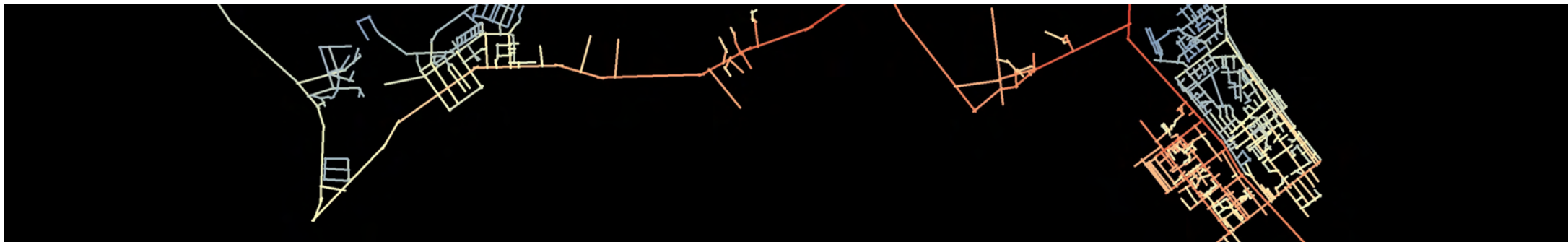




Concept, functions and architecture for the plot in Edise
Edise kinnistu kontseptsioon, funktsioonid ja arhitektuur



Architects

Projekteerijad

Client /
Tellijä

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Jõhvi vald, Ida-Virumaa

Author /
Projekteerija

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www.ars.ee

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Juhtiv arhitekt

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Team /
Meeskond

Damiano Cerrone
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Andrei Pleskatšjov
Helen Pau
Kristi Grišakov

Contents

Sisukord

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- Location
- Existing situation
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- Traffic density

Statistical information

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- East Viru county
- Income
- Real estate market

Development strategy

- Target group and strategy
- Development scenarios
- Reference cases
- Implementation

Analysis of the plots

- Accessibility analysis
- Suitability analysis
- Space syntax analysis

Planning of the area

- View corridors – generative design
- Sketch maps
- Site plans

Location

Asukoht



Between Tallinn and St. Petersburg

- Tallinn is the capital of Estonia
- St. Petersburg is the 2nd biggest city in Europe
- Rail Baltic is going to pass nearby
- European union wants trade to Russian Federation

Existing situation

Olemasolev olukord



Panorama view from the road



Buildings



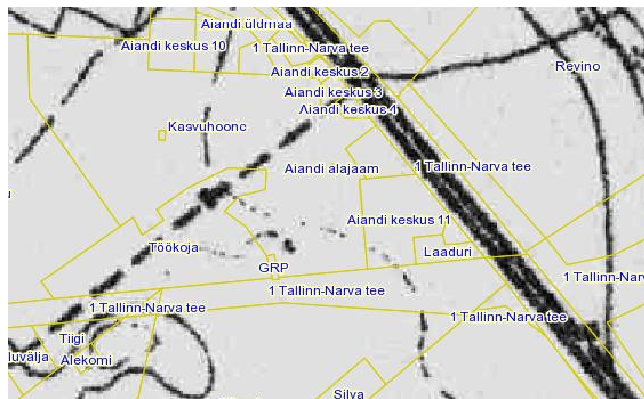
Tree nursery



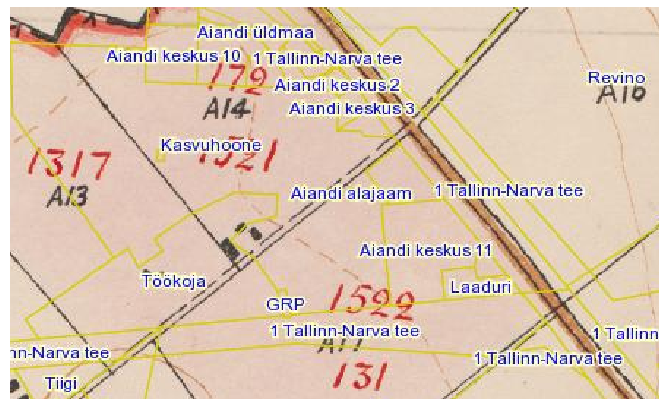
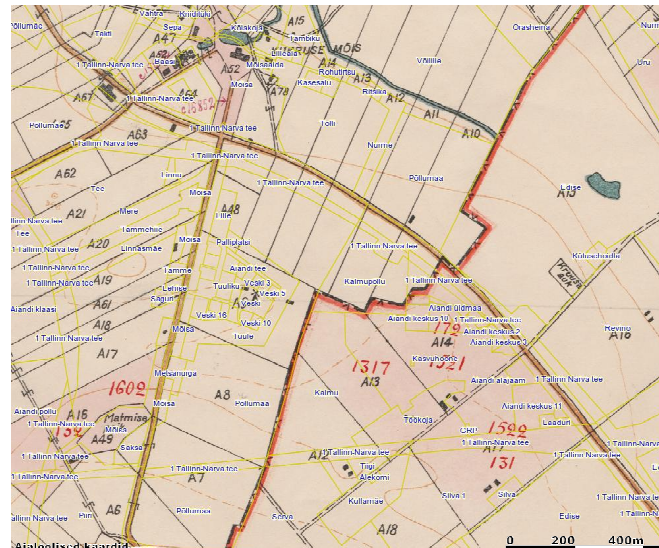
Greenhouses

Historical maps

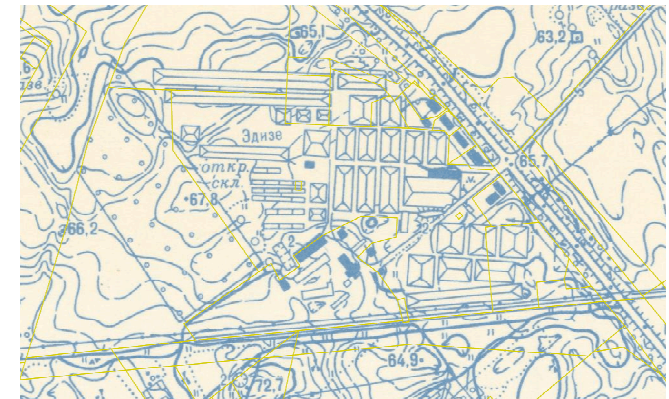
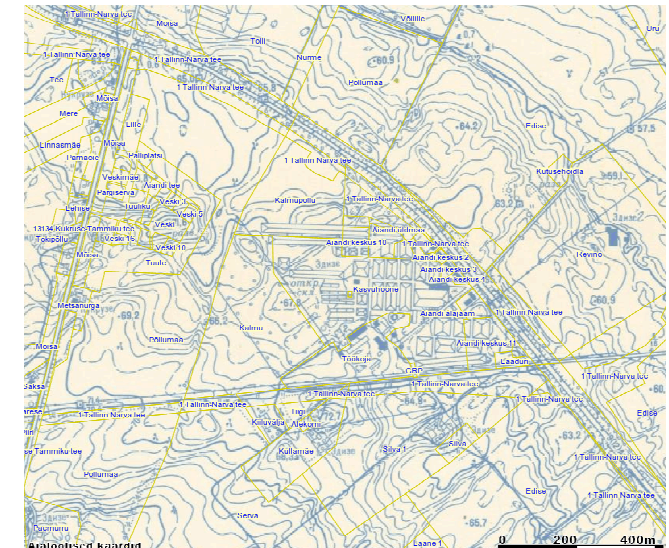
Ajaloolised kaardid



