a great loss, as these houses are unique to this region of the world and do have a pleasant quality as buildings.

In following chapters, this *Enoncé Théorique* will aim to demonstrate that the Linz-Land region is expected to further develop due to its booming industries, thus new housing will be required to cope with a growing demand. Simultaneously, in the *Grünland* and *Dorfgebiet* zones, on agricultural land, it will be impossible to construct new residential buildings: first the land-classifications will have to be changed and then the whole planning process started. What could be an alternative to this process would be the utilisation of the existing building stock, the Vierkanterhöfe. However, in this there is a problem: according to the *Grundlagen im oberösterreichisches Raumordnungsgesetz* (1994), once these houses in the landscape are demolished or collapse on their own, new structures cannot be erected in their place. Thus, what owners and farmers must realise is that even though they think they need not hurry, time is really of essence!

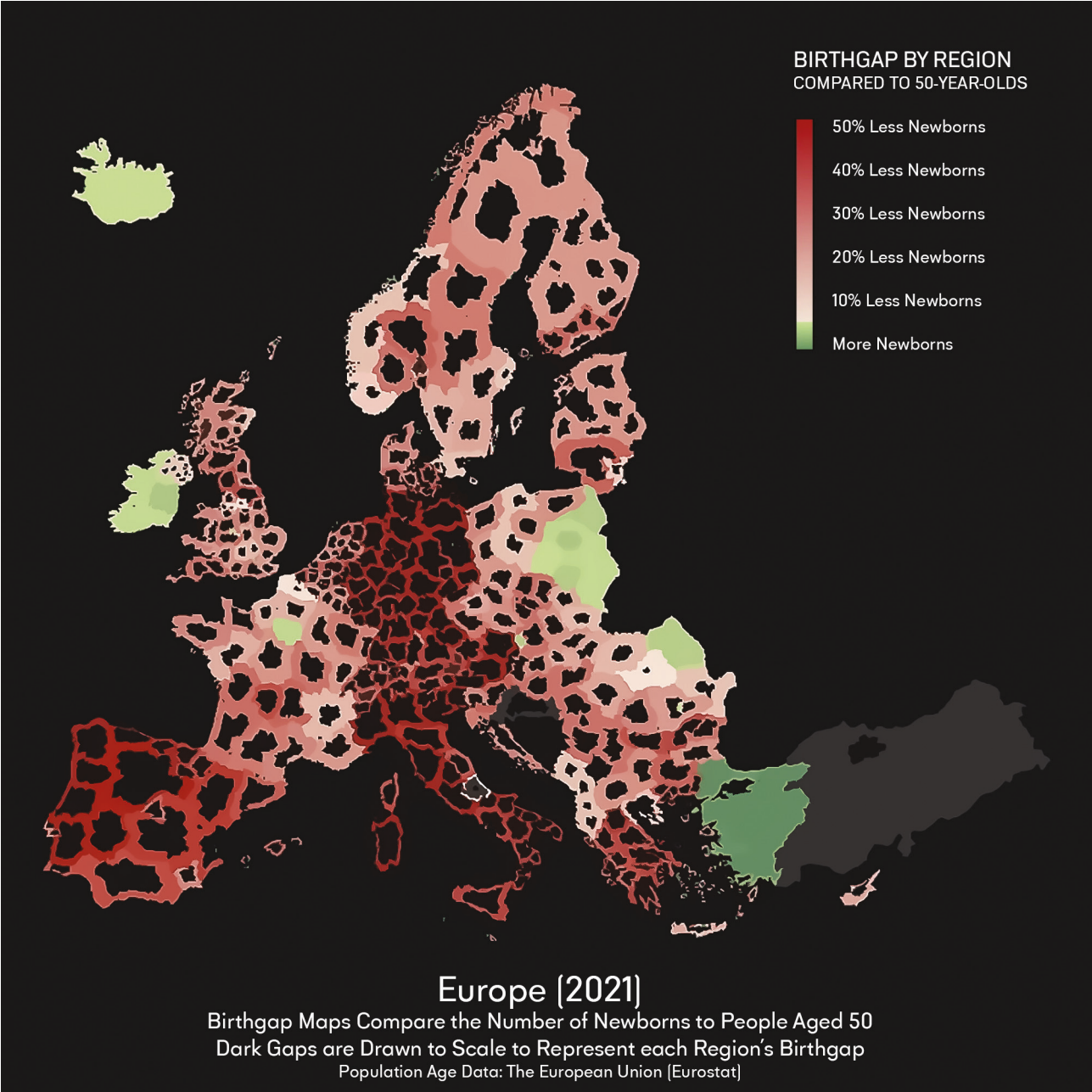


Figure 06.01
The European
replacement rates of
50-year-olds by newborns
is looking alarming
[Birthgap, 2023]

FAST-PACED CHANGE

work-structure, migration, family

This chapter is dedicated to statistical data rather than architecture and is a key underpinning of the architectural work proposed and advocated for in upcoming chapters. Upper-Austria, and at its heart Linz-Land is a noteworthy region to study in the 2020s, as it has been the premise of considerable social change for the past 40 years. Once a regional city on the decline, Linz is again expanding and flourishing – and attracting new inhabitants. In urbanism both contracting and expanding of cities creates issues to be solved, and it is the case with Linz at the moment as well. As Europe is a central destination for world-wide migration and as the experimentation ground for strange limitations on property building and development, the continent and its housing market are experiencing difficulties to meet the ever-growing demands while maintaining affordable prices.

In parallel, the job-market is also going through a transformation: long gone are the days of never-ending days at the office from the pre-COVID-19 era. In order to be competitive, employers are now offering one or two days of distance work to their employees – who have realised that it makes little difference whether they type at their desk in a crammed city apartment or from a spacious study on the edge of the suburbs.

Since the 1970s, Western Societies are also experiencing a demographic shift, a

“Birthgap” of sorts, where in each generation more and more people remain childless for life. Contrary to what easy statistics show, the average family structure changed little in the past 50 years – it is only that fewer people actually end up having a family. It is clear that the radical decrease in reproductive rates means the end for society-wide pension, education and healthcare systems in their current form, but what this entails for the individual is not.

Birthgap Part 1.
[2023]. Directed by
Stephen J. Shaw

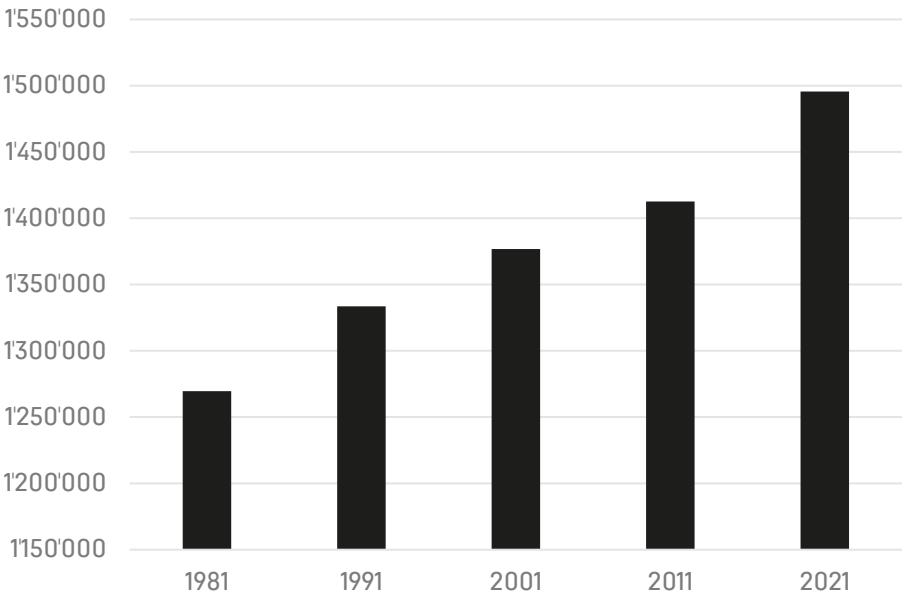


Figure 06.02
The population of Upper-
Austria is increasing by
about 100'000 people
each decade
*[Land Oberösterreich,
2023] drawn by Ürmössy,
B. [2023]*

06.1

The city of Linz

growing industrial city and its agglomeration

City Population [2023] Linz;
AdminStat Austria [2023]
Stadt Linz
Land Oberösterreich [2023]
Bildung und Forschung;
Anton Bruckner
International School
[2023] Homepage
AdminStat Austria [2023]
Province of Linz-Land;
Land Oberösterreich [2023]
Bevölkerungsstand

Linz, the regional capital city of the Upper-Austria federal state (*Bundesland Oberösterreich*), is situated along the south bank of the River Danube with 203'000 inhabitants (as of 2021). It is an industrial city, the home of VoestalpineSteel (one of the few profitable steel companies in Europe), the former "Chemie Linz" (chemicals and medicine manufacturer), the International Airport of Linz, a trading and manufacturing hub, as well as sixty conference-centers. It boasts nine different colleges and universities, as well as one international school for high school aged students. Currently these, alongside other companies in the area, offer around 160'000 places of employment that the city alone cannot fill. The city of Linz turns to the surrounding region to supplement its workforce: together with its agglomeration of Linz-Land, this metropolitan area boasts 460'000 inhabitants making it the second largest urban area in Austria.

City Population [2023] Linz;
AdminStat Austria [2023]
Stadt Linz

In the past twenty years almost 50'000 people moved to the Linz and Linz-Land areas, which trend is likely to continue due to the economic success of the above-mentioned industries. The distribution of this was 27'000 people moving to Linz (city) and 23'000 people moving to Linz-Land. What is noteworthy here is that the population remained about 95% constant Austrian in Linz-Land, whereas 26-28% of the inhabitants of the city of Linz were born outside the borders of Austria, with 18% not yet having achieved naturalisation. Nevertheless, irrespective of passport status, all these newcomers

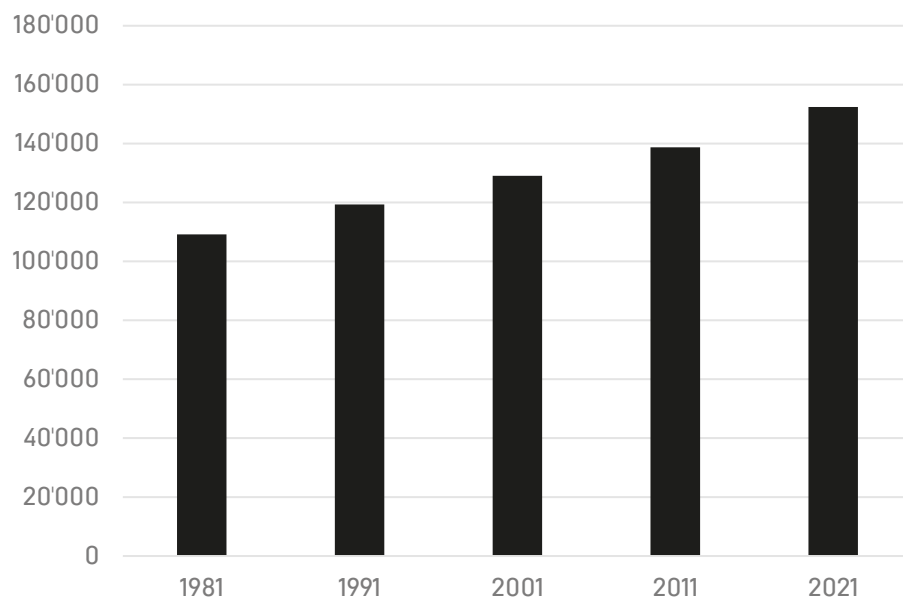


Figure 06.03
 The population of Linz-Land is increasing by about 10'000 people each decade
 (AdminStat Austria, 2023)
 drawn by Ürmössy, B. (2023)

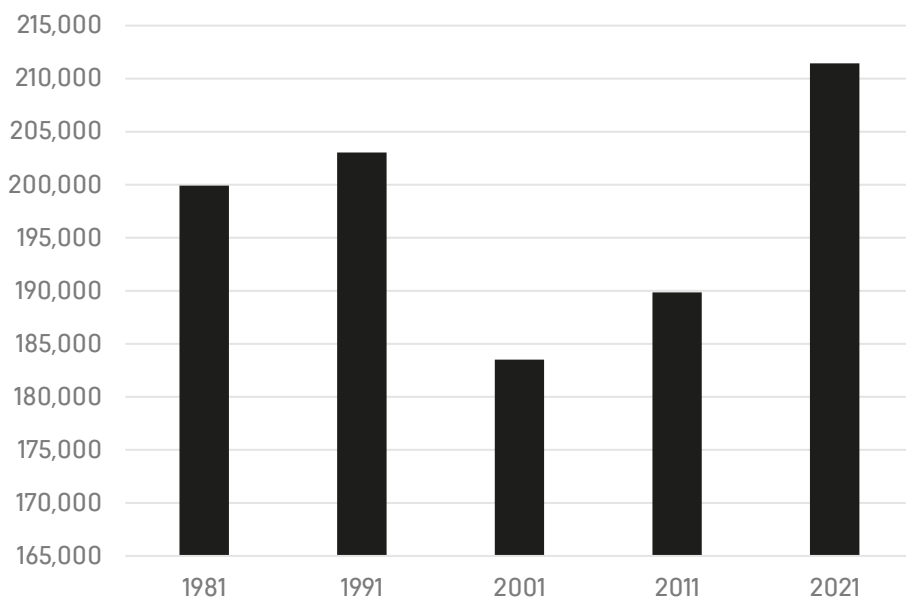


Figure 06.04
 The population of the city of Linz is currently rising
 Source:
 (City Population, 2023;
 AdminStat Austria, 2023)
 drawn by Ürmössy, B. (2023)

needed housing, and future migrants to the region will require still more. In the current capitalist market, this speculated demand will be met with offers from developers sooner rather than later. This *Enoncé Théorique* speculates that under the right circumstances even the Vierkanterhöfe could serve as a premise for that.

Statistik Austria (2023)
STATatlas Average
Property Prices

Even though currently fewer people moved to Linz-Land than the city of Linz, due to rising property prices this trend might change. That is because of the premium one must pay for properties within the city and its relation to the average wages in Austria. For houses, the average price per square meter in Linz is 4'500+ EUR / m² compared to 3'500 EUR / m² in Linz-Land. In this case a 120 m² house would cost about 540'000 EUR in Linz versus 420'000 EUR in Linz Land. Apartments are somewhat cheaper: 4500-3500 EUR / m² in Linz versus 2500-3500 EUR / m² in Linz Land. Thus, a 120 m² flat in Linz should be about 480'000 EUR and 360'000 EUR in Linz Land.

Statistik Austria (2023)
Annual personal income;
Statistik Austria (2023)
Structure of earnings;
Finanz.at (2023)
Einkommensteuerrechner
- Einkommensteuer in
Österreich berechnen

This becomes an even more considerable difference when property prices are compared to average salaries. In 2018 the median hourly rate was 15.09 EUR, giving a 2'742 EUR monthly median gross income. With the Austrian standard 13th and 14th month salaries, that totals a 38'388 EUR / year gross salary, which is 30'429 EUR after taxes. Looking at data from 2021, according to Statistik Austria, the median gross annual income rose to 45'595 EUR, which equalled 34'681 EUR after taxes. If we assume that "affordable housing" totals maximum 1/3 of one's monthly income before tax, a downpayment for an "affordable" mortgage should be 1'266.53 EUR for one person and 2'533.06 EUR for a two-income household.

DurchBlicker
Kreditrechner
Österreich (2023)

Assuming the desired purchase of a family house in Linz at the price of 540'000 EUR with a 20% deposit of 108'000 EUR, with current market conditions, the monthly downpayment would be set at 2'600 EUR [3.8% fixed interest rate loan of 432'000 EUR at 20 years run-time]. This means that two average people earning median salaries in Austria will not get approved for a mortgage for buying a house in Linz. On the other hand, when buying a similar property in Linz-Land for 420'000 EUR, with 20% deposit and similar loan conditions, the monthly downpayment decreases to 2000 EUR. This means that houses in Linz-Land are an affordable solution for pairs looking to purchase property – and thus the demand for homes in the countryside as opposed to the city itself is likely to increase in the near future.

This exodus to the countryside from cities within those circles that desire to own private property is also further supported by changes in the employment market. During and after the Coronavirus Pandemic, many intellectual office workers have realised that their work can be fully or partially delivered even from remote locations, which saw the beginnings of new trends.

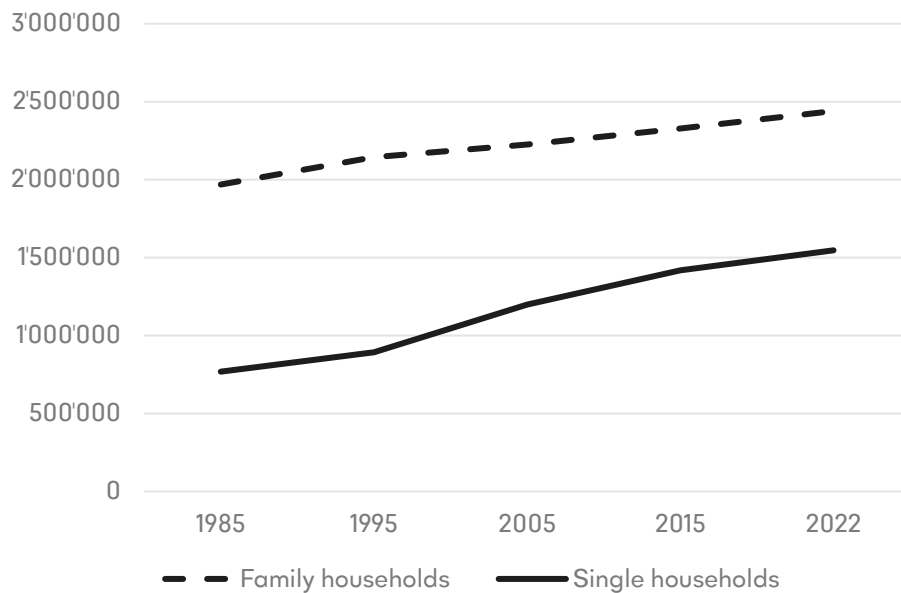


Figure 06.05
The absolute number of single-person households has more than doubled in Austria between 1985 and 2022
(Statistik Austria, 2023)
drawn by Ürmössy, B. (2023)

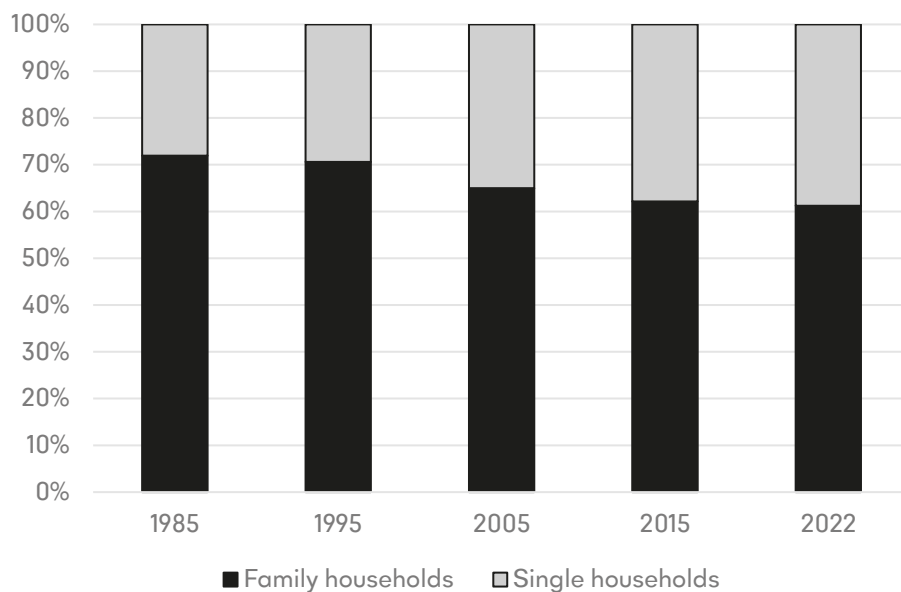


Figure 06.06
The population of the city of Linz is currently rising
(Statistik Austria, 2023)
drawn by Ürmössy, B. (2023)

Changing work environment

Where should we sit at our desk?

Roche Pharma
Schweiz AG (2022)
Private Tour of
Headquarters for Junior
Herzog & de Meuron
Employees

In the post-pandemic world, in order to remain competitive employers, many workplaces offer remote working opportunities to their employees, with one or two days on-site for meetings and workshops. The phenomenon bears many names: “distance work” or “wfh [work from home]” for English-speakers, “Home Office” in the German-influenced economies, and “télétravail” for the francophones. In numerous new office fit-outs, employees do not even have their designated desks anymore: sometimes whole thousand-desk open-office spaces can be reserved on a day-by-day basis, where employees from Asia can book themselves a team-space for a week in the headquarter offices in Europe.

In such an environment, paying exorbitant rents or downpayments for a mortgage, only to compromise on apartment floorspace, be annoyed by noise and air pollution as well as for children to be taken to and from school becomes too big of a trade-off for convenient access to workspaces. For the Upper-Austria region specifically, moving out from the city of Linz into Linz-Land became an attractive alternative, especially since the whole area lies within a 30-minute commute from Linz city center by car.

Additionally, mobility-wise Austria is a very developed country, where accessibility to cars to any inhabitant above 18 years of age should not be a problem. According to

Statistik Austria, at the end of the calendar year 2022, there were 5'150'000 passenger cars registered in circulation within the country. According to this same state-run statistical office, for the 9 October 2022 presidential election 6'363'336 citizens were eligible to vote (so were over the age of 18), out of whom 6'302'223 citizens lived in Austria. From these numbers, we can infer that there is a car for every 1.22 adults in Austria, or 0.82 cars per adult. Looking at demographic data from the next chapter, for the average household size of 2.19 people, there should be 1.80 cars (so in effect, at least one but most likely two cars) available per household. For effective planning, it should be noted that about 1% of all cars in circulation were electric at this time period. This rough estimate could be critiqued on the basis of not accounting for alien citizens residing in Austria. However, on the other hand neither does it subtract inhabitants of dense city centers where outrageous parking fees and the scarcity of available parking spaces deter people from owning cars (e.g. Vienna with 1'897'000 people).

Statistik Austria (2023)
Stock of motor vehicles

The public transportation system in the region should be praised for its countless regional bus lines, S-Bahns and regional trains, which target the biggest sleeping towns in the area. Nevertheless, due to the even distribution of Vierkanterhöfe in the landscape, perhaps they are not the most effective in targeting would-be inhabitants of those houses. In *Chapter 04.3 Geography* a possible solution to this problem is vaguely outlined to be developed – and in the meantime the already existing and functioning infrastructure of cars is to be relied upon.

Oberösterreichischer Verkehrsverbund (2023)
www.ooevv.at

One problem coming from distance working that should be addressed is the question of isolation. It must be noted that in adult life one spends most of their active hours working, thus the place of work is the primary stage for socialising. When we remove physical workplaces and colleagues from the equation (e.g. when working from home), and do not consciously replace them with other people, the most active portion of waking hours become completely isolated. Humans evolved to be social animals, existing in groups, and defining themselves in relation to group-dynamics. Remove this social setting completely, and the road to depression and the loss of complete sanity becomes short and easy to walk. Looking at demographic trends in the Western World today, a tendency towards an ever-increasing number of people experiencing isolation can be discerned. This is why architecture that fosters community-building, such as the Vierkanterhöfe, should gain prestige in the future.

Peterson, J. B. (2019)
Social Isolation Leads to
Insanity and Then Death

Wider socio-economic issues

in the “Developed World”

Birthgap Part 1.
[2023] *Op. cit.*

Nowadays, in Western Europe and North America, especially in relation to the “Climate Crisis”, one can hear frequently about “overpopulation”, about “resources running out” and about “an imminent need for cutting [one’s] carbon footprint”. What one hears less about is a phenomenon that Stephen J. Shaw calls the “Birthgap”: the continual decrease in the number of children born (well below the “replacement rate”) as more people remain childless for life. From an economical and political point of view, this trend means the sure and not-so-distant end of the society-wide pension, education, and healthcare systems in their current form as they build on the idea of younger people always replacing the older generation on the employment market. However, that is not the focus of this *Enoncé Théorique*, which instead is more interested in the prognosed social results on the individual psyche of a life lived without children, grandchildren, and increasingly more often even without a partner.

Statistik Austria [2023]
Privathaushalte;
Statistik Austria [2023]
Family types

To remain specifically on Austrian soil, in 2022 Statistik Austria counted 4’067’500 households in total, where the arithmetic (mathematical) average of household size was 2.19 people. At first this seems reasonable, as the country has about 9 million inhabitants and “2.19 people” intuitively means people live with a partner and some maybe one child. The truth is a bit more nuanced than that.

