

MITTELLAND MIDDLE PLACE

Egerkingen's Transition
to an Alternative
Urban-Rural Paradigm

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A Topic
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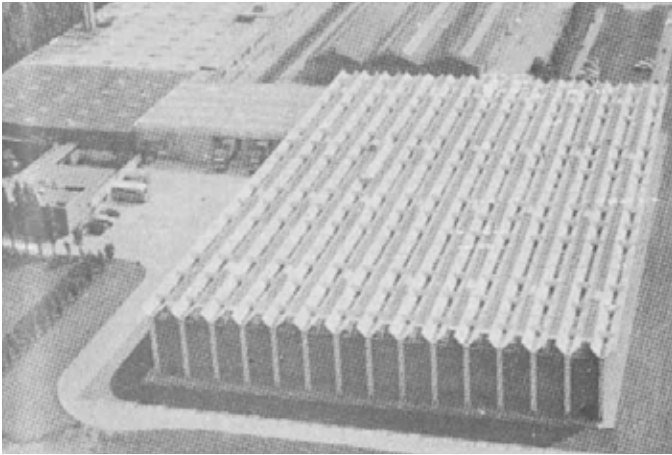


1.

Introduction



2.



3.



4.

The Swiss Plateau or Central Plateau, or *Mittelland*, constitutes one of the three major landscapes in Switzerland alongside the Jura Mountains and the Swiss Alps. It covers about 30% of the Swiss land surface, and comprises flat and hilly areas 400 to 700 meters above sea level. At 858 people per square kilometer, the region is, by far, the most densely populated area in Switzerland and the most important with respect to economy and transportation. Four of Switzerland's six largest cities are situated on the plateau.

Thanks to favorable climate conditions and fertile grounds the western part of the plateau is Switzerland's most important agricultural regions. The traditional textile industries are situated in the plateau's central and eastern regions. Today's most important industries are the machine industry, the automotive industry, the electrical industry, the fine and micro mechanical, watch and electronic industries, next to the optical and metal constructions. The area is key to Swiss power generation; numerous hydroelectric plants use the rivers to produce electricity, all four Swiss nuclear power plants are situated on the plateau (see Gösgen nuclear power plant in Däniken, active since 1979, see fig. n°2). Because of the comparatively easy topography and dense population, the region's transport networks are highly developed.

The Swiss *Mittelland* is, as other similar areas in Europe, the place where new urban realities are emerging. The area is one of the Swiss regions that has been affected by an extremely rapid growth over the past 50 years, "...becoming in the process a classic example of continuous urban sprawl."

Baccini P., Oswald F., *Netzstadt: transdisziplinäre zum Umbau urbaner Systeme*, Printoset, Zurich 1999 (see in **References**)

With 93% of Communes with less than 10.000 Inhabitants, the Swiss *Mittelland* is a network of villages and major cities which constitutes a *continuous metropolis*.

The selected project area is located in the municipality (Gemeinde) of Egerkingen, which belongs to the Canton of Solothurn. It is at the crossroads of the Swiss Plateau's backbones: the A1 highway that connects Geneva to Zurich and St. Gallen, and the A2 highway, the Swiss north-south axis, which crosses the Alps, connecting Basel to Lugano. The important railway hub of Olten is ten minute far from the location.

The proposal to build a privately funded cargo tunnel, the Cargo Sous Terrain, has been widely discussed across Switzerland. While the first 70 kilometers of the underground transport sys-

tem scheduled to break ground within the 2030s, the villages of Härkingen and Niederbipp have been identified as two of the eight hubs that will feed into the system. Egerkingen lies in between the two villages and stands to grow as a base for logistics and transportation.

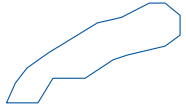
The proposed task of the A-Topic Master Thesis for FS 2017 is to envision an urban design project that allows for future development in a selected project area in Egerkingen, that can be applied to the region. The students are invited to experiment with alternative urban-rural paradigms and address the development of urban qualities for (what is still largely viewed as) a village colliding with built structures designed for logistics, industry and shopping (clash of different scale, Gulliver in the Lilliputians' Land, see fig. n° 4). Projects will serve as a methodological examples, that could be scaled, adjusted, and multiplied for other areas in the Swiss *Mittelland*.

2. Aerial view looking from Olten toward Aarau © U-TT Daniel Schwartz

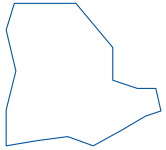
3. Penguin warehouse Hardmondsworth, early 60's

source: Drury, Jolyon, Briefing: Center for Storages and Distribution in Architectural Design, Vol XLIV, 1/1974, S.30-38

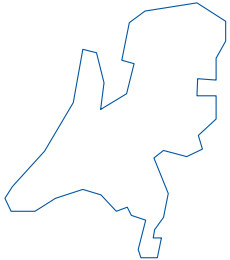
4. Gulliver's travels by Jonathan Swift



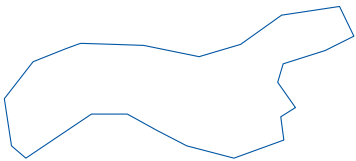
Swiss Mittelland _____ **A 87,88 km²** _____ **Zurich** _____ **A 12.385 km²**
D 858 people/km² _____ **D 450 people/km²**
2014



South East England _____ **A 1.572 km²** _____ **London** _____ **A 19.096 km²**
D 5.342 people/km² _____ **D 440 people/km²**
2014



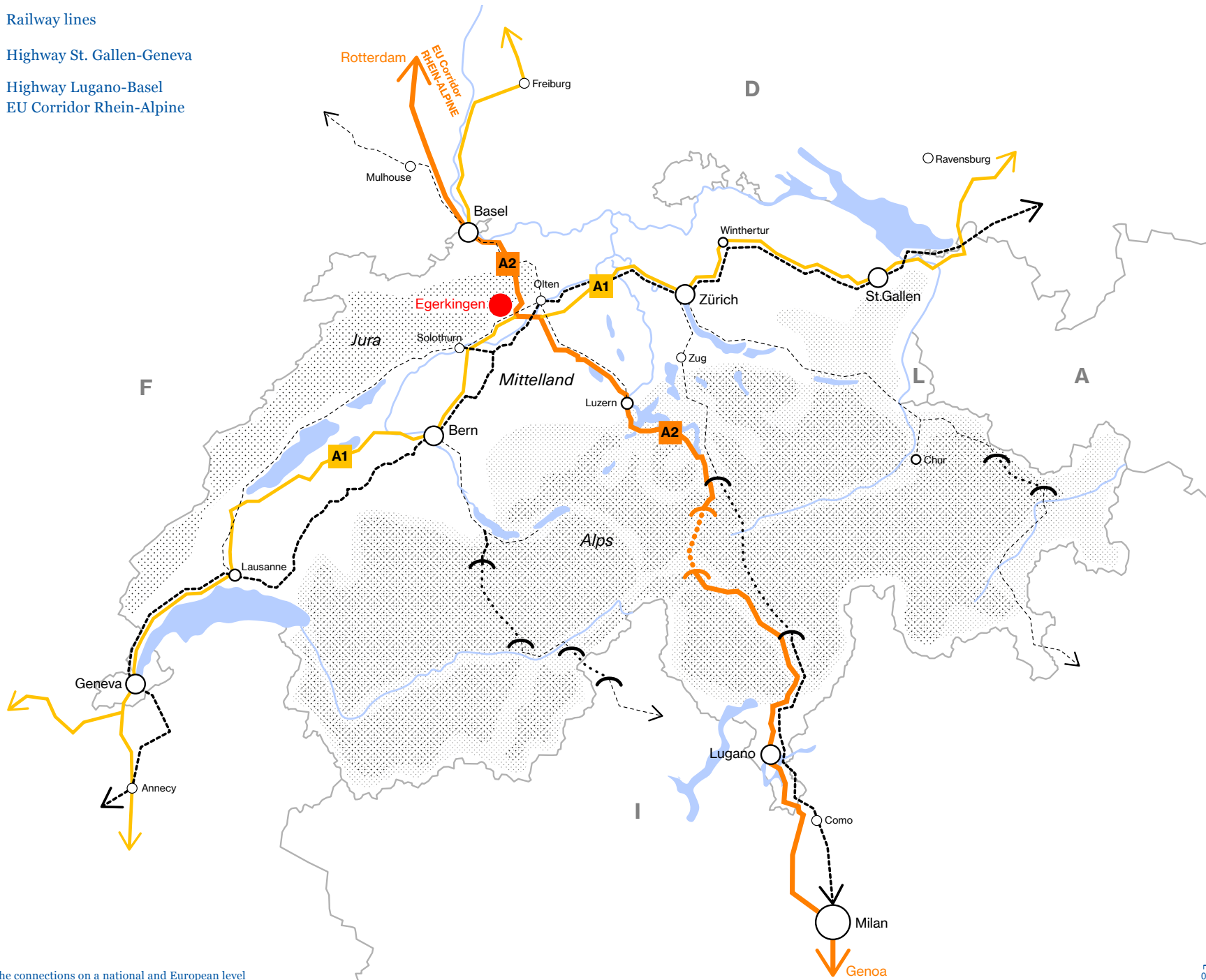
Netherlands _____ **A 219,33 km²** _____ **Amsterdam** _____ **A 41.543 km²**
D 4.994 people/km² _____ **D 395 people/km²**
2015



Italian Pianura Padana _____ **A 181,67 km²** _____ **Milan** _____ **A 47.000 km²**
D 7.435 people/km² _____ **D 215 people/km²**
2015








source: Knoema, Wikipedia

- Railway lines
- A1** Highway St. Gallen-Geneva
- A2** Highway Lugano-Basel
EU Corridor Rhein-Alpine



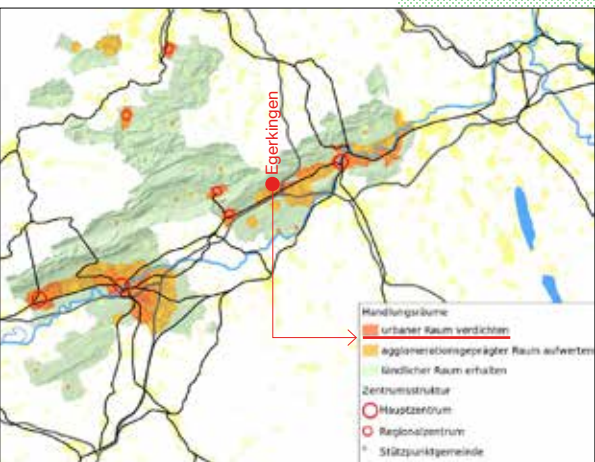
5. Maps of the connections on a national and European level



-  Egerkingen
-  Canton Solothurn Border
-  Railway lines
-  S-Bahn
-  A1 Highway St. Gallen-Geneva
-  A2 Highway Lugano-Basel
-  EU Corridor Rhein-Alpine

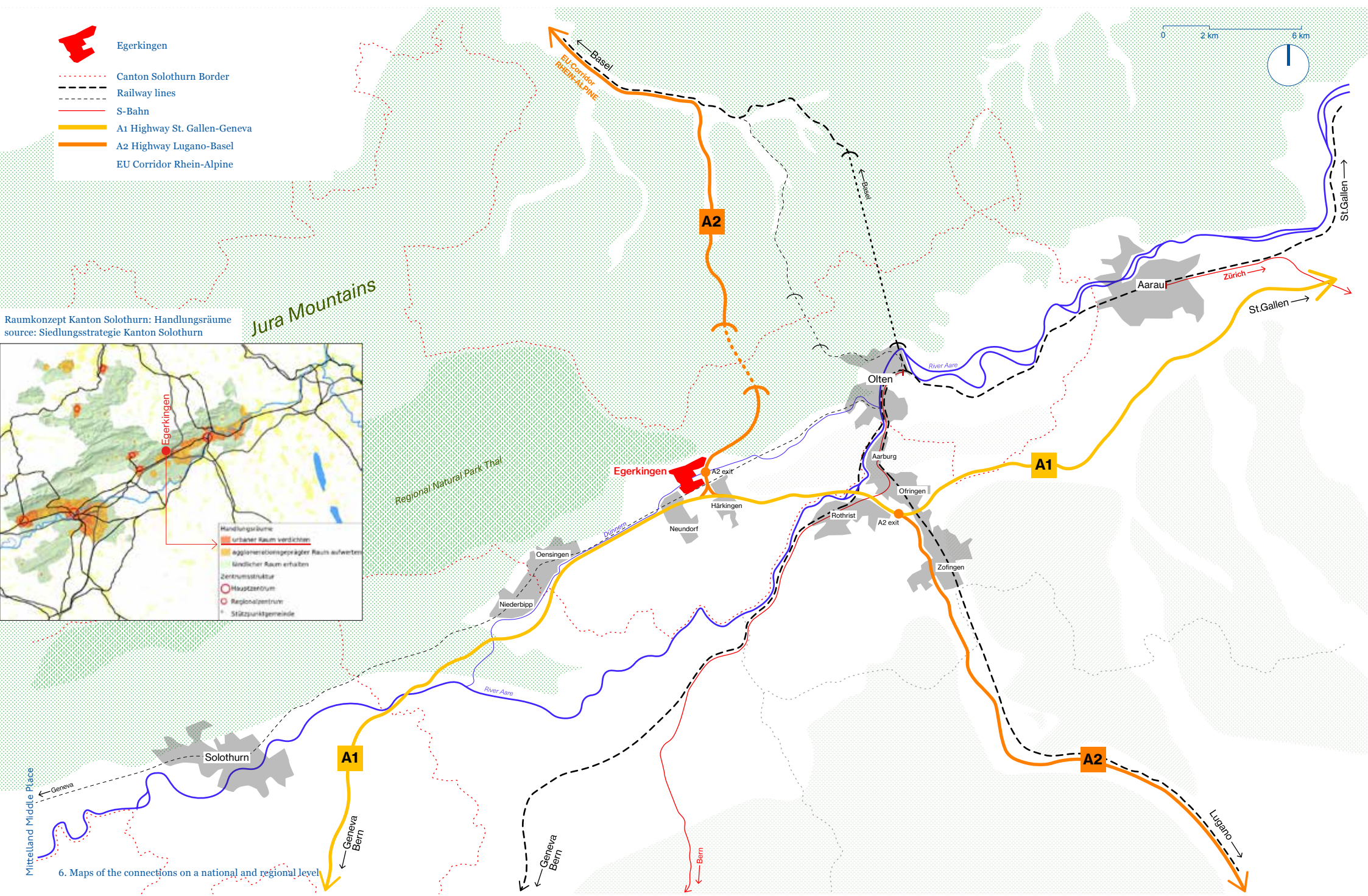


Raumkonzept Kanton Solothurn: Handlungsräume
 source: Siedlungsstrategie Kanton Solothurn



Jura Mountains

Regional Natural Park Thal



Mittelland Middle Place

6. Maps of the connections on a national and regional level



7. Areal view of Egerkingen, with the project area highlighted, together with landscape and infrastructures features.



8.

The Context

The Village

Egerkingen is a municipality in the district of Gäu, in the Canton of Solothurn in Switzerland, at the southern foot of the Jura Mountains between Olten and Oensingen.

Egerkingen has a population of 4200 (2015 data). 26.5% of the population are resident foreign nationals (2008 data). Over the last 10 years (1999-2009) the population has changed at a rate of 14.1%. The increase of the population is mainly due to the parallel increase of the job offers in the area.

Topography and Size

Egerkingen has an altitude of 438 m to 968 m above sea level and an area of 708 ha, of which 340 ha are part of the Regional Park (Regionaler Naturpark Thal), located on the north side of the town.

History

The village of Egerkingen is Neolithic in origin, and Romans known to have passes through too. The Catholic St. Martins Church, located in the core of the old village, is one of the oldest church houses in Switzerland. It goes back to at least 1294 and today is under the protection of the Swiss Confederation.