Verstamap
From the years 1935 -1939



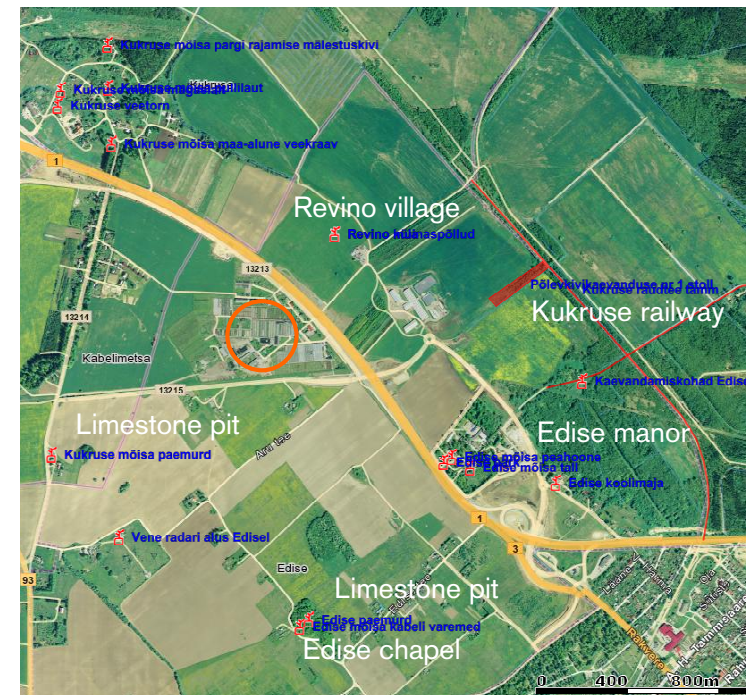
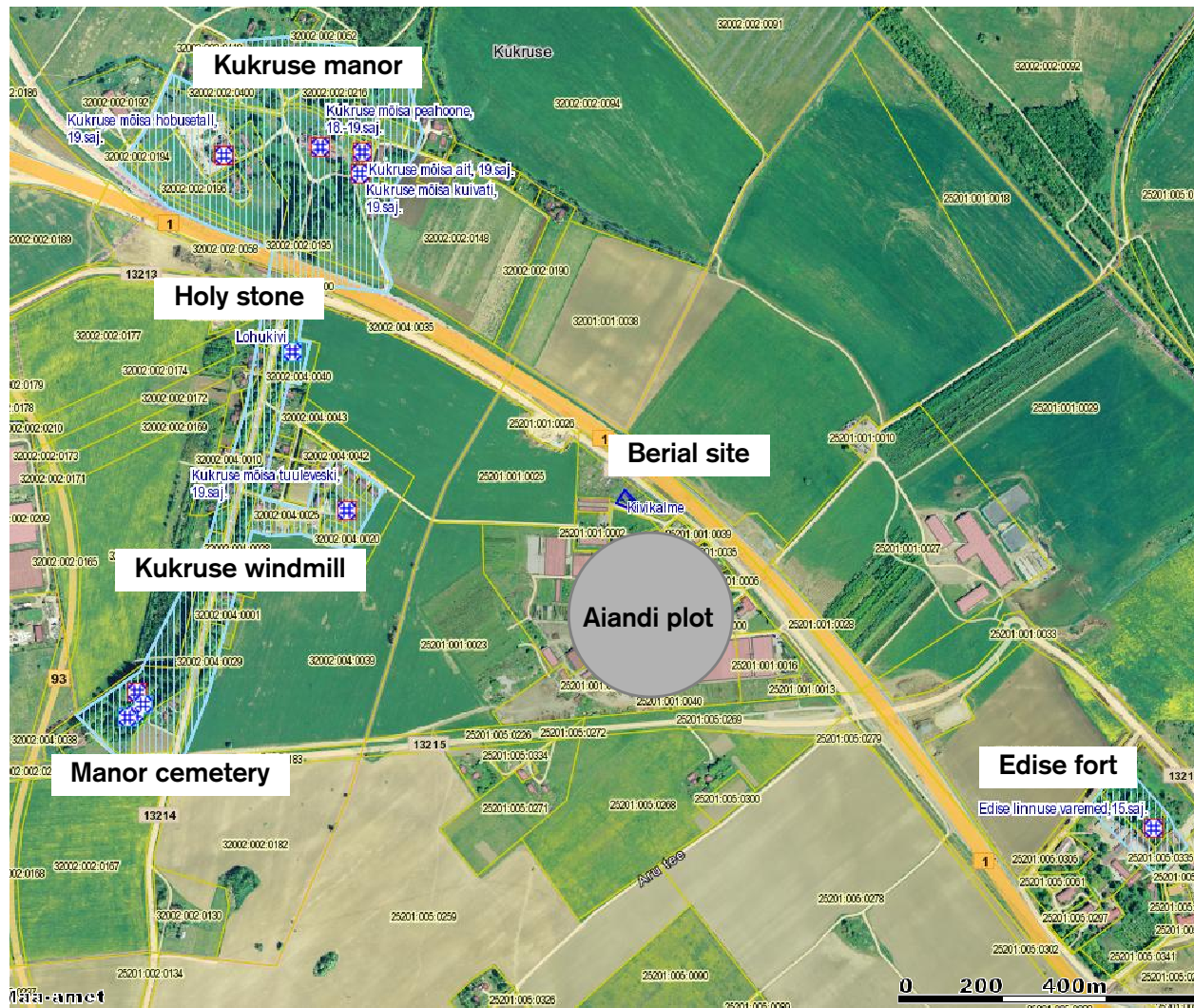
Topographical basemap
From the years 1930 - 1944



Topographical basemap
From the years 1979

Historical landmarks

Ajaloolised maamärgid



Cultural monuments and local cultural heritage

- There are several limestone pits (quarries) and traces of mining oil shale (kerogenite) in the area
- Remains of Kukruse and Edise manors are protected
- There are several holy stones and berial sites

Aiandi plot 

Existing landmarks

Olemasolevad maamärgid



Kukruse manor



E20, pedestrian bridge



E20, sound barrier



White horse inn (Edise manor stall)