Out of the 4’067’500 households 1’546’400 were single-person, meaning that in 38% of



Figure 06.07
Two households out of every five are single-person households
[Statistik Austria, 2023]
drawn by Ürmössy, B. [2023]

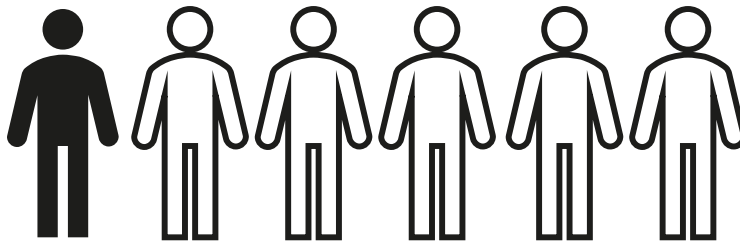


Figure 06.08
One person out of every six people lives alone in Austria
[Statistik Austria, 2023]
drawn by Ürmössy, B. [2023]

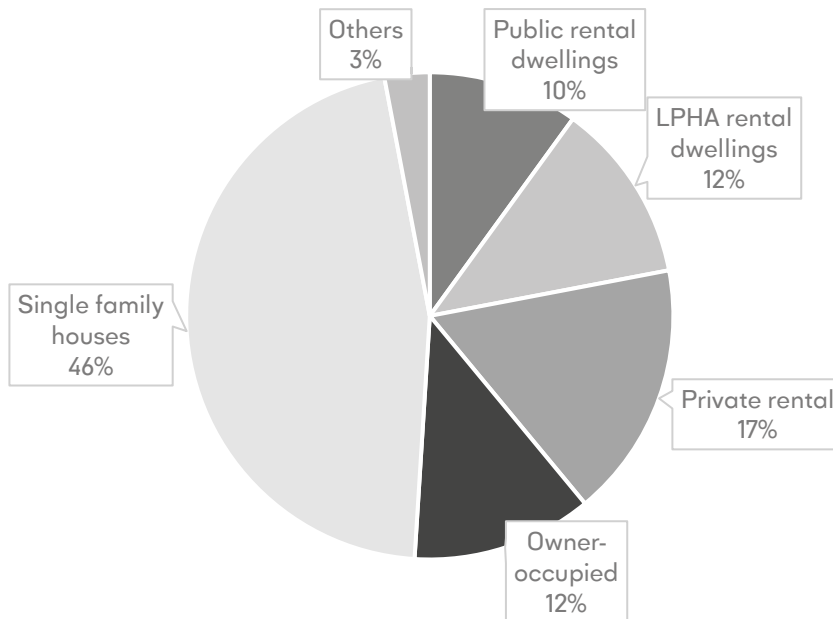


Figure 06.09
About 40% of all people living in Austria do not own the property they are inhabiting
[Statistik Austria, 2023]
drawn by Ürmössy, B. [2023]

Statistik Austria (2022)
Privathaushalte

households people live completely alone. In a country of 9'129'652 inhabitants (data from 01.07.2023), 16.94% of people – meaning every 6th person – lives isolated and alone. This data is especially alarming, once it is placed into perspective: since 1985 (when the number of single-person households was 768'100), the number of people living alone more than doubled in 37 years, so in less than two generations.

Inspecting the data further, if one subtracts the number of households labelled “single-person households”, “pairs without children” (1'036'300) and “one-parent households” (263'400) from the equation, one should be left with a dataset one could label “families”. Dividing the number of people by the number of such households, one obtains 4.40 – which could be translated to two adults living with two or three children. This shows that *Birthgap* (2023) is right: the people who end up having children do so in the “average family model” which has not changed since the 1970s-1980s – it is the number of people isolated and alone that has dramatically increased.

City Population (2023) Linz;
AdminStat Austria (2023)
Stadt Linz

One could argue that even though someone chooses to live in a single-person household, that does not automatically translate to loneliness – but can that realistically be the case? In the age of globalisation, especially young adults are more mobile than ever before: many of them moving between countries, some even across continents. This may be phenomenal for careers, economic productivity, and personal freedom but one other aspect should also be noted: by moving around, one loses the local support network that they built over years growing up or studying somewhere (e.g. family, friends etc). In a location such as the city of Linz, whose population's 26-28% were born outside of Austria, this could be especially true. Even if all foreigners (and inter-country migrants) succeed in pairing up and having a family, without an extended support network (e.g. family member such as grandparents and aunts as well as a reliable, tried-and-tested friendship groups) bringing up children is admittedly a more demanding challenge (e.g. bringing children home from school or leaving them with someone for an evening). Additionally, life tends to become more complex as one ages: technological advancement does not slow down to wait for those who cannot keep up. Today, even booking a doctors' appointment requires proficiency in using a smartphone, not to mention banking systems and reading the news online. Thus, irrespective of the stage of life one is in, a dependable community is vital for everyday life.

Interview with
Mrs Zs. Tömpe (2023)

Even if the problems of everyday life can be managed without a reliable support network, the chances of successfully overcoming impending crises are rather slim. Writing this *Enoncé Théorique* in 2023-2024 right after the Coronavirus-19 Pandemic, with two ongoing wars with geopolitical implications (Russia-Ukraine and Israel-Palestine), during an economic regression and impending economic crises

with record-high inflation of the most reliable currencies [e.g. USD] as well as an increasingly volatile climate due to global warming, one must conclude that error-proofing for one's future is quite a complex task. Being resilient to crises means being independent enough to be able to look after oneself even in times of these crises. One key aspect of this resilience and independence is having a secure place to live from which one cannot be evicted.

Single-person households worldwide are the least likely to be living in their own private property. According to Australian and Dutch researchers this trend is not only due to age (e.g. young adults living alone before forming a family), as those who remain living in single-person households remain unlikely to own private property over their lifetime. Living in rented property is a precarious business in the current state of the world, as how can one expect steady employment when everything else is governed by variables. One is always one serious illness, one economic crisis or one company downsizing away from not being able to pay rent, then eviction and possible homelessness. And in Austria, where 40% of all households live in rented property, this is an especially grave issue. Of course, having a partner and with that two incomes diminishes risks somewhat, but not completely.

As written in the *Chapter 06.1 The city of Linz*, the average person around Linz could only afford property in Linz-Land if they wanted to live in more secure circumstances. However, by simply moving to a new real estate development project on the outskirts of Linz does not solve the social issues raised in this chapter. Social isolation, loneliness and aimlessness are on the rise, while finding meaning without a strong family-structure is challenging. In a world moving towards renting everything from apartments to cars as well as even movies and clothes, having done away with an effective social support network, how can one find security and resilience?

Hendershott, P., H. (2009)
Marital history and home
ownership: Evidence from
Australia;
Blaauboer, M. (2010)
Family Background,
Individual Resources and
the Homeownership of
Couples and Singles

I-IWB (2011)
Housing Stock and
Provision



COMMUNAL LIVING & RESILIENCE

Figure 07.01
Facade detail of *The
Gardens Nursing Home* in
Örebro, Sweden
[AF Asia Archizine, 2022]

From the statistical data explored in the previous chapter, and real-life experiences of all the people interviewed for this *Enoncé Théorique*, it is apparent that any form of “communal living” [e.g. living as part of a community where people socialise and depend on each other] is not the current norm, neither in Upper-Austria, nor more widely speaking in the Western World. However, this does not mean that the problem has not been recognised and co-habitation has not been tested before. In fact, many examples exist, especially in Switzerland.

Kraftwerk1 Bau- und
Wohngenossenschaft
(2023), www.kaftwerk1.ch

As there are a multitude of different systems for co-living or co-habitation, the term is relatively hard to define or delineate. There are less intrusive and less strongly knit communities, where flats are arranged around a courtyard without any further obligations, while in others up to sixteen people co-habit a huge apartment with a bedroom for each of them and a shared American kitchen and living room [e.g. projects of the *Kraftwerk Genossenschaft* in Zürich]. This academic paper focuses on the former kind of co-habitation, as that can cater to a wider range of audiences than the latter. Co-habitation is advocated for in this *Enoncé Théorique* as a means to create dependable communities of manageable sizes, instead of other goals such as rationalising floor space per *capita* or diminishing the use of resources.



Figure 07.02
Children playing in
protected courtyard,
Lange Eng, Denmark
[Dorte Mandrup
Architects, 2023]

Resilience in communities

What is the “winning strategy” for overcoming crises?

Robb, C. E. (2020),
Associations of Social
Isolation with Anxiety and
Depression During the
Early COVID-19 Pandemic;
Fingerman, K. L. (2020)
Living Alone During
COVID-19

As the person-per-household data inspected in the previous chapter has shown, the current trend is that more and more people live in single-person households. A study conducted in London during the COVID-19 pandemic has shown that older adults' mental health plummeted during social isolation (this study has consulted over 7000 adults). Another study (Fingerman, 2020) has shown, that older adults who live alone were less likely to see others in person or to receive or provide help. Also, older adults who live alone were more likely to have contact with friends rather than with family.

Beam, C. R. (2020)
Psychological sequelae
of social isolation and
loneliness might be a
larger problem in young
adults than older adults

Thus, having people to whom one can reach out (and who are close enough to be able to literally come and help), especially in late adulthood is of paramount importance. However, another study conducted during the same time period has found that Millennials (between 25-40 years of age) reacted even worse to social isolation and loneliness than the older generations. Thus, having access to social interactions irrespective of age – but especially at the time when the largest portion of society lives alone (before and after having a long-term partner) – benefits the average person. This is where communal living becomes advantageous: living around others, in a community, ensures that help is available to all, should it be required.



Figure 07.03
The one entrance of
Harvey Court, Cambridge
flows into the gardens
located to the South
(Gonville and Caius
College, 2013)

Co-habitation worldwide

Five typologies, five case-studies

In order to gain a better understanding of how communal living performs, one should understand tried and tested models where it does function. In the following pages five examples will be explored that all have a different mixture and generation of inhabitants, sometimes inter-generational. In Cambridge, UK a collegiate building will be investigated, where the primary inhabitants are university students ages 18-21. In the Nursing Home in Örebro, Sweden, the target audience have been pensioners. A mixed cohort of residents (families) inhabit both Siedlung Halen, near Bern, Switzerland and the Suburban Housing in Lange Eng, Denmark. The Baugenossenschaft Gstöck Bülach, near Zürich in Switzerland was specifically constructed with young families and pensioners in mind: there are normal apartments alongside *Alterswohnungen* (apartments specifically designed for the elderly) serviced by the local pensioners' home. The aim of studying these case studies is to understand how much space is allocated to each function, are there special needs and spaces that are normally not required when planning residential buildings and what other, non-quantifiable qualities make these projects into successes in their own right.

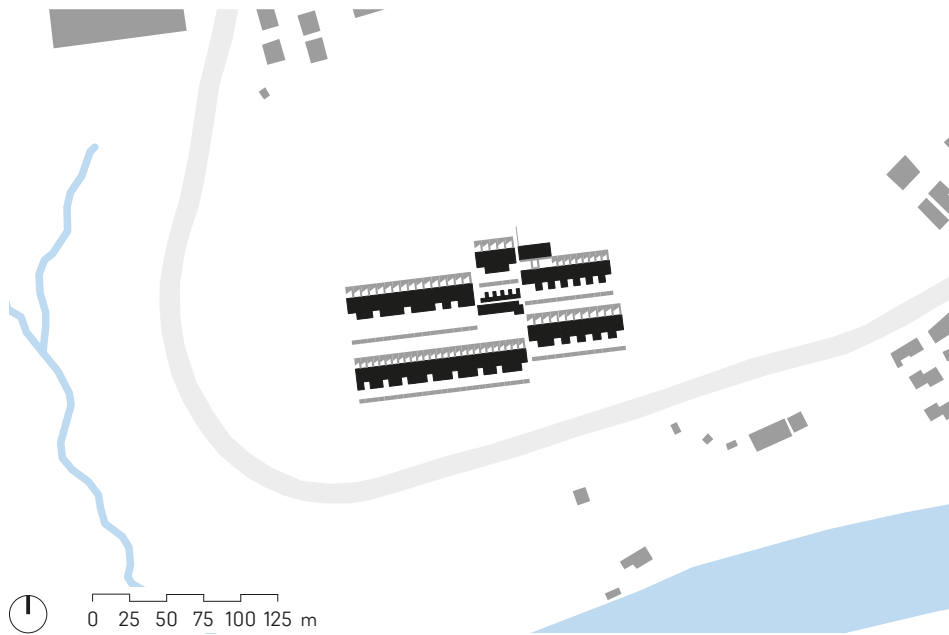


Figure 07.04
Siedlung Halen schematic
site plan with the River
Aare, @1:5'000
(Atelier 5 Architekten,
2023) redrawn by
Ürmössy, B. (2023)



Figure 07.05
Main square, "corner shop"
and houses in Siedlung
Halen
(Atelier 5 Architekten,
2023) redrawn by
Ürmössy, B. (2023)

07.2.1 | Siedlung Halen, Bern, Switzerland

Siedlung means “settlement” in German, and it is a fitting name for the group of houses situated on the sloping hills of the wood just outside Bern. Seemingly in the middle of the wilderness, the group of houses arranged around a central courtyard is reminiscent of a medieval fortress. And that is not far away from the inspiration for the project: the architects were heavily influenced by Le Corbusier’s monastery designs, who himself heavily borrowed from the fortress-monasteries of the Carthusian monks, such as the Certosa del Galluzzo, Florence, IT.

Architects: Atelier 5 Architekten, Bern

Date: 1957-1961

Proportions, spaces:

Siedlung Halen was envisioned as a social residential development on the outskirts of Bern. Proportionally, the 81 private houses arranged in two rows under one another on sloping terrain take up the most space on the masterplan. Significantly, cars must remain outside in the designated (and proportionally large) parking lot to the West of the houses. To reach each individual house, one main passageway must be used, which also leads to the communal square and indoor space in the center. Here, one finds a laundry, a shop and bookable rooms for community activities. Above the development on the hill, there is also a communal swimming pool accessible to all members of the community.

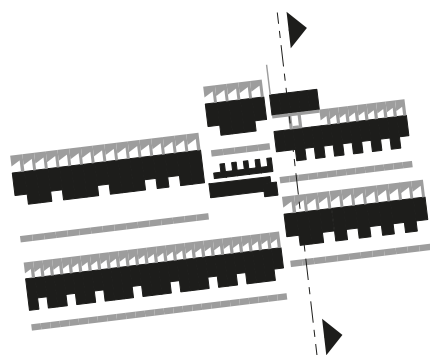
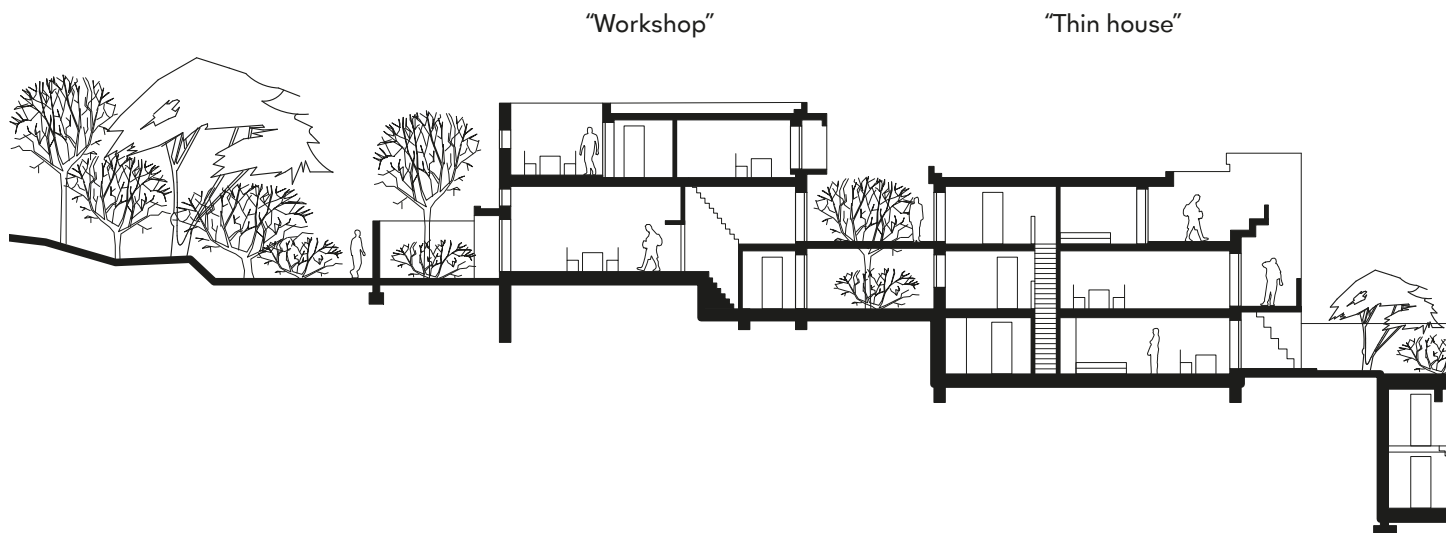
Thresholds from public to private:

As the whole development is surrounded by trees, it feels like a secluded group of houses, even though it is just outside the city of Bern with two bus stops in the immediate vicinity. As cars must be left outside, the way to the houses already feels more private. The houses have a little covered walkway and a patio-garden by the entrance, this is a semi-public space as it can be entered by neighbours. The experience of the houses are completely private, as from the living room and the private gardens the other houses and passageways are not visible; only the panorama and the landscape.

Defining quality:

H.M. [1959]
Siedlung Halen bei Bern:
Architekten
“Atelier 5”, Bern

The houses are built of exposed concrete with flat roofs, and thus in their rhythmic uniformity together they give the impression of a fortress. The houses themselves from the inside are open to the rolling hills and forest of the landscape on the outskirts of Bern through large window surfaces.



0 1.5 3 4.5 6 7.5 m

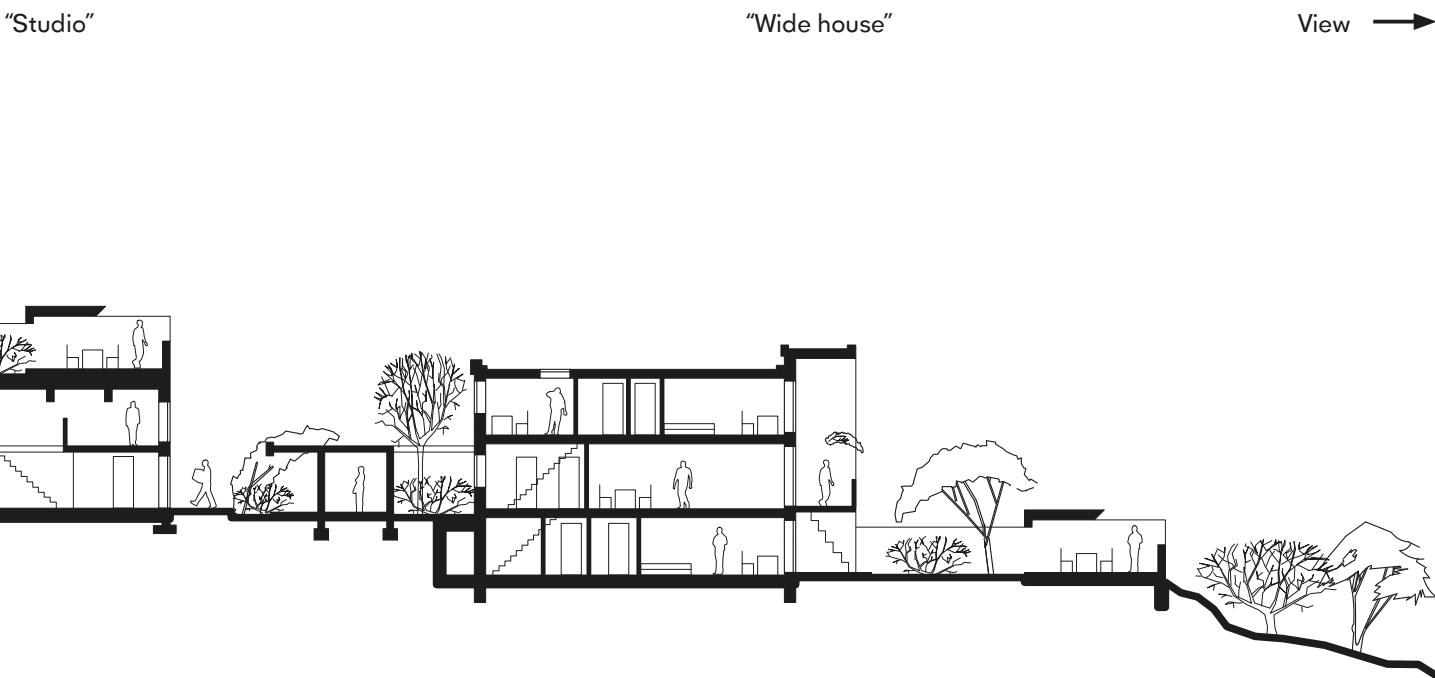


Figure 07.06
Short section through
housing estate; @1:300
[Atelier 5 Architekten,
2023] redrawn by
Ürmössy, B. [2023]

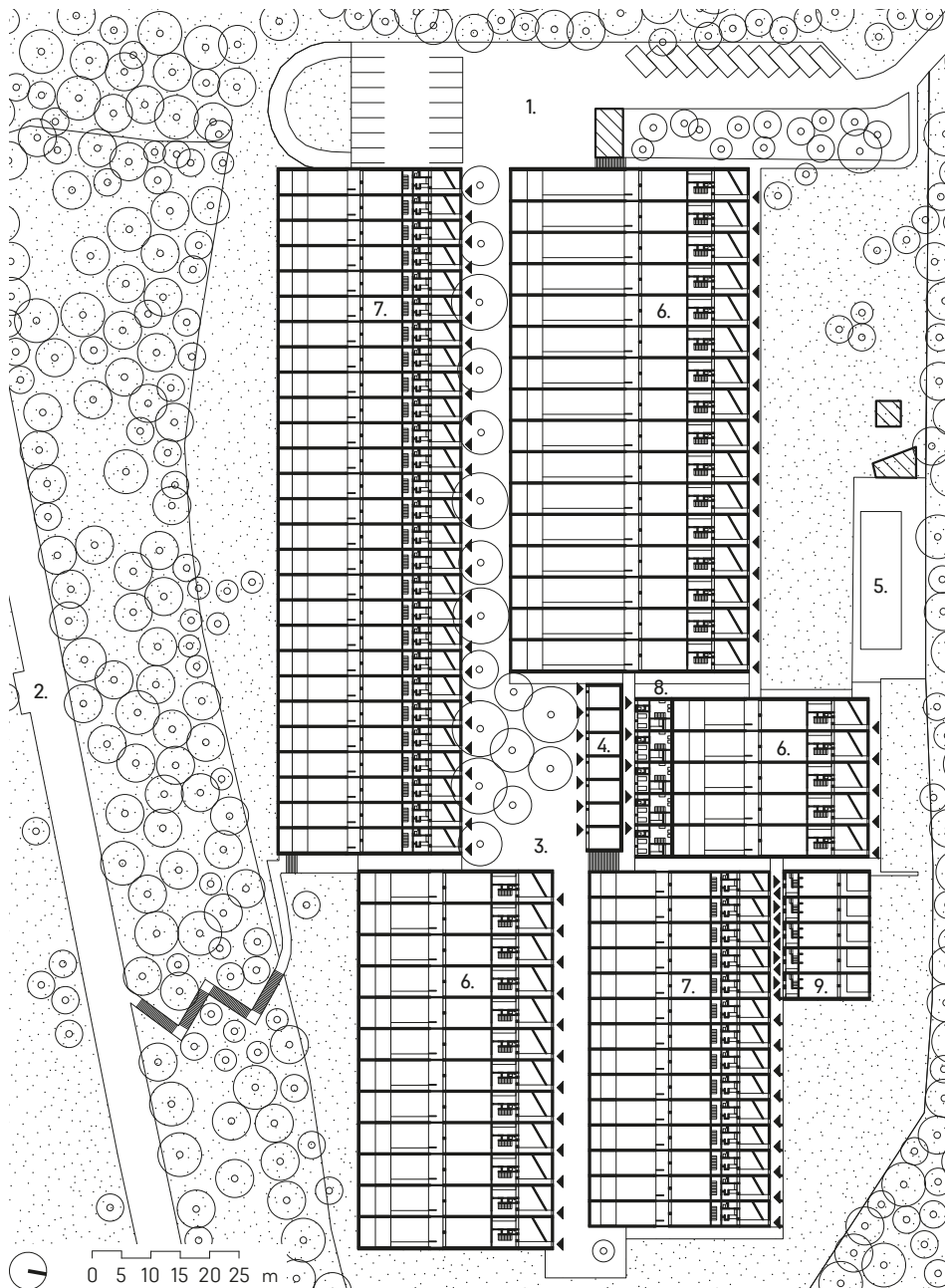


Figure 07.07
Ground floor plan of each
housing unit; @1:1'250

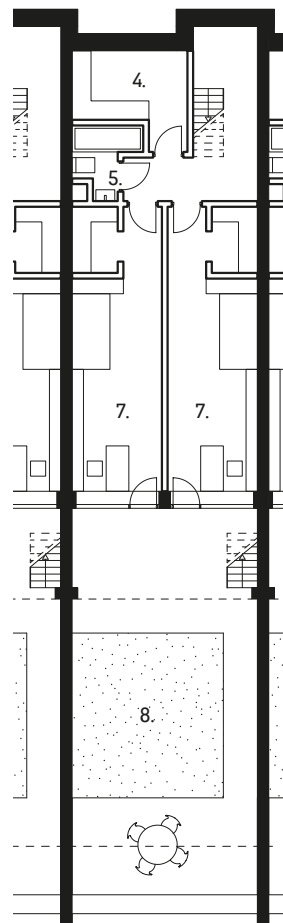
1. Parking lot
2. Bus stop
3. "Courtyard"
4. Shop and laundry
5. Swimming pool
6. Wide house
7. Thin house
8. Studio
9. Workshop

*[Atelier 5 Architekten,
2023] redrawn by
Ürmösy, B. [2023]*

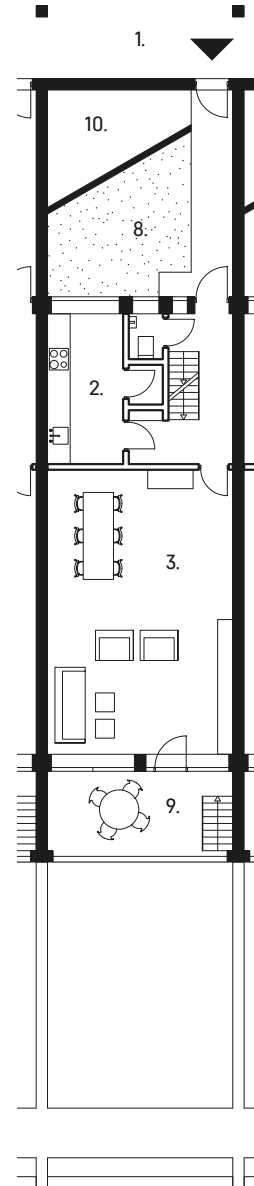
Figure 07.08
Example floor plan of wide
house unit; @1:200

1. Passage
2. Kitchen
3. Dining and living room
4. Laundry and storage
5. Bathroom
6. Master bedroom
7. Bedroom
8. Garden
9. Terrace
10. Waste collection

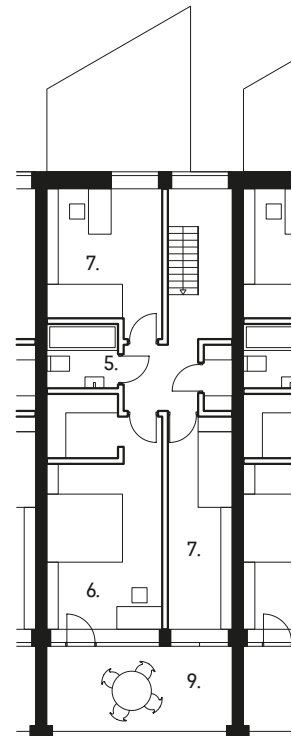
*(Atelier 5 Architekten,
2023) redrawn by
Ürmössy, B. [2023]*



Basement
0 1 2 3 4 5 m



Ground Floor



First floor



Figure 07.09
Lange Eng schematic site
plan, @1:5'000
(Schmid, Birkhäuser
Building Types Online,
2023) redrawn by
Ürmössy, B. (2023)



Figure 07.10
External black wooden
facade of Lange Eng, a
fortress with many stairs
(Schmid, Birkhäuser
Building Types Online,
2023) redrawn by
Ürmössy, B. (2023)

07.2.2 | Suburban Housing in Lange Eng, Denmark

Lange Eng is a communal housing project in Alberton, in western Copenhagen. It consists of 54 owner-occupied apartments from 72 to 135 square meters. The project is a romantic vision come to life, as children play in the courtyard, someone is having barbecue and neighbours drink coffee on the terraces. The sense of community at Lange Eng is maintained because all residents cooperate with others through activities in the central courtyard, while working groups ensure inter-group coordination and budgets.