The village stretches around the river Dünnern and along a country road up a mountain slope towards the Regional Park. The original core, with gardens and courtyards, was surrounded by a fence to protect cattle, which has been partly preserved in the area of the “Jakobsleiter” and the “Flüehloch.” The majority of the countrymen were craftsmen: blacksmith, weaver, tailor, rocker, beekeeper, shoemaker, to name but a few.

The opening of the railway line between Solothurn and Olten, Gäu Bahn in 1876 had little effect on the local industry even though the expectations of the inhabitants were high.

The village’s population rose substantially with the construction of the national roads in the last 50 years. The junction of two main highways nearby attracted a large number of businesses, especially in the field of logistics and transportation. The first company to settle in Egerkingen was Von Arx System.

In the past, locals viewed highway construction positively because it brought potential new economic development, however today

enlargement of the logistic hub is perceived as a threat. Major concerns center around increased pollution and noise in the area. “People in the village are now looking back to an idealized past,” said Municipality President Johanna Bartholdi, a time “without traffic and immigrants...the village life.”

Economy

Before the development of the infrastructures, Egerkingen was a village of farmers (an average land size per owner of 3000 m²) and lived typically on agriculture. Only with the industrialization process the farmers could find a secondary job in the industries outside of the village as the development bypassed the center of the town. In 1950 the village was less than 1000 inhabitants, with less than 100 jobs. It was grown to 4200 inhabitants, with 3233 people employed in the village, the majority in the tertiary sector. 2464 are commuters who do not live in Egerkingen.

In 2000, there were 1.826 workers who commuted into the municipality and 1.028 workers who commuted away. The municipality is a net importer of workers, with about 1.8 workers entering the municipality for every one leaving. Of the working population, 9.9% used public transportation to get to work, and 60.2% used a private car.

The main factor of economic growth is based on the logistics beside the presence of some other companies as Härterei Gerster (which is involved in the sector of hardening and heat treatment technology since 1950), Reinhold Dörfliger AG (active in the earth movement business) and Von Arx systems AG (machines lifecycle treatments), see fig. n° 16 for the complete list.

Egerkingen has developed both in Switzerland and internationally its position as crucial location for the logistic structures, as said (see example as: Die Post Paketzentrum, SBB Bahntechnik, Migros Verteilbetrieb AG, Emil Frey Betriebs AG, Planzer Transport, see fig. n° 16) but also as location for seminars, conferences and gastronomy.

The Commercial Center Gäupark, built in the middle of the 90’s, and further expanded and developed over the years, is one of several shopping centers and a commercial hotspot for many customers across the Canton.

Services and landmarks

The Catholic St. Martins Church in the core of the village together with Paulus Church in the southern part of the village, built in the 1898, are the two main historical landmarks.

The village has two schools, one is a primary school (Schulhaus Kleinfeld, Kindergarten) and the second one (Schulhaus Mühlematt) offers an intermediate level of education.

A 70 m high office and housing tower is planned to be built close to the highway exit to increase the visibility of the village from the highway. A new congress center, an housing densification, a strengthening of the actual railway station and highway exit are planned to be realized in the town soon (see fig. n° 19).

Housing

While statistics show a shortage of new housing in the Solothurn Canton, the vacancy rate of new built apartments in Egerkingen has risen from 1.2% in 2011 to 4.2 in June 2016.

“...Since the interest rates have gone to zero and normal money investments no longer yield any income, private and institutional investors are pushing into the real estate market. They want to earn money with multi-family houses, which is why more and more of them have been built in recent years,” says Markus Thommen, Construction Manager. “In the next few years, about 240 apartments could be put on the market again” Thommen worries. He does not believe that the market will absorb these apartments in a useful time. “There are not enough jobs for this... at first sight, the region seems attractive because there are still building sites and the land prices are relatively low. But the investors ignore the fact that the willingness to pay is not as great as in the centers. Many apartments on the market are too expensive.”

source: NZZ, 30/01/17, <http://www.tagesanzeiger.ch/wirtschaft/standardviele-neue-wohnungen-aber-fuer-wen/story/10238790>

The question of how to increase the quality of life in the village and create an interesting synergy of job offers, services and housing stock to attract people to settle, becomes crucial for any future development scenario.

Historical Timeline

1861



First agglomeration of houses with the St.Martin Church.

1965



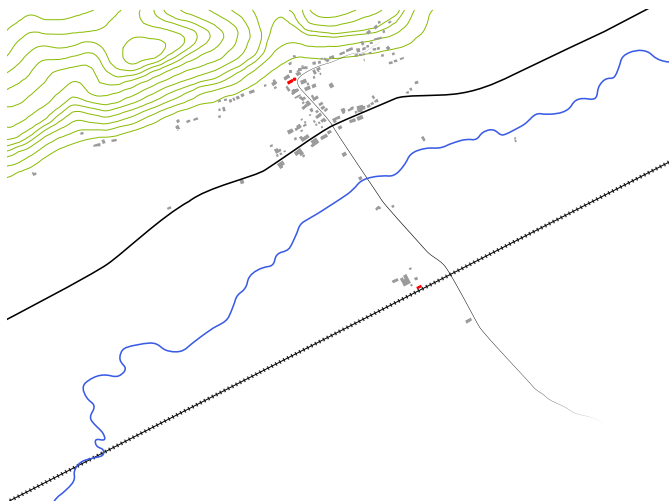
A new church is built and the new expansion of the village toward south is more and more consistent. First highway, A1 is built too.

1990



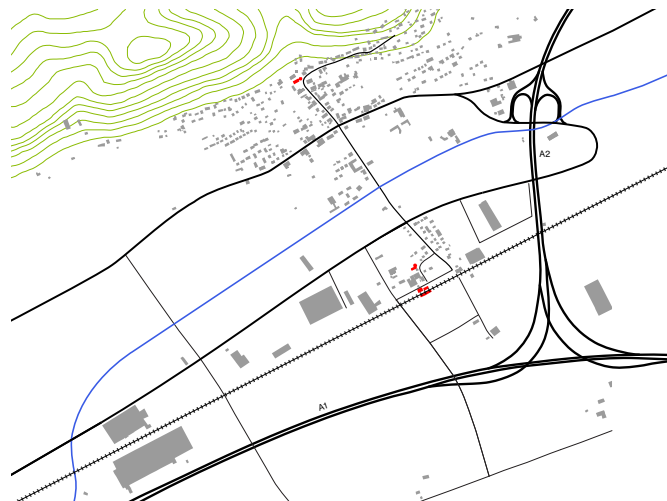
The process of densification of the production area is in constant evolution.

1922



With the coming of the Railway line, the village started expanding toward south. In red, St. Martin Church on the north and Railway Station on south.

1976



The A2 highway is built during the 70's and together with that the exit/entrance and the junction with the A1. The south part of the village starts being occupied by factories and first logistic centers.

2007



Nowadays we register the clash between the scale of the village and the big structures of the logistic production expansion. The commercial center is one of those, right next to the highway exit.



9.



10.



11.



12.



13.



14.

Figures

Canton
District
Municipality

Solothurn
Gäu
Egerkingen

Land Usage

Total Area	6.94 km ²
Agricultural	24.8%
Forested	49.6%
Built environment	25.1%
Rivers	0.3%

Demographics and Employment data 2015

Tot amount of people living	4200
Active People	2100
Not active People	2100
Tot amount of people working	3233
Local Workers	769
Commuter Workers	2464
Primary sector	10%
Secondary sect	30%
Tertiary sector	60%

People present during the NIGHT	4200
People present during the DAY	5130 [930 more than during the night]

Built Area

New built houses	200
New vacant built houses	100
Vacancy rate in 2011	1.2%
Vacancy rate in June 2016	4.1 %
Underdeveloped area in Gäu:	
Living area	15%
Mixed used are	10%
Industry	25%

source: Amt für Raumplanung, Canton Solothurn, B. Staub

9. St. Martin Church 1912 © Verlag L. Rauber Baumann © ETH Archive

10. St. Martin Church as seen from Bahnhofstrasse, 2016 © U-TT

11. 12. View of the Egerkigen railway station © U-TT

13. 14. St. Paulus Church © U-TT



15.

15. Overview of the logistic area in the close municipality of Härkingen
© Daniel Schwartz U-TT

The Context

The Logistic and Production Hub

Due to the fortuitous conditions, Egerkingen became a privileged spot for the development of logistics, manufacture, and production companies.

In the vicinity we find the Die Post package center in Haerkingen, the SBB Bahntechnik Center in Haegendorf, and the Migros Logistic Warehouse in Neuendorf.

Egerkingen has the potential to host more services like these also in the future.

At the boarder of Egerkingen and Haerkingen, next to the highways, we find the site for the Cargo Sous Terrain project that is awaiting funding. It provides for new underground tunnels where self-driving cars will transport goods under the Swiss Mittelland from Geneva to Zurich. It is hoped that the tunnel will lead to a reduction of 20% of the traffic. The first section will be concluded by 2030 and it will run from Haerkingen-Niederbipp to Zurich. (see text in **References** and see pag.17 for further explanations) The project may construct exit hubs in the industrial areas and in cities under which it passes, meaning that a tunnel entrance area would come up at the boarded of Egerkingen and Haerkingen. This could open up to new future socio-economical developments of the village. It is crucial to reflect on how the new intervention can be bearer of an higher urban quality by envisioning new urban-rural typologies of expansion.

Another discussed mobility project in the area is “...the new S-Bahn lines in the area between Olten, Zofingen, Lenzburg and Aarau to form a Ringbahn. [...] Through such a *network city*, the concept of a new large city that had sprung up in the 1970s, but immediately sunk, would reappear in a contemporary form halfway between Zurich and Bern. The heart would be the green lung on the hillside across which the border between the Cantons of Aargau and Solothurn runs.”

source: NZZ, 30/07/11, <https://www.nzz.ch/im-autobahnkreuz-1.11702687>

Another project “...proposes an unbundling of the flows of passenger and freight transport by rail. Key elements of this approach would be a new tunnel only for freight trains between Muttenz near Basel and Egerkingen following the Jurasudfuss route together with a freight transport center ideally situated near Egerkingen. The latter is planned between the railroad and the motorway. It should cover a 40-hectare area and it could anticipate expected multi-traffic, supplementing existing facilities in Basel and replacing existing trans-shipment facilities.

If the automated underground transport system (Cargo Sous

Terrain) were to be realized, the new hub could also be connected to it. The bundling of the goods for the transit toward Löttschberg and Gotthard would require a new connection from Egerkingen to Rothrist, Oftringen and Zofingen. This new connections would allow the existing rail network to be used for national and regional passengers transport.

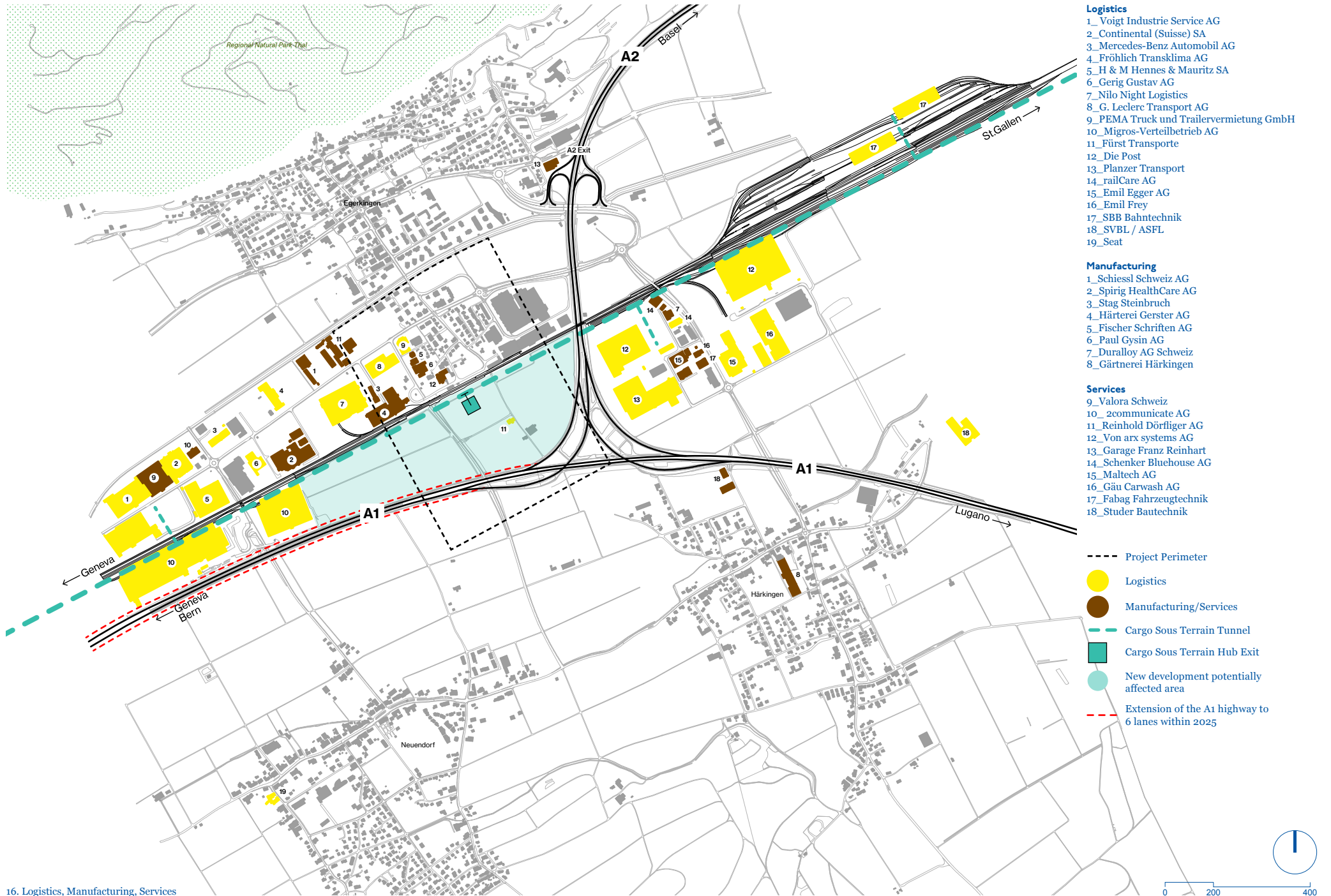
3.2 billion francs have been estimated as investment costs for the expansion of railway facilities.”

source: NZZ, 14/10/15, <https://www.nzz.ch/schweiz/zum-beispiel-ein-bekanntnis-zur-logistik-1.18629345>

Moreover, the logistic sector is more and more connected to the development of new delivery modes, from the already established “Collection in shop or showroom” mode to the newest “Collection from deposit boxes or automated collection points” mode, at the very early stage in Switzerland (see in **Reference** “Real Estate Market 2014” Credit Swiss, from pag 58 to 64).