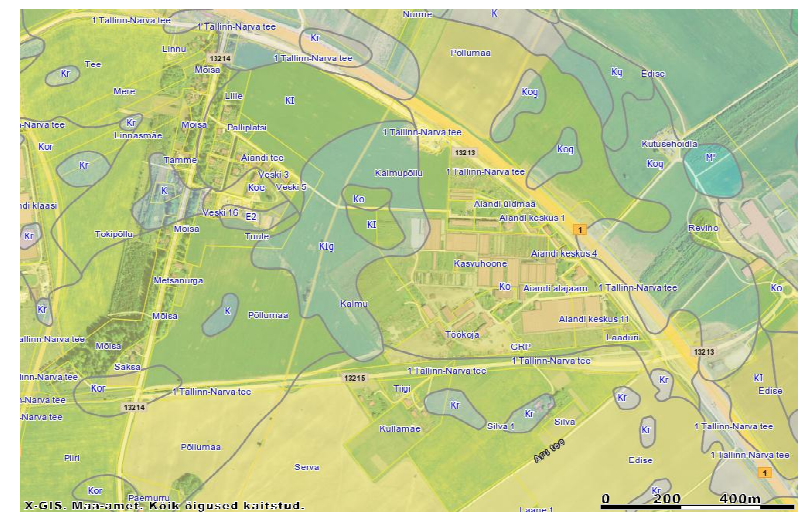
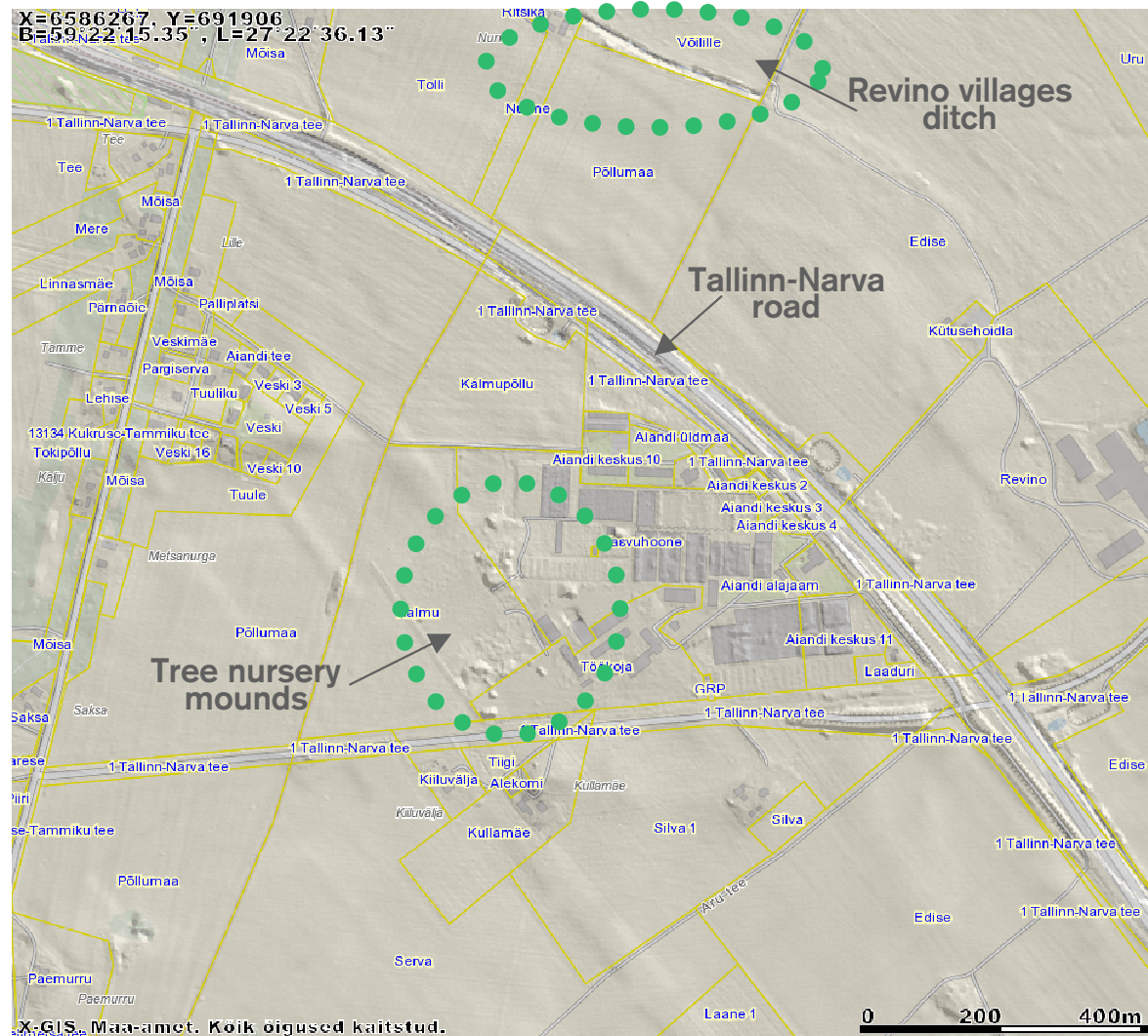
Kukruse manor avenue



Kukruse manor mill and housing area

Topography and soil type

Reljeef ja mullastik

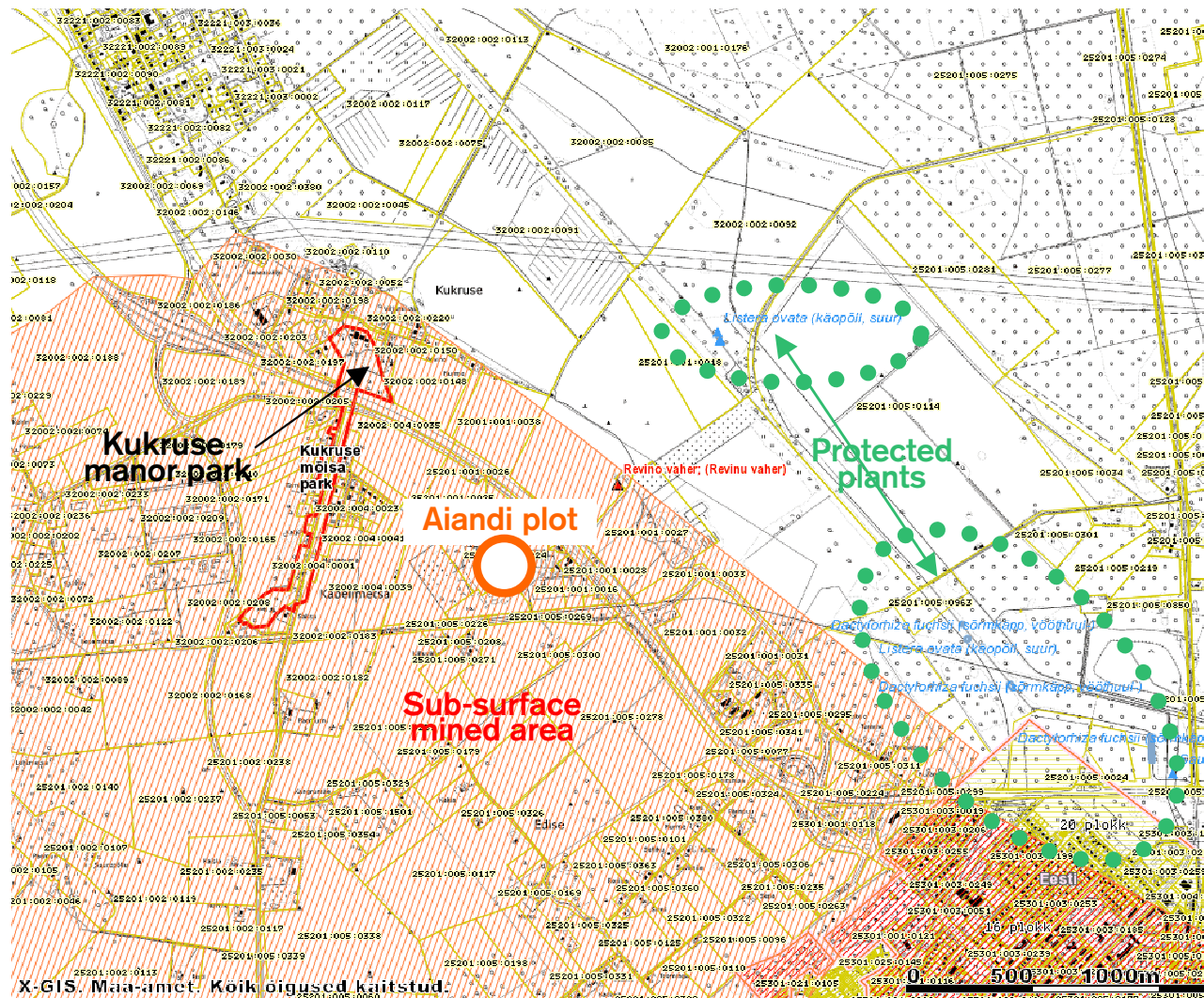


Terrain and soil

- The area is mainly flat
- The lowest spot is Revino villages ditch (former pit) and highest place is Tallinn-Narva road
- Former market garden (greenhouses) area is enlived by mounds near the old tree nursery
- Predominant in the area is (Ko) soil (leostunud), a neutral sand and gley soil that is well suitable for all of the field crops
- Western land areas are podzol (KI) soil (leetjas) neutral sand and gley soil that is well suitable for all of the field crops
- Some parts of western areas are podzol (Klg) soil (gleistunud leetjas) that is slightly acid and temporarily overmoist soil