Architects: Dorte Mandrup Architects

Date: 2007-2009

Proportions, spaces:

From the outside, the homogeneous black wooden façades look like a fortress, an alien object placed into the landscape. Once inside the publicly accessible courtyard which has two gates that cannot be locked, the opaque polycarbonate façades paint a much friendlier, inviting picture. All houses have façades that look into the courtyard. The two-storey dwellings are equipped with dining spaces, kitchens and living rooms on the ground floor and bedrooms for privacy in the upper floors.

The 600 m² two-storey communal space is located near the south gate. It consists of a kitchen, a playroom and dining space for more than one hundred people. Also, there is a screening room, an event room, multi-purpose spaces, storage places, music and computer rooms. These are mainly used in the winter season when it is cold outside.

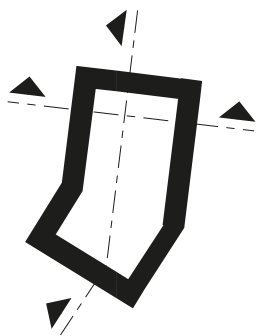
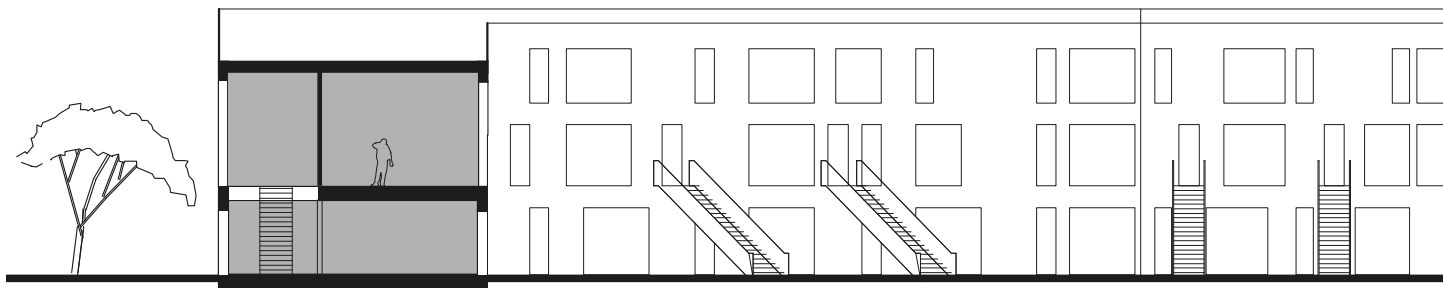
Thresholds from public to private:

The project enables a public way of living, as not only are the outer façades, but also the ones facing the courtyard accessible to the public. Private space begins behind the façades, once the exterior staircases have been ascended. On the inside, there is a clear hierarchy of rooms depending on the amount of privacy associated with their functions. The working groups created by the association of property owners helps resolve disputes and decide who is responsible for which aspect of public life.

Defining quality:

The stark contrast of black wood and translucent polycarbonate signal a change in mood towards the person approaching the building: from the outside strong and excluding from the inside intriguing and inviting. The filigree staircases extending into the space beyond the façade help the building “bleed out” into the surrounding landscape.

Dorte Mandrup
Architects [2023],
www.dortemandrup.dk;
Schmid S. [2023]
Bofaellesskabet
Lange Eng in
Birkhäuser Building
Types Online,
www.bdt.degruyter.com;
Lange Eng [2023],
www.langeeng.dk



0 1.5 3 4.5 6 7.5 m

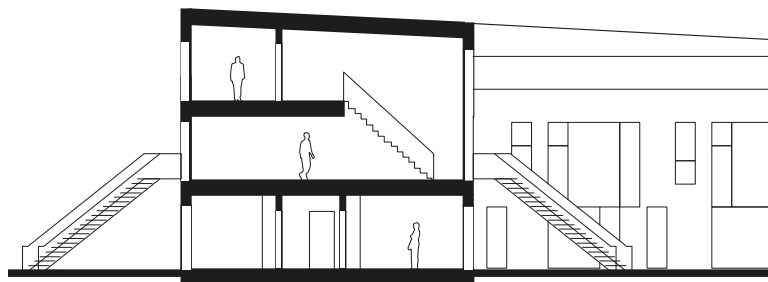


Figure 07.11
 Section through long
 side of courtyard and
 communal space [grey];
 approx. @1:300
(Schmid, Birkhäuser
Building Types Online,
2023) redrawn by
Ürmössy, B. (2023)

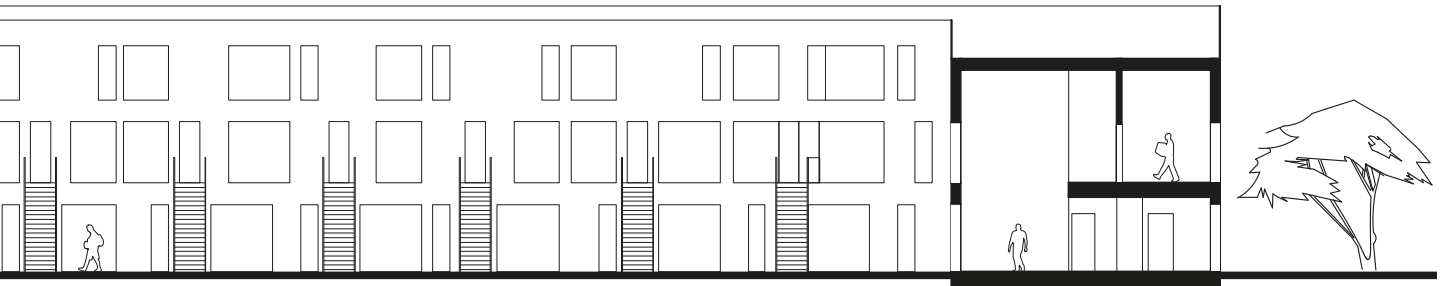
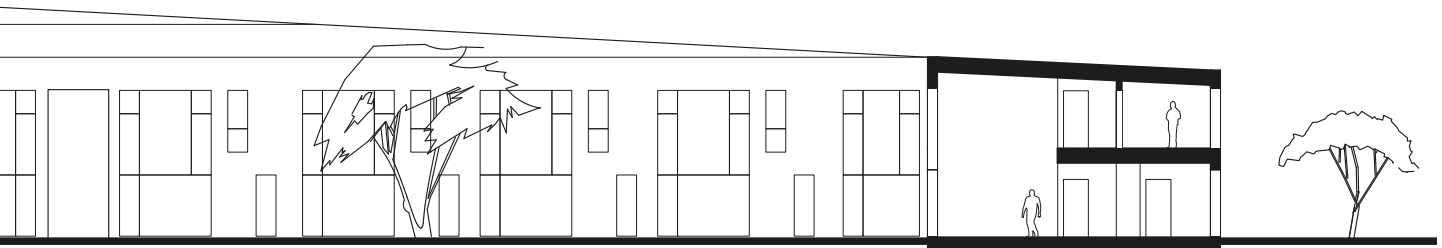


Figure 07.12
 Section through short
 side of courtyard showing
 single-storey and two-
 storey apartments;
 approx. @1:300
(Architizer, 2023) redrawn
by Ürmössy, B. (2023)



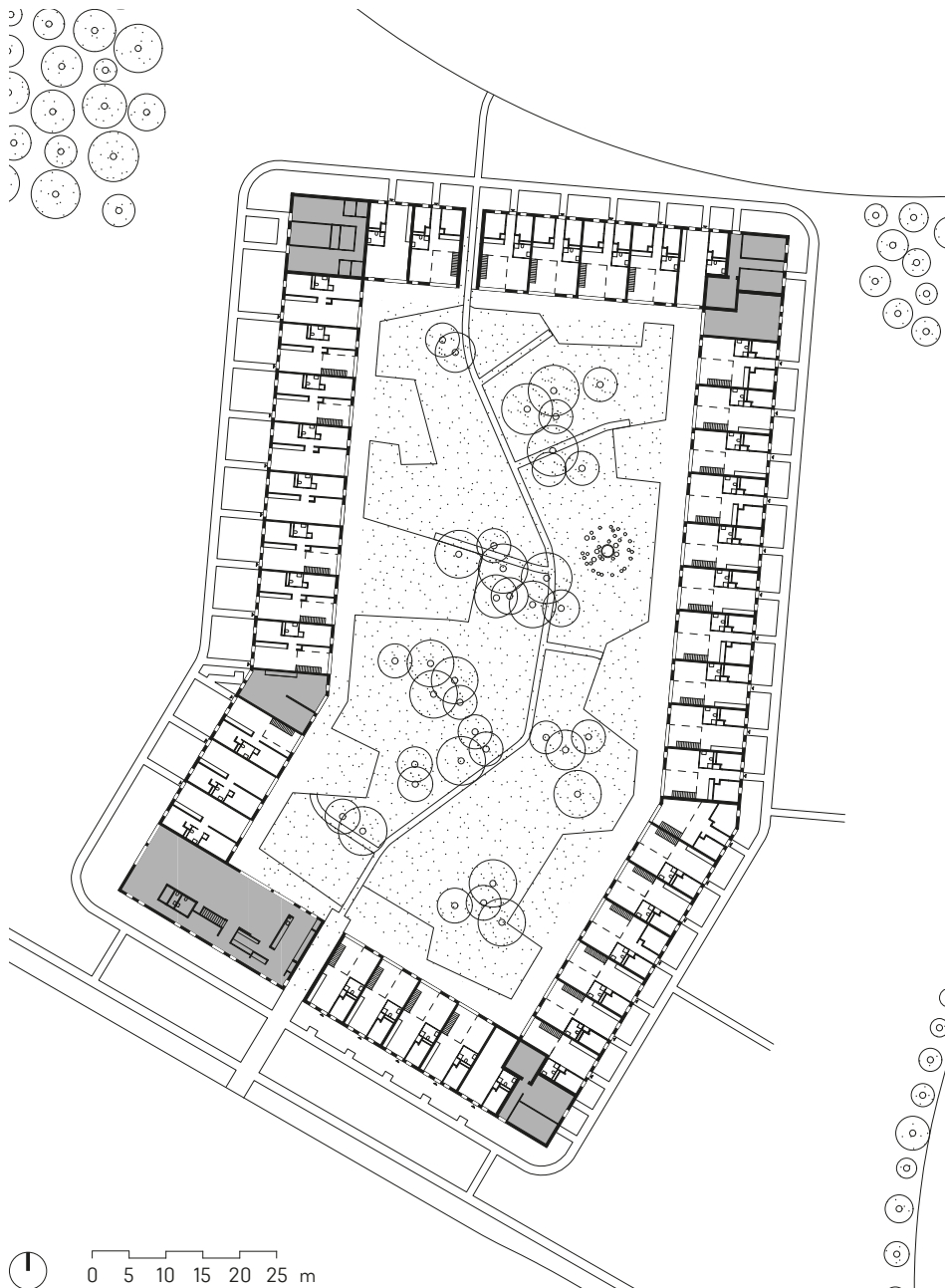
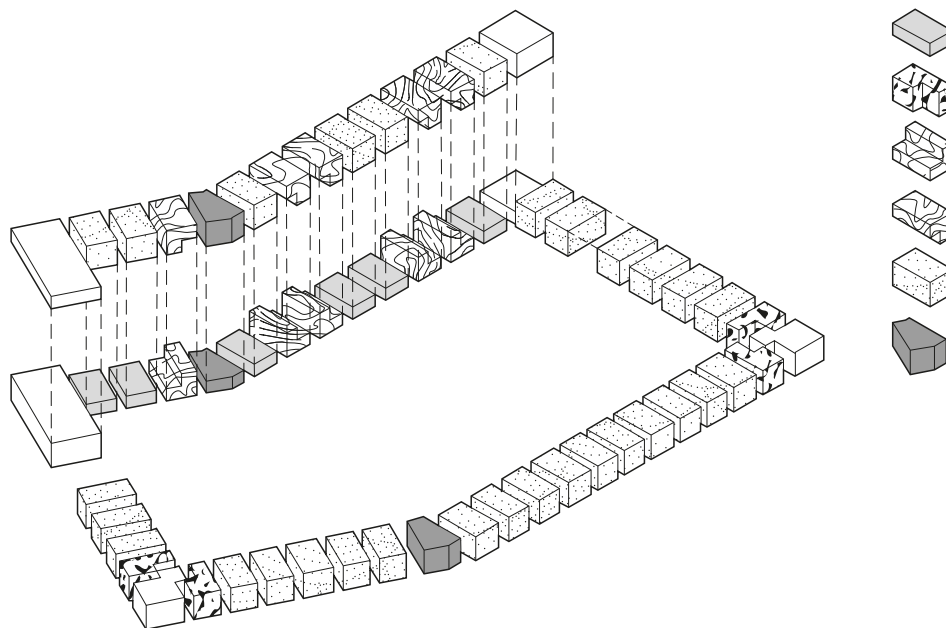


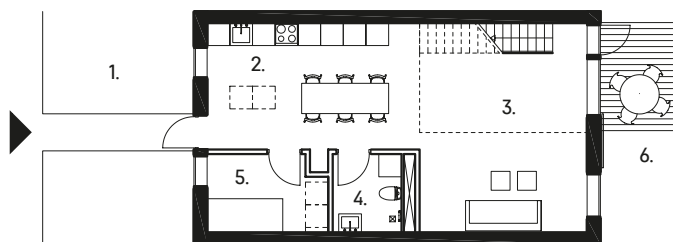
Figure 07.13
 Ground floor plan of
 Lange Eng; @1:1'000
 A courtyard without doors;
 Communal space
 Courtyard
 [Schmid, Birkhäuser
 Building Types Online,
 2023] redrawn by
 Ürmössy, B. [2023]

Figure 07.14
5 types of apartments at
Lange Eng (top to bottom:
small rectangle, L-shaped,
small 2-storey, large
2-storey, corner)
(ARQUA, 2019) redrawn by
Ürmösy, B. (2023)

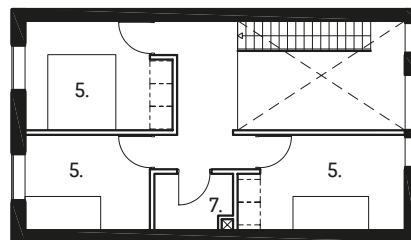


1. street
2. kitchen and dining
3. living room
4. bathroom
5. bedroom
6. terrace, courtyard
7. storage

Total: 115 m²



Ground floor



First floor

Figure 07.15
Plan of typical large
2-storey apartment;
approx. @1:200
(Lange Eng, 2023) redrawn
by Ürmösy, B. (2023)

0 1 2 3 4 5 m

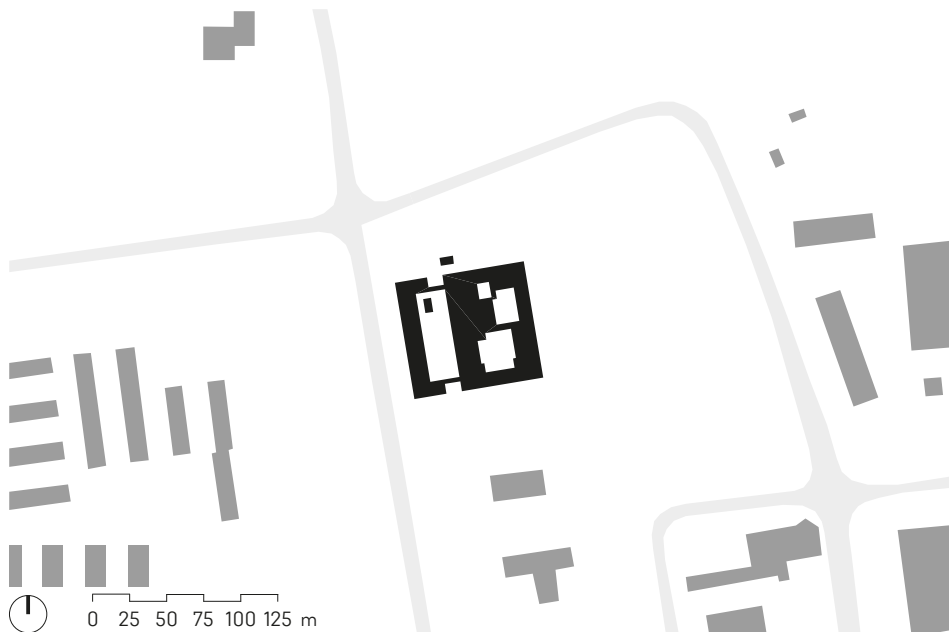


Figure 07.16
Trädgårdarna nursing
home schematic site plan,
@1:5'000
(Wærn, Birkhäuser
Building Types Online,
2023) redrawn by
Ürmössy, B. (2023)



Figure 07.17
Colourful cement tiles on
the facade, an object in
the landscape
(Wærn, Birkhäuser
Building Types Online,
2023) redrawn by
Ürmössy, B. (2023)

07.2.3 | Trädgårdarna Nursing Home in Örebro, Sweden

The criss-cross pattern of the roof of this nursing home sets it apart in the landscape of fields, forests, and industrial buildings. The unique, object-like façade and form-giving make it a symbol of an attractive and safe living environment for the elderly. The complex boasts 77 one-room units and four two-room units. The latter is to enable people with dementia to stay with their partner even if just one of them needs care. People moving to the facility usually stay for 1-3 years, their last place of residence.

Architects: Marge Arkitekter

Date: 2018

Proportions, spaces:

The entrance is the most public space with the restaurant, reception and loading of goods. The building is oriented inwards, towards the courtyards on the ground floor. The conservatory was designed for meeting relatives (children and grandchildren) emphasizing modernity and the vivid life. The upstairs apartments for inhabitants are 36 m² each, and are kept generic. Even in the last stages of life, French balconies ensure views to the outside even from one's bed. The total area for each tenant is 85 m²: 50 m² are common areas, paths, corridors, and yards. There are no dead-ends, so one can continue walking all day long without outright having to turn around.

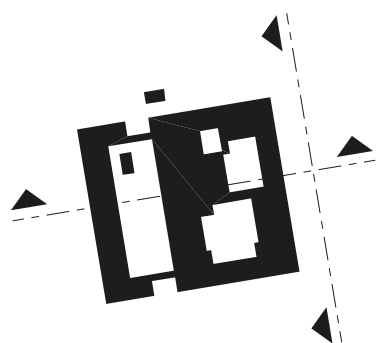
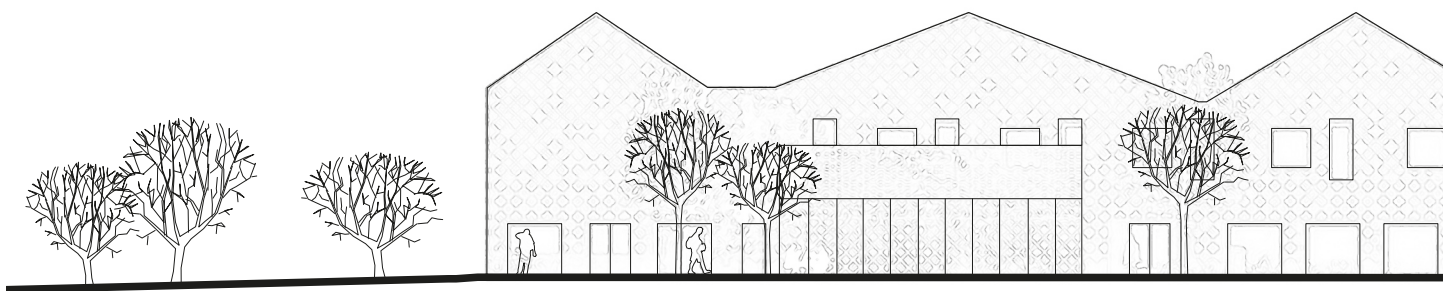
Thresholds from public to private:

The entrance was made as public as possible to give life to the facility. It houses the restaurant accessible to outsiders in hopes of attracting visitors from the area. All the common areas as well as all communications are open to the yards. To foster social interaction, the gardens are easily accessible, and so are other shared facilities. The landscape arrangements of trees and water creates an intimate, engaging and gentle atmosphere. The rooms are arranged around the corridors in such a way that they are the least private possible: common facilities and shared spaces strengthen the sense of belonging and participation – fundamentals of not feeling alone.

Defining quality:

As patients are sadly not expected to leave until the end of their lives, the exterior of the building is designed to be closed and "final". It is covered in fiber cement tiles of different colours, corresponding to the local landscape. Towards the inner courtyards the building is more porous (allowing more connections with the indoor space), and thus has huge window surfaces as well as robust and durable wood panelling.