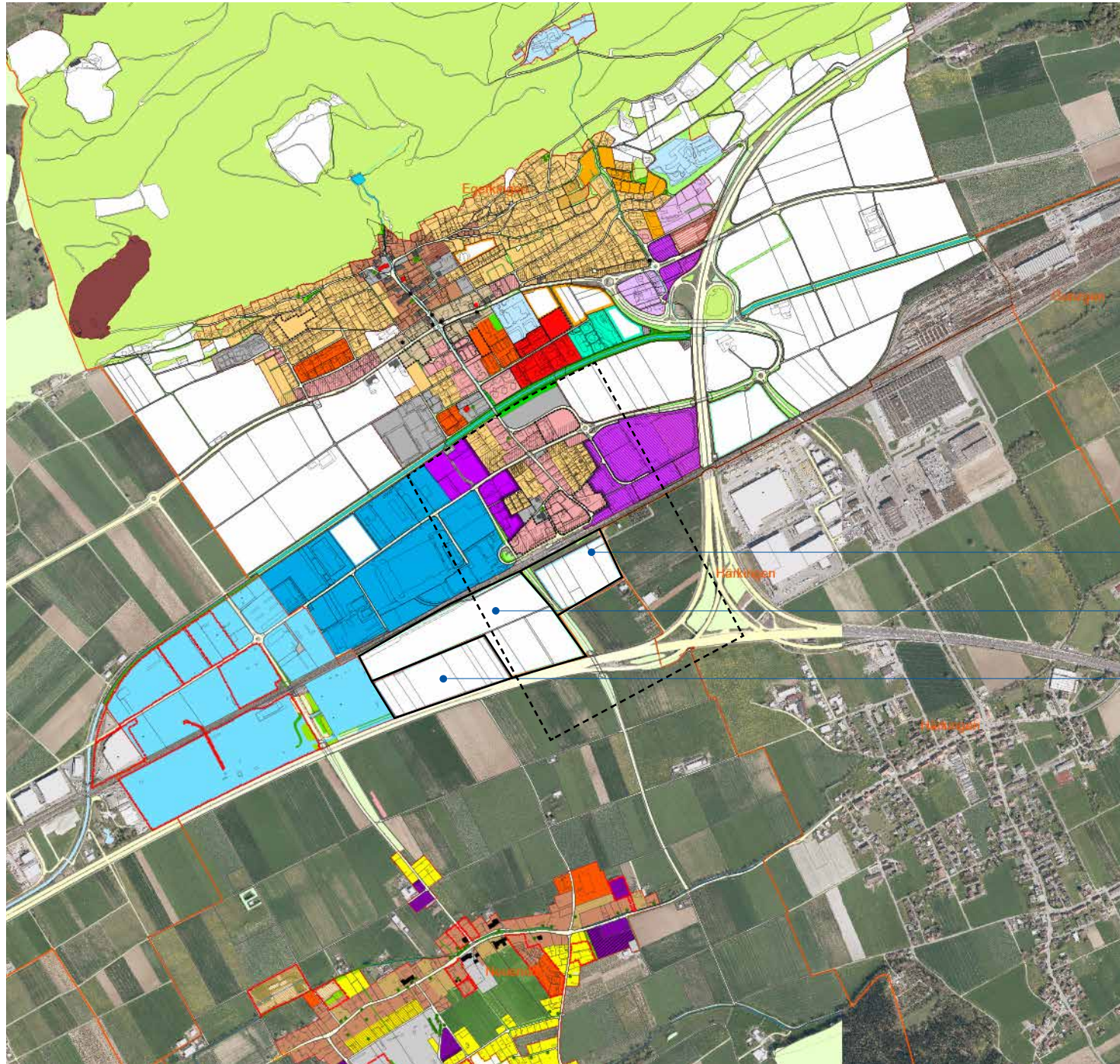
Company as Amazon they are transforming themselves in transportation companies, researching how to evolve the delivery system toward the *door to door* solutions (ex: delivery drone).

This socio-economical background has to be seen as a new challenge for the architects and urban planners.



16. Logistics, Manufacturing, Services

----- Project Perimeter



Nichtbauzonen, ES III
Reservezone RAZ*

Nichtbauzonen, ES III
Reservezone Kant. Inter-
essengebiet

Bauzone
Industriezone mit
Gestaltungsplanpflicht

*RAZ
Reservezone
Regionale
Arbeitsplatzzone

Entwicklungsschwerpunkt Gäu

KANTON **solothurn**

Amt für Raumplanung



Entwicklungsschwerpunkt Gäu

KANTON **solothurn**

Amt für Raumplanung

Konzeptstudie Raumentwicklung Oensingen-Olten

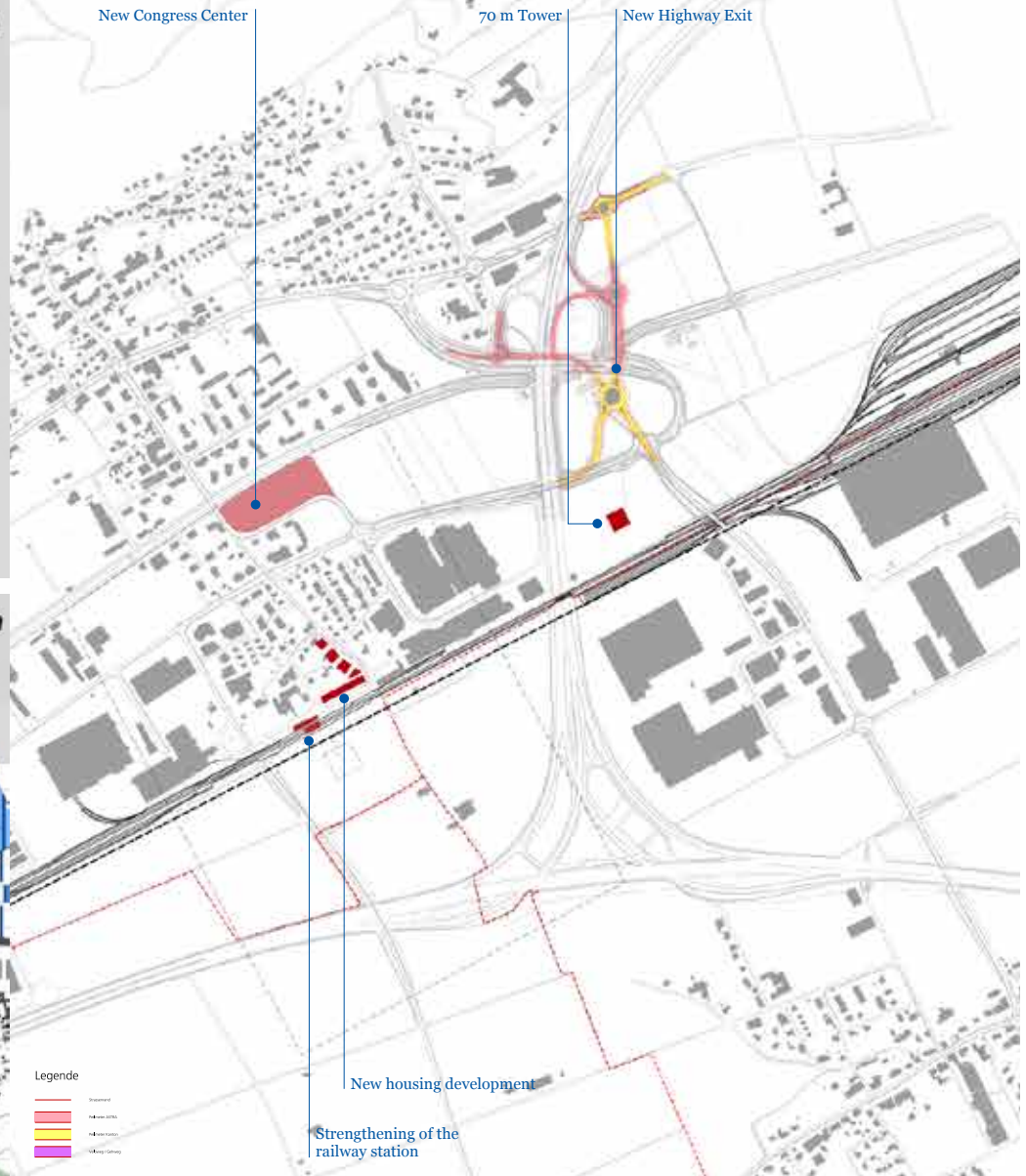
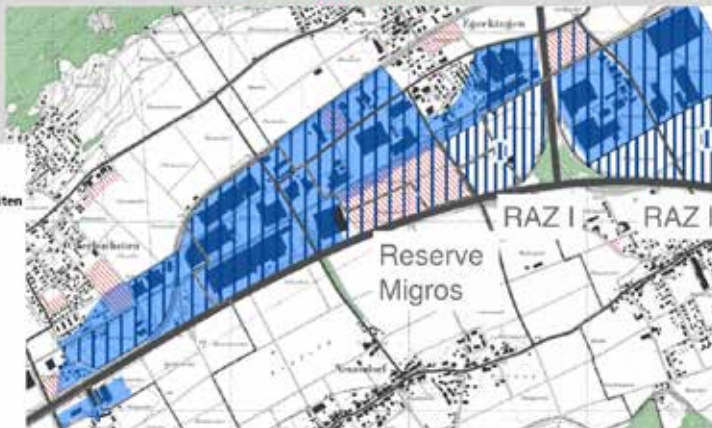
Arbeitsplatzgebiet
Gäu «Mitte»

Richtplanerische Festlegungen

- Entwicklungsschwerpunkt ESP Arbeiten
- regionale Arbeitsplazonen RAZ
 - I RAZ Industrie
 - II RAZ Dienstleistung / Einzelhandel / Landwirtschaft

Orientierungsinhalt

- Arbeitsplatzgebiet von überörtlicher Bedeutung (Richtplan, 2000)
- Reservezone



18.

19.

18. source: Amt für Raumplanung, Kanton Solothurn, Bernard Staub, 2016
19. Upcoming interventions in Egerkingen



20.



22.



24.



21.



23.



25.

- 20. Die Post Briefzentrum in Härkingen © U-TT
- 21. Traditional means of transportations in the village © U-TT
- 22. Emil Frey storage and logistic center in Härkingen © U-TT
- 23. Local manufacture warehouses © U-TT
- 24. Bösigler Gemüse intensive vegetables production in Niederbipp © U-TT
- 25. Small, local greenhouses and vegetable gardens © U-TT

2030 First connection tunnel Härkingen/Niederbipp - Zurich 67 kilometers of underground tunnel

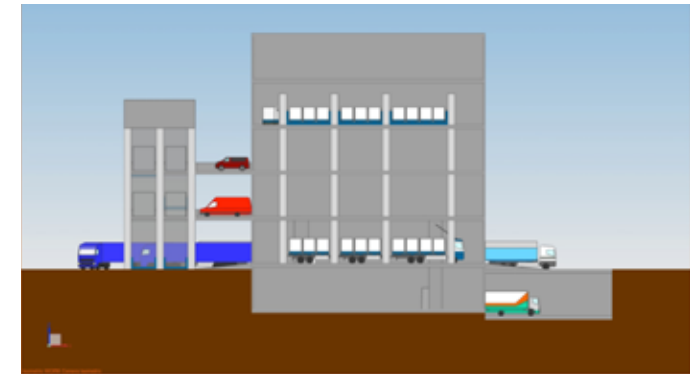
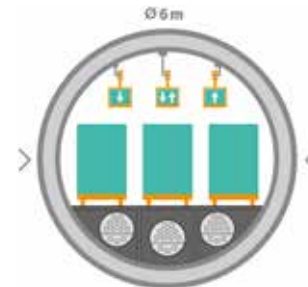
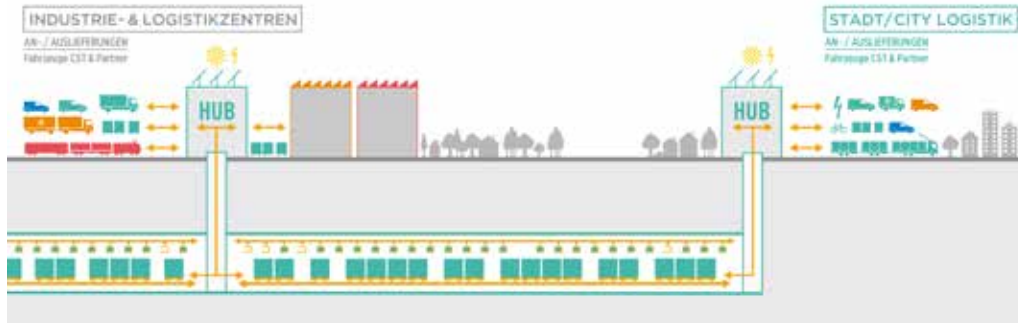
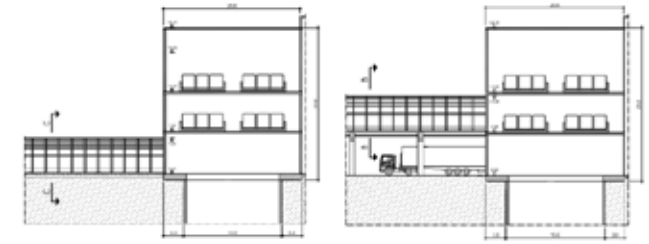
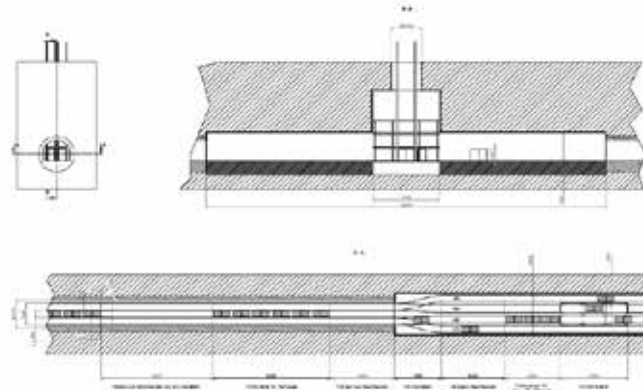


Abbildung 2-21: City-Hub Konzept. Quelle: LTW Intralogistics.

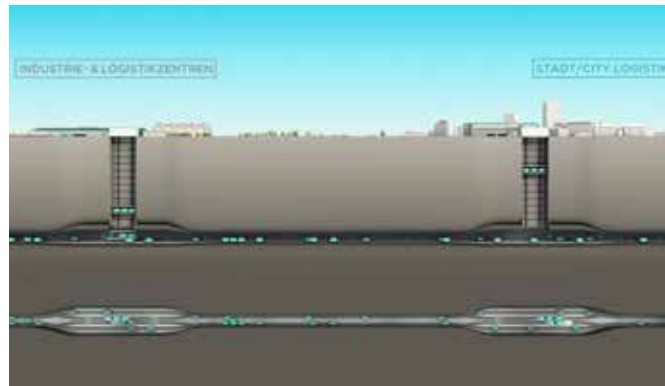
Flächenbedarf City-Hub inkl. Paletten-HRL für 2944 Paletten (ohne Abb.):

- 3610m² eigentliche Hub Fläche inkl. HRL (38m x 95m)
- 5140m² Verkehrsfläche
- 8750m² Total (81m x 108m)

source: HUB KONZEPTION CARGO SOUS TERRAIN Report



Distribution spots within the city



Underground connection system City-Logistic Centers



Hub and logistic connection



26.

The Context

Retails & Short Term Accommodation



27.



29.



30.



28.

The village is nationally renowned for its retail and accommodation facilities. Gäu Park is a shopping center that attracts visitors from all over the region. However, it lies outside the village and it doesn't contribute to the creation of the village identity.

Besides the big commercial center structure, the town presents numerous vacant ground floor spaces, which, historically hosted traditional commercial activities, like butchers and bakeries, along the main village street axis, Bahnhofstrasse (see fig. n°32). By envisioning the presence of Cargo Sous Terrain new delivery modes, we can speculate about the future of commercial city axis as Bahnhofstrasse. What type of services will it host in the future? Will the shops become mere showrooms?

Another key role of Egerkingen on a national level, is represented by its short term accommodation facilities. During the 80's, a TV series, titled "Motel," took place in the village and was filmed in the town (see fig. n°27).

The Mövenpick Hotel (see fig. n°28), situated on the hill of the village, is a well-known congress center that brings many people each year. Numerous small accommodations and BnBs are scattered around the town (see fig. n°29, 30).