Natural environment

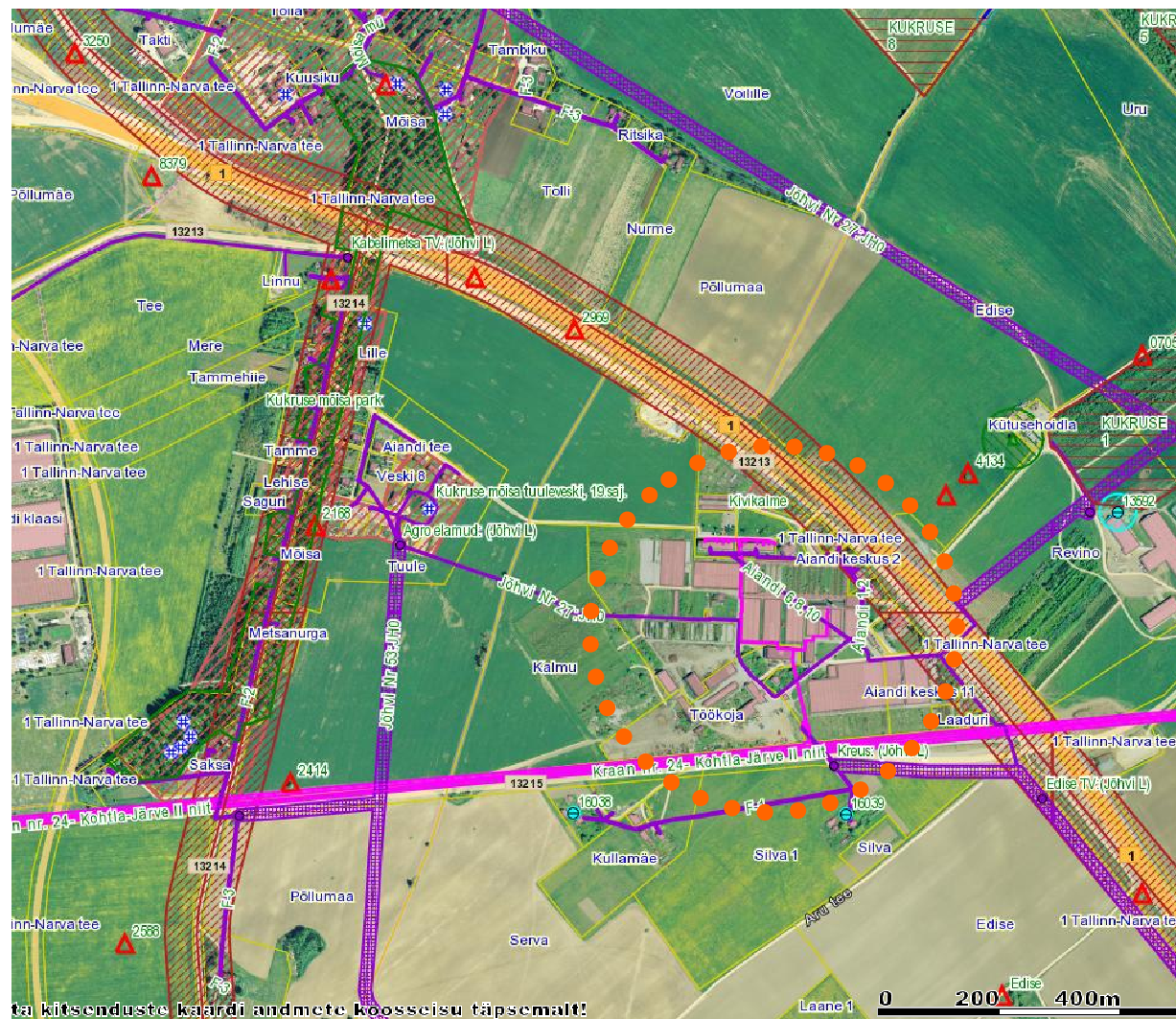
Looduskeskkond



Natural environment analysis

- The area is sub-surface mined from underground
- Nearby are growing places of protected plants
- Protected Kukruse manor park with larch boulevard is visible from the area
- Winds are mainly from the south

Restrictions Kitsendused



Keskkonnakaitselised piirangud

- metsa kitsendused
- paikne saasteallikas
- kaitseobjekti piirangud
- kaitsmata põhjaveega ala
- valgala reostuskaitsevöönd