Wærn, R. [2023]
Trädgårdarna
Nursing Home in
Birkhäuser Building
Types Online,
www.bdt.degruyter.com;
Pintos, P. [2018]
The Gardens Care Home
/ Marge Arkitekter in
ArchDaily,
www.archdaily.com



0 1.5 3 4.5 6 7.5 m

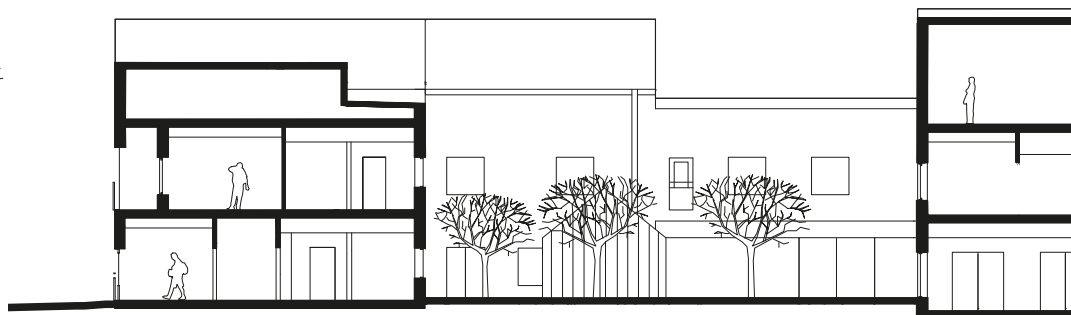


Figure 07.18
 Facade from fields
 showing large windows
 from residents' rooms;
 approx. @1:300
 (Marge Architekten,
 2019) redrawn by
 Ürmössy, B. (2023)

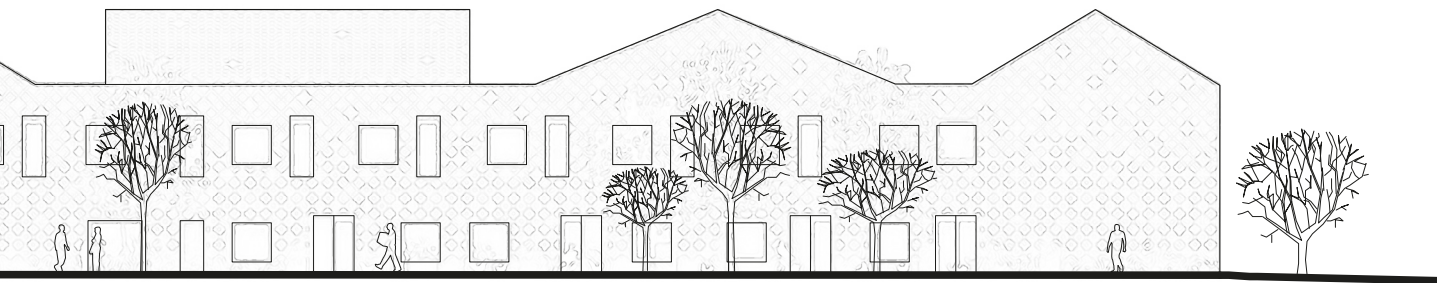
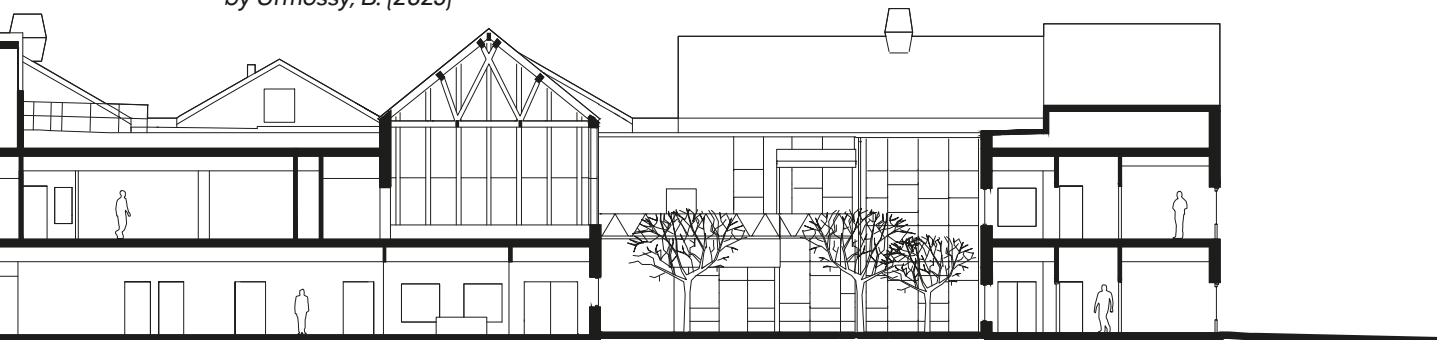


Figure 07.19
 Section through two
 courtyards, rooms and
 the conservatory where
 residents meet visitors;
 approx. @1:300
 (Wærn, Birkhäuser Building
 Types Online, 2023) redrawn
 by Ürmössy, B. (2023)



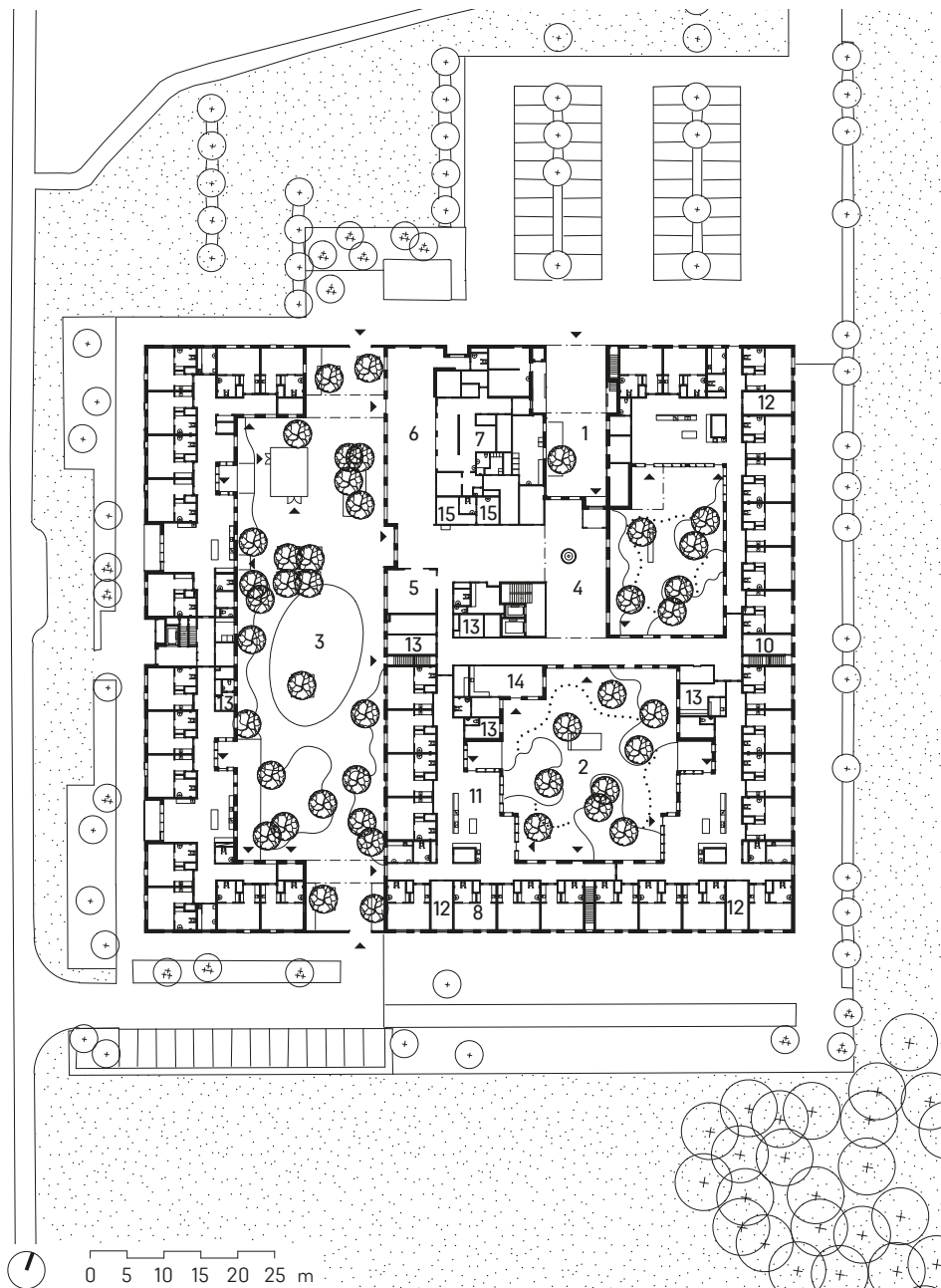


Figure 07.20
Ground floor plan of
Trädgårdarna nursing
home; @1:1'000;

1. Entrance
2. Atrium garden
3. Courtyard garden
4. Lobby
5. Seminar Room
6. Restaurant
7. Kitchen
8. Apartment (singles)
9. Apartment (doubles)
10. Laundry room
11. Live-in kitchen
12. TV room
13. Management
14. Staff room
15. Hair salon / Foot clinic
16. Conservatory
17. Dressing room
18. Terrace

*[Wærn, Birkhäuser
Building Types Online,
2023] redrawn by
Ürmössy, B. [2023]*

Figure 07.21
Ground floor plan of
Trädgårdarna nursing
home; @1:1'000;
Double apartments in grey
(Wærn, Birkhäuser
Building Types Online,
2023) redrawn by
Ürmössy, B. (2023)

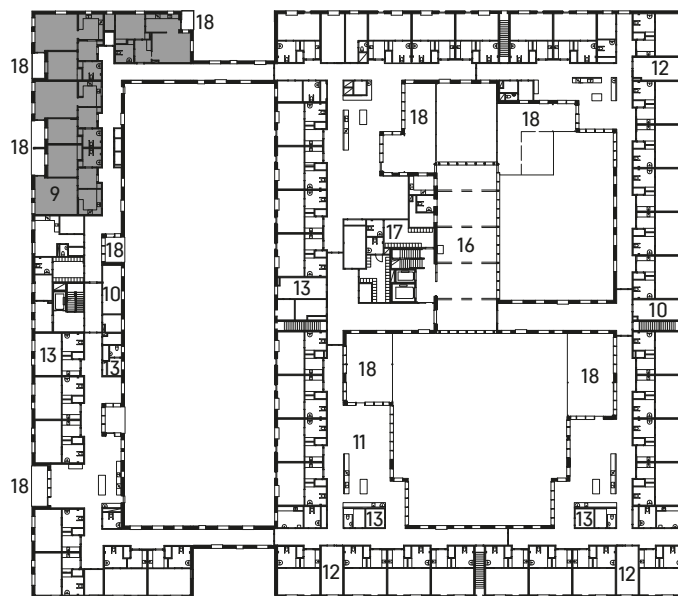
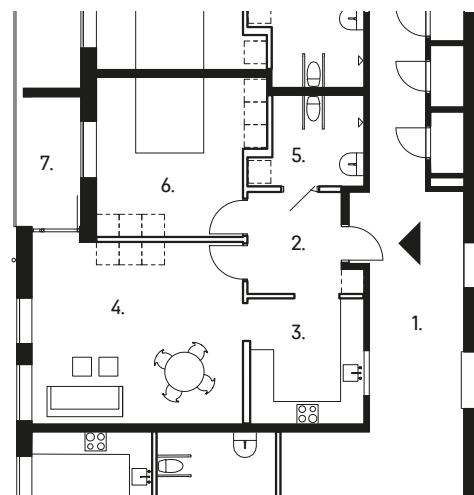
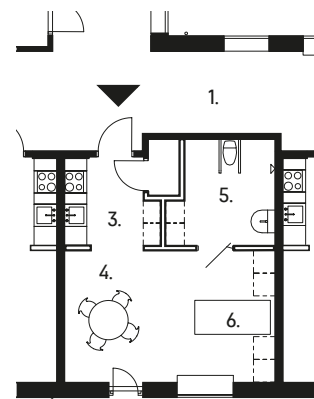


Figure 07.22
Floor plans of typical
single and double
apartments; @1:200
(Wærn, Birkhäuser
Building Types Online,
2023) redrawn by
Ürmössy, B. (2023)



Double apartment
0 1 2 3 4 5 m

- 1. corridor
- 2. entry
- 3. kitchen
- 4. living and dining room
- 5. bathroom
- 6. bedroom / sleeping area
- 7. terrace



Single apartment



Figure 07.23
Harvey court with faculties
(West), garden (South),
the River Cam (East) and
"the Backs" (North-East),
@1:5'000
(Google Maps, 2023)
redrawn by Ürmössy, B.
(2023)



Figure 07.24
South facade from the
Caius College Cambridge
gardens
(Payload Cargo Collective,
2023)

07.2.4 | Harvey Court, University of Cambridge, United Kingdom

This university is one of the oldest still-functioning educational institutions that offers many famous buildings to its visitors. Due to its unique collegiate system, it offers all its students accommodation for the whole duration of their degrees. A “Cambridge Education” entails largely socialising in what is called within “the Cambridge Bubble”. To foster this, the architecture of both Cambridge and Oxford are inward turning, both in their Medieval buildings and their newer reinterpretations.

Architect: Prof. Sir Leslie Martin, Patrick Hodgkinson

Date: 1962

Proportions, spaces:

The building is placed further from the city center, and with it the mayhem of university students, tourists and regular people who live in Cambridge crowding the streets. This allowed its designer to work with architectural form to guide its users rather than aggressive, tall fences. It is placed to the East of the West Cambridge Site, where newer faculty buildings (e.g. law, history, music and economics) are situated. It is placed North of the Gonville and Caius College gardens, and to the South and West of relatively busy thoroughfares. Thus, the building is closed off from three sides to protect its inhabitants from noise and is open towards the South, towards the gardens. The rooms are arranged in stepped terraces around a square central court.

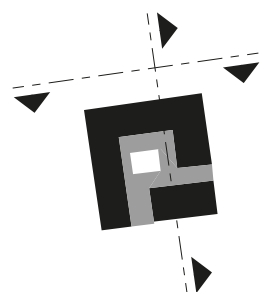
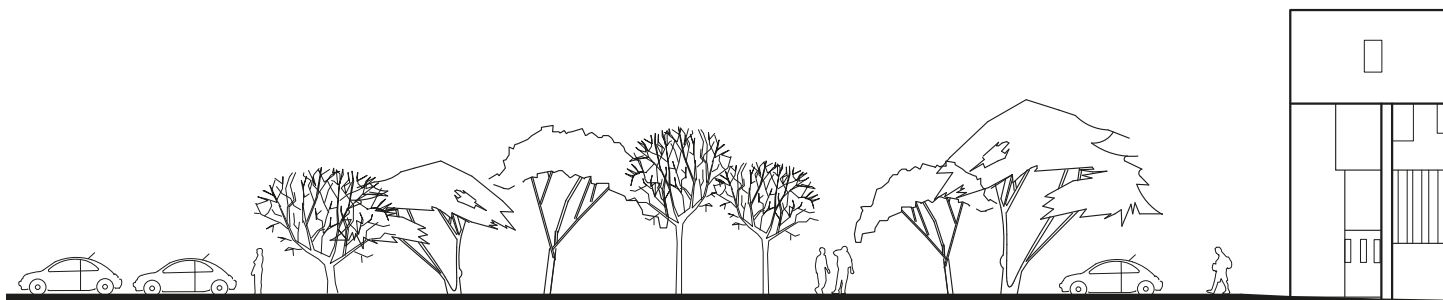
Thresholds from public to private:

The building is closed like a fortress from the three sides it expects traffic from the public and from students. The entrances and circulation spaces (corridors) also face outwards to the traffic and noise. The student rooms are arranged looking inwards to the courtyard and the gardens. The building was constructed with 99 student rooms which have been refurbished in 2011 to provide them *en-suite* facilities, a room selection that includes 38 doubles and 4 triples. Many of the bedrooms overlook the flourishing gardens. On the ground floor, there are communal rooms and a cafeteria that are all top-lit through rooflights in the courtyard.

Defining quality:

The defining architectural quality of this building is its brutalist style, as the construction material of brick is fully exposed wherever possible. It is also used for parapets and as paving to the court. The roof material is copper and all metal flashings are in lead coated copper to avoid staining.

AJ Buildings Library (2023),
*Harvey Court, Gonville &
Caius College* in www.ajbuildingslibrary.co.uk;
Gonville and Caius
College, University of
Cambridge (2023),
Harvey Court in
www.cai.cam.ac.uk



0 1.5 3 4.5 6 7.5 m

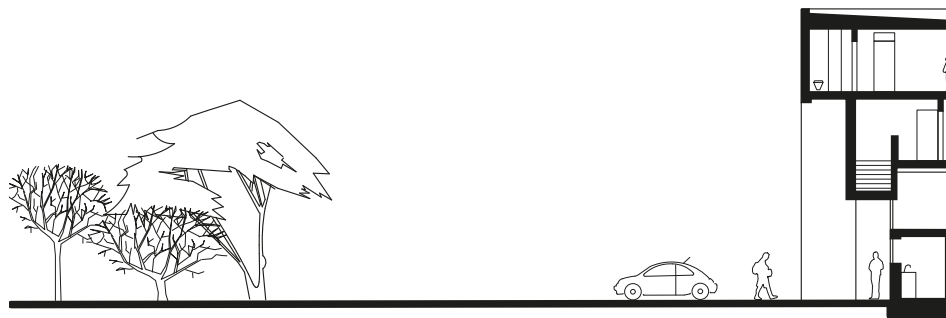


Figure 07.25

A fortress facing a noisily,
busy street; North facade
facing the street; approx.
@1:300
(Blundel Jones, 2023:40)
redrawn by Ürmösy, B.
(2023)

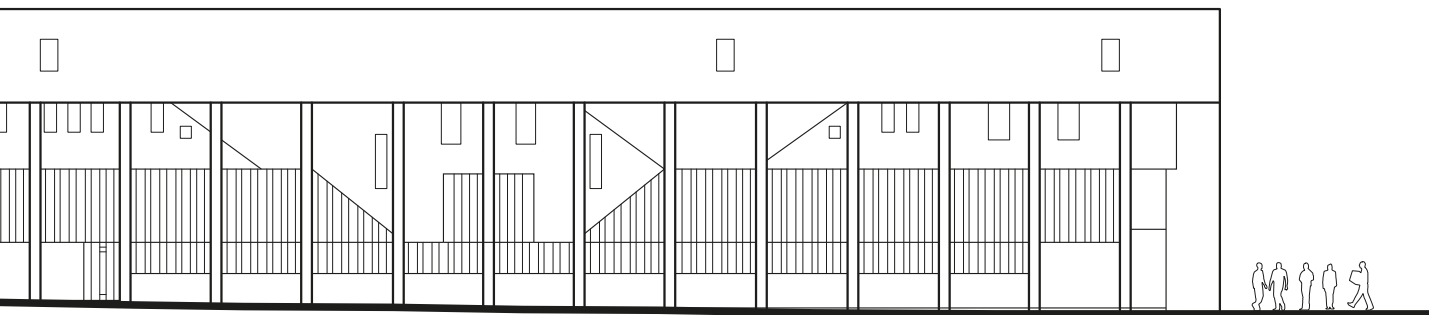
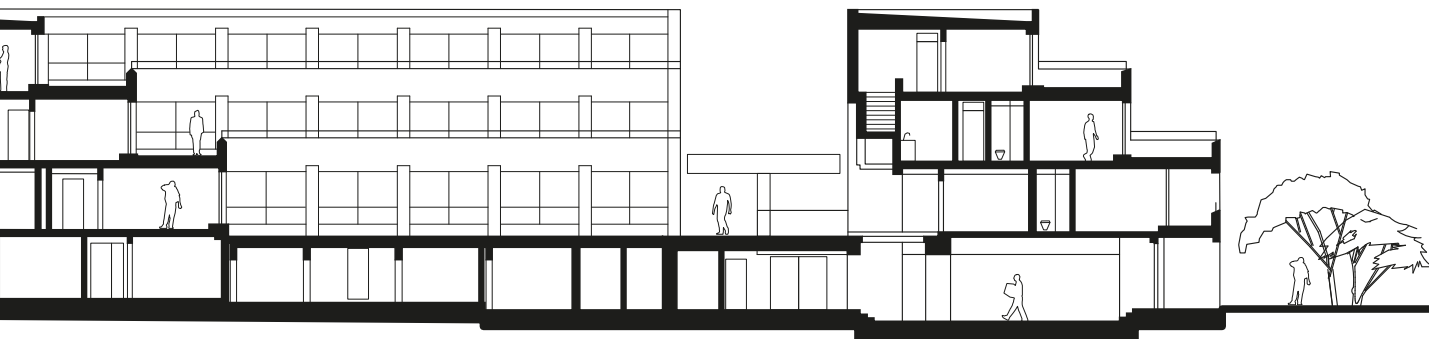


Figure 07.26

Student rooms facing
south; section through
rooms and courtyard;
approx. @1:300
(Blundel Jones, 2023:40)
redrawn by Ürmösy, B.
(2023)



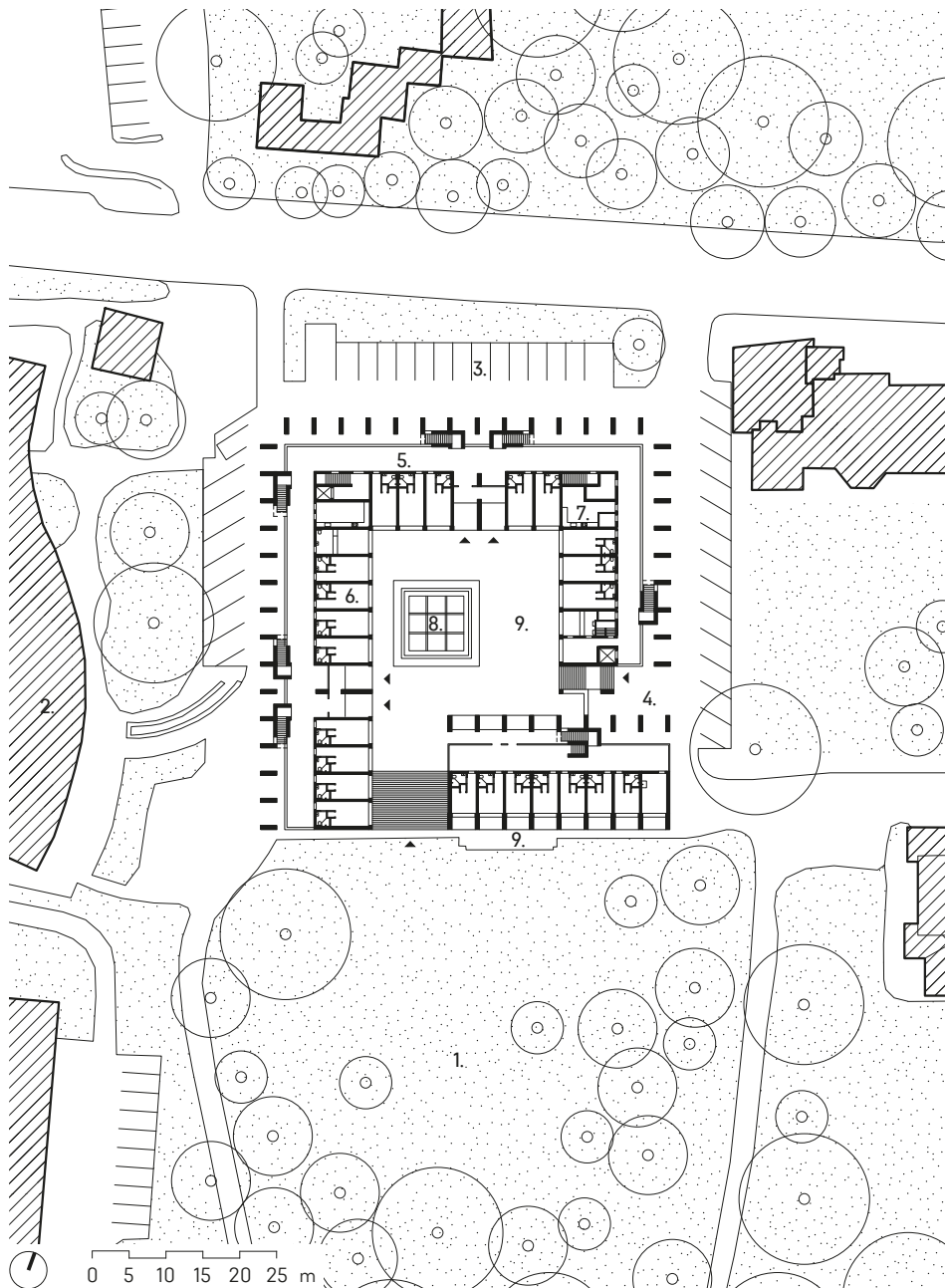


Figure 07.27
Refurbished upper ground
floor plan; @1:1'000;

1. Harvey Court Gardens
2. Sidgwick Site
(faculty buildings)
3. Parking
4. Main entrance
5. Corridor
6. *En-suite* student rooms
7. Kitchen
8. Roof light for lower
ground floor
9. Terrace

(Blundel Jones, 2023:42)
redrawn by Ürmösy, B.
(2023)

Figure 07.28
Refurbished first floor plan;
@1:1'000
(Blundel Jones, 2023:42)
redrawn by Ürmösy, B.
(2023)

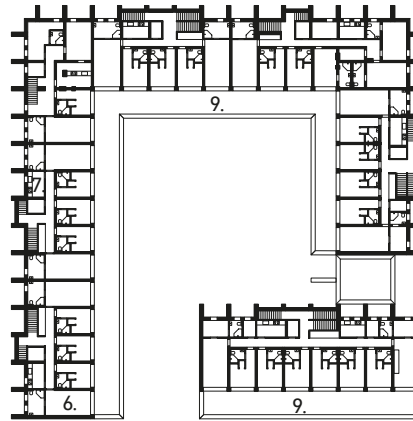
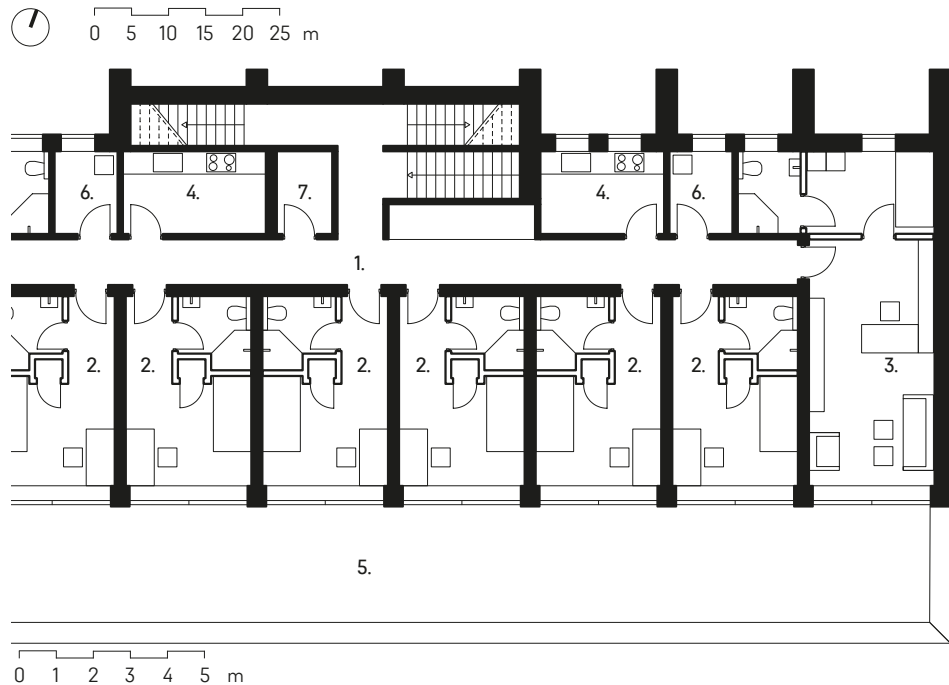


Figure 07.29
Typical floorplan of group
of rooms; @1:200;

1. Corridor and staircase
2. En-suite bedroom
3. En-suite room with study
4. Kitchen
5. Terrace
6. Laundry
7. Utility room

(Blundel Jones, 2023:42)
redrawn by Ürmösy, B.
(2023)



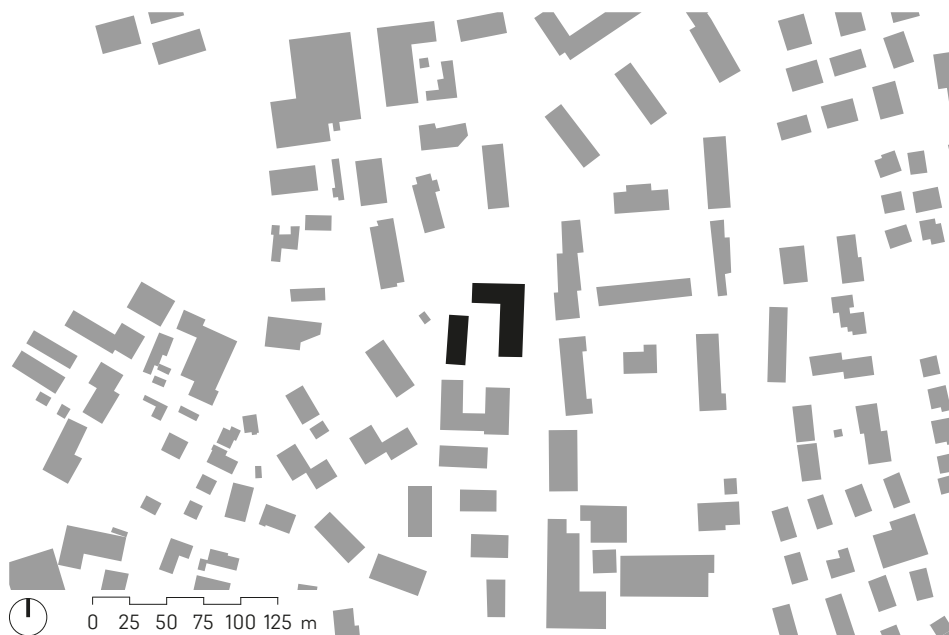


Figure 07.30
 Site plan of
 Baugenossenschaft
 Gstückt Bülach, courtyard
 formed by two new and
 one existing buildings;
 @1:5'000
 [Google Maps, 2023]
 redrawn by Ürmössy, B.
 [2023]



Figure 07.31
 View of the bistro,
 the block with
 Alterswohnungen and the
 block with apartments
 [Google Maps Street View,
 2023]

07.2.5 | Baugenossenschaft Gstückt Bülach, Zürich, Switzerland

This is an interesting example of communal living not necessarily because of its architectural form, but rather due to the cooperative nature of how inhabitants' lives are organised on the premises. During Autumn 2013, 28 retirement apartments (*Alterswohnungen*), 11 family apartments, a bistro and a nursing apartment for 16 people with dementia were built.