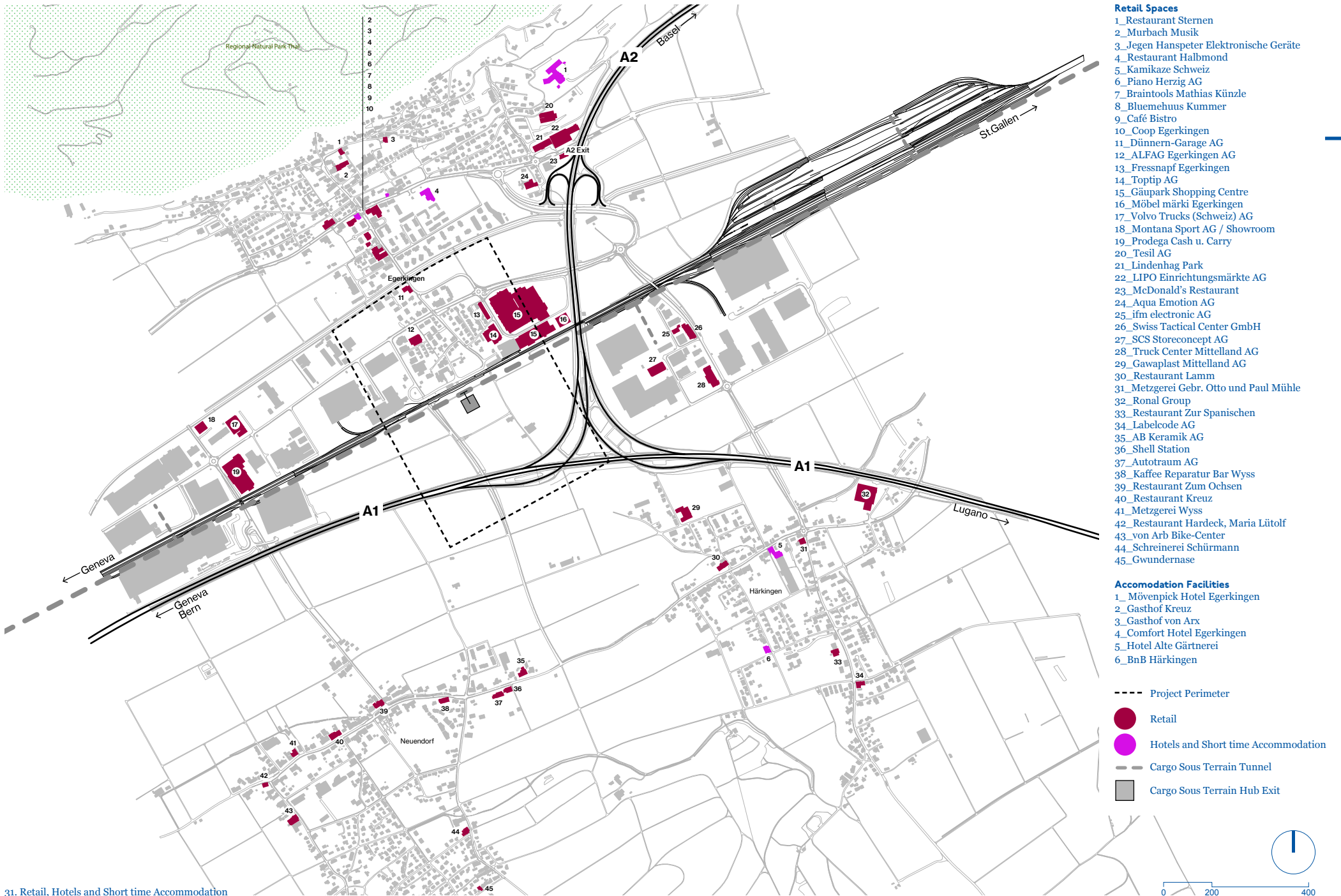
Again we register a difference in the scale and proportion between small, family-run structures enveloped by the village, and big commercial centers at the town's margins.

27. Video frames extracted from "Motel" Swiss TV Series, set in Egerkingen, 1984

28. The Movenpick Hotel internationally renowned congress center in Egerkingen © U-TT

29. Diffuse BnB structure and small accomodation facilities, scattered on the territory © U-TT

30. Interior of a BnB inside a former greenhouse in Haerkigen © U-TT



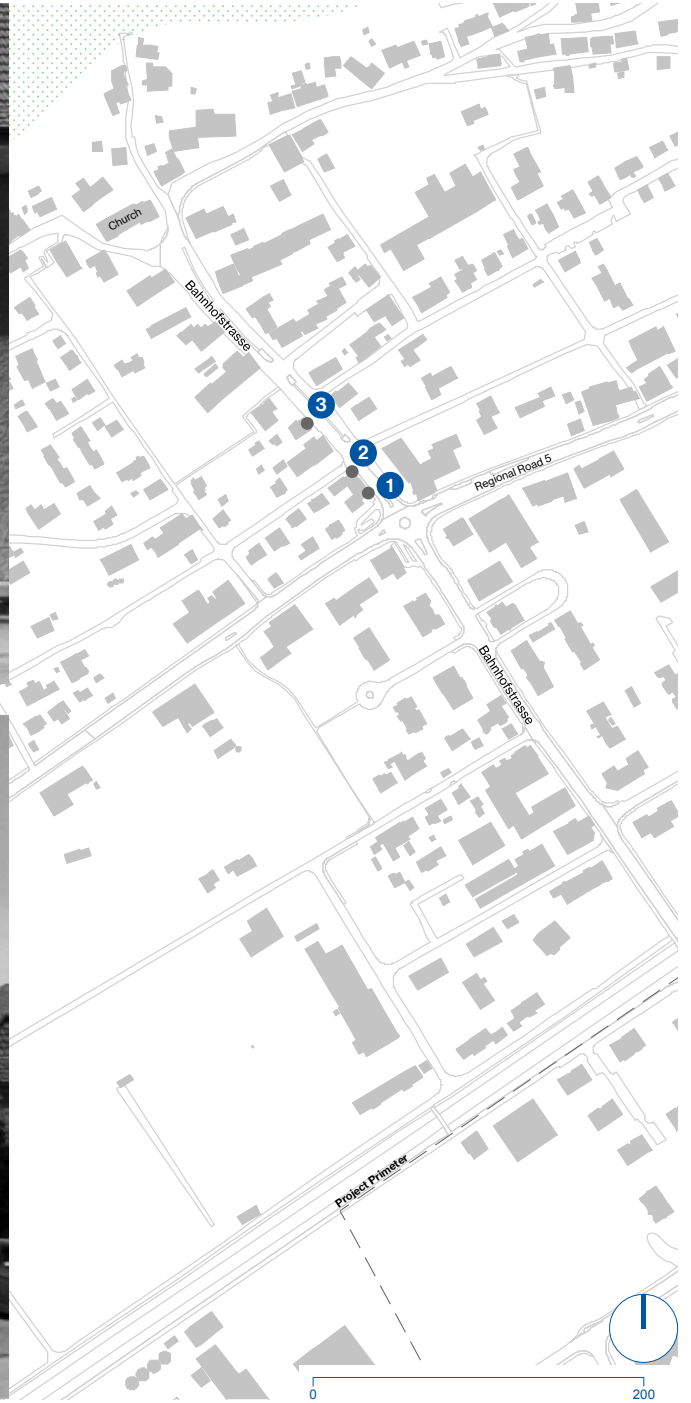
- Retail Spaces**
- 1_Restaurant Sternen
 - 2_Murbach Musik
 - 3_Jegen Hanspeter Elektronische Geräte
 - 4_Restaurant Halbmond
 - 5_Kamikaze Schweiz
 - 6_Piano Herzig AG
 - 7_Braintools Mathias Künzle
 - 8_Blumehuus Kummer
 - 9_Café Bistro
 - 10_Coop Egerkingen
 - 11_Dünnern-Garage AG
 - 12_ALFAG Egerkingen AG
 - 13_Fressnapf Egerkingen
 - 14_Toptip AG
 - 15_Gäupark Shopping Centre
 - 16_Möbel märki Egerkingen
 - 17_Volvo Trucks (Schweiz) AG
 - 18_Montana Sport AG / Showroom
 - 19_Prodega Cash u. Carry
 - 20_Tesil AG
 - 21_Lindenhag Park
 - 22_LIPO Einrichtungsmärkte AG
 - 23_McDonald's Restaurant
 - 24_Aqua Emotion AG
 - 25_ifm electronic AG
 - 26_Swiss Tactical Center GmbH
 - 27_SCS Storeconcept AG
 - 28_Truck Center Mittelland AG
 - 29_Gawaplast Mittelland AG
 - 30_Restaurant Lamm
 - 31_Metzgerei Gebr. Otto und Paul Mühle
 - 32_Ronal Group
 - 33_Restaurant Zur Spanischen
 - 34_Labelcode AG
 - 35_AB Keramik AG
 - 36_Shell Station
 - 37_Autotraum AG
 - 38_Kaffee Reparatur Bar Wyss
 - 39_Restaurant Zum Ochsen
 - 40_Restaurant Kreuz
 - 41_Metzgerei Wyss
 - 42_Restaurant Hardeck, Maria Lütolf
 - 43_von Arb Bike-Center
 - 44_Schreinerei Schürmann
 - 45_Gwundernase

- Accommodation Facilities**
- 1_Mövenpick Hotel Egerkingen
 - 2_Gasthof Kreuz
 - 3_Gasthof von Arx
 - 4_Comfort Hotel Egerkingen
 - 5_Hotel Alte Gärtnerei
 - 6_BnB Härkingen

- Project Perimeter
- Retail
- Hotels and Short time Accommodation
- Cargo Sols Terrain Tunnel
- Cargo Sols Terrain Hub Exit

31. Retail, Hotels and Short time Accommodation





32. Local, historical retail spaces, some of them now vacant © U-TT



33.

The Project Area



34.



35.



36.

The selected project area is the area of new built expansion of the village toward the south (see Bauzonenplan 2016, fig. n° 17). It is located between the Dünnern stream and the A1 highway. On the east side it is bordered by the production area of Egerkingen, where one finds the Härtereier Gerster industrial park. A residential area lies between Gerster and the next to the Gäu Park shopping centre, it presents a difficult coexistence with the surrounding environment and could be developed into the project proposal.

The project area is of 792.000 m². Respectively the category of service and retail occupy the 42% of the floor area and the 40% goes to the logistic, manufacturing and office area; while only the 18% is represented by residential area. The density is low and the housing structure resembles the most typical urban sprawl.

The Paulus Church, built in the 1898, is the only landmark inside the area. The urban spaces in the vicinity are not well maintained, and clearly not perceived as a gathering place by the local community. Egerkingen's railway station is also located inside the project perimeter. It is a small station meant to serve the mostly rural location with only two platforms. The railway tracks create a barrier between the village newest residential area, described before, and the empty fields, which adjoin with the A1 highway on the south. The A1 highway will enlarge the number of its lanes from 4 to 6 within 2025.

According to the Canton's Bauzonenplan (zoning plan) the field by the station is a *Nichtbauzone*: reserved for future expansions of the production area. The other land, currently zoned as agriculture with a diverse ownership pattern, have the same designation.

The proposition, in the context of the thesis research, is the construction of a typology for one of the exit hubs of the Cargo Sous Terrain tunnel on the site south of the train station areas (see Section AA', BB', pag. 26, 27).

According to data from the Canton, there is 25% of underdeveloped area in the whole Gäu District reserved for future industrial expansion (70 ha) and 15% reserved for residential.

The open, urban spaces are lacking in attractiveness and facilities. The spaces between the housing structures and the commercial area of the Gäu Park are clearly separated by a gate (see fig. 34). The division between public and private soil is remarkably present and possibly indicates a scarcity of the common urban

space.

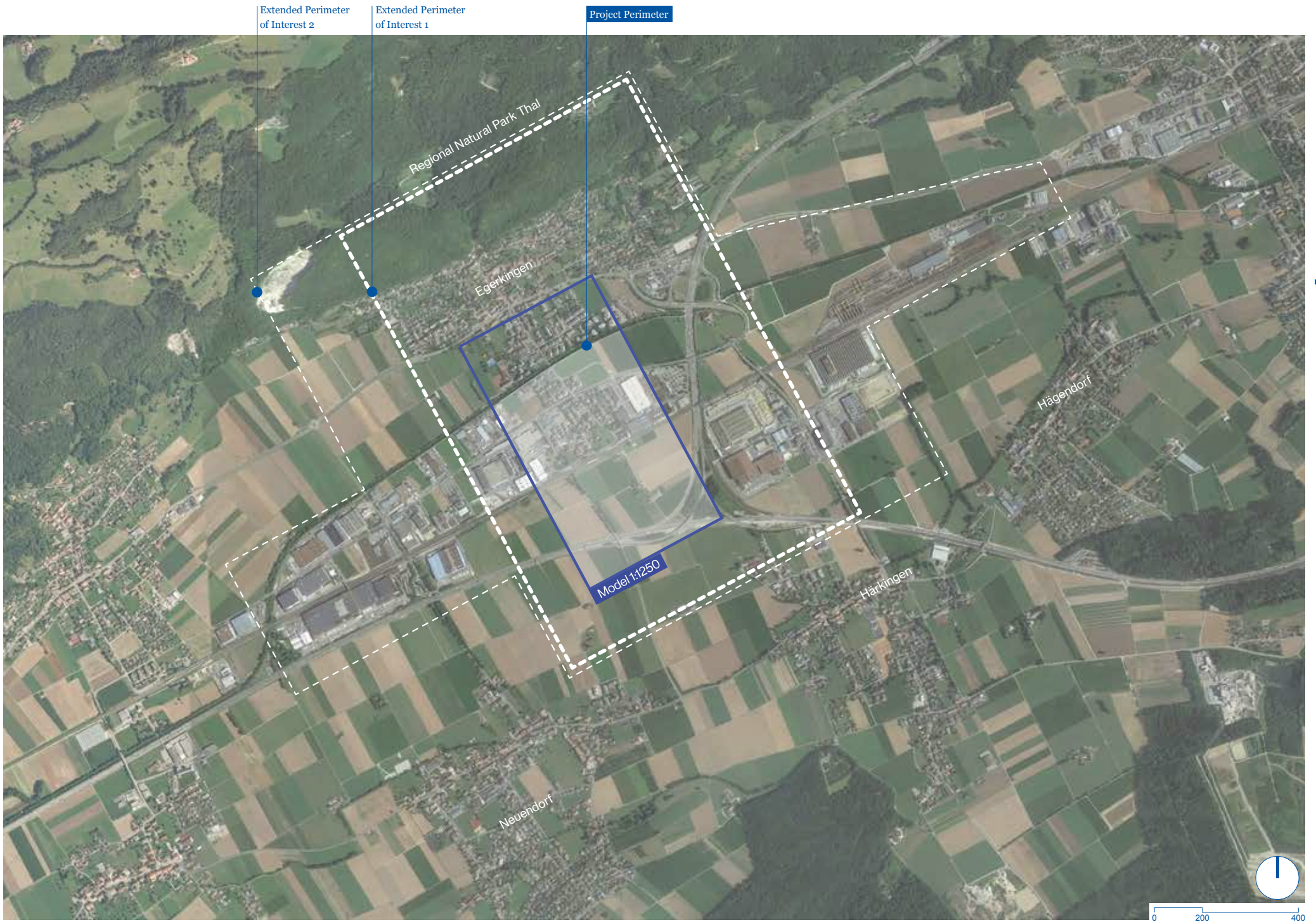
The village's growth in logistics, retail, and manufacture has not been associated with transformations that were necessary to operate a transition from a mainly rural context to an urban one. It is, for this reason, interesting to research the opportunities and challenges that reside in this hybrid context.