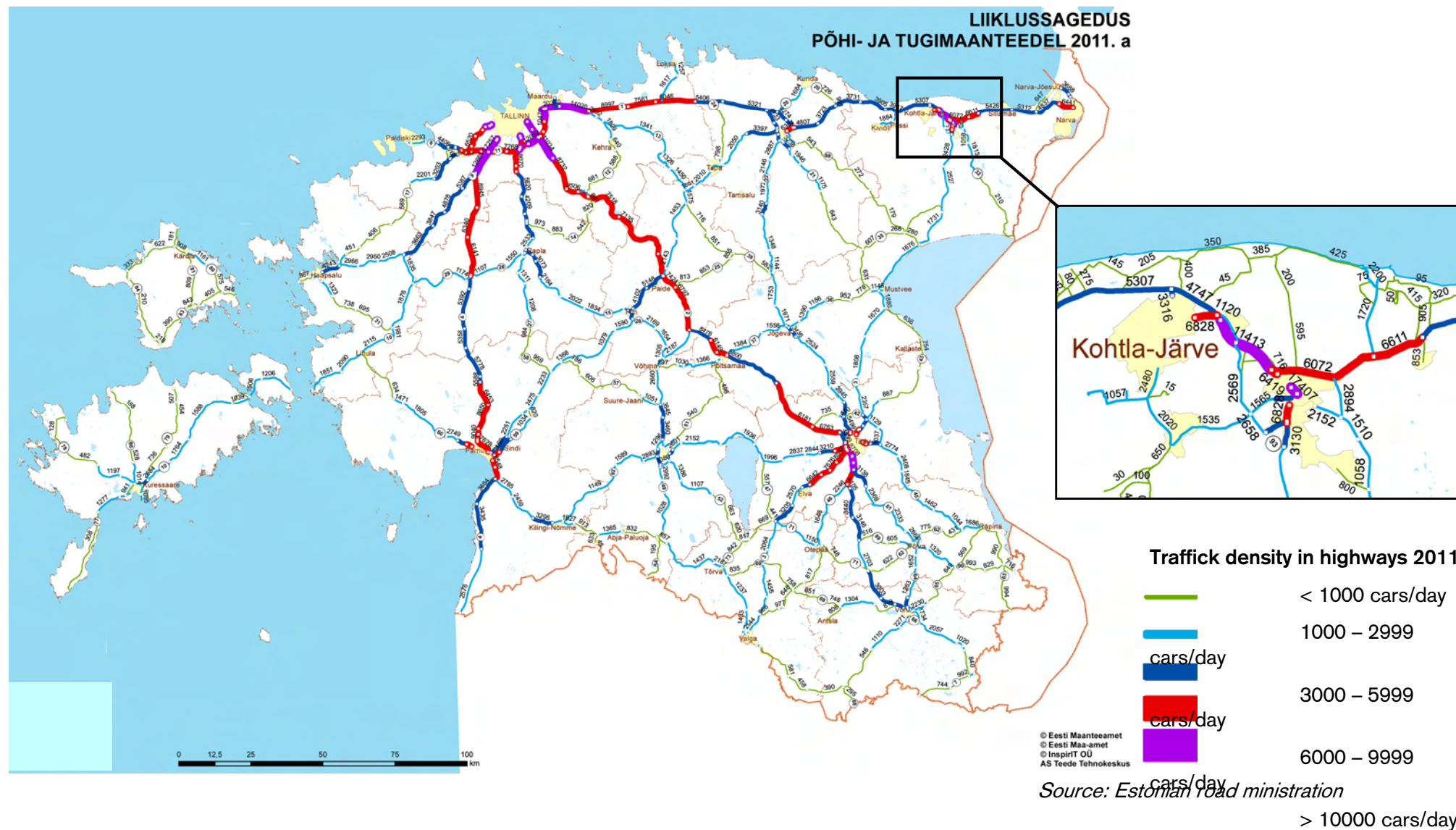
Tehnorajatistest tulenevad piirangud

- tee kaitsevöönd
- raudtee kaitsevöönd
- lennuvälja lähikümbus
- elektripaigaldise kaitsevöönd
- gaasipaigaldise kaitsevöönd
- surveadme kaitsevöönd
- vee- ja kanal. kaitsevöönd
- liinirajatise kaitsevöönd

Muud maakasutuspiirangud

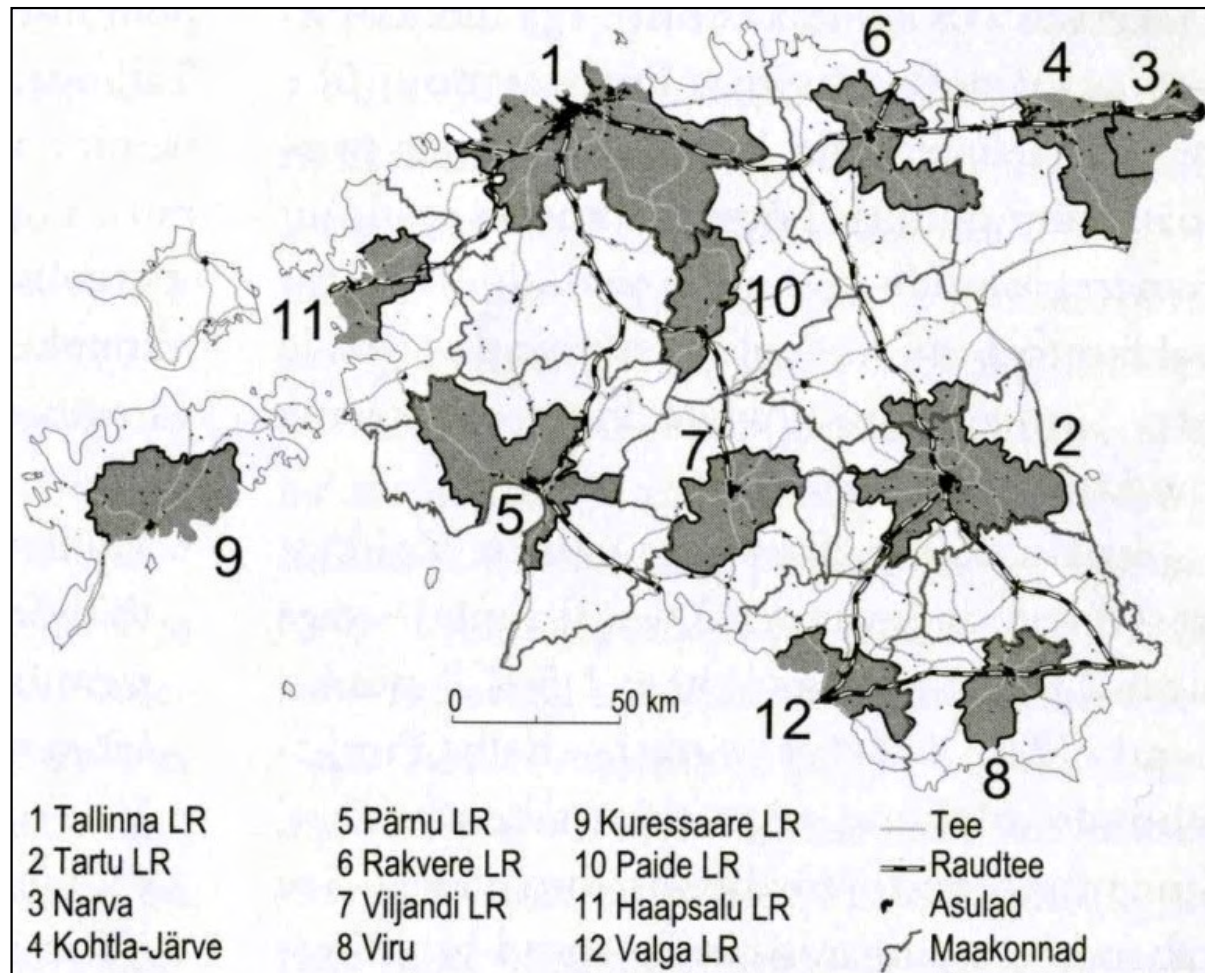
- planeeringuala
- geoloogilised piirangud
- riigikaitselised kitsendused
- muinsuskaitse kitsendused
- geod.märgi kaitsevöönd