Architects: Mossdorf Architektur + Projektentwicklung GmbH, Bülach;
Architrema GmbH, Zürich; Peter Weber, Garten- und Landschaftsarchitektur, St.Gallen

Date: 2013

Proportions, spaces:

In the 2013 phase, two buildings were developed: one an elongated building, the other with an L-shaped plan, which form a U with the other buildings on the site from 1995. The new buildings were designed to blend in with the existing ones, hence their "retro" aesthetic. The *Alterswohnungen*, the home for people with dementia and the family apartments were placed in the vicinity of each other specifically to avoid an "old people's ghetto". However, through the separation of different intended target-groups into freestanding buildings, the mixing between the different inhabitants becomes minimised – they do not disturb each other. The apartments were designed to be spacious and be wheelchair accessible where possible. The *Alterswohnungen* are equipped with 24-hour alarms for emergency situations. The apartments have huge window surfaces, and thus plenty of light, look onto green spaces and share one big parking lot beneath the site.

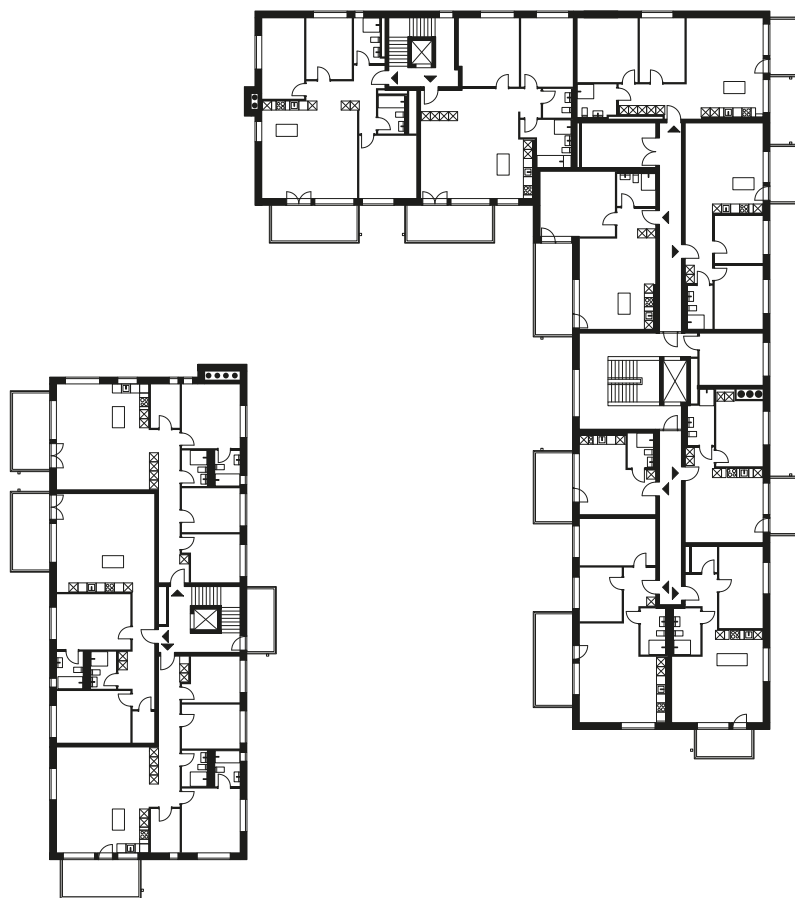
Thresholds from public to private:

When one enters from the street, one passes by the bistro and the hairdressers' salon, both spaces that are open to the general public as well. The apartments are accessible through three different stair-and-elevator cores and face both inside the courtyard and outwards onto the street. In the *Alterswohnungen* all inhabitants have their private bathrooms for privacy and dignity.

Althaus, E. (2021)
Generationen Wohnen,
ETH Wohnforum, p.116-125;
Fehrlin, P. (2023)
Baugenossenschaft
Gstückt Bülach,
www.gstueckt.ch

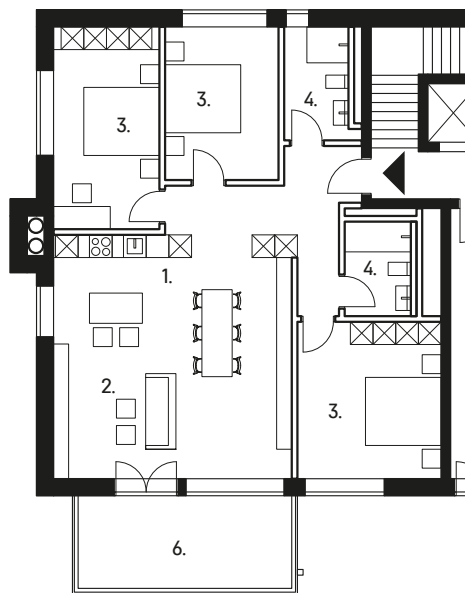
Defining quality:

Originally, the pensioners living in the retirement home helped watch the small children of the families next door, while the younger adults helped the retirees with repair work, grocery shopping and other chores for free. For lack of enthusiasm from the inhabitants, this stopped. Today the Genossenschaft Gstückt Bülach (developer company) and the bistro organise communal activities. It is still an attractive place to live as the apartments are in a good condition and are offered at rates below the housing market.

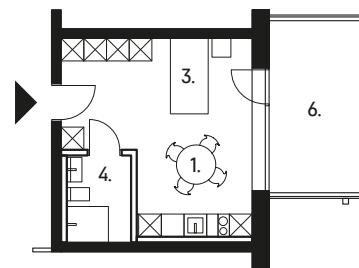


0 2.5 5 7.5 10 12.5 m

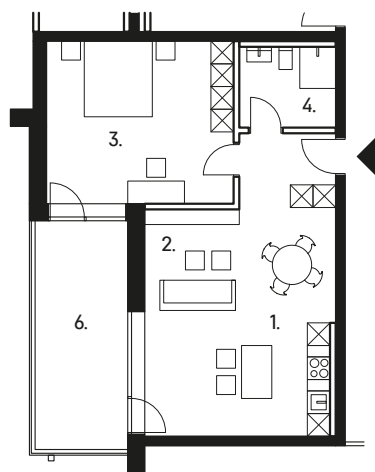
Figure 07.32
Sample floor plan of
family apartments
(rectangular block)
and Alterswohnungen
(L-shaped block)
separated for privacy and
noise issues; @1:500
(*Baugenossenschaft*
Gstücht Bülach, 2016)
redrawn by Ürmössy, B.
(2023)



4.5-room apartment for 2+ people [2-5]

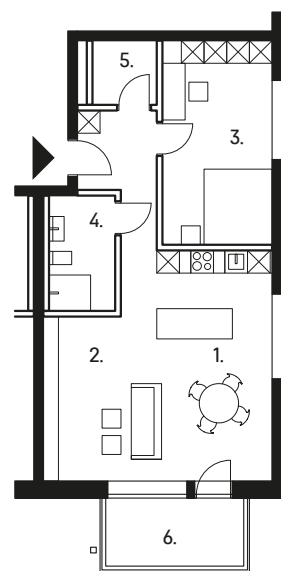


1.5-room apartment for 1 person



2.5-room apartment for 2 people

0 1 2 3 4 5 m



2.5-room apartment for 1 person

Figure 07.32
Alterswohnungen:
different apartment sizes
for different number of
inhabitants; @1:200;

- 1. Kitchen and dining area
- 2. Living room
- 3. Bedroom, sleeping area
- 4. Bathroom
- 5. Laundry room
- 6. Terrace

(Baugenossenschaft
Gstückt Bülach, 2016)
redrawn by Ürmösy, B.
(2023)

All in all, one can learn organizing principles from the precedents explored above. One such factor is the importance of having several shared spaces where residents can meet and interact to foster communities. Lange Eng was a prime example of this, as the courtyard itself and the big indoors shared rooms provide ample space for group activities irrespective of the weather. In the Trädgårdarna Nursing Home shared spaces are vital, as they provide the elderly residents with room to be in each other's company: there are communal kitchens, living rooms, courtyards and endless corridors to spend time together and form a community. Both in Harvey Court and Siedlung Halen shared spaces are somewhat smaller (in Cambridge a communal dining room is on the lower ground floor, while in Bern it is a square in the middle of the development), however, due to their central placement they are frequented by all inhabitants and thus serve their purpose. In Baugenossenschaft Gstückt Bülach the courtyard is not a functional meeting space because it is not defined well architecturally and because residents are not motivated to spend time there to interact with others. Additionally, as the Kanton Zürich has a cold climate, the courtyard cannot be used year-round and there is a lack of indoors shared spaces in the project – thus a community cannot be formed. The success of community building primarily depends on the availability of shared indoor and outdoor spaces.

While forming a community is not easy, retaining privacy in an integrated community is the real challenge. Siedlung Halen is the perfect example of this, as when looking out of the windows one cannot see the other houses, and even from the gardens cannot hear them. This allows the inhabitants to enjoy a bit of alone time to recharge their social batteries. Here, the houses are also organized according to a hierarchy of privacy: kitchens, dining rooms and living rooms are easily accessible from the street, while bedrooms are on upper or lower floors. This way of organizing the rooms is also present in Lange Eng, where all bedrooms are on the first floor. In Harvey Court the rooms all face either the gardens, or rooms far away: one does not feel surveilled by others. Being able to spend time away from the community is vital, as not all activities and moments should be shared with everyone.

This feeling of privacy is usually created through carefully placed windows, which shows the importance of views. In Siedlung Halen, framing is what creates a sense of privacy, at Trädgårdarna Nursing Home it is what gives a sense of freedom and a taste of the outside world. Here, hospital beds are positioned in a way that allows bedridden residents a view to the outside, even if they cannot get up to go and explore it anymore. Framing and views to the outside are important for multiple reasons, and is an aspect of design worth recreating.

Architecturally Baugenossenschaft Gstückt Bülach seems to offer little to learn, but that is not the case. Organisationally, segregating the elderly from young families with children was a clever decision: all get to keep their peace even in varying noise levels. This project, along with Lange Eng, shows the importance of offering a wide variety of apartment sizes as well: the elderly are often alone or with a partner, while families easily need 4.5- or even 5.5-room apartments and houses. This is most apparent in the project from around Zürich, where small and large apartments are sequenced into two separate blocks. A key takeaway here is that knowing the requirements and wishes of a targeted audience can make or break the success of an architectural project.

Overall, all five projects have merits and weaknesses that made them interesting case studies for a refurbishment project of a Vierkanterhof. By targeting different age groups, all of them showed the needs of different demographics in terms of the size of individual apartments, communal spaces, and other utilitarian areas such as parking. By being situated in countries with similar weather conditions (e.g. having four seasons), it has also highlighted the importance of both indoor and outdoor mingling spots. Furthermore, what united all projects was not just the way they introspectively turned inwards, but also the way in which their residents can view, see and interact with the outside world.



VIERKANTER AS THE PREMISE OF CO-LIVING

Figure 08.01
Fortress in the vast fields;
Premise of the proposed
renovation project: Herr S.
Augl's new Vierkanterhof
(Ürmössy, 2023)

Interview with
Herr V. Lenz [2023]

Having conducted interviews with the owners of Vierkanterhöfe, with local intellectuals as well as those on the side of legislation, one thing became clear: this building typology is in crisis and there is a segment of society who would be enthusiastic to do what it takes to salvage the buildings before they deteriorate beyond repair. Fortunately, these people also seem like the “ideal” property developers: they are not after immediate, maximised profit but are after strengthening their local communities and social prestige within them.

Looking at demographic and housing market trends in the Western World (Europe, North America, developed economies in the Far and Middle East), more and more people are lonely and are living alone – while they are also pushed out of the real estate market due to more demand than supply and the resulting increasing property prices.

In the penultimate chapter, this *Enoncé Théorique* would like to provide hope for the future: to propose a solution and end this thought experiment on a high note. That is because from the data presented in this book, it is evident that there could still be a future for the Vierkanterhöfe that would benefit more people than the nuclear families of their owners.



Figure 08.02
South-eastern external
facade of "Leebgut"
Vierkanterhof; water and
sewage system organised
below concrete deck in
the front
(Ürmössy, 2023)



Figure 08.03
North-western external
facade of "Leebgut"
Vierkanterhof; (left to
right) workshop doors,
Herr S. Augl's new floor to
ceiling window, and the
light wooden structured,
collapsing barn; underside
of roof in bad condition
(Ürmössy, 2023)

08.1

Hypothesis

from synthesis of challenges

Through the previous chapters three main problems have been identified in the region of Linz-Land specifically within Oberösterreich.

One, and perhaps the most visible, is the redundancy and decline of the Vierkanterhöfe farm building type in its current function.

Then, as the economic success of Linz continues, people will migrate to the city to fill jobs. As in the city property prices are rising and “Home Office” is gaining popularity, the demand for housing in Linz-Land is prognosed to increase. Due to the legislative framework of land-classifications, finding properties that can be developed into new residential housing is difficult. However, there are 3000 largely vacant existing buildings [the unused Vierkanterhöfe] in the region and their use can be mostly freely chosen.

Thirdly, as an increasing number of people are living alone, the population is less resilient to crises than if they were residing in communities. As the Vierkanterhof was a building typology for co-habitation, injecting this spirit back into them could mean a new life as affordable residential refurbishment projects fostering communities.

This chapter is the synthesis of the ideas explored previously, the culmination of this *Enoncé Théorique*, laying the groundwork for an exciting and rich *Projet de Master*.



Figure 08.04
Internal courtyard of
"Leebgut" Vierkanterhof;
photo taken from the
South-eastern corner
looking West
(Ürmössy, 2023)



Figure 08.05
Internal courtyard of
"Leebgut" Vierkanterhof;
photo taken from the
North-western corner
looking East
(Ürmössy, 2023)

Specific co-habitation model

"Happy ending" by design

As is evident from the case studies explored, laying out rules and goals from the outset is vital for the practical functioning of communal living projects. It can be said that in general, the central courtyard – as a safe space for enjoying the outdoors and for socialising – is the main organisational principle of the case studies explored. From there, one accesses the private sphere of individual apartments of varying sizes where the others can only gain admission via invitation.

Hintermayr, J. [1978],
Das Mostviertel und
sein Museum in Haag, p.98

Although Vierkanterhöfe are all individual in their exact dimensions, one can estimate the circumference of *Großvierkanterhöfe* to be around 180-220 meters. Their internal floor area [taking double of the ground floor area] could be expanded up to 2'000-2'400 m² equally distributed between two floorplates. Some Vierkanterhöfe do have cellars [an underground floor], but those are usually beneath where the kitchen was originally situated and not very spacious. Depending on building statics, some of the site beneath these buildings could be excavated to house parking lots, storage spaces and a plant room [water-boilers, heating systems, water pumps, ventilation etc.], servicing the whole building.

As the baseline 2'000-2'400 m² is rather spacious, and as people require more specialised spaces in different stages of life, this *Enoncé Théorique* proposes to divide the available floorspace into three main sections. Firstly, reaching back to the

original character of the Vierkanterhof, the communal areas would be planned where the *Mittelflur*, the kitchen and the *Stube* used to be. These communal rooms would include a modern and functioning kitchen with a communal dining room where events could be organised. Additionally, a spacious *bureau* room would be located on the other side of the *Mittelflur* for those adults who work a lot from home. This would be useful, as during the COVID-19 pandemic people complained that concentration at home was difficult in spaces that they otherwise associated with different activities, while sitting in isolation all day long was daunting. This office space could have meeting rooms as well, and when not actively in use could be rented out to external people or companies. Additionally, a “hobby-room” could serve as a kindergarten [childcare], a music room or for organising workshops together (e.g. painting). Other communal spaces could include storage space, washing and drying facilities as well as the inner courtyard for play and relaxation. To provide care for elderly residents, an equivalent of a *SPITEX Schweiz* room should also be provided. *SPITEX Schweiz* is an organisation that provides expert, hospital-level care for people in need in their own homes, so that they can remain in a comfortable environment for longer. The service is mostly available during working hours and requires a small office space with changing rooms on site. The total envisioned floor space for these communal rooms should not exceed 400 m².

SPITEX Schweiz (2023)
Das Angebot der Spitex,
www.spitex.ch

The second section of the building would be dedicated to two-storey family apartments of about 100-120 m², targeting the “average family model” of 4.40-people households (two adults, two or three children). These should be 4.5-5.5 room apartments equipped with two bathrooms, a *Waschküche* (laundry and storage room) and an open kitchen, dining room and living room area. To keep the number of apartments balanced, about 12-13 of these family apartments are recommended, totalling at about 1'300-1'400 m².

Last but not least, the rest of the building would be turned into *Alterswohnungen* (retirement-apartments) that would all be wheelchair accessible. Calculating with 10 of these apartments of around 60 m² each, they will be arranged around elevator cores to enable single-storey solutions. Originally planned for singles or couples, there should also be the possibility to convert two such apartments into one bigger flat, functioning as a *Wohngemeinschaft* (“WG” or “colocation”, a form of apartment sharing).

To fulfil the social aspirations of the communal living project, all adults with young kids moving to the property would have to pledge to take part in caring for their own and each other's children. What is understood under this clause for example is that if there are 5 families with small children, one adult from these families watches

the children each day in rotation, so in each family one adult can work 100% and the other can work 80%. If younger childless people or retired people moving to the property wish to do so, they can also volunteer to take part in childcare in return for services (e.g. help with groceries and easy home renovation works).

As covered in previous chapters, there are a lot of (mostly European) migrants in the city of Linz, whose integration would be a worthwhile goal. It would be interesting to take families from immigration backgrounds (Austrians and non-Austrians from outside the "Upper-Austria" region), move them into such a community and try to provide them with the social support network they likely do not have available locally.

As previously shown, all people living in Austria who wish to have one can and do own a car. Thus, building the infrastructure that caters to this reality (which for now is unlikely to change) is vital and should be delivered for the marketability of such a project. For the *Alterswohnungen*, at least one parking spot should be provided per apartment, while for families (looking at the statistical data) two parking places should be made available. Additionally, visitor parking (for relatives, friends and SPITEX) should also be built.

Looking at the situation of Vierkanterhöfe compared to schools, bigger schoolchildren could easily cycle to the nearest institution in warm weather. For smaller schoolchildren and for bad weather conditions, a schoolbus system is already in operation in Austria, where buses collect students from rural areas and take them to and from school each day. As explained in the chapter about maps, a similar system could be developed on a public transportation basis, should the need arise.

One might comment on the dangers and inconveniences of being located far from physical shops and community centers. Currently, with the widespread use of online retailer platforms such as Amazon.de, Spar Home Delivery, Foodora and Ubereats, not to mention fashion retailers, the location in the countryside should not be a hurdle that is impossible to overcome. The social isolation aspect of living in the middle of farmland is mitigated by the large community of around 70 people living around a courtyard. This number should be small enough for every inhabitant to personally know everyone else, but large enough to enable the formation of smaller, more intimate friendship groups.



Figure 08.06
Wooden barn with holes
on facade; old agricultural
machinery storage
(Ürmössi, 2023)



Figure 08.07
Hay storage below
collapsing roof; upper
first floor of "Leebgut"
Vierkanterhof; South-
western corner of building
(Ürmössi, 2023)

08.3

Formal analysis

of suggested site

Having visited the region for the writing of this *Enoncé Théorique*, and Herr S. Augl's offer to help provide a Vierkanterhof for a study-project, the *Großvierkanter* named "Leebgut" was selected. Its address on Google Maps is Bucherholzstraße 2, 4062 Kirchberg Thening, while in the Austrian Land Registry it is listed under Aistentaler Straße 27, 4062 Kirchberg Thening. The first mentions of this Vierkanterhof in official documents is from the *Josephinisches Lagebuch* 1787 [Cadastral map from the reign of Joseph II], where the name is "Löwengut", the owner is Peter Minichmair and the address is Niederbuch 4, Kirchberg. Another mention in the *Oberösterreichisches Landesarchiv* [Federal State Archive of Upper-Austria] records is from the *Altes Grundbuch* 1790-93, where the name is "Lebengut", the owner is Maria Minichmayr and the address remained unchanged. This record states that (probably another) Maria Minichmayr inherited this property in 1849. The building itself is situated on a plot of 41'955 m², alongside a [currently dysfunctional] well and a *Bachhouse* [separate building where bread was baked; wine, must and cider where stored; and where bigger machinery that could not be taken inside the farm were parked].

This farm, along with the 281'661 m² agricultural farmland belonging to it was recently purchased by the Augl family. It is in the *Grünland* zone and is not under heritage protection. The exterior perimeter of the building is roughly 55 x 65 m, the courtyard is approximately 30 x 40 m. The previous owner lived in the Vierkanterhof until death,

but as his children have moved to big cities and are unwilling to continue the family tradition of farming, the property was sold. Due to how the legislative framework is formulated, there was no possibility of selling the farmland without the house, and *vica versa*. It was not possible to contact the previous owners at the time of writing this document for family anecdotes or the history of their Vierkanterhof. As for Herr S. Augl, this is his second such farmstead: he occupies his family's long-treasured and recently renovated Vierkanterhof not far away in Leonding, and purchased this property for the farmland only.

Currently, there is no running water or a sewage system connected to the mains servicing this site. At the moment, there are two big tanks that need cleaning twice a year fulfilling this role. At the time of purchase, the building did not have foundations in the contemporary sense of this world, and Herr Augl had to organize concrete to be poured under a section of the walls for structural integrity. The roof has sagged in multiple places due to no adequate maintenance and the age of the property, and will have to be replaced. As is written on a plaque on the wall in the courtyard, the whole Vierkanterhof burned down and was reconstructed in 1911. The building is largely constructed of clay bricks endemic to the region, is dry and is holding up well. Certain parts of the brick walls and floorplates have been exchanged from brick to concrete by the previous owner, probably due to structural issues. Herr Augl has also set up a workshop for himself on site and added one big glass window to one of the exterior façades for more light. The parts of the building originally used for storing hay and farm vehicles, which is made entirely of wood, is in the poorest condition (understandably), but this part would be completely demolished and rebuilt in the event of a complete refurbishment project.

The architectural quality of the Vierkanter that are notable are the interior spaces and the courtyard. The interiors are more than adequately lit by the relatively big windows both on the ground floor and the first floor. These rooms are also relatively tall (around 3 meters), have no mold and are spacious, especially when considering the age of the building (about 120-100 years old). The courtyard is a large space (about 1200 m²), is protected from the wind, has ample amounts of sunlight and echoes somewhat. An architectural quality that is present in the courtyards of multiple Vierkanterhöfe are the three arches supporting the covered garage spaces along the South-Western wall of the courtyard. The windows of the storage spaces are also decorated with traditional motifs, that still allow air circulation but prevent small animals from entering and spoiling the produce.

In the immediate neighbourhood, there are two other Vierkanterhöfe (much better preserved) as well as a few dozen family homes with swimming pools in their back gardens. There is also a "Nachbarns Garten BIO Hof" local grocery store 900 meters away from the property. For those who prefer shopping in chain-stores, there is also a UNIMARKT 1.4 km away. At similar distances, there is an evangelical church, a Raiffaisen bank, a volunteer firefighter station, a hair and nail salon and even a pizza and kebab shop. There are two schools in the immediate vicinity of the property, a Montessori school (900 m) and a "regular" *Volksschule* (1.8 km; primary school). Even though Linz International Airport is only four kilometers away, the noise from the aircrafts is not disruptive due to small plane sizes and the low number of flights per day. As for public transportation, there are two regional bus lines servicing the area, with the closest bus stop being 1.1 kilometers (about 15 minutes' walk) away. With regional buses and trains, Linz Hauptbahnhof (main train station) can be reached within 42 minutes. By car this would take about 20-25 minutes, depending on the route and traffic.