Moreover, Egerkingen works as an example for the entire region of the Swiss Mittelland, characterized by the presence of many similar scattered agglomerations on the territory. They stand as *fragments* waiting to be understood within a new logic of a socio-economic and physical development.

34. Wolfacker, urban spaces within the residential area © U-TT

35. Langackerstrasse, looking north west to Gäupark © U-TT

36. Urban spaces along Güterstrasse, close to the railway station © U-TT



37. The project area perimeter and the extended areas of interest

Project Area Land Use

Project Area Surface

792.000 m²

Total Floor Area

227.300 m²

Residential

42.500 m² 18%

Service/Retail

92.600 m² 42%

Logistic/Office/Manufacturing

92.200 m² 40%

Inhabitants/ha

40-60*

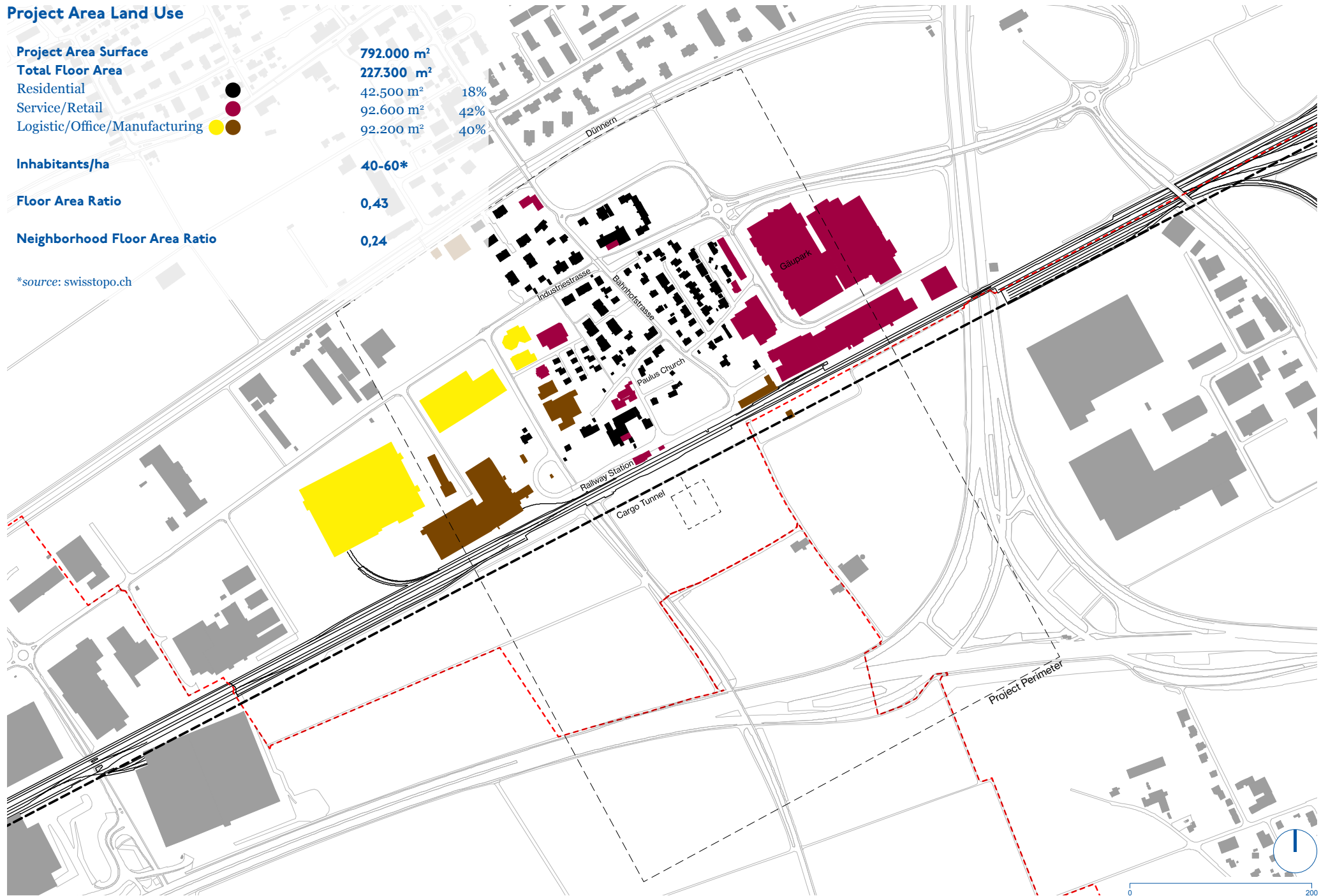
Floor Area Ratio

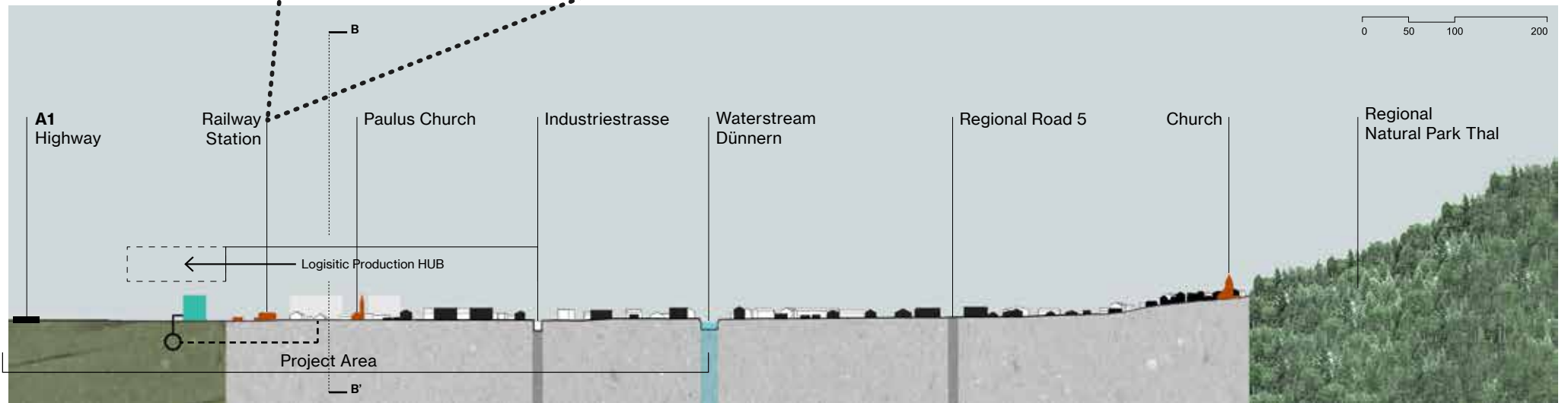
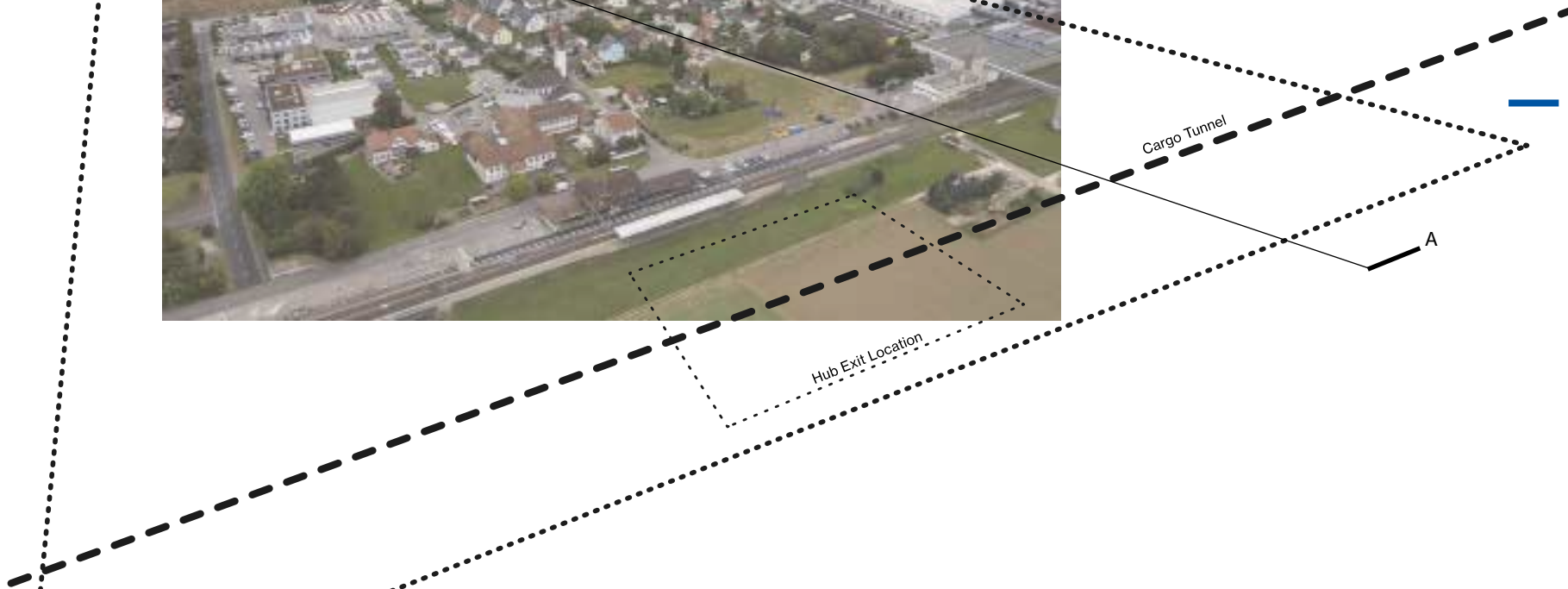
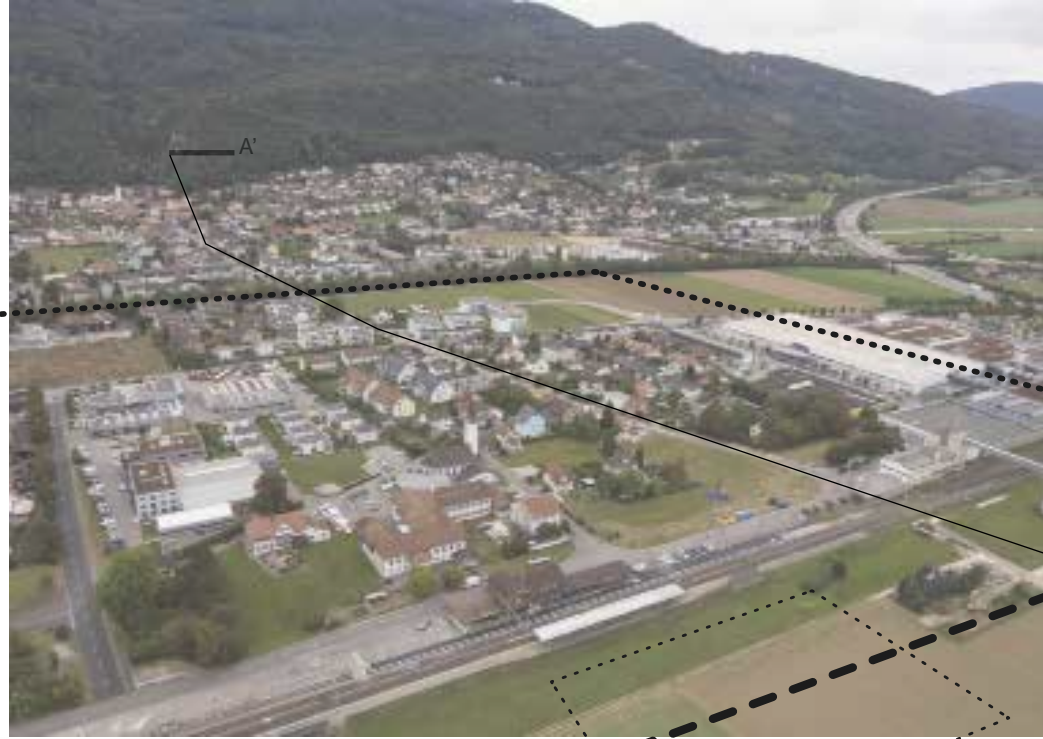
0,43

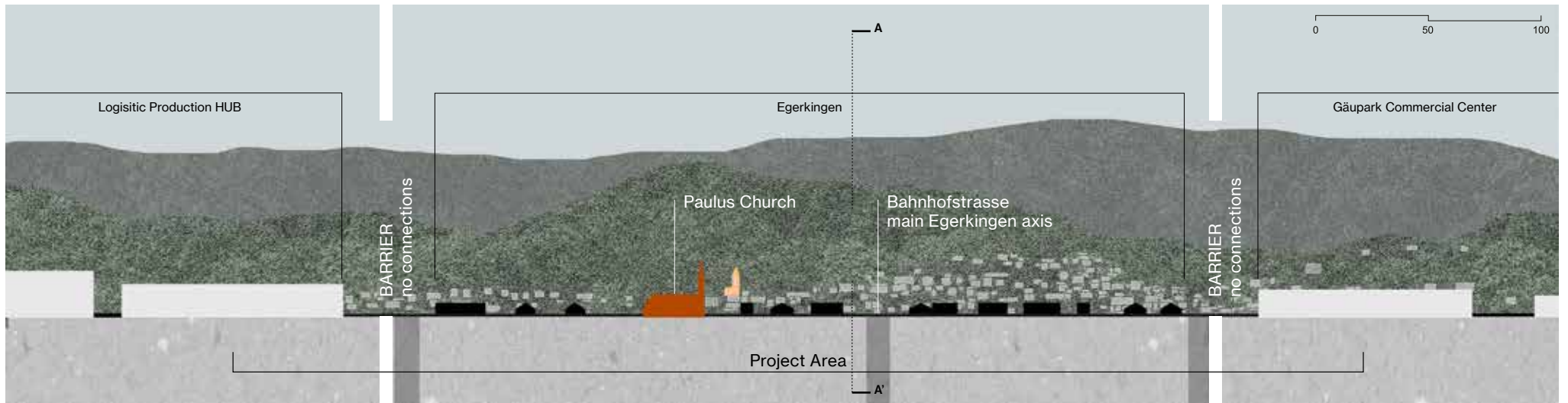
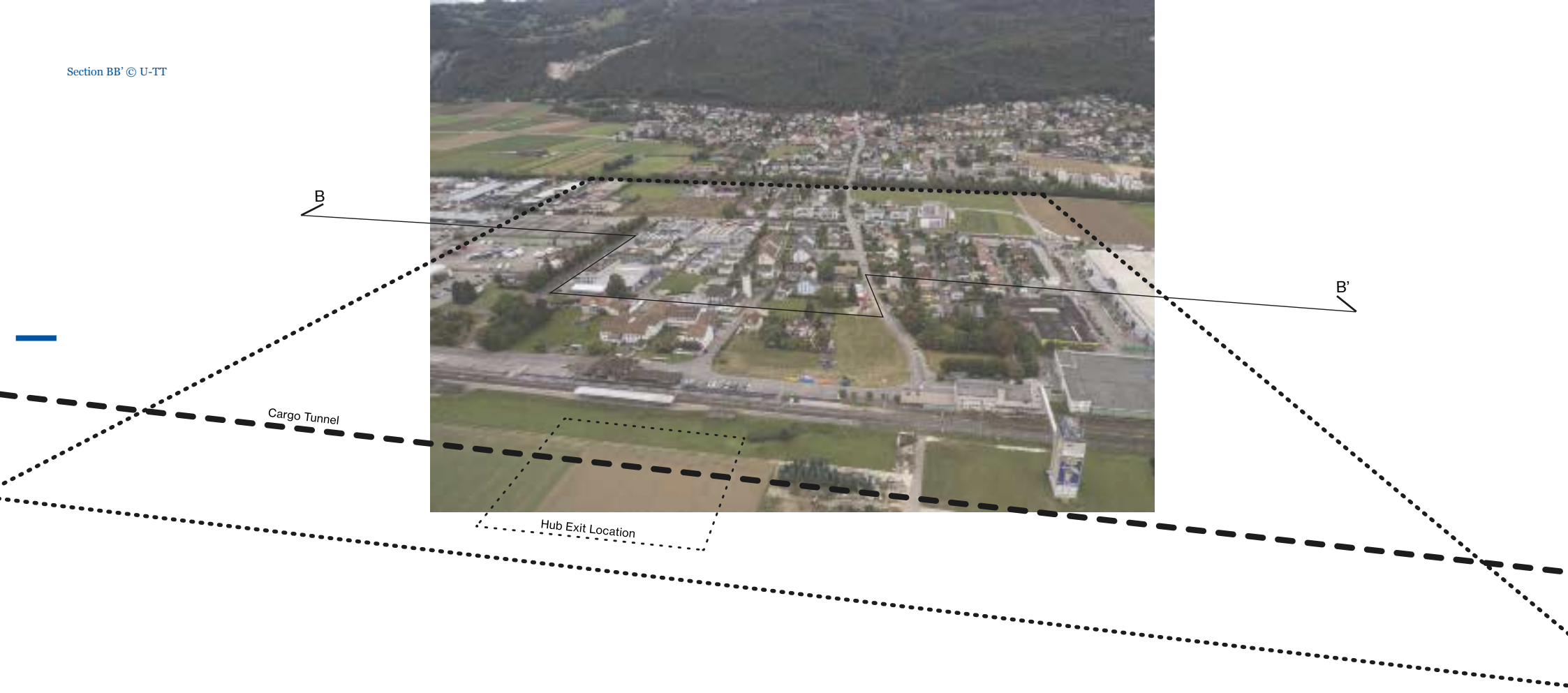
Neighborhood Floor Area Ratio