Traffic density Liiklustihedus

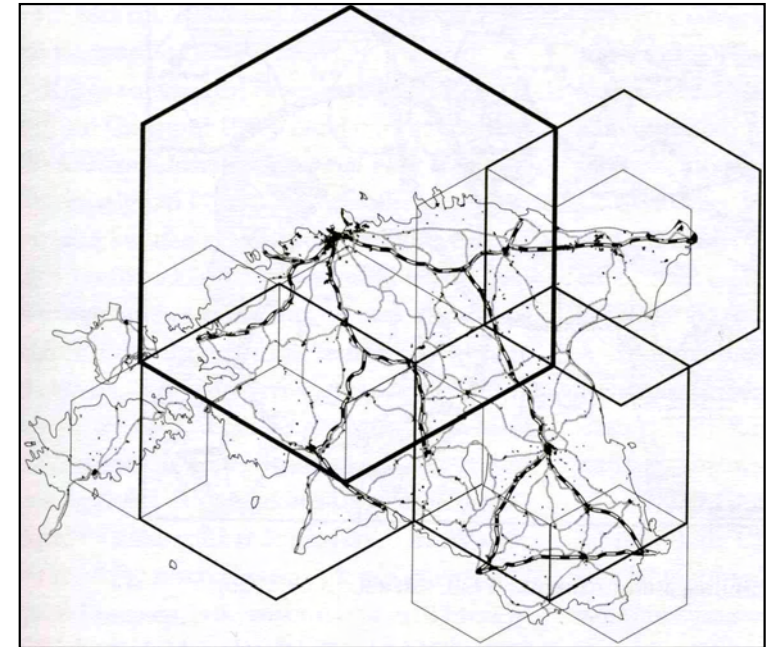


City regions in Estonia

Eesti linnaregioonid



City regions in estonia

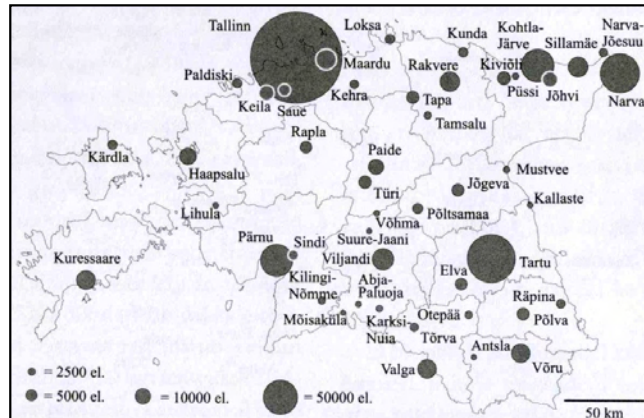


Model of estonian central places

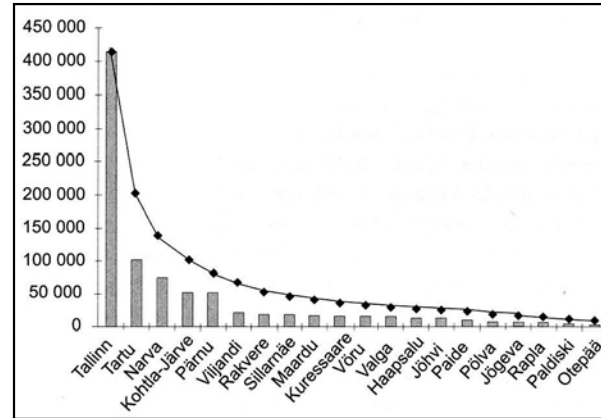
Source: Linnageograafia, J.S Jauhiainen

City regions in Estonia

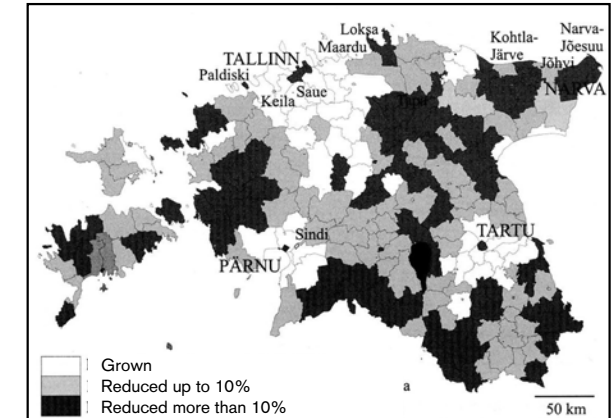
Eesti linnaregioonid



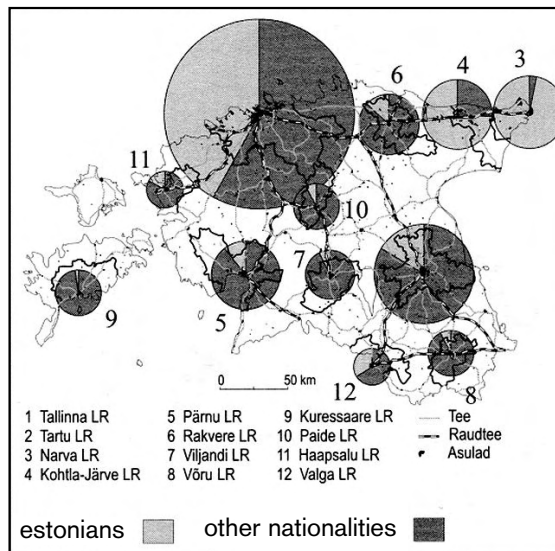
Estonian towns by population



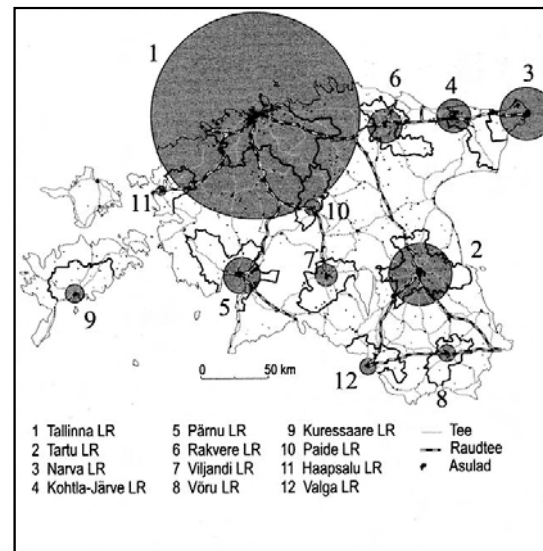
Estonian towns by rank-size rule



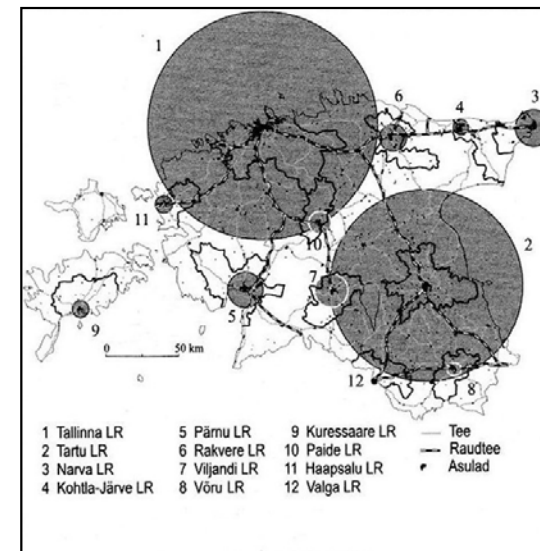
Population changes in Estonian municipalities



City regions social capacity (population)



City regions economical capacity (crossover)



City regions knowledge capacity (students)