Figure 08.08
Living quarters of *Gesinde*
in "Leebgut" Vierkanterhof;
room on first floor facing
South; last renovation
before the 1960s
(Ürmössy, 2023)



Figure 08.09
Herr S. Augl's workshop in
"Leebgut" Vierkanterhof;
room on ground floor
facing North-west
(Ürmössy, 2023)

Figure 08.10
Apple and pear cider
bottling room in small
building next to "Leebgut"
Vierkanterhof; room on
ground floor facing West
(Ürmössy, 2023)



Figure 08.11
Apple and pear cider
storage cellar in small
building next to "Leebgut"
Vierkanterhof; room in
cellar with shaft lights
(Ürmössy, 2023)



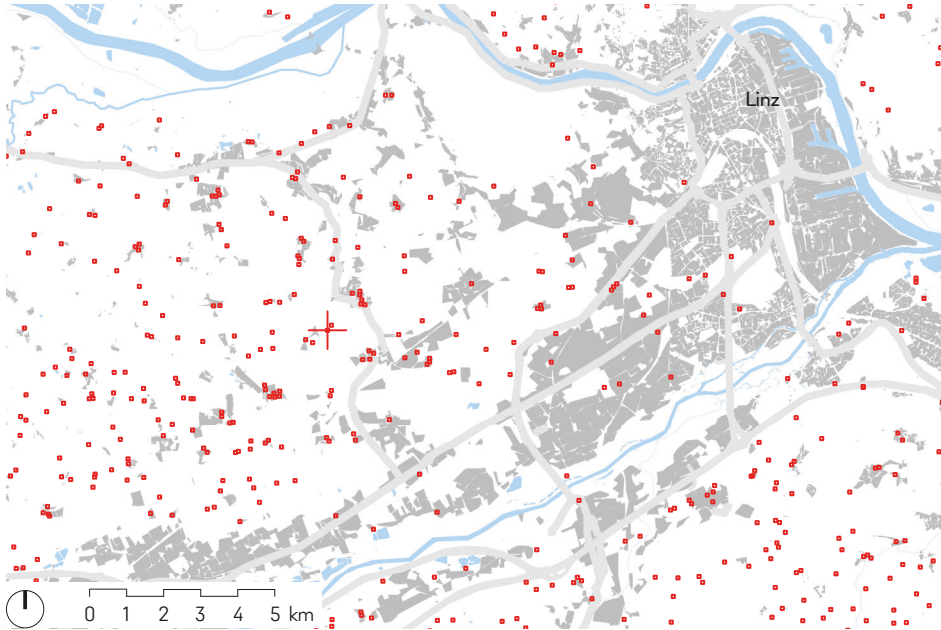


Figure 08.12
Location of "Leebgut"
Vierkanterhof; @1:200'000

 Leebgut

[DORIS, 2023] redrawn by
Ürmössy, B. (2023)

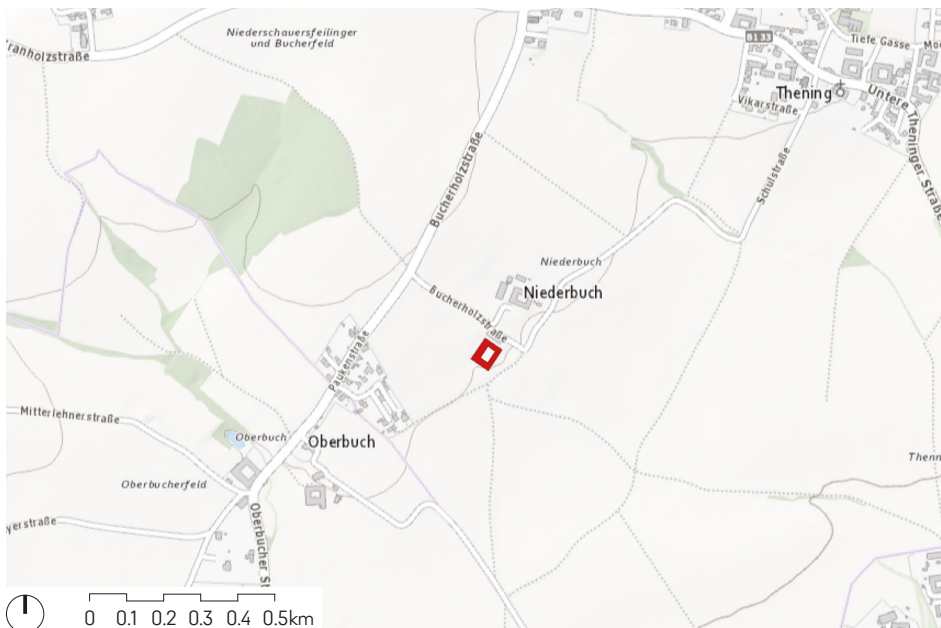


Figure 08.13
Location of "Leebgut"
Vierkanterhof; @1:20'000

 Leebgut

[DORIS, 2023] edited by
Ürmössy, B. (2023)

Figure 08.14
Types of soil beneath
“Leebgut” Vierkanterhof;
@1:20'000

 Braunerden
(brown earth)

(DORIS, 2023) edited by
Ürmössy, B. (2023)

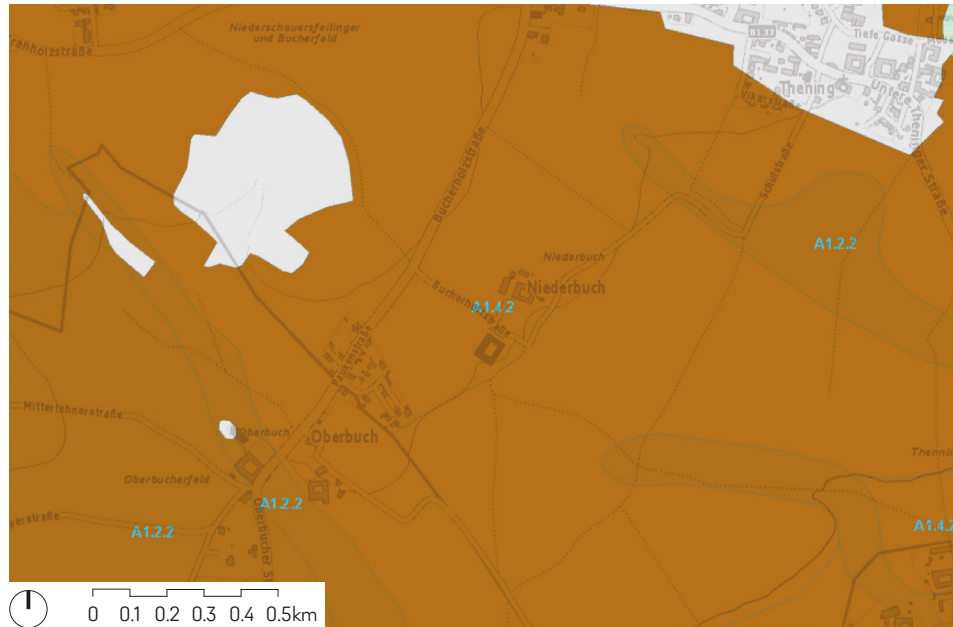


Figure 08.15
Nature and landscape
around “Leebgut”
Vierkanterhof; @1:20'000

 Inn- und
Hausruckviertler
Hügelland

(DORIS, 2023) edited by
Ürmössy, B. (2023)



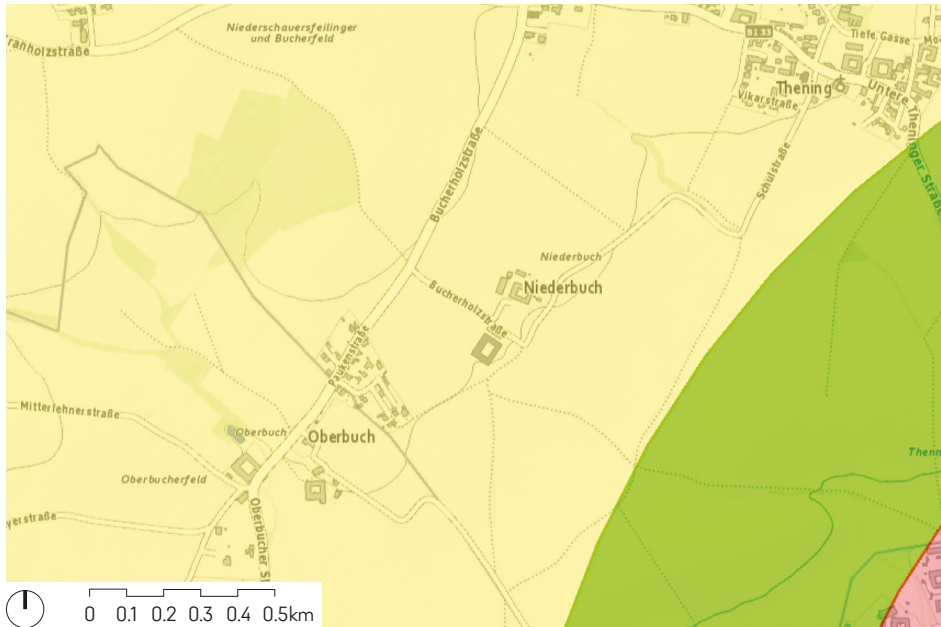


Figure 08.16
Air traffic around
"Leebgut" Vierkanterhof;
@1:20'000

 Yellow zone
(not red!)

(DORIS, 2023) edited by
Ürmössy, B. (2023)

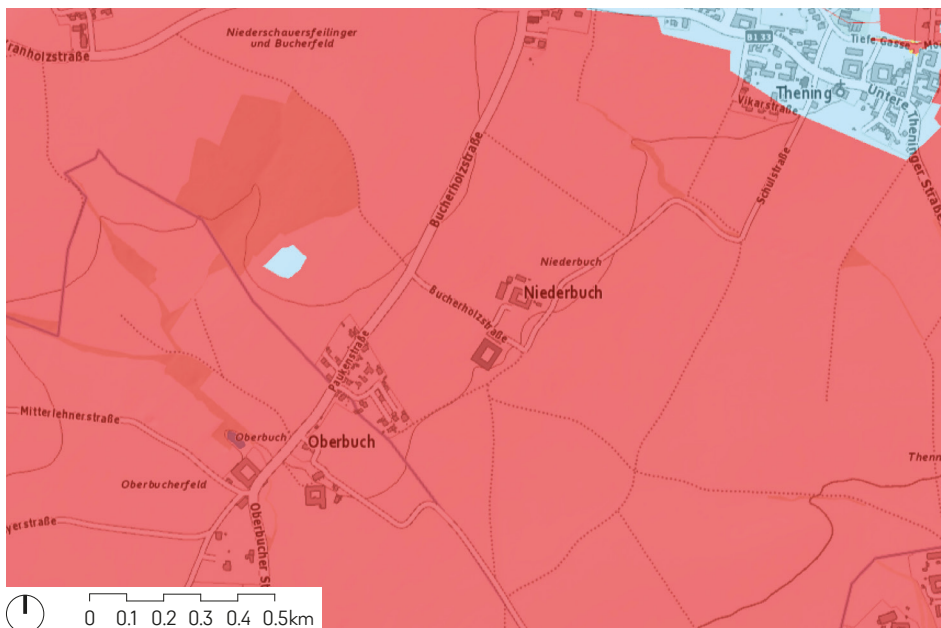


Figure 08.17
Photovoltaics placement
policy around "Leebgut"
Vierkanterhof; @1:20'000

 Access restricted

(DORIS, 2023) edited by
Ürmössy, B. (2023)

Figure 08.18
Freshwater, sewage
systems, and water
related structures around
“Leebgut” Vierkanterhof;
@1:20'000

-  Freshwater and
sewage access
point under
construction;
-  Geothermal
probes;
-  Wastewater
producing plant

(DORIS, 2023) edited by
Ürmössy, B. (2023)

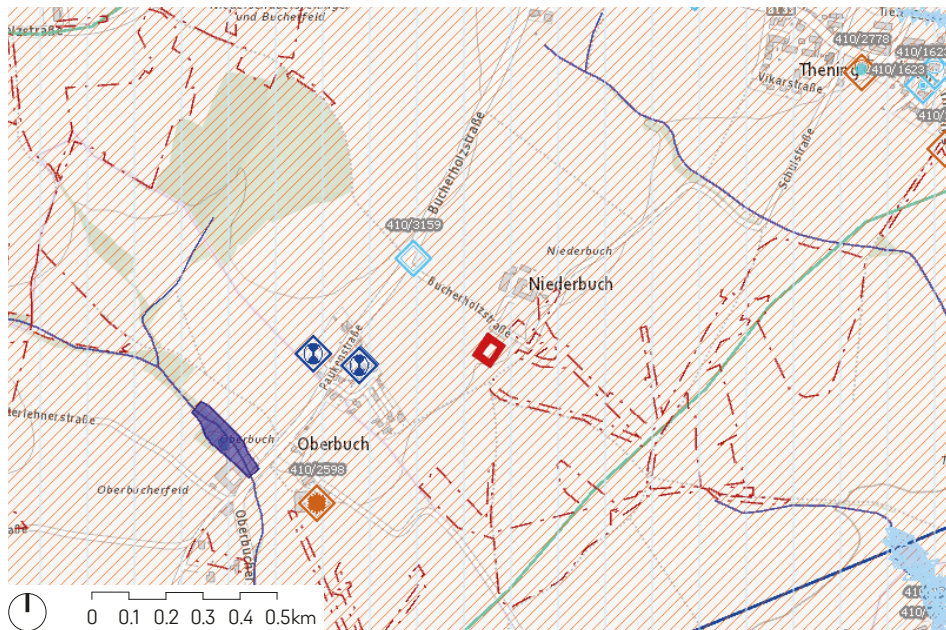


Figure 08.19
Geological data around
“Leebgut” Vierkanterhof;
@1:20'000

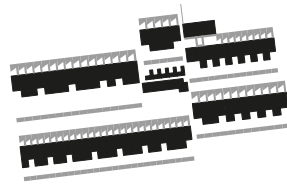
-  Loess loam (Löß)

(DORIS, 2023) edited by
Ürmössy, B. (2023)

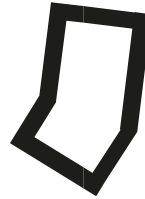




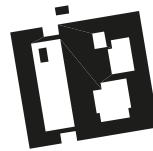
Figure 08.20
Site plan of "Leebgut"
Vierkanterhof in the
middle of the fields;
@1:5'000
[DORIS, 2023] redrawn by
Ürmössy, B. [2023]



1. Siedlung Halen



2. Lange Eng



3. The Gardens Nursing Home



4. "Leebgut" Vierkanterhof



5. Harvey Court



6. Baugenossenschaft Gstückt

Figure 08.21
Comparing size of
"Leebgut" Vierkanterhof
with precedents; projects
ranked by size; @1:5'000
(Ürmössy, 2023)

0 25 50 75 100 125 m

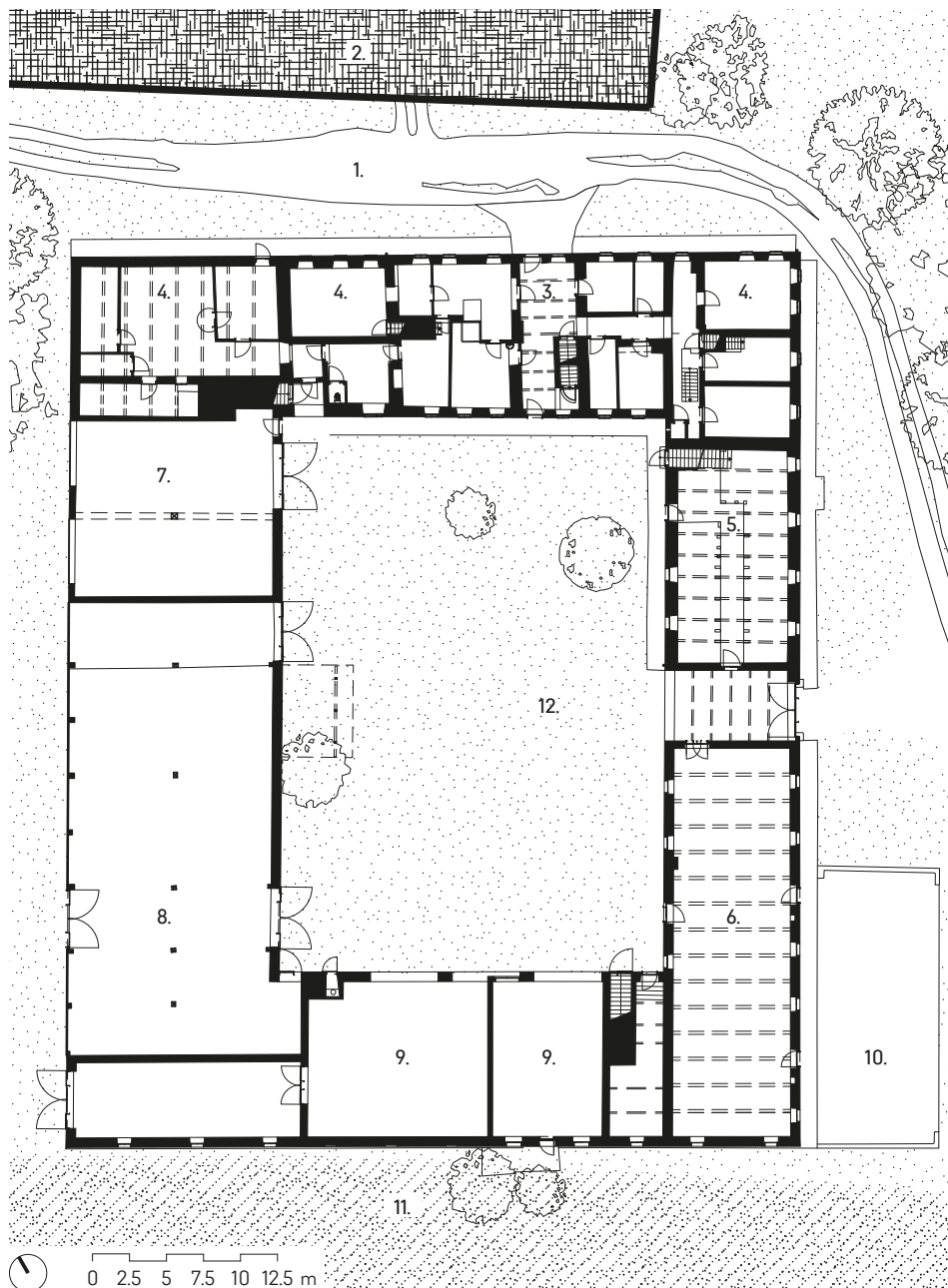


Figure 08.22
Ground floor plan of
"Leebgut" Vierkanterhof
in site; @1:500

1. Gravel road leading to the building
2. Small secondary building
3. *Mittelflur*
4. Living quarters
5. Pig stalls
6. Cattle stalls
7. Workshop
8. Wooden barn
9. Exterior storage or garage
10. Water and sewage
11. Adjacent field in use
12. Courtyard

[Aug], GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]

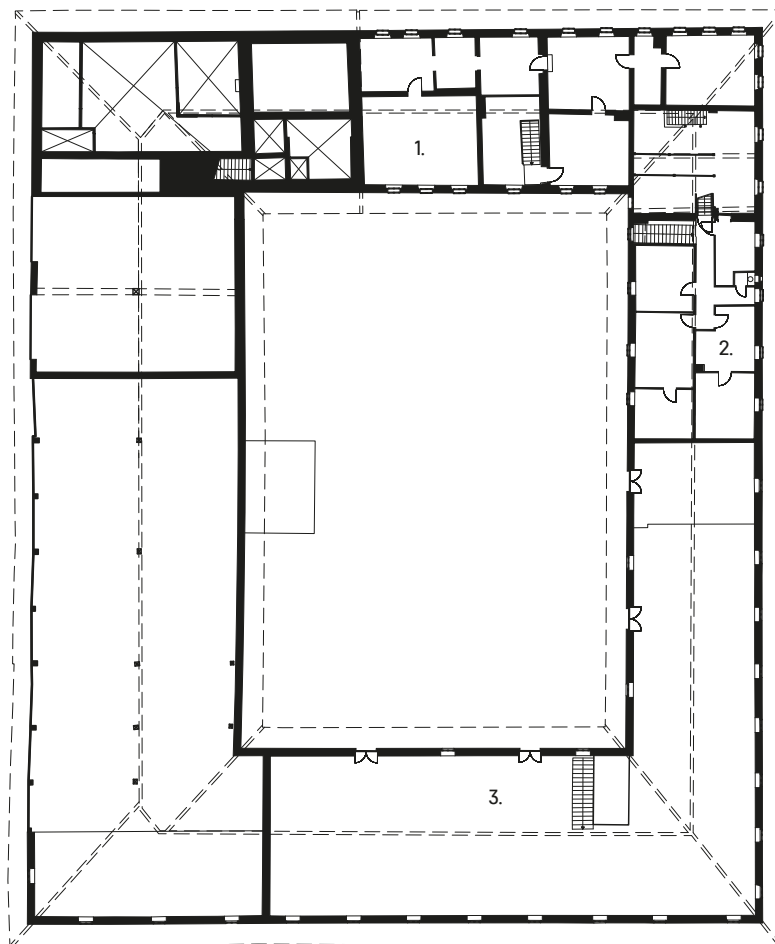
Figure 08.23
First floor plan of
“Leebgut” Vierkanterhof
in site; @1:500

- 1. Living quarters
- 2. Living quarters for
Gesinde
- 3. Hay storage

[Aug], GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]



0 2.5 5 7.5 10 12.5 m



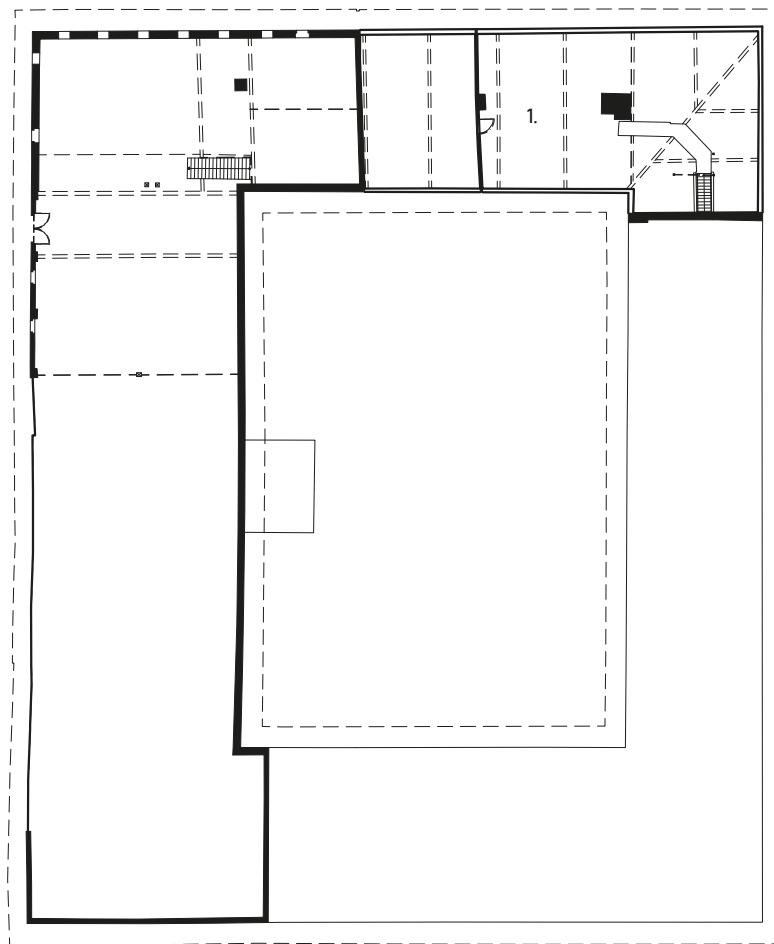


Figure 08.24
Ground floor plan of
"Leebgut" Vierkanterhof
in site; @1:500

1. Attic

[Aug], GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]



0 2.5 5 7.5 10 12.5 m

Figure 08.25
North-eastern facade of
"Leebgut" Vierkanterhof;
@1:300
[Augl, GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]

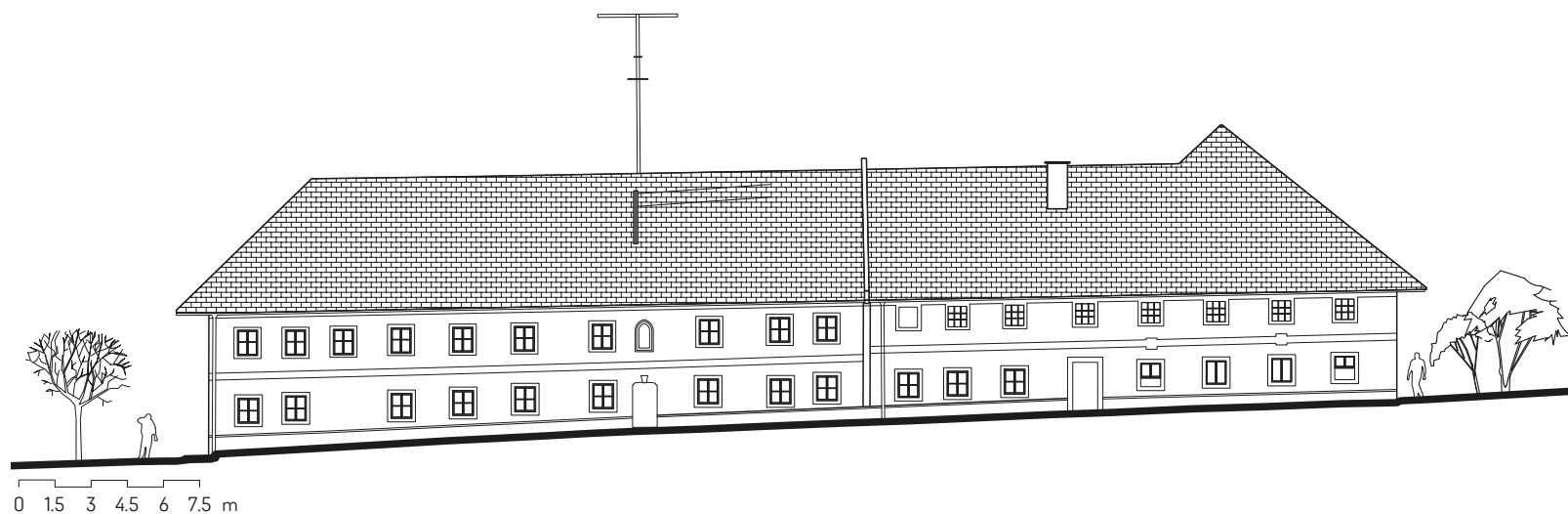


Figure 08.26
South-western facade of
"Leebgut" Vierkanterhof;
@1:300
[Augl, GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]