0,24

*source: swisstopo.ch







The Task

The Project Task

The task for the students is to envision future development scenarios for Egerkingen. By 2050, ten Million People will live in Switzerland (“Schweiz 2050” in “Raumkonzept Schweiz” by SIA). This necessitates the extension and densification of Swiss towns, especially in the central Mittelland. The Mittelland has been described as a model of *decentralized centralization* where there is no longer a recognizable line between city and countryside as expanded networks of small, medium, and large size cities spread across a mainly flat territory where infrastructures and landscape are not frequently in dialogue. It is a new territory which proposes a new condition: the *diffuse* city.

The scenarios should develop a methodological approach which is adaptable and scalable, and therefore relevant for the whole Mittelland. It is necessary to provide a new positive image and vision where strength of the landscape, new infrastructure, mobility systems, and immigration are taken into consideration. The proposed scenarios have to break the dichotomy between the rural and the urban characteristic, between landscape, building, infrastructure and the urban tissue. There is an ongoing effort among municipalities and Cantons to plan *over borders*, stabilize relationships, and collectively come up with new solutions (see, Verein Aareland).

The Students should select one of three possible future development scenarios for the project perimeter:

Scenario Low Density: 150.000m²

Scenario Mid Density: 185.000m²

Scenario High Density: 220.000m²

The Scenarios should achieve the following mix of functions:

Residential: 20%

Services and Retail: 15%

Logistics, Office, Manufacturing: 65%

The following topics and typologies should be part of the development scenarios:

Mixed-use village

The new urban development has to provide a significant improvement of the quality of life and boost the attractiveness of the village. Egerkingen should transform itself from a place where people work to a place where people also want to live.

The train station and the logistic Hub

The scenario includes the extension of the existing railway station from two platforms to three and a new Cargo Sous Terrain Hub.

Logistic Centers

How can the new hub be conceived? Which program could it host? Within a speculative scenario where the use and the transport of the letters will be completely substituted by email, how could the big logistic blocks be re-used? The necessity of the land consumption reduction leads to rethink new design organization for the logistic centers (*go vertical*). Promoting a mixed-used strategy of expansion is encouraged.

Mobility

The densification process has to take into consideration the increasing traffic inside the area and therefore elaborate a mobility strategy (*last mile* place). The reinforcement of the slow mobility network, reconnecting the natural resources present on the territory (Regional Park Thal) to the village, is requested too.

Urban Space Quality

In the elaboration of the design proposal, specific attention should be paid to the design of high quality urban spaces, incorporating public spaces for lunch and recreation.

Scenario Phasing

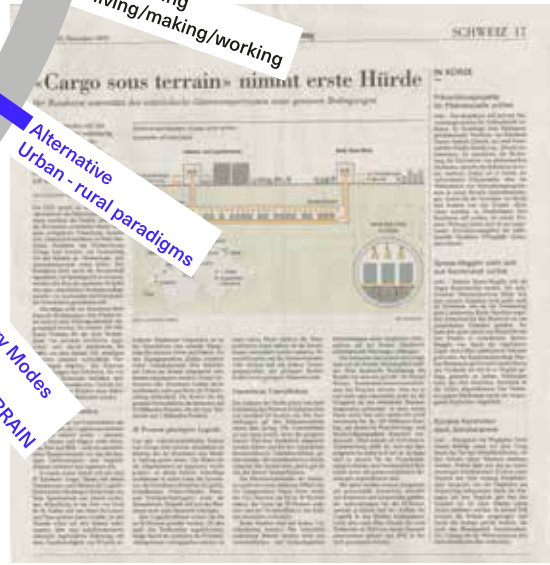
Specific attention should be paid to the phasing of the scenario. Projects must detail the evolution of a scenario that extends from the near future to the year 2050.

Identity

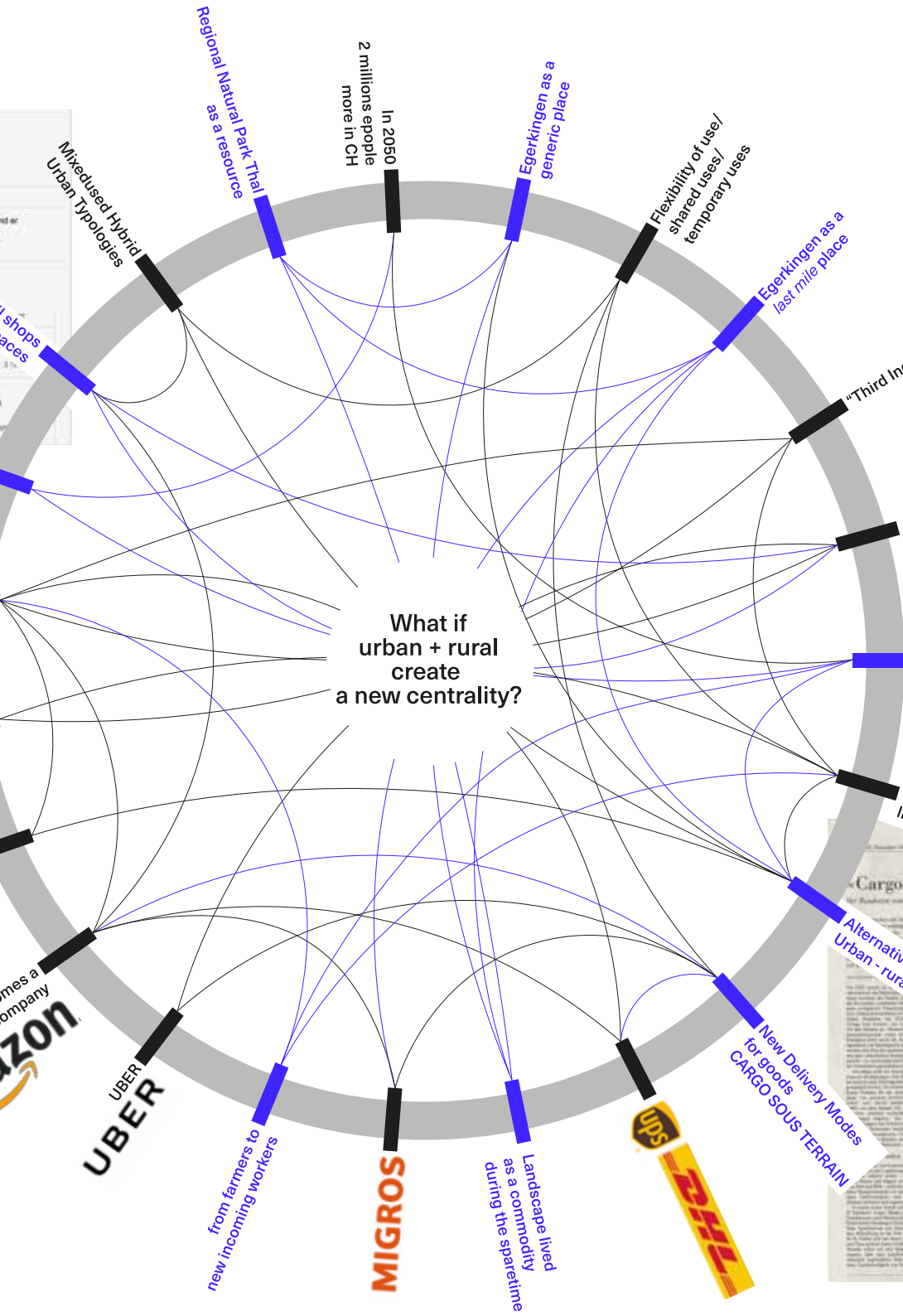
Create a new centrality in Egerkingen related to a specific feature (potentially to logistics). The challenge is giving the village a distinct identity: from the rural village to a new urban-rural condition within the broader context of the Mittelland.



source: The Economist, 21-27 April 2012



source: NZZ, 25 Nov 16

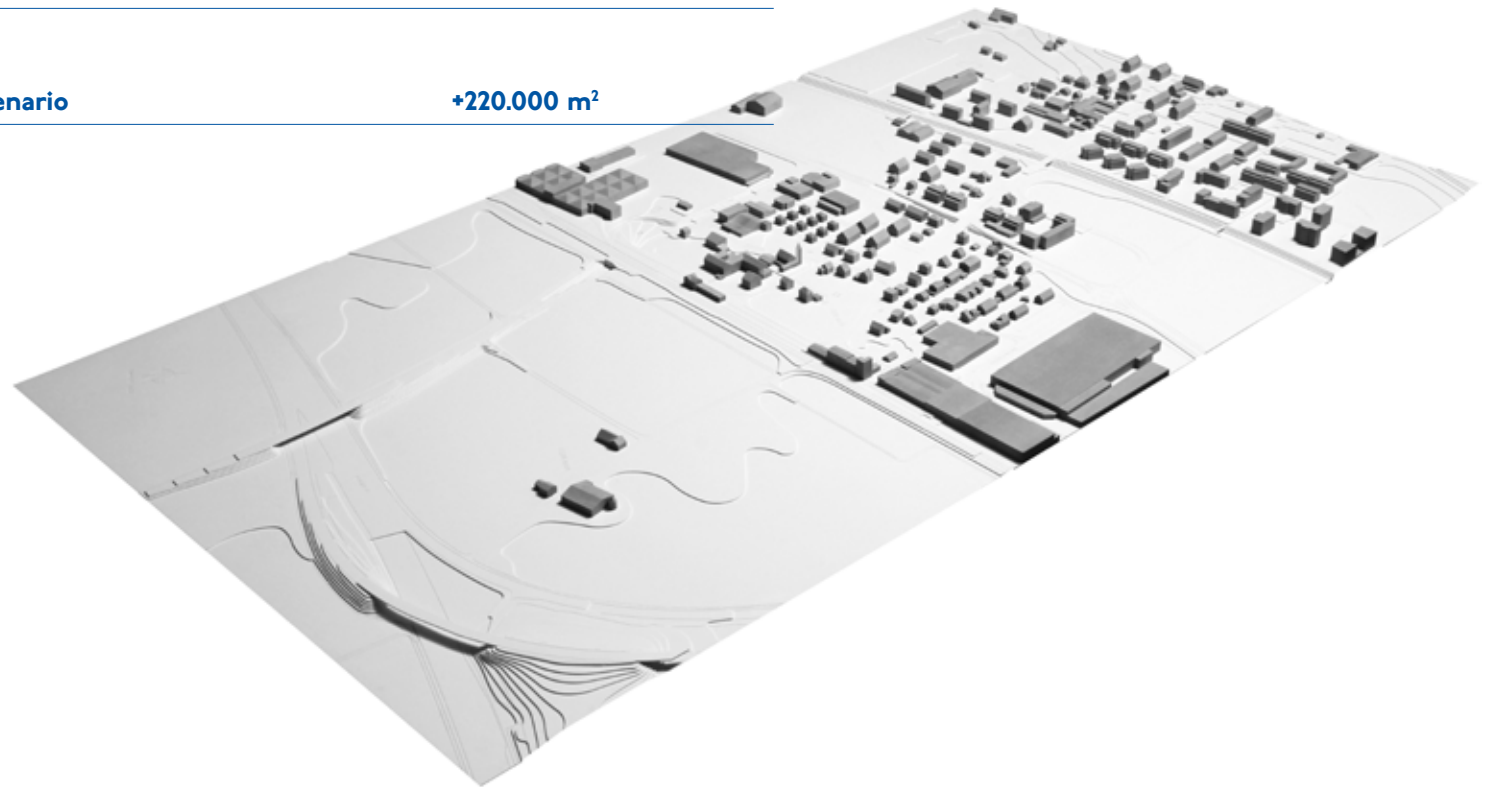


■ local tendencies
 ■ global tendencies

The Task

The Project Requirements

PROGRAM	m ²	%
Residential	+ 30.000 (+900 people)	+20
Service Retail	+ 22.500	+15
Logistic Office Manufacture	+ 97.500	+65
Low Density Scenario	+150.000 m²	+100%
Mid Density Scenario	+185.000 m²	
High Density Scenario	+220.000 m²	



Information

Materials

1) Booklet High Res

containing the presentation of the topic and the task

2) Digital Plans

- Cadastral Map (Regional level), 2D CAD
- Cadastral Map with elevation curves (Project Area), 2D CAD
- Egerkingen Municipality, 3D CAD Model of buildings
- SwissTopo Map 1:25000, 1:10000, 1:5000, pdf

3) Digital Images

- Drone
- Terrestrial
- Terrain Images LIDAR

4) Reference Texts

5) Model

- Cast Plaster Model 1:1250, 60x110 cm

***All Data will be available to download at

<https://polybox.ethz.ch/index.php/s/8FnewtDWDS29KCa>

ETHZ General Information on Master Thesis

www.arch.ethz.ch

> Studium > Studium Laufend > Masterarbeit

Deliverables

Design Proposal Documentation

Extended Area 1 - 2 and Project Area

- Overview 1:2000 (up to 5.000)
- Plans 1:1000*
- Elevations 1:1000
- Sections 1:1000
cross and longitudinal
- Cast Plaster Model 1:1250

Project Area

- Plans 1:500*
- Sections 1:500
cross and longitudinal
- Elevations 1:500
- Further models of important areas to enhance the understanding of the project
- Three-dimensional visualization of public spaces perspectives, photomontage, video animation etc.

Analysis

Provide a comprehensive analysis of the site and its physical and economical connections to the surrounding area.

A deep understanding of the issues and potentials of the site is required to validate the design proposal choices.

Strategy

Develop a set of principles and strategies derived from the analysis and projected in the form of development scenarios for the site. Development phasing in terms of space and volume: a depiction of potential stages.

Communication

Choose appropriate mediums including models and maps, sketches, renders, collages, diagrams, to communicate the proposal.

An explanatory text in which the work's central theses and their implementation are elaborated, is required.

References

Integrate references and best cases to support the thesis.

Sketchbook

Include a full documentation of the design development process.

Collaboration Sheet

To be filled in, signed, and presented with the project.