Source: Linnageograafia, J.S Jauhiainen

East-Viru county

Ida-Viru maakond



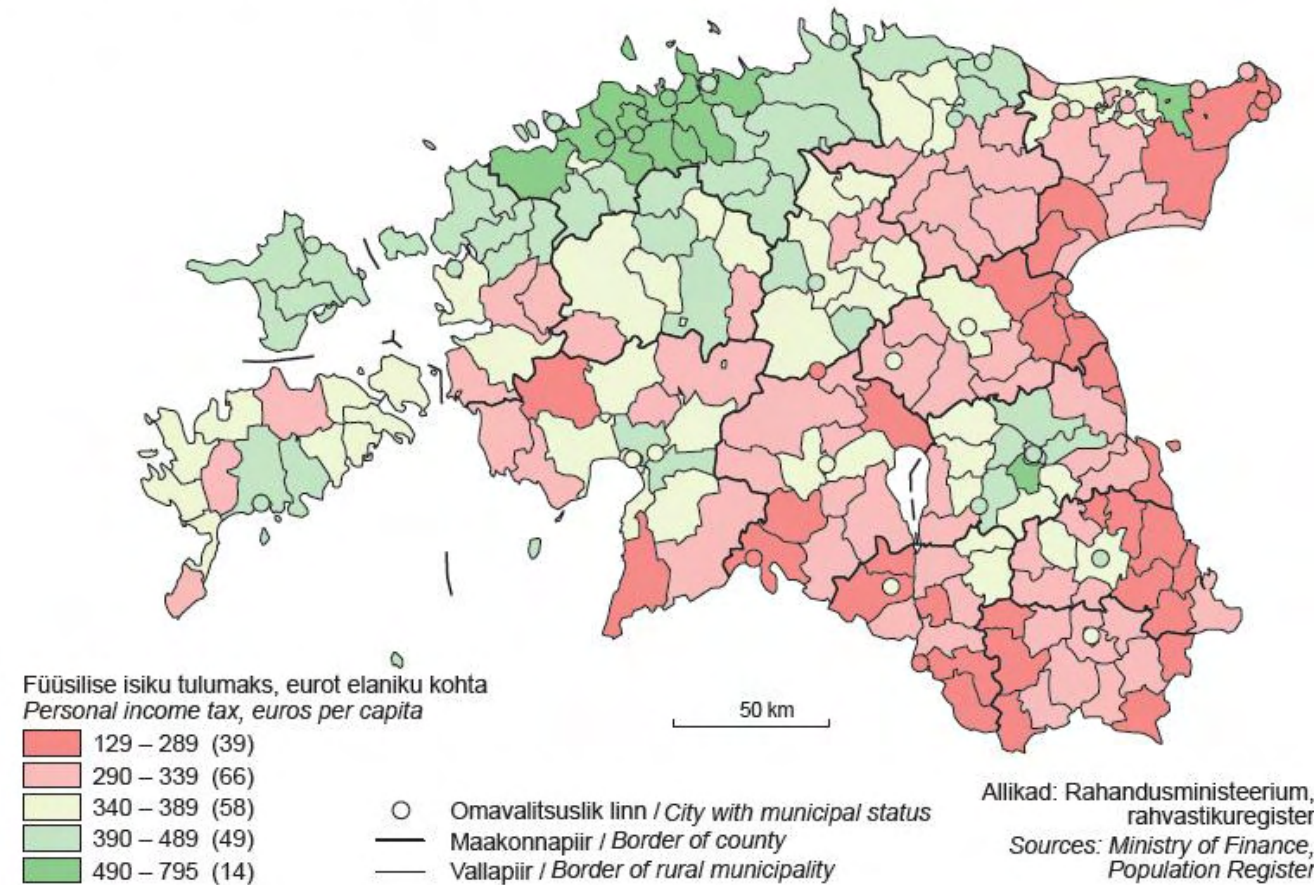
- 2nd biggest county in Estonia with the population 168 689 (01.01.2009)
women 55,41% and men 44,59%
natural growth -6,15‰
- Ethnicity:
estonians 16,65% and russians 71,28%
- Age structure:
 - Under-age (0-14) 13,27%
 - Working-age (15-64) 68,63%
 - Retirement age (65+) 18,10%unemployment rate 12,3%
inhabitation density 50,4 in/km²
- 6 cities together have population 148 000 people (88% Ida-Viru county's population)
 - Narva 66 000
 - Kohtla-Järve 44 000
 - Sillamäe 16 000
 - Jõhvi 13 000
 - Kiviõli 7 000
 - Püssi 2 000
- Land area 3 364 km² (7,4% Eestist)
- Main economical branches: oil shale mining, chemical industry, heavy- and light industry, governmental offices, agriculture.

Income

Sissetulekud

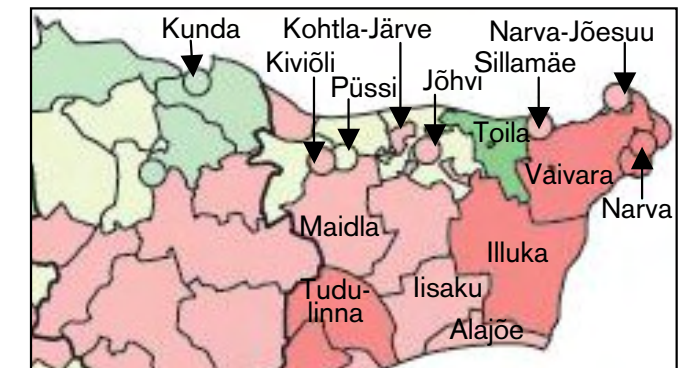
Kaart 3. Füüsilise isiku tulumaksu laekumine kohaliku omavalitsuse eelarvesse elaniku kohta, 2010

Map 3. Personal income tax received into local budget per capita, 2010



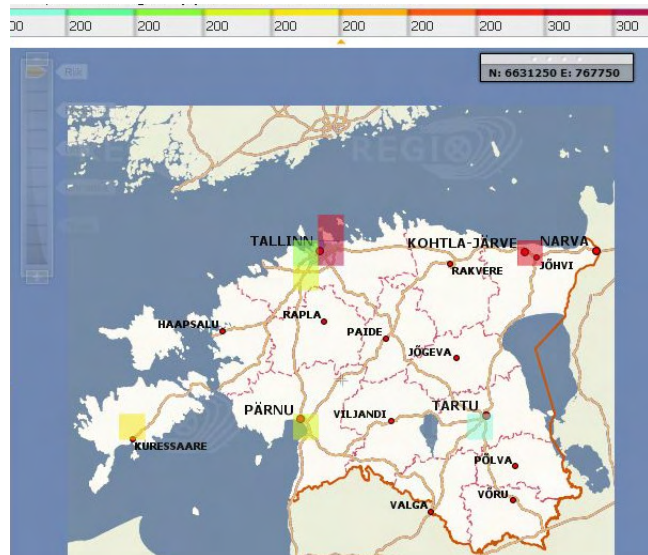
Individuals monthly gross income, 2010 (euros)

Maakond	2010	Muutus 2005. aastaga võrreldes, %
Harju	862	49
Tallinna linn	847	48
Tartu linn	799	54
Tartu	777	55
Estonian average	767	53
Hiiu	756	56
Rapla	730	52
Saare	708	50
Lääne	695	52
Lääne-Viru	692	55
Pärnu	683	49
Järva	680	48
Viljandi	667	52
Põlva	660	57
Võru	657	55
Jõgeva	652	52
Ida-Viru	642	70
Valga	633	56

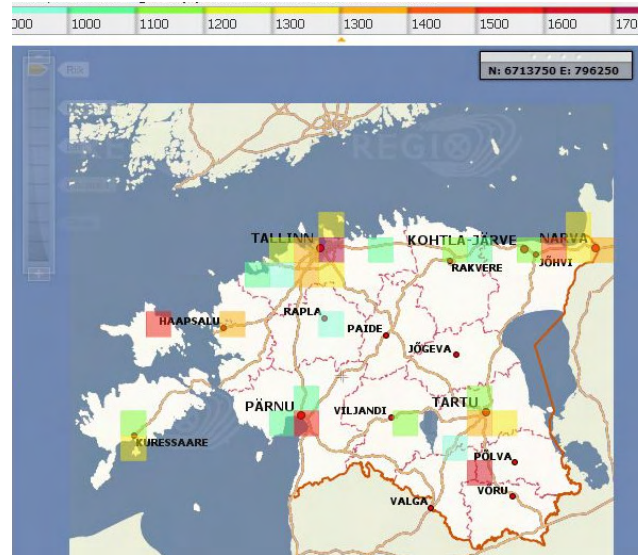


Realestate market

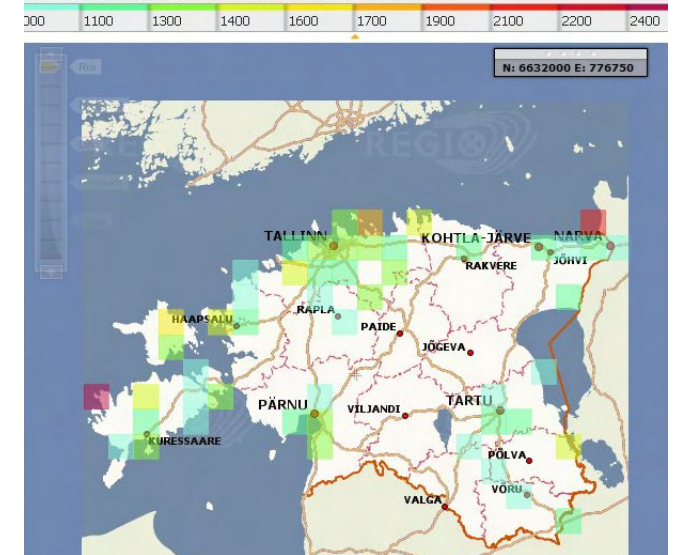
Kinnisvaraturg



Garages sales prices in Estonia (100-300 €/m²)