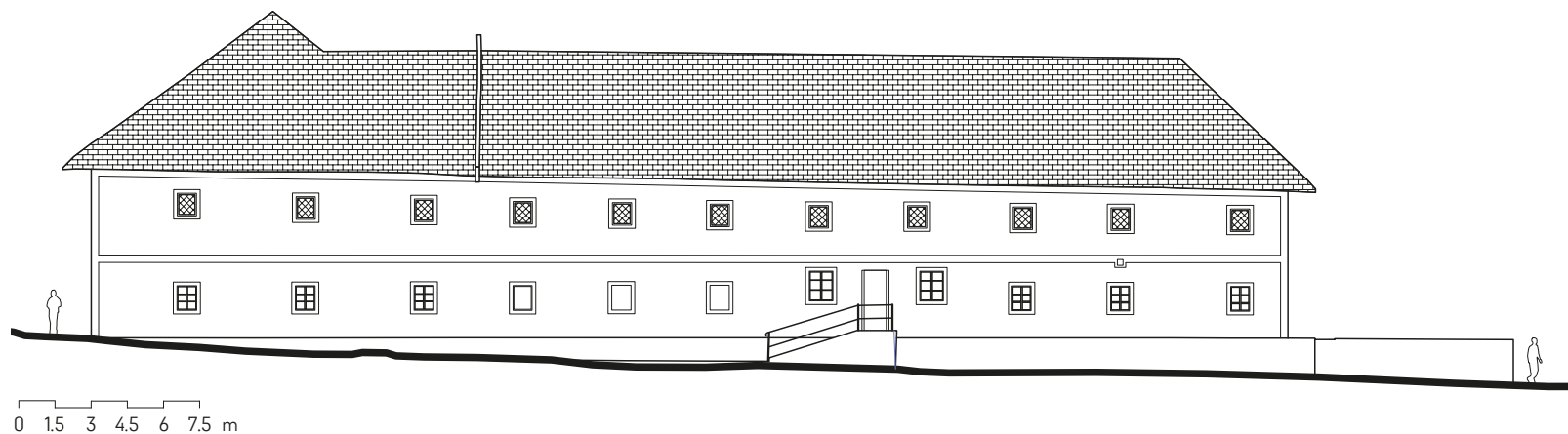


Figure 08.27
South-eastern facade of
"Leebgut" Vierkanterhof;
@1:300
[Augl, GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]

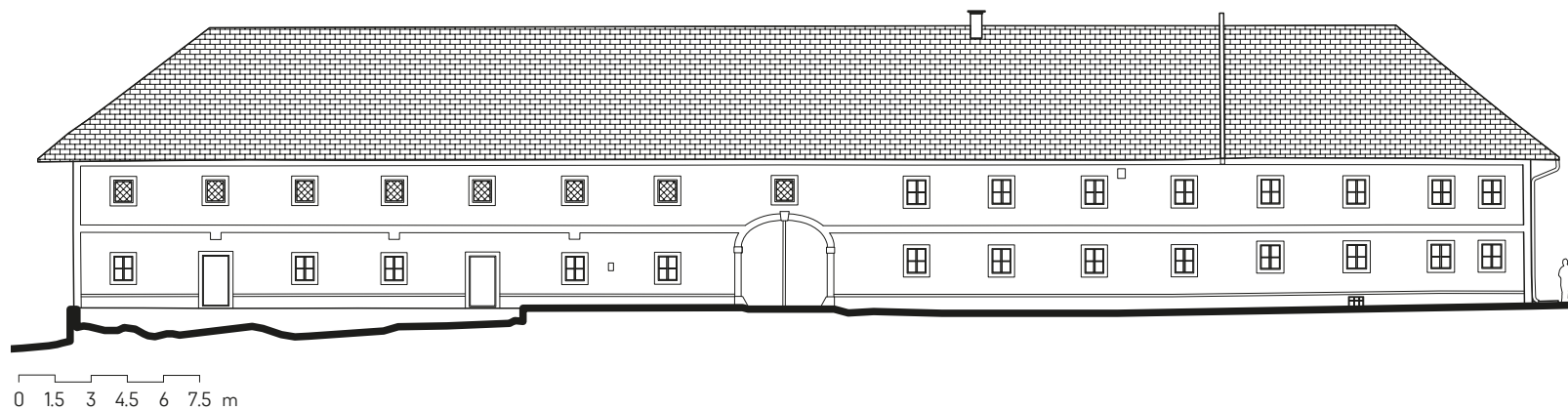


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[Augl, GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]

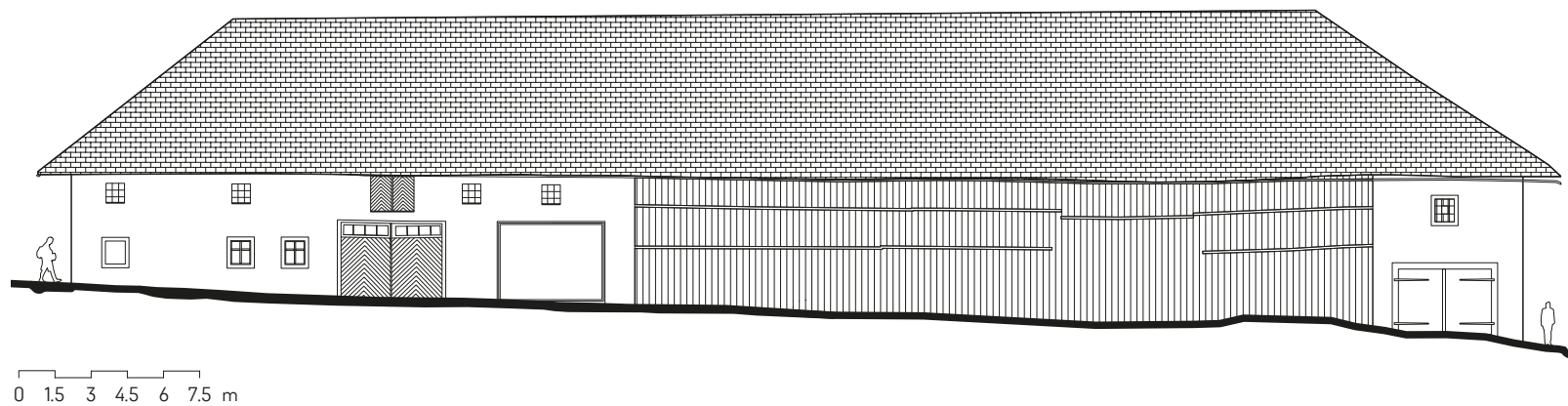


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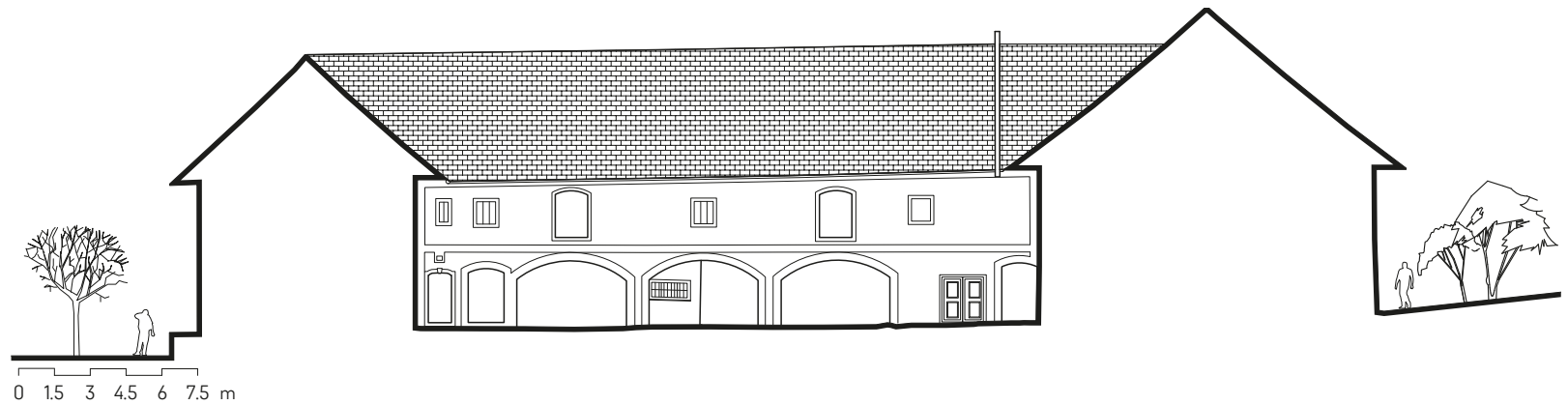


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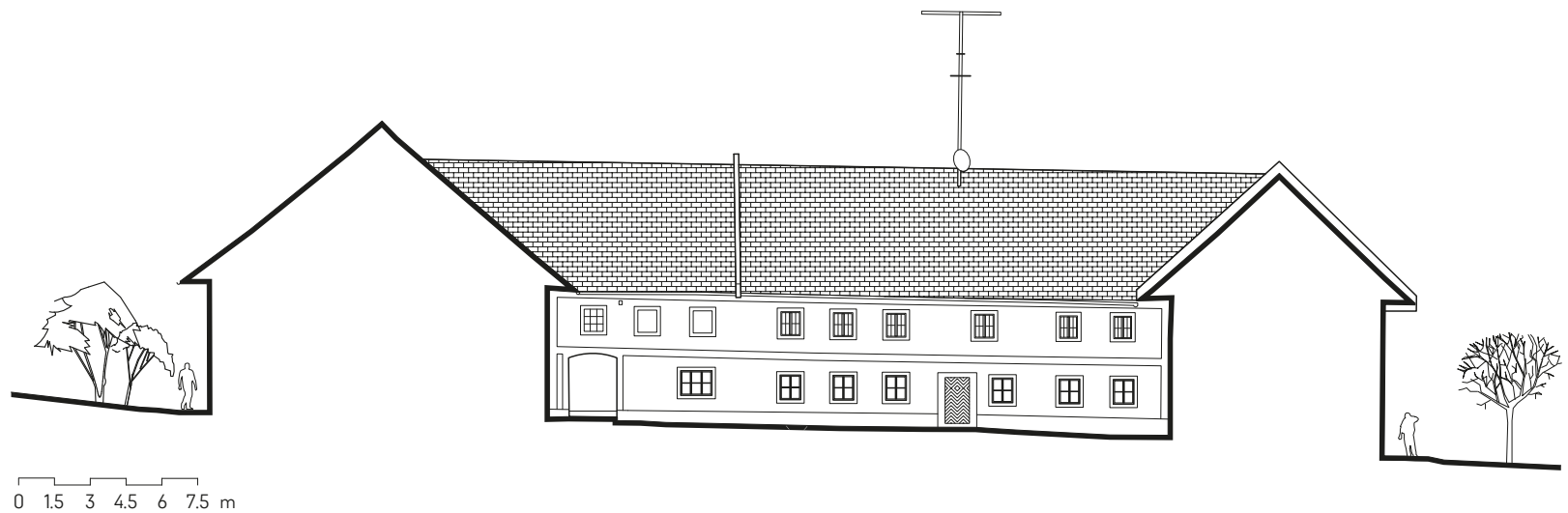


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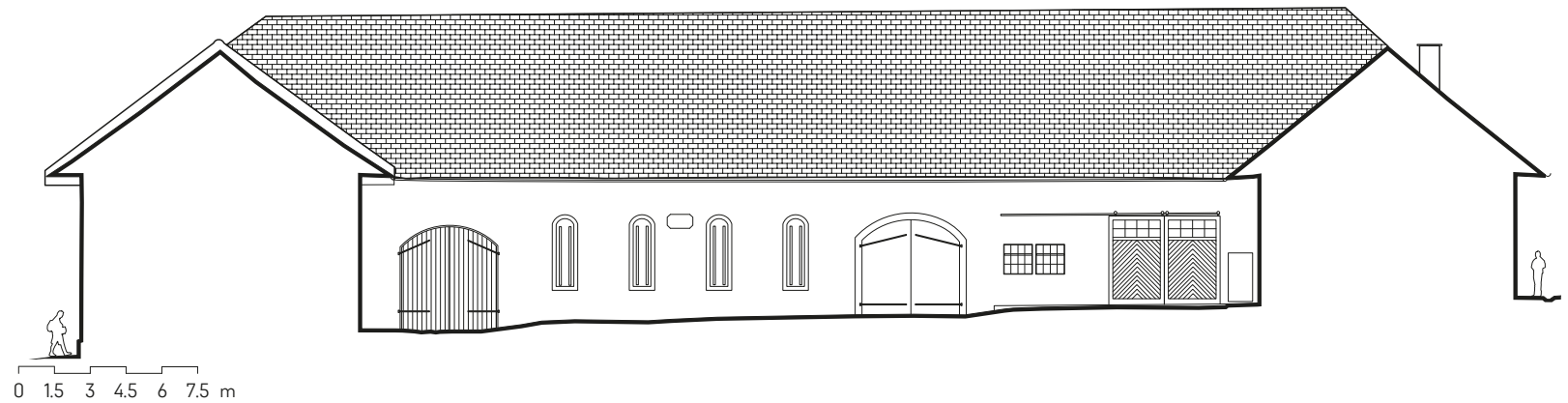


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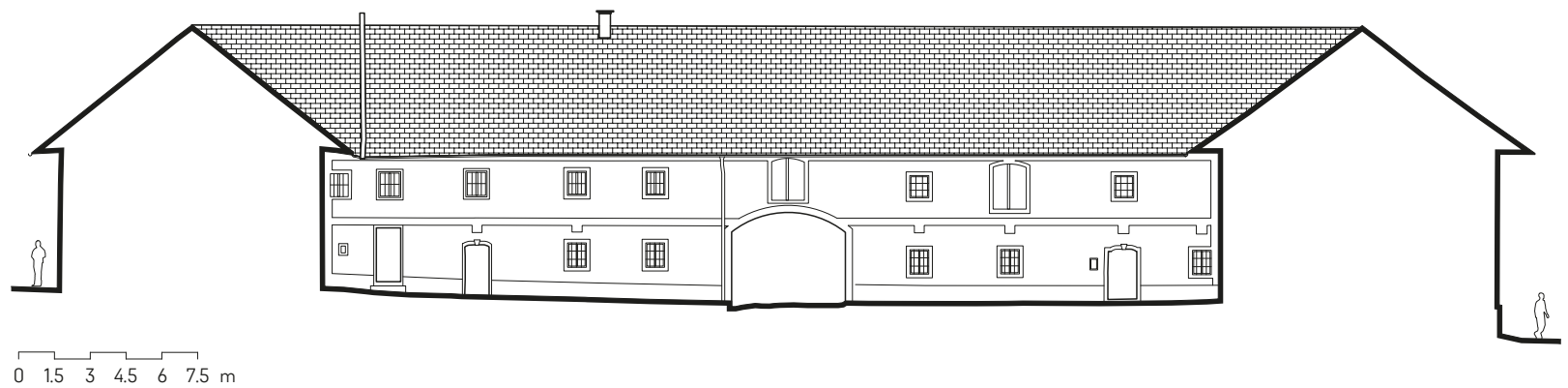


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- 2. Mittelflur
- 3. Attic

[Augl, GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]

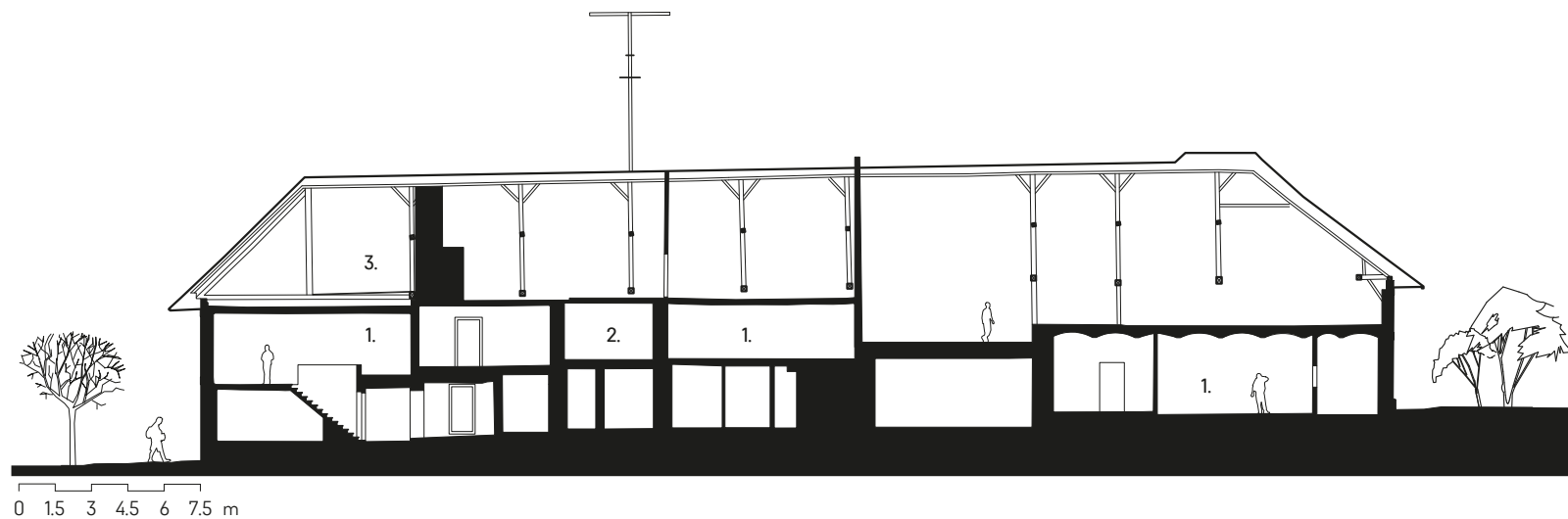


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- 1. Mittelflur
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[Augl, GeoLanz GmbH,
2023] redrawn by
Ürmössy, B. [2023]

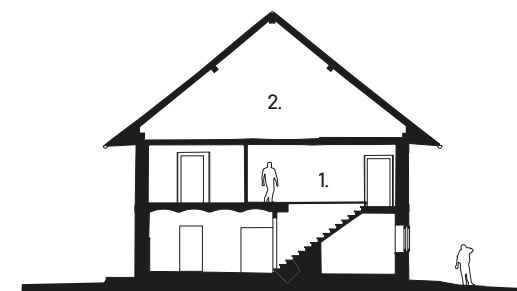
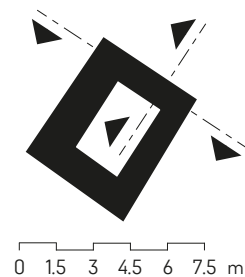




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(Ürmössy, 2023)



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ground floor facing North
and South
(Ürmössy, 2023)

08.4

Possibility of autonomy & self-sufficiency

With projects like this one, currently not connected to the usual water, sewage and energy networks, the question of off-grid living and to what extent this is possible are always asked. As off-grid projects are always marketed towards a niche of society, and as this project is possibly aimed at 3000 houses in a fairly large landscape, going in this direction would not make a lot of sense. Should the project ever be [partially] realized and should the future inhabitants (investors) require such living conditions, off-grid solutions could be searched for, found and constructed.

However, even with off-grid energy and water solutions, there would be one serious limitation to self-sufficiency. That would be the lack of agricultural fields attached to the property. Currently, 0.0281 hectares of land belong to this Vierkanterhof, which would not be enough to feed a varied and healthy diet for even one fully grown adult. This means that if being able to feed themselves is important to a community, much more agricultural land must first be acquired.



Figure 09.01
 Alone in the summer sun;
 Premise of the proposed
 renovation project: Herr S.
 Augl's new Vierkanterhof
 [Ürmössy, 2023]

CONCLUSION

In conclusion, this project is an interesting sociological and architectural challenge that involves architecture, demographic trends, housing market prices and legislative conditions. The Vierkanterhof is a building typology with at least 450 years of history in the region, and losing such architectural heritage would continue the current trends of globalisation at the cost of the landscape's local character.

In *Chapters 04* and *05* the history and the problems facing the Vierkanterhof were presented. These 3000 buildings at the moment are largely standing vacant in a region where housing is sought after and where prices are constantly increasing. Although renovation projects do exist, they are scattered and without an overarching architectural intent or programme. It is also vital to understand that while a *Gasthof* (farmstead hotel and restaurant) is a logical and popular transformation model currently, 3000 of them are not viable and are not needed in the area.

What would be needed in the region in the upcoming 20-30 years is more housing. *Chapter 06* was dedicated to examining demographic trends to support this conclusion. Then, *Chapter 07* enumerated precedent study projects in relation to the proposed communal living solution: from apartment complexes and nursing homes to college buildings. Finding a social way of living is a necessity for

healthy human psyches in a world where increasingly more time is spent looking at computer screens in an otherwise empty room. Finally, *Chapter 08* chose a specific Vierkanterhof for such an experiment and dedicated several pages to understanding the surrounding site conditions. With circa 2'400 m², this building will be the premise of a refurbishment project of about 20-25 separate apartments targeted at different individuals and of varying sizes. This *Projet de Master* will provide architectural solutions to current and future social issues that are present not only in Upper Austria but also in the wider Developed World.

In a globalized world where people are moving between countries and sometimes across continents, it is easy to lose touch with one's roots and lose the social support network associated with it. With people's children migrating far away for multiple reasons, it is not uncommon to remain isolated and lonely in old age. This *Enoncé Théorique* proposes a mode of living where young and old are reunited into a community once more – even if blood relations are not necessarily present. This initiative would also solve the depopulation, desertion, and destitution of the countryside, which in many European countries is becoming increasingly void of shops, businesses, opportunities and most importantly, people.

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The absolute number of single-person households has more than doubled in Austria between 1985 and 2022 [Data reproduced from Statistik Austria (2023) *Privathaushalte*. Available at: <https://www.statistik.at/statistiken/bevoelkerung-und-soziales/bevoelkerung/familien-haushalte-lebensformen/privathaushalte> [Accessed on: 31.12.2023]] drawn by Ürmössy, B. (2023)

06.06

The population of the city of Linz is currently rising [Data reproduced from Statistik Austria (2023) *Privathaushalte*. Available at: <https://www.statistik.at/statistiken/>

[bevoelkerung-und-soziales/bevoelkerung/familien-haushalte-lebensformen/privathaushalte](https://www.statistik.at/statistiken/bevoelkerung-und-soziales/bevoelkerung/familien-haushalte-lebensformen/privathaushalte) [Accessed on: 31.12.2023]] drawn by Ürmössy, B. (2023)

06.07

Two households out of every five are single-person households [Data reproduced from Statistik Austria (2023) *Privathaushalte*. Available at: <https://www.statistik.at/statistiken/bevoelkerung-und-soziales/bevoelkerung/familien-haushalte-lebensformen/privathaushalte> [Accessed on: 31.12.2023]] drawn by Ürmössy, B. (2023)

06.08

One person out of every six people lives alone in Austria [Data reproduced from Statistik Austria (2023) *Privathaushalte*. Available at: <https://www.statistik.at/statistiken/bevoelkerung-und-soziales/bevoelkerung/familien-haushalte-lebensformen/privathaushalte> [Accessed on: 31.12.2023]] drawn by Ürmössy, B. (2023)

06.09

About 40% of all people living in Austria do not own the property they are inhabiting [Data reproduced from Statistik Austria (2023) *Privathaushalte*. Available at: <https://www.statistik.at/statistiken/bevoelkerung-und-soziales/bevoelkerung/familien-haushalte-lebensformen/privathaushalte> [Accessed on: 31.12.2023]] drawn by Ürmössy, B. (2023)

07

07.01

Facade detail of The Gardens Nursing Home in Örebro, Sweden [Reproduced from AF Asia Archzine (2022) *Marge-Arkitekter - The Gardens Care Home*. Available at: <https://afasiaarchzine.com/wp-content/uploads/2022/07/Marge-Arkitekter.-The-Gardens-Care-Home.-OREBRO-Johan-Fowelin-afasia-1-1024x759.jpg> [Accessed on: 07.01.2024]]

07.02

Children playing in protected courtyard, Lange Eng, Denmark [Reproduced from Dorte Mandrup Architects Facebook Page (2023) *Lange Eng, Denmark*. Available at: https://scontent.fbud6-4.fna.fbcdn.net/v/t1.6435-9/40694570_1868339863258453_514926841752977408_n.jpg?_nc_cat=104&ccb=1-7&_nc_sid=7f8c78&_nc_ohc=or3q3TXURTsAX91da8M&_nc_ht=scontent.fbud6-4.fna&oh=00_AfB98SisE1nKeZCIEN83fz85Hzu0OCjAwGDZF9pBE79N2Q&oe=65BB693B [Accessed on: 07.01.2024]]

07.03

The one entrance of Harvey Court, Cambridge flows into the gardens located to the South [Reproduced from Gonville and Caius College (2013) *Harvey Court, Cambridge*. Available at: https://www.cai.cam.ac.uk/sites/default/files/styles/medium/public/gallery-images/img_20130927_134505.jpg?itok=GooRJvhq (Accessed on: 07.01.2024)]

07.04

Siedlung Halen schematic site plan with the River Aare, @1:5'000 [Reproduced from Atelier 5 Architekten (2023) *Siedlung Halen site plan*. Available at: https://atelier5.ch/fileadmin/_processed_/4/3/csm_Halen_Herrenschwanden_SIT_f17a64f8c6.png (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.05

Main square, "corner shop" and houses in Siedlung Halen [Reproduced from Atelier 5 Architekten (2023) *Siedlung Halen image of main square*. Available at: https://atelier5.ch/fileadmin/user_upload/atelier5/arbeiten/1961_Halen_Herrenschwanden/Halensiedlung_Halen_2.jpg (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.06

Short section through housing estate; @1:300 [Reproduced from Atelier 5 Architekten (2023) *Siedlung Halen section through the project*. Available at: https://atelier5.ch/fileadmin/user_upload/atelier5/arbeiten/1961_Halen_Herrenschwanden/Halen_Herrenschwanden_SNT.png (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.07

Ground floor plan of each housing unit; @1:1'250; 1. Parking lot, 2. Bus stop, 3. "Courtyard", 4. Shop and laundry, 5. Swimming pool, 6. Wide house, 7. Thin house, 8. Studio, 9. Workshop [Reproduced from Atelier 5 Architekten (2023) *Siedlung Halen site plan*. Available at: https://atelier5.ch/fileadmin/_processed_/4/3/csm_Halen_Herrenschwanden_SIT_f17a64f8c6.png (Accessed on: 07.01.2024)] and reproduced from Atelier 5 Architekten (2023) *Siedlung Halen typical apartments*. Available at: https://atelier5.ch/fileadmin/_processed_/b/6/csm_Halen_Herrenschwanden_TYPEN_12c79e6720.png (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

Figure 07.08

Example floor plan of wide house unit; @1:200; 1. Passage, 2. Kitchen, 3. Dining and living room, 4. Laundry and storage, 5. Bathroom, 6. Master bedroom, 7. Bedroom, 8.