*The maps have to provide for the information on the spatial volumetric arrangement of the buildings and exterior spaces

Evaluation

1) Concept

- Comprehensive analysis of the site (Territorial, Urban, Architectural)
- Elaboration of a convincing development scenario which takes into consideration the challenges and the potentials of the site
- Clarity of concept and representation to a larger audience
- Implementation of concept in phases

2) Urban and architectural implementation

- Coherence of concept and design;
- Design performance on 3 scales: Territorial, Urban, Architectural
- Development and representation of program, typologies, prototypes, public-private spaces, networks, phasing, mobility, identity
- New typologies's capability to be adapted and scaled to further parts of the Mittelland
- Performance of design regarding economical, social and environmental sustainability
- Representation shows qualitative and quantitative aspects of design

3) Integrated Discipline (Begleitfaecher) 1

4) Integrated Discipline (Begleitfaecher) 2

5) Presentation Quality and Clarity

- Drawings, Images, Diagrams, Models, Text
- Consistency of concept, text and graphics

6) Overall impression

Schedule

Diploma topic presentation

Date Monday 20.02.2017
Hour 17:00
Location HIL E4

Site visit

Date Wednesday 22.02.2017
Hour 9:00
Location Egerkingen
Meeting point Egerkingen Railway Station

Application deadline

Date Friday 24.02.2017
Hour 11:00

Material collection

Date Monday 20.02.2017
Hour 17:00
Location HIL E4

Download material at
<https://polybox.ethz.ch/index.php/s/8FnewtDWDS29KCa>

Model collection

Date 03.03.2017
Hours 10:00 - 12:00
Location Ramp HIL A, 2 Stock

Final diploma submission

Date Thursday 11.05.16
Hours 6:30 pm
Location ETH HG Foyers

Exhibition of master theses

Date 12.05.16 - 31.05.16
Location ETH HG Foyers

Tools and References

Tools

Swiss Statistics
<http://www.bfs.admin.ch>

Swiss Federal Office of Meteorology and Climatology
<http://www.meteoswiss.admin.ch>

Swiss Federal Office of Topography
<https://www.swisstopo.admin.ch>

Swiss Federal Office of Maps
<https://map.geo.admin.ch>

Canton Solothurn
<http://www.so.ch>

City of Olten
<http://www.olten.ch>

Archive, Olten
<http://www.stadtarchiv-olten.ch>

Egerkingen
<http://www.egerkingen.ch>

Canton Solothurn WebGIS
<http://www.geoweb.so.ch/>

Newspaper Articles

<https://www.nzz.ch/im-autobahnkreuz-1.11702687>
<https://www.nzz.ch/schweiz/zum-beispiel-ein-bekanntnis-zur-logistik-1.18629345>
<http://www.tagesanzeiger.ch/wirtschaft/standardviele-neue-wohnungen-aber-fuer-wen/story/10238790>

References

Baccini P., Oswald F.,
Netzstadt: designing the urban
Birkhäuser, Basel 2003

Baccini P., Oswald F.,
Netzstadt: transdisziplinäre zum Umbau urbaner Systeme
Printoset, Zurich 1999

Böttger M., Carsten S., Engel L.,
Speculation Transformations
Thoughts on the Future of Germany's Cities and Regions
Lars Müller Publishers, Zurich 2016

*BSB + Partner
Anschluss Egerkingen, Ergänzung des technischen Berichts
vom 5. September 2014 Neue Varianten-Antrag
August, 2015

Burckhardt L., Frisch M., Kutter M.
Zuzug der Architekten, Gutmann R., Manz T.
Achtung: die Schweiz
Manifesto, 1954

*Credit Swiss
Real Estate Market. Structures and Prospects
March 2014

De Meuron P., Diener R., Herzog J., Meili M., Schmid C.,
ETH Studio Basel
Achtung: die Landschaft: lässt sich die Stadt anders denken?
Lars Müller Publishers, Zurich 2016

De Meuron P., Diener R., Herzog J., Meili M., Schmid C.
ETH Studio Basel
Switzerland, An Urban Portrait
Basel Birkhäuser, 2006

*HSR Hochschule für Technik Rapperswil,
Entwurfsprojekt 2010
Strassenraumgestaltung Egerkingen, May 2011

ed. by Ginsburg N., Koppel B., McGee T.G.
“The Emergence of Desakota Regions in Asia:
Expanding a Hypothesis.”
The extended metropolis: settlement transition in Asia
Honolulu: University of Hawaii Press, 1991

*Graf J., Cargo Sous Terrain
Hub Konzeption Cargo Sous Terrain
December, 2012

*Kockelkorn A., Stalder L., Vrachliotis G.,
Logistikbauten, Texte zum Wahlfachseminar FS 2010
Seminar Logistikbauten Ass. FS 2010

Laba EPFL ed. by Gugger H.
Swiss lessons: teaching and research in architecture
Park Books, Zurich, 2014

Meili A.,
Landesplanung in der Schweiz
Neuen Zürcher Zeitung, Zurich 1941

*Schweizerischer Bundesrat
Raumkonzept Schweiz
Bern, 2012

*Widmer H,
Bolo'bolo, Paranoia City
Zurich, 1983

*Sattlerpartner architekten+planer AG
Teilzonen und Gestaltungsplan
“Überbauung Bahnhofpark Egerkingen”
Solothurn, March 2015

*Texts available to be download, see *** in **Material** section of this booklet
[folder 4_Reference Texts]
The rest of the books will be available for consultation at the ETH-Bibliothek, throughout the
whole Semester.

Institute for Transport Planning and System Prof. Dr. Kay Axhausen

The study area is one of the busiest Swiss logistics hubs.

The additions of further logistics facilities, housing, offices and retail will reenforce the location and attract further movements to the location.

The task of the students is to:

- provide an inventory of the existing firms and their traffic;
- analyse the position of the location in the Swiss logistics landscape;
- assess the likelihood of the number and type of new firms joining the location within 10 years;
- estimate the additional traffic by type of vehicles within 10 years;
- check roughly, if the available infrastructure can deliver a level of service consistent with the demands of the firms and residents.

Literature

Ortúzar Juan de Dios, Willumsen Luis G.
Modelling Transport
Wiley-Blackwell, Chichester, 2011

Contact

E-Mail axhausen@ivt.baug.ethz.ch

Office Institut für Verkehrsplanung und Transportsysteme

HIL F 31.3

Landschaftsarchitektur

Prof. Christoph Girot

Aufgabenstellung

An der gemeinsamen Informationsveranstaltung der Professuren Christophe Girot und Günther Vogt wird die Aufgabenstellung erläutert und das Thema aus landschaftsarchitektonischer Sicht eingeführt.

Leistungen

Alle Leistungen sind in die Präsentation des Architekturentwurfes zu integrieren. Es erfolgt keine gesonderte Darstellung. In Modell, Lageplan, Schnitten, Grundrissen und Perspektiven sind die raumbildenden Elemente der Landschaftsarchitektur darzustellen. Es werden Aussagen zur Topografie (Geländehöhen), Vegetation (Art der Bepflanzung; Benennung einzelner Arten wird nicht verlangt), Einbauten, Verkehrsführung und Materialisierung erwartet. Daraus ergeben sich folgende Anforderungen:

- Situationsplan (im Massstab der architektonischen Aufgabenstellung): Darstellung der Erschliessung, markante Aussenraumabfolgen und -hierarchien, Raumbildung und

Vegetationskonzept

- Grundrisspläne: Darstellung der Einbauten, Materialisierung und Vegetation
- Schnitte und Ansichten
- Perspektivische Darstellung entsprechend der architektonischen Visualisierung
- Text: kurze und präzise Absichtserklärung des konzeptionellen Ansatzes in Bezug auf den Aussenraum, Beschrieb der wichtigsten Eingriffe und Massnahmen
- Volumenmodell mit raumwirksamer Vegetation
- ggf. Detailmodelle, Bepflanzungsstudien etc...

Den Plänen müssen alle projektrelevanten Informationen entnommen werden können. Sie vermitteln einen räumlichen Eindruck und sind eindeutig beschriftet (mit Höhenkoten, Materialisierung etc., in Grundrissen und Schnitten).

Voraussetzungen/Anmeldung

Empfohlen sind entsprechende Grundkenntnisse: ein Testat im Wahlfach Landschaftsarchitektur oder die Teilnahme an einem landschaftsarchitektonischen Entwurf. Neben der regulären Anmeldung beim Studiensekretariat müssen sich die Diplomierenden per E-Mail bei der Professur Vogt anmelden (Anmeldemodus siehe unten).

Termine

Dienstag 21.02.2017 14:00 Uhr

HIL H 40.9, Foyer

Einführung Begleitfach Landschaftsarchitektur

Freitag 24.02.2017 16:30 Uhr

Anmeldeschluss

Anmeldung per E-Mail an tanrisever@arch.ethz.ch mit folgenden Informationen:

- Name, Vorname
- Besuchte Kurse im Fach Landschaftsarchitektur (inkl. Angabe der Professur + Semester)
- Präferenz der Professur für die Diplombegleitung

Die Zuteilung wird im Anschluss an die Anmeldung per E-Mail bekannt gegeben.

Zwischenbesprechungen im Verlauf der Diplomarbeit erfolgen nach Absprache mit der jeweiligen Professur.

Abgabe

Die Dokumentation der gesamten Arbeit ist am Tag der Diplomabgabe auf den Server der jeweiligen Professur zu laden (PDF-Dateien aller Pläne und Visualisierungen, zuzüglich Fotodokumentation der Modelle).

Contacts

Professur Christophe Girot

Assistenz James Melsom

E-Mail melsom@arch.ethz.ch

Website www.girot.arch.ethz.ch

Büro HIL H55.3 (Mo/Mi/Fr, 09:00 Uhr-18:00 Uhr, nur mit Termin)

Professur Günther Vogt

Assistenz Ilkay Tanrisever

E-Mail tanrisever@arch.ethz.ch

Website www.vogt.arch.ethz.ch

Büro ONA J25 (Mo-Mi, 09:00 Uhr-18:00 Uhr)

Chair of Architecture and Building Systems

Prof. Dr. Arno Schlüter

Integrated Discipline “Energy Hub”

Introduction

The Intergovernmental Panel on Climate Change (IPCC) highlights the influence of the built environment on global energy consumption and climate change. Buildings account for 32 per cent of the global energy consumption, causing 19 per cent of greenhouse gas emissions. Today, 75 per cent of primary energy is consumed in urban areas. Energy consumption projections in buildings range from double to triple by 2050, which prize cities for the transition towards a low-carbon society. Even though the knowledge, practice and technology to make the transition exist, many barriers prevent the application of cost-efficient measures to increase energy efficiency and reduce carbon emissions of the built environment. Due to their long life cycles, buildings that are not transformed and cities that are not designed to operate with low-carbon emissions endanger meeting the global goals for climate change mitigation. Historically, the availability of renewable energy sources has been an important parameter for the establishment, growth and prosperity of cities. The access to energy has been described as even more important for stability than the access to food. When only renewable energy sources were available, the spatial vicinity to these resources has influenced the location, size, functions and form of cities. With available, powerful, cheap and manageable energy from fossil fuels, this relation has changed, leading to detached and centralised energy infrastructures. While developing nations still struggle to establish such a reliable infrastructure, industrialized nations face the challenge of transitioning towards a new energy system by reintroducing renewable energy at large scale.

A. Schlueter, J. A. Fonseca, G.Happle, S. Hsieh, Z. Shi: Multi-Scale Energy Systems for Low Carbon Cities
Future Cities Lab Challenges, 2016

The Energy Hub

As urban energy hub we understand not a single entity containing all necessary systems for transformation, conversion, and storing of energy, but that individual energy consumers and producers are spatially distributed over an area, which is relevant especially in case of transferring heat with the energy hub. This allows to take variable loads, systems, and energy sources of multiple buildings into account. The advantage of extending boundaries

to the urban scale is that typically, multiple energy sources are available, which allows for a higher flexibility of the system. An urban energy hub is defined as a delimited system, which balances energy flows within the boundaries, but can be also connected to the local energy grid to extract or supply energy. Individual hubs can be connected and exchange energy flows with various types of distribution grids, such as electricity, gas or heat networks.

Orehounig, Kristina, Ralph Evins, and Viktor Dorer
Integration of Decentralized Energy Systems in Neighbourhoods Using the Energy Hub Approach
Applied Energy 154 (September 15, 2015): 277–89. doi:10.1016/j.apenergy.2015.04.114.

The Task

Egerkingen. The growth and the observed clash of industrial infrastructure and villages address questions for future energy supply and necessary energy infrastructures. Whereas village buildings require only little heat and electricity, which can easily be supplied by decentralized sources and generators such as heat pumps, the industrial scale demands a different energy supply approach. As much as the village benefits from industry in terms of retail, jobs and transport infrastructure, it can also benefit from energy infrastructure, such as from the anchor loads established to supply industrial and commercial usages. Co-development and exploitation of renewable energy sources, utilization of waste heat potentials can benefit both, the industrial consumers as well as the village. The future logistics hub therefore also bears strong potentials to function as an *energy hub*.

The challenging question is: in lieu of the “Energiestrategie 2050” of Switzerland, which demand a fast transition towards renewable energy sources, how can the village be linked to the industrial scale in terms of exploitation of energy use and infrastructure in order to reduce energy consumption and CO₂ emissions? What synergies can arise, both on the level of infrastructure as well as the architectural/urban integration of energy technologies?

The task for the Integrated Discipline “Energy Hub” of the A Topic is therefore to conceptualize and design a future low carbon, mixed use urban-rural energy hub. Key objectives are to maximize the exploitation of renewables, the identification of synergies and joint infrastructure, integrated within the urban/architectural design

Contact

Assistant Dr. Amr Elesawy
Website www.systems.arch.ethz.ch
E-Mail elesawy@arch.ethz.ch

project, towards a new image of an *integrated energy hub* as a second dimension of the architectonic logistics hub.

The task consists of the following steps:

1. Analysis of renewable energy potentials of the project perimeter and extended perimeter.
2. Analysis of energy demand (heat, electricity) and loads in terms of quantity and quality for the different existing typologies on the project site (residential, office, industry... etc), as well as on the project perimeter surroundings.
3. Development of a concept for maximizing waste heat recovery and renewable energy generation potentials on the project site.
4. Identification, use and quantification of synergies and inter-connections between energy services for industry and demand of the village.
5. Visualization of the energy hub on the urban scale and of a core element on the building scale that demonstrates the interaction between:
 - a. Energy services for the industrial site and the village.
 - b. Energy systems and the architecture/urban design.

Deliverables

Subtask 1:

Mapping of renewable energy potentials (solar, geothermal heat, wind, biomass) including rough quantifications
Fractions of building typologies, type and profile or energy demand of buildings on the project perimeter

Subtask 2:

Estimation of total energy demand of heat and electricity for the different typologies; (tools for estimation supplied, visualization example: sankey diagram).

Subtask 3:

Concept schematic of exploitation of renewable energy potentials (subtask 1) and choice of renewable energy technologies in accordance to the urban design proposal

Subtask 4:

Location and placement of renewable energy technologies on the extended project perimeter; visualizations illustrating the overlap and interaction of urban design and energy sources/systems

Subtask 5:

Selection of one building central to the urban design concept (e.g. the Logistics Hub), visual/aesthetic integration of chosen renewable energy technology (i.e. solar PV) and illustration/

visualization of the architectural/urban design consequences

Documents

You present your work on an additional plan in the same format of the design drawings plus a written A4 report outlining the different subtasks and their results (details will be provided).

Administration (Dates tentative)

If you would like to do the integrated discipline please sign up until March 03 (binding) via email to elesawy@arch.ethz.ch.