Apartments sales prices in Estonia (1000-1700 €/m²)



Houses sales prices in Estonia (1000-2400 €/m²)



Garages sales prices in the region (100-400 €/m²)



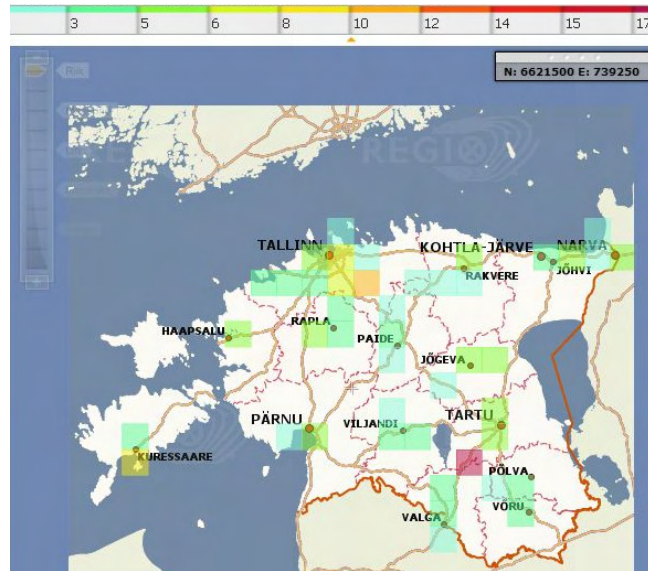
Apartments sales prices in region (1000-1400 €/m²)



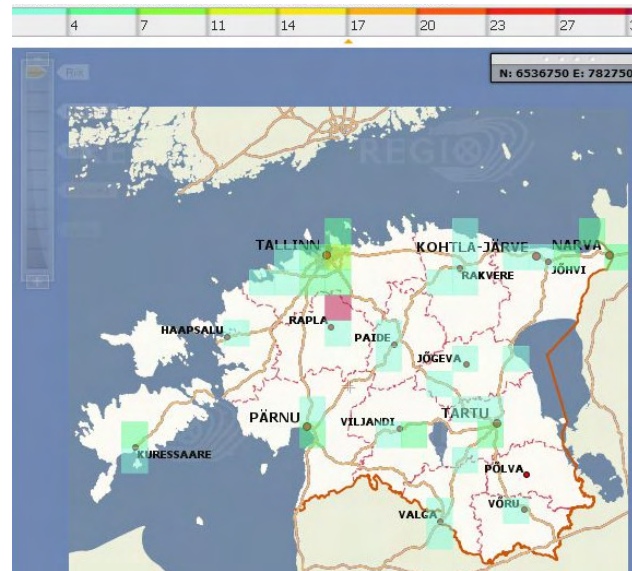
Houses sales prices in the region (1000-1200 €/m²)

Realestate market

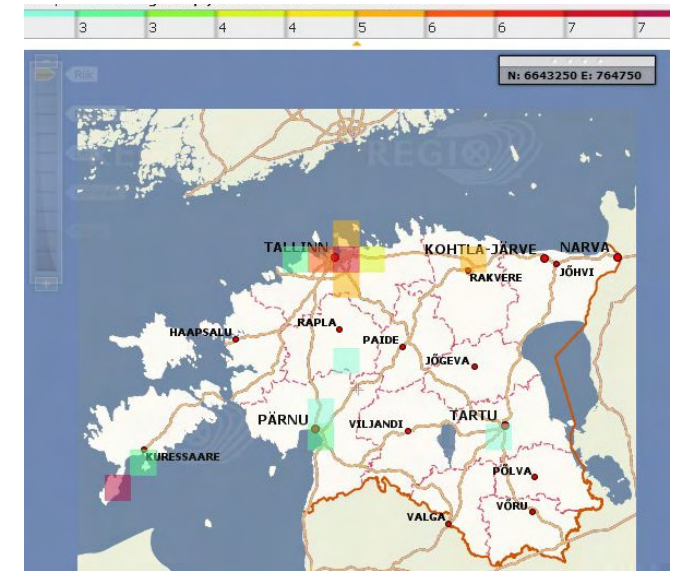
Kinnisvaraturg



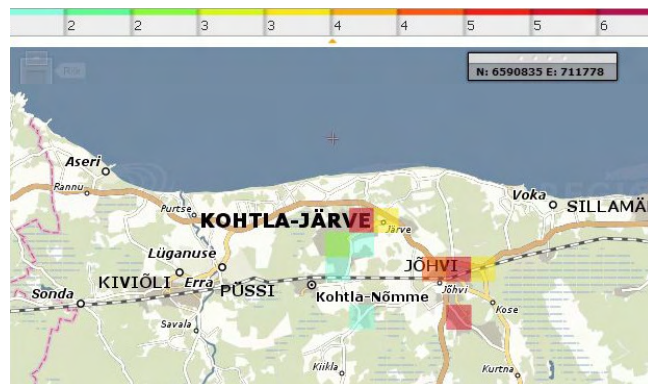
Business space rental prices in Estonia (1-17 €/m²)



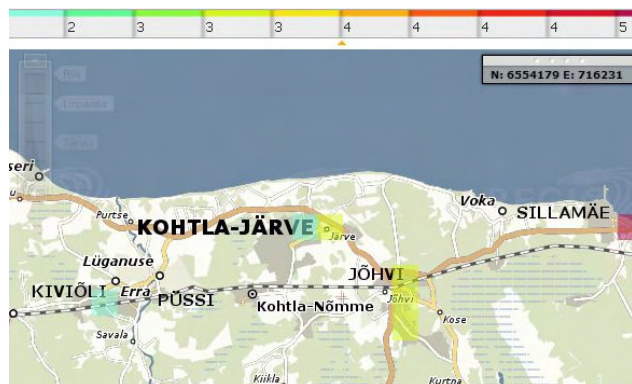
Flats rental prices in Estonia (1-30 €/m²)



Houses rental prices in Estonia (1-7 €/m²)



Business space rental prices in the region (1-6 €/m²)



Flats rental prices in the region (1-5 €/m²)

Realestate market overview

- no houses for rent in the region
- no garages for rent in the region
- no business spaces for sale in the region
- All rental prices and sales prices for the houses are lower than Estonian average price
- Sales prices for the flats are mainly same as in other Estonian places

Target group and Strategy

Sihtgrupp ja Strateegia

Target group

Ida-Virumaa countys inhabitants

Shiftworkers
Better living place seekers
Students and civil servants

Estonian inhabitants

Commuters
Business apartments

Foreigners

Summer cottages for Peterburi inhabitants

Target group quantity ca 150 000 people

Market situation

- Existing blocks of flats are without renovation for many years
- Problems paying for heating costs
- No new developments in area

Strategy

- Mixed use development
- Blocks of flats residential area
- Whole Revino development to include
- Small private housing + blocks of flats + office spaces
- Start right away

Development timeline