Garden, 9. Terrace, 10. Waste collection [Reproduced from Atelier 5 Architekten (2023) *Siedlung Halen typical apartments*. Available at: https://atelier5.ch/fileadmin/_processed_/b/6/csm_Halen_Herrenschwanden_TYPEN_12c79e6720.png [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. (2023)

07.09

Lange Eng schematic site plan, @1:5'000 [Reproduced from Schmid, S. (2023), *'Bofaellesskabet Lange Eng' in Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_27_030-bofaellesskabet-lange-eng/ [Accessed on: 31.12.2023]] redrawn by Ürmössy, B. (2023)

07.10

External black wooden facade of Lange Eng, a fortress with many stairs [Reproduced from Schmid, S. (2023), *'Bofaellesskabet Lange Eng' in Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_27_030-bofaellesskabet-lange-eng/ [Accessed on: 31.12.2023]] redrawn by Ürmössy, B. (2023)

07.11

Section through long

side of courtyard and communal space [gray]; approx. @1:300 [Reproduced from Schmid, S. (2023), *'Bofaellesskabet Lange Eng' in Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_27_030-bofaellesskabet-lange-eng/ [Accessed on: 31.12.2023]] redrawn by Ürmössy, B. (2023)

07.12

Section through short side of courtyard showing single-storey and two-storey apartments; approx. @1:300 [Reproduced from Architizer (2023) *Lange Eng Collective Living*. Available at: <https://architizer.com/idea/1181503/> [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. (2023)

07.13

Ground floor plan of Lange Eng; @1:1'000; A courtyard without doors; Communal space, Courtyard [Reproduced from Schmid, S. (2023), *'Bofaellesskabet Lange Eng' in Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_27_030-bofaellesskabet-lange-eng/ [Accessed on: 31.12.2023]] redrawn by Ürmössy, B. (2023)

07.14

5 types of apartments at Lange Eng (top to bottom: small rectangle, L-shaped, small 2-storey, large 2-storey, corner) [Reproduced from Arqa (14.11.2019) *Lange Eng*. Available at: <https://arqa.com/en/architecture/lange-eng.html> (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.15

Plan of typical large 2-storey apartment; approx. @1:200 [Reproduced from Lange Eng (2023), *Boligtyper og plantegninger*. Available at: <https://www.langeeng.dk/boligtype-b/> (Accessed on: 31.12.2023)] redrawn by Ürmössy, B. (2023)

07.16

Trädgårdarna nursing home schematic site plan, @1:5'000 [Reproduced from Wærn, R. (2023) '*Trädgårdarna Nursing Home*' in *Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_23_167/ (Accessed on: 31.12.2023)] redrawn by Ürmössy, B. (2023)

07.17

Colourful cement tiles on the facade, an object in the landscape [Reproduced from Wærn, R. (2023) '*Trädgårdarna Nursing Home*' in *Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_23_167/ (Accessed on: 31.12.2023)] redrawn by Ürmössy, B. (2023)

07.18

Facade from fields showing large windows from residents' rooms; approx. @1:300 [Reproduced from Marge Arkitekter (2019) *Trädgårdarna vårdboende*. Available at: https://systemscontentful.imgix.net//images.ctfassets.net/zlz5er7srj5z/FJ95QJYafbzE4Mylaix6n/d45c671c8fb596e743323a93b5f6dc8e/Tradgardarna_fasad_sektion.jpg?&fit=crop&w=1000&sharp=0&fm=jpg&q=80 (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.19

Section through two courtyards, rooms and the conservatory where residents meet visitors; approx. @1:300 [Reproduced from Wærn, R. (2023) '*Trädgårdarna Nursing Home*' in *Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_23_167/ (Accessed on: 31.12.2023)] redrawn by Ürmössy, B. (2023)

07.20

Ground floor plan of Trädgårdarna nursing home; @1:1'000; 1. Entrance, 2. Atrium garden, 3. Courtyard garden, 4. Lobby, 5. Seminar Room, 6. Restaurant, 7. Kitchen, 8.

Apartment (singles), 9. Apartment (doubles), 10. Laundry room, 11. Live-in kitchen, 12. TV room, 13. Management, 14. Staff room, 15. Hair salon / Foot clinic, 16. Conservatory, 17. Dressing room, 18. Terrace [Reproduced from Wærn, R. (2023) *Trädgårdarna Nursing Home* in *Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_23_167/ [Accessed on: 31.12.2023]] redrawn by Ürmössy, B. (2023)

07.21

Ground floor plan of Trädgårdarna nursing home; @1:1'000; Double apartments in gray [Reproduced from Wærn, R. (2023) *Trädgårdarna Nursing Home* in *Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_23_167/ [Accessed on: 31.12.2023]] redrawn by Ürmössy, B. (2023)

07.22

Floor plans of typical single and double apartments; @1:200 [Reproduced from Wærn, R. (2023) *Trädgårdarna Nursing Home* in *Birkhäuser Building Types Online*. Available at: https://bdt.degruyter.com/entry/bdt_23_167/ [Accessed on: 31.12.2023]] redrawn by Ürmössy, B. (2023)

07.23

Harvey court with faculties (West), garden (South), the River Cam (East) and “the Backs” (North-East), @1:5'000 [Reproduced from Google Maps (2023) *Homepage*. Available at: www.maps.google.com [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. (2023)

07.24

South facade from the Caius College Cambridge gardens [Reproduced from Payload Cargo Collective (2023) *Caius College Cambridge*. Available at: https://payload.cargocollective.com/1/7/251125/5368177/IMG_0540_1_o.jpg [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. (2023)

07.25

A fortress facing a noisily, busy street; North facade facing the street; approx. @1:300 [Reproduced from Blundel Jones, P. (2018) *Court Circular: Lewitt Bernstein updates a modern classic*. p.40, Available at: https://lkaaarchitecturalreferences.files.wordpress.com/2018/07/martin_cambridge-harvey-court.pdf [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. (2023)

07.26

Student rooms facing south; section through rooms and courtyard; approx. @1:300 [Reproduced from Blundel Jones, P. (2018) *Court Circular: Lewitt Bernstein updates a modern classic*. p.40, Available at: https://lkaaarchitecturalreferences.files.wordpress.com/2018/07/martin_cambridge-harvey-court.pdf (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.27

Refurbished upper ground floor plan; @1:1'000; 1. Harvey Court Gardens, 2. Sidgwick Site (faculty buildings), 3. Parking, 4. Main entrance, 5. Corridor, 6. En-suite student rooms, 7. Kitchen, 8. Roof light for lower ground floor, 9. Terrace [Reproduced from Blundel Jones, P. (2018) *Court Circular: Lewitt Bernstein updates a modern classic*. p.42. Available at: https://lkaaarchitecturalreferences.files.wordpress.com/2018/07/martin_cambridge-harvey-court.pdf (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.28

Refurbished first floor plan; @1:1'000 [Reproduced from Blundel Jones, P. (2018) *Court Circular: Lewitt Bernstein updates a modern classic*. p.42. Available at: https://lkaaarchitecturalreferences.files.wordpress.com/2018/07/martin_cambridge-harvey-court.pdf (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

07.29

Typical floorplan of group of rooms; @1:200; 1. Corridor and staircase, 2. En-suite bedroom, 3. En-suite room with study, 4. Kitchen, 5. Terrace, 6. Laundry, 7. Utility room [Reproduced from Blundel Jones, P. (2018) *Court Circular: Lewitt Bernstein updates a modern classic*. p.42. Available at: https://lkaaarchitecturalreferences.files.wordpress.com/2018/07/martin_cambridge-harvey-court.pdf (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

7.30

Site plan of Baugenossenschaft Gstöck Bülach, courtyard formed by two new and one existing buildings; @1:5'000 [Reproduced from Google Maps (2023) *Homepage*. Available at: www.maps.google.com (Accessed on: 07.01.2024)] redrawn by Ürmössy, B. (2023)

7.31

View of the bistro, the block with Alterswohnungen and the block with apartments [Reproduced from Google Maps Street View (2023) *Homepage*. Available at: www.maps.google.com (Accessed on: 07.04.2024)]

07.32

Sample floor plan of family apartments (rectangular block) and Alterswohnungen (L-shaped block) separated for privacy and noise issues; @1:500 (Reproduced from Baugenossenschaft Gstüct Bülach [2016] *Pläne Soligaenter*. Available at: https://gstueckt.ch/wp-content/uploads/2016/11/Plaene_Soligaenter.pdf (Accessed on: 07.01.2024)) redrawn by Ürmössy, B. [2023]

07.32

Alterswohnungen: different apartment sizes for different number of inhabitants; @1:200; 1. Kitchen and dining area, 2. Living room, 3. Bedroom, sleeping area, 4. Bathroom, 5. Laundry room, 6. Terrace (Reproduced from Baugenossenschaft Gstüct Bülach [2016] *Pläne Soligaenter*. Available at: https://gstueckt.ch/wp-content/uploads/2016/11/Plaene_Soligaenter.pdf (Accessed on: 07.01.2024)) redrawn by Ürmössy, B. [2023]

08

08.01

Fortress in the vast fields; Premise of the proposed renovation project: Herr S. Augl's new Vierkanterhof (Reproduced from Ürmössy, B. [2023] *Private Photo Archive: Vierkanterhöfe*)

08.02

South-eastern external facade of "Leebgut" Vierkanterhof; water and sewage system organised below concrete deck in the front (Reproduced from Ürmössy, B. [2023] *Private Photo Archive: Vierkanterhöfe*)

08.03

North-western external facade of "Leebgut" Vierkanterhof; (left to right) workshop doors, Herr S. Augl's new floor to ceiling window, and the light wooden structured, collapsing barn; underside of roof in bad condition (Reproduced from Ürmössy, B. [2023] *Private Photo Archive: Vierkanterhöfe*)

08.04

Internal courtyard of "Leebgut" Vierkanterhof; photo taken from the South-eastern corner looking West (Reproduced from Ürmössy, B. [2023] *Private Photo Archive: Vierkanterhöfe*)

08.05

Internal courtyard of “Leebgut” Vierkanterhof; photo taken from the North-western corner looking East [Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*]

08.06

Wooden barn with holes on facade; old agricultural machinery storage [Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*]

08.07

Hay storage below collapsing roof; upper first floor of “Leebgut” Vierkanterhof; South-western corner of building [Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*]

08.08

Living quarters of Gesinde in “Leebgut” Vierkanterhof; room on first floor facing South; last renovation before the 1960s [Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*]

08.09

Herr S. Augl’s workshop in “Leebgut” Vierkanterhof; room on ground floor facing North-west [Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*]

08.10

Apple and pear cider bottling room in small building next to “Leebgut” Vierkanterhof; room on ground floor facing West [Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*]

08.11

Apple and pear cider storage cellar in small building next to “Leebgut” Vierkanterhof; room in cellar with shaft lights [Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*]

08.12

Location of “Leebgut” Vierkanterhof; @1:200’000; Leebgut [Reproduced from DORIS (2023) *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. (2023)]

Figure 08.13

Location of “Leebgut” Vierkanterhof; @1:20’000; Leebgut [Reproduced from DORIS

[2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. [2023]

08.14

Types of soil beneath “Leebgut” Vierkanterhof; @1:20'000; Braunerden (brown earth) [Reproduced from DORIS [2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] edited by Ürmössy, B. [2023]

08.15

Nature and landscape around “Leebgut” Vierkanterhof; @1:20'000; Inn- und Hausruckviertler Hügelland [Reproduced from DORIS [2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] edited by Ürmössy, B. [2023]

08.16

Air traffic around “Leebgut” Vierkanterhof; @1:20'000; Yellow zone (not red!) [Reproduced from DORIS [2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] edited by Ürmössy, B. [2023]

08.17

Photovoltaics placement policy around “Leebgut” Vierkanterhof; @1:20'000; Access restricted [Reproduced from DORIS [2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] edited by Ürmössy, B. [2023]

08.18

Freshwater, sewage systems, and water related structures around “Leebgut” Vierkanterhof; @1:20'000; Freshwater and sewage access point under construction; Geothermal probes; Wastewater producing plant [Reproduced from DORIS [2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] edited by Ürmössy, B. [2023]

08.19

Geological data around “Leebgut” Vierkanterhof; @1:20'000; Loess loam (Löß) [Reproduced from DORIS [2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] edited by Ürmössy, B. [2023]

08.20

Site plan of “Leebgut” Vierkanterhof in the middle of the fields; @1:5'000 [Reproduced from DORIS [2023] *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. [2023]

08.21

Comparing size of "Leebgut" Vierkanterhof with precedents; projects ranked by size; @1:5'000 [Reproduced from DORIS (2023) *Homepage*. Available at: www.doris.at [Accessed on: 07.01.2024]] redrawn by Ürmössy, B. (2023)

08.22

Ground floor plan of "Leebgut" Vierkanterhof in site; @1:500; 1. Gravel road leading to the building; 2. Small secondary building; 3. Mittelflur; 4. Living quarters; 5. Pig stalls; 6. Cattle stalls; 7. Workshop; 8. Wooden barn; 9. Exterior storage or garage; 10. Water and sewage; 11. Adjacent field in use; 12. Courtyard [Reproduced from Herr S. Augl and GeoLanz GmbH. (2023) *Drawings of Leebgut*] redrawn by Ürmössy, B. (2023)

08.23

First floor plan of "Leebgut" Vierkanterhof; in site; @1:500; 1. Living quarters; 2. Living quarters for Gesinde; 3. Hay storage [Reproduced from Herr S. Augl and GeoLanz GmbH. (2023) *Drawings of Leebgut*] redrawn by Ürmössy, B. (2023)

08.24

Ground floor plan of "Leebgut" Vierkanterhof in site; @1:500; 1. Attic [Reproduced from Herr S. Augl and GeoLanz GmbH. (2023) *Drawings of Leebgut*] redrawn by Ürmössy, B. (2023)

08.25

North-eastern facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced from Herr S. Augl and GeoLanz GmbH. (2023) *Drawings of Leebgut*] redrawn by Ürmössy, B. (2023)

08.26

South-western facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced from Herr S. Augl and GeoLanz GmbH. (2023) *Drawings of Leebgut*] redrawn by Ürmössy, B. (2023)

08.27

South-eastern facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced from Herr S. Augl and GeoLanz GmbH. (2023) *Drawings of Leebgut*] redrawn by Ürmössy, B. (2023)

08.28

North-western facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced from Herr S. Augl and GeoLanz GmbH. (2023) *Drawings of Leebgut*] redrawn by Ürmössy, B. (2023)

08.29

South-western courtyard facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced

from Herr S. Augl and GeoLanz GmbH. [2023] *Drawings of Leebgut*) redrawn by Ürmössy, B. [2023]

08.30

North-eastern courtyard facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced from Herr S. Augl and GeoLanz GmbH. [2023] *Drawings of Leebgut*) redrawn by Ürmössy, B. [2023]

08.31

North-western courtyard facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced from Herr S. Augl and GeoLanz GmbH. [2023] *Drawings of Leebgut*) redrawn by Ürmössy, B. [2023]

08.32

South-eastern courtyard facade of "Leebgut" Vierkanterhof; @1:300 [Reproduced from Herr S. Augl and GeoLanz GmbH. [2023] *Drawings of Leebgut*) redrawn by Ürmössy, B. [2023]

08.33

Long section through "Leebgut" Vierkanterhof; @1:300; 1. Living quarters; 2. Mittelflur; 3. Attic [Reproduced from Herr S. Augl and GeoLanz GmbH. [2023] *Drawings of Leebgut*) redrawn by Ürmössy, B. [2023]

08.34

Short section through "Leebgut" Vierkanterhof; @1:300; 1. Mittelflur; 2. Attic [Reproduced from Herr S. Augl and GeoLanz GmbH. [2023] *Drawings of Leebgut*) redrawn by Ürmössy, B. [2023]

08.35

Cattle stall in "Leebgut" Vierkanterhof; room on ground floor facing South [Reproduced from Ürmössy, B. [2023] *Private Photo Archive: Vierkanterhöfe*]

08.36

Pig stall in "Leebgut" Vierkanterhof; room on ground floor facing North and South [Reproduced from Ürmössy, B. [2023] *Private Photo Archive: Vierkanterhöfe*]

09.01

Alone in the summer sun; Premise of the proposed renovation project: Herr S. Augl's new Vierkanterhof (Reproduced from Ürmössy, B. (2023) *Private Photo Archive: Vierkanterhöfe*)

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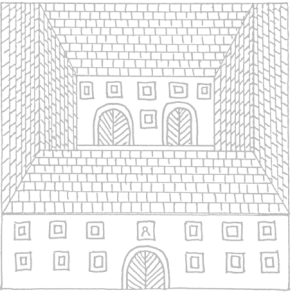
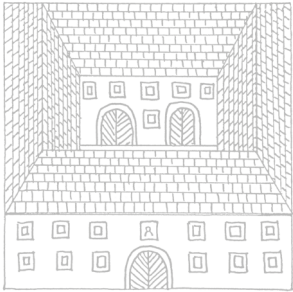
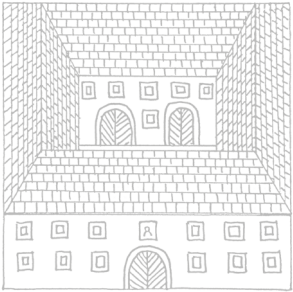
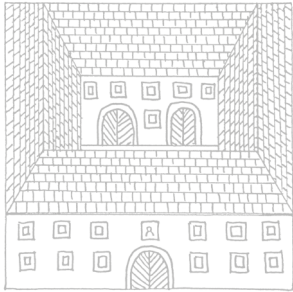
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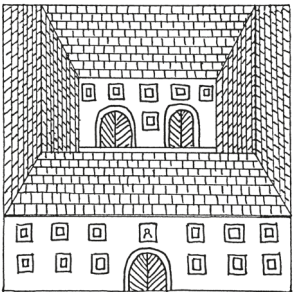
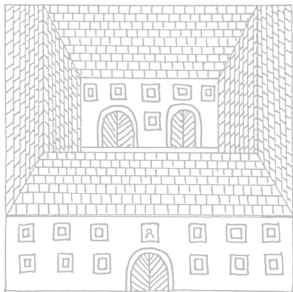
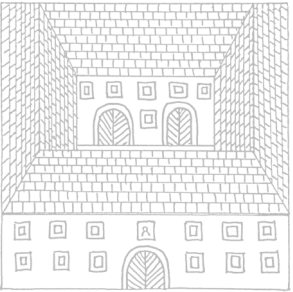
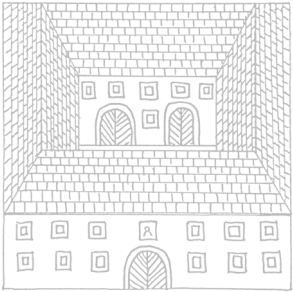
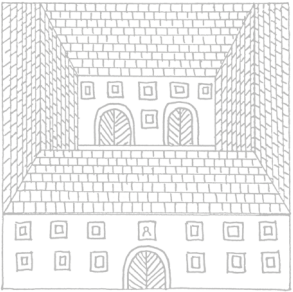
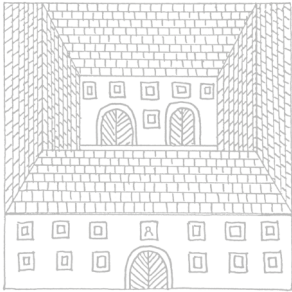
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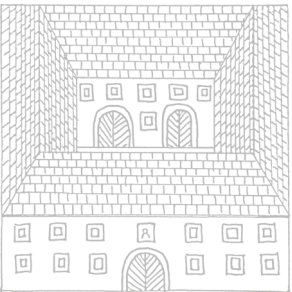


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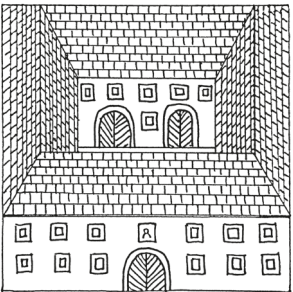
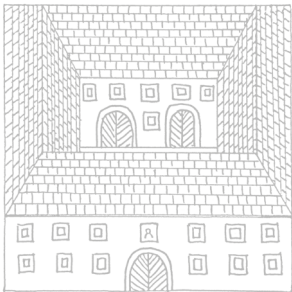


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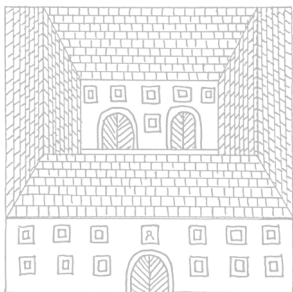
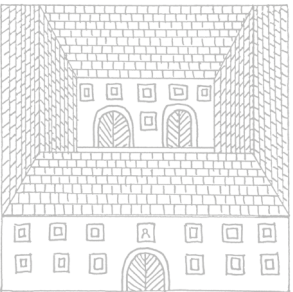
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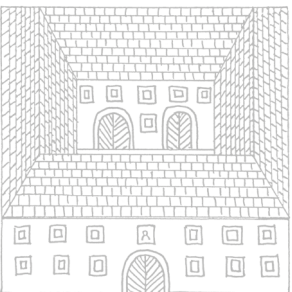
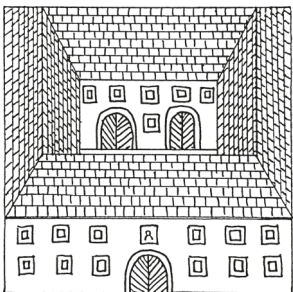


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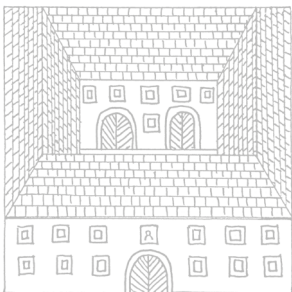


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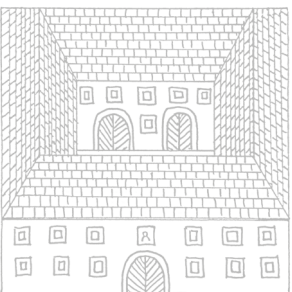
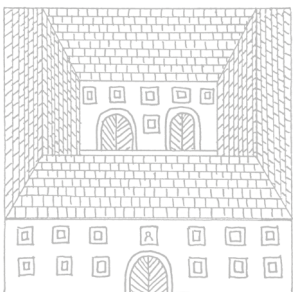
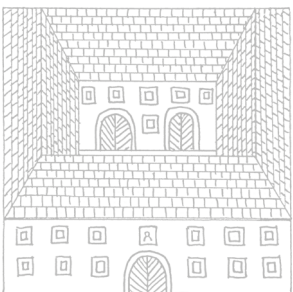
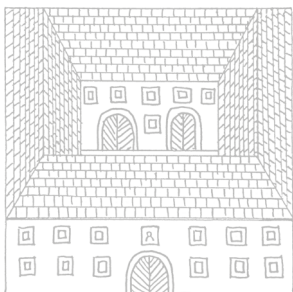
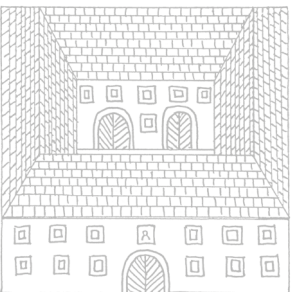
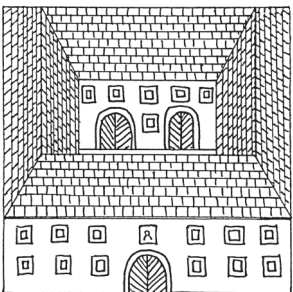


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