The submission date of the plans displaying the results of the integrated discipline is the same as the diploma submission: **11.05.2017**

The submission date of the written report is one week after submission of the diploma plans: **18.05.2017**

Architekturtheorie

Prof. Dr. Laurent Stalder

Das Schweizer Mittelland kann als «Logistic Landscape» (Waldheim/Berger 2008) beschrieben werden. Seine räumliche Entwicklung ist eng mit den nationalen und internationalen Transportachsen von Strasse und Schiene verbunden und wird wesentlich durch grossmassstäbliche Warenlager, Verteilzentren und Verarbeitungsanlagen geprägt. Die Bauten zwischen Architektur und Infrastruktur bilden die Knotenpunkte von abstrakten Netzwerken und verkörpern bestimmte Prozesse in der Organisation von Güter- und Informationsflüssen.

Doch wer gestaltet die Logistiklandschaft? Welchen Gesetzmässigkeiten folgen die Anlagen, denen normalerweise wenig Aufmerksamkeit zukommt, die aber die gebaute Umwelt entscheidend prägen? Und inwiefern lässt sich daraus ein entwerferisches Potential für Architektur und Städtebau ableiten?

Aufgabe des Diplom-Begleitfachs in Architekturtheorie ist es, einen Aspekt der Schweizer «Logistic Landscape» historisch aufzuarbeiten. Das Ziel ist dabei weniger eine umfassende Beschreibung, als vielmehr aus einem historischen Verständnis heraus Erkenntnisse für den Entwurf zu gewinnen. Es wird erwartet, dass sich die Arbeit nicht auf eine Zusammenfassung von bestehenden städtebaulichen und architektonischen Studien beschränkt, sondern mit dem angeeigneten Wissen eine präzise Analyse des Ortes und seiner Bauten, seiner Infrastruktur, etc. vornimmt.

Die Arbeit ist als wissenschaftliche Schrift von rund 10'000 Zeichen Länge zu verfassen. Eine Rohfassung soll am Freitag, 24. März 2017 in elektronischer Form abgegeben werden und wird in der darauf folgenden Woche in einer Einzelkritik diskutiert. Weitere Zwischenbesprechungen vorher oder nachher können individuell vereinbart werden. Die endgültige Arbeit ist am Freitag, 28. April 2017 in zwei gedruckten Exemplaren einzureichen. Bei Fragen zur Aufgabenstellung besteht die Möglichkeit am Mittwoch, 22. Februar 2017 die Sprechstunde der Professur zu nutzen.

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ZUKUNFTSPROJEKT «DIE SCHWEIZ 2050»

Bessere Lebensqualität für die Schweiz planen

Mit dem interdisziplinären Projekt SwissAIM will die ETH Zürich zusammen mit dem SIA Zukunftsszenarien für den Lebensraum und das Bauwerk Schweiz entwerfen – Ziel ist eine verbesserte Lebensqualität bis 2050.

Text: Reza S. Abhari, Hubert Klumpner und Anna Gawlikowska

Die Schweiz genießt den Ruf als ein weltweiter Qualitätsmassstab, mit Schwerpunkt auf Stabilität und Innovation. Um diese Führungsrolle auch in Zukunft bewahren zu können, muss sie sicherstellen, dass Veränderungen in der Gesellschaft und in der gebauten Umwelt mit den Schweizer Werten von Qualität und Nachhaltigkeit in Einklang stehen.

Soll eine Vision für die Schweiz 2050 entwickelt werden, dann muss ein Spektrum an Möglichkeiten geschaffen werden – ausgehend von der heutigen Struktur mit ihren spezifischen Gegebenheiten. SwissAIM ist ein kollaboratives, ergebnisorientiertes Programm der ETH Zürich (ETHZ) und des SIA – eine Softwareplattform, mit der sich mögliche künftige Szenarien und ihre Auswirkungen für die Schweiz generieren lassen.

Seit 2009 investierte eine Gruppe von Ingenieuren am Institut für Energietechnik (LEC) der ETHZ etwa 50 Personenjahre in die Entwicklung der Datenbank und des Softwaretools. Das LEC und das Institut für Städtebau (NSL / U-TT) leiteten 2015 in Zusammenarbeit mit dem SIA das interdisziplinäre Projekt SwissAIM ein. Das Planungstool von SwissAIM nutzt Big Data, hochentwickelte Software mit Visualisierung und Large-Scale-Computing. Das Tool bietet dem Anwender die einzigartige Möglichkeit einer simultanen dynamischen und hoch auflösenden Modellierung von städtischen Strukturen, Landschaft, Personenverkehr, Wetter, Energie, Ressourcen und Sozioökonomie. Per-

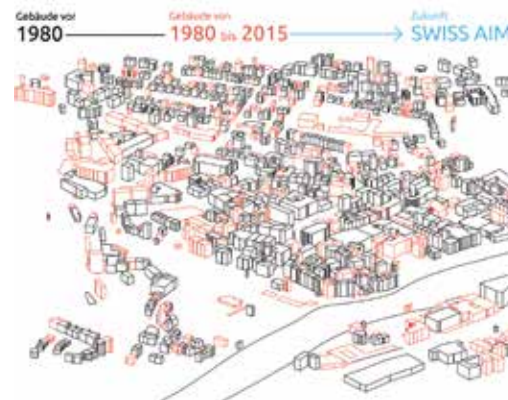
sonen werden mit Datenbeständen, die bis auf die Ebene einzelner Gebäude herunterreichen, als individuelle «Agenten» mit ihren künftigen Bedürfnissen modelliert. So werden z. B. stündliche Aktivitäten im Land – von der Mobilität bis hin zum Energieverbrauch – für bis zu 30 Jahre im Voraus simuliert.

Den Kontinent modellieren

Der Anwender kann Elemente wie die künftige Fortbewegung von Personen und den Bau neuer Gebäude, Strassen, Tunnels, Dämme oder Kraftwerke anpassen, um die Auswirkungen auf die künftige Ökonomie und Ökologie abzuschätzen. Um den Einfluss angrenzender Länder

zu berücksichtigen, wurde der gesamte europäische Kontinent modelliert. Ein einzigartiges Merkmal des Tools SwissAIM ist seine ganzheitliche Verschmelzung von Wissen, Big Data und Analysen, die Planer und Ingenieure mit realisierbaren Visionen unterstützt.

Mit diesen Tools lassen sich Szenarien für alle Gebiete der Schweiz, ungeachtet ihres städtischen oder ländlichen Charakters, gleichzeitig beurteilen, wobei Landschaft und Infrastruktur des Bauwerks Schweiz berücksichtigt werden. Zum ersten Mal verknüpfte man Datenbestände aus sehr unterschiedlichen Quellen, unter anderem von Bundesämtern, nahtlos und strukturiert miteinander, um eine



Im Projekt SwissAIM wird unter anderem die Öltener Gebäudeentwicklung untersucht.

Bild: Swiss AIM, ETH Zürich

ZUKUNFTSPROJEKT «DIE SCHWEIZ 2050»

Auf das Gebaute bauen

Raumentwicklung und Planung neu denken: Mit einem unkonventionellen, transdisziplinären Ansatz startet das Studio Basel der ETH in das Projekt «Die Schweiz 2050 – Bauwerk und Lebensraum».

Text: Charlotte von Moos, Katia Frey

Wie wird die Schweiz in 35 Jahren aussehen? Das ETH Studio Basel beabsichtigt als Krönung der Lehrzeit von Jacques Herzog und Pierre de Meuron an der ETH Zürich auf provokative, aber realistische Art und Weise Möglichkeiten darzustellen, wie sich unser Land räumlich entwickeln könnte. Entgegen der vorherrschenden, thematisch fragmentierten Planungsrealität konfrontieren die Basler die Stadtplanung mit der Sichtweise des Architekten und Generalisten. Dabei werden mithilfe eines präzisen Vokabulars und eines systematischen Analyseverfahrens Probleme ganzheitlich angegangen, wobei die Planungsrealität – etwa das revidierte Raumplanungsgesetz – als kritisch zu hinterfragende Grundlage angenommen wird.

Neue Lesart von Urbanisierung

Herzog und de Meuron knüpfen mit dieser Arbeit an Themen an, die sie schon zuvor am ETH Studio Basel untersucht haben und deren Forschungsergebnisse in mehrere Publikationen einfließen: «Die Schweiz. Ein städtebauliches Portrait» (2006) und «The Inevitable Specificity of Cities» (2014), sowie «Achtung: die Landschaft. Kann man die Stadt anders denken? Ein erster Versuch» (2015). Diese Studien, die für eine neuartige Lesart von Urbanisierungsprozessen stehen und eine Neuentdeckung des dem Territorium innewohnenden Potenzials fordern, werden dem neuen Projekt sowohl eine Arbeitsgrundlage als auch erprobte methodische Ansätze liefern.

Wie geht man ein so ambitioniertes Projekt an? In der Initial-

phase fokussierte das Studio Basel mit dem trinationalen Metropolitanraum Basel auf heimisches Terrain, um hier eine anschauliche und radikale Arbeitsmethode zu entfalten. Das an diesem Fallbeispiel entwickelte Vorgehen und Vokabular soll, unter Berücksichtigung der jeweiligen spezifischen Gegebenheiten, als Modell für die Untersuchung weiterer Gebiete in der Schweiz adaptiert und anwendbar gemacht werden.

Als wichtigste These der Arbeit wurde die Maxime «Auf das Gebaute bauen» aufgestellt: Ist es möglich, das Bevölkerungswachstum (10 Millionen Menschen – oder mehr oder weniger?) innerhalb der schon bestehenden Siedlungsgebiete aufzunehmen und damit die fortschreitende Zersiedelung zu stoppen und gleichzeitig das Nicht-Gebaute, die Landschaft ins Zentrum zu stellen? Und wie kann diese Idee umgesetzt werden?

Territorium – Mensch – Macht

Ausgehend von den bestimmenden Faktoren Territorium – Mensch – Macht wurde eine konzeptionelle Matrix aufgestellt. Sie soll den bestimmenden Kräften, wie politischen, ökonomischen, technischen, sozialen und kulturellen Faktoren, aber auch der komplexen Interaktion zwischen den entscheidenden Akteuren aus Politik, Wirtschaft, Öffentlichkeit und Planung Rechnung tragen und diese nachvollziehbar darstellen.

Das «Territorium» wird dabei in vier gewichtete thematische Typologien unterteilt: «Die Rolle der Landschaft stärken», «Aus Agglomeration Stadt werden lassen», «Die unverrückbare gebaute Stadt

infrage stellen», «Die Räume der Infrastruktur neu denken» – und an konkreten Standorten (im Metropolitanraum Basel z. B. Gempfen, Murtens-Pratteln, Grossbasel, Lange Erlen) systematisch untersucht. Um ein besseres Verständnis dieser Orte zu ermöglichen, werden der Mensch mit all seinen Aktivitäten sowie die politische Macht mit all ihren Ausprägungen in der Beurteilung mit einbezogen. Einfache, planerische Maximen – «auf das Gebaute bauen», «den öffentlichen Raum gestalten», «verbinden statt trennen», «Schönheit fördern», «programmatisch und baulich verdichten», «versorgen und entsorgen», «über politische Grenzen hinaus denken» – stützen spezifische Eingriffe.

Die Projektautorens sind auf die aktive Unterstützung und den Austausch mit ETH-internen und externen Fachleuten unterschiedlicher Gebiete angewiesen; auch die Berufsgruppen und Fachvereine des SIA sowie die Sektionen sollen in den Prozess einbezogen werden. Hinzu kommt ein als «Sounding Board» bezeichnetes Element, in dessen Rahmen Philosophen, aber auch Schriftsteller oder Historiker zu Wort kommen und den Prozess kritisch kommentieren. So erhält er bewusst fachfremde Impulse.

Die Ergebnisse des Projekts sollen in möglichst anschaulicher Form einer breiten Öffentlichkeit präsentiert werden mit dem Ziel, eine konstruktive und produktive Debatte über «Die Schweiz 2050» zu initiieren. •

Charlotte von Moos, Dipl. Arch. ETH, Institutsleitung ETH Studio Basel

Der Text entstand unter Mitwirkung von Dr. Katia Frey (D-Arch, ETH) und Julian Oggier (ETH Studio Basel)



1.



3.



Eppenbergtunnel: Die Baustelle wird vorbereitet



Mauern sind abgetragen und Bohrer sind zurückgezogen, um das Areal für die künftigen Bauarbeiten vorzubereiten.
© Flavia Nüssli

Der Baubeginn des Vierspurausbaus Olten-Aarau rückt näher. Der Bund hat das Projekt bewilligt. Die Hauptarbeiten für das 800-Millionen-Franken-Projekt starten im Frühling 2015. Mit den Vorarbeiten ist bereits begonnen worden.

Artikel zum Thema

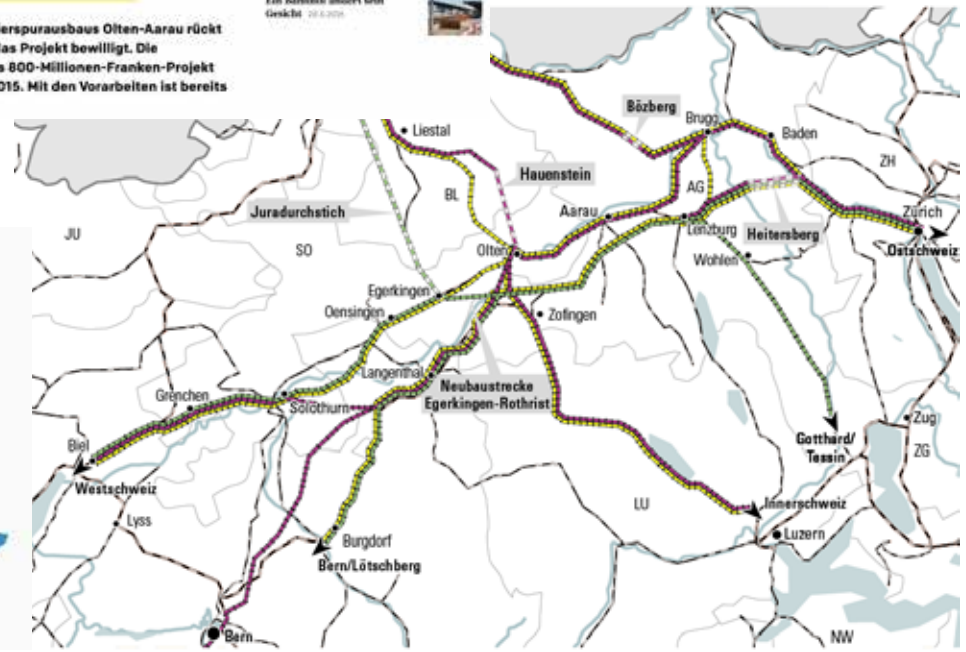
EPPENBERGTUNNEL
Ein 200-Tonnen-Motor kommt auf Cesswegen auf die Baustelle 07.07.2014

AARGAU-OLTEN
Vorsicht herrscht beim Eppenbergtunnel-Projekt der SBB: «Es jetzt läuft alles fast zu gut» 16.08.2014

EPPENBERGTUNNEL
Seltler Waldbrand wird zur Baustelle: Hier kommt ein 70-Meter-Schacht zum Eppenbergtunnel hin 20.08.2014

DÜLLIKEN
Ein Bahnhofslandwirt wird Gescht 20.08.2014

2.



4.

1. source: SBB Olten Aarau new planned railway extensions
2. source: Aargauer Zeitung, August 2016
3. source: Hochparterre, Die Gruppe Bibergeil will den Aargau umformen
<http://www.hochparterre.ch/nachrichten/planung-staedtebau/blog/post/detail/les-argovies-die-studie-im-original/1447175878/>
4. source: Neue Zürcher Zeitung, 14/10/15
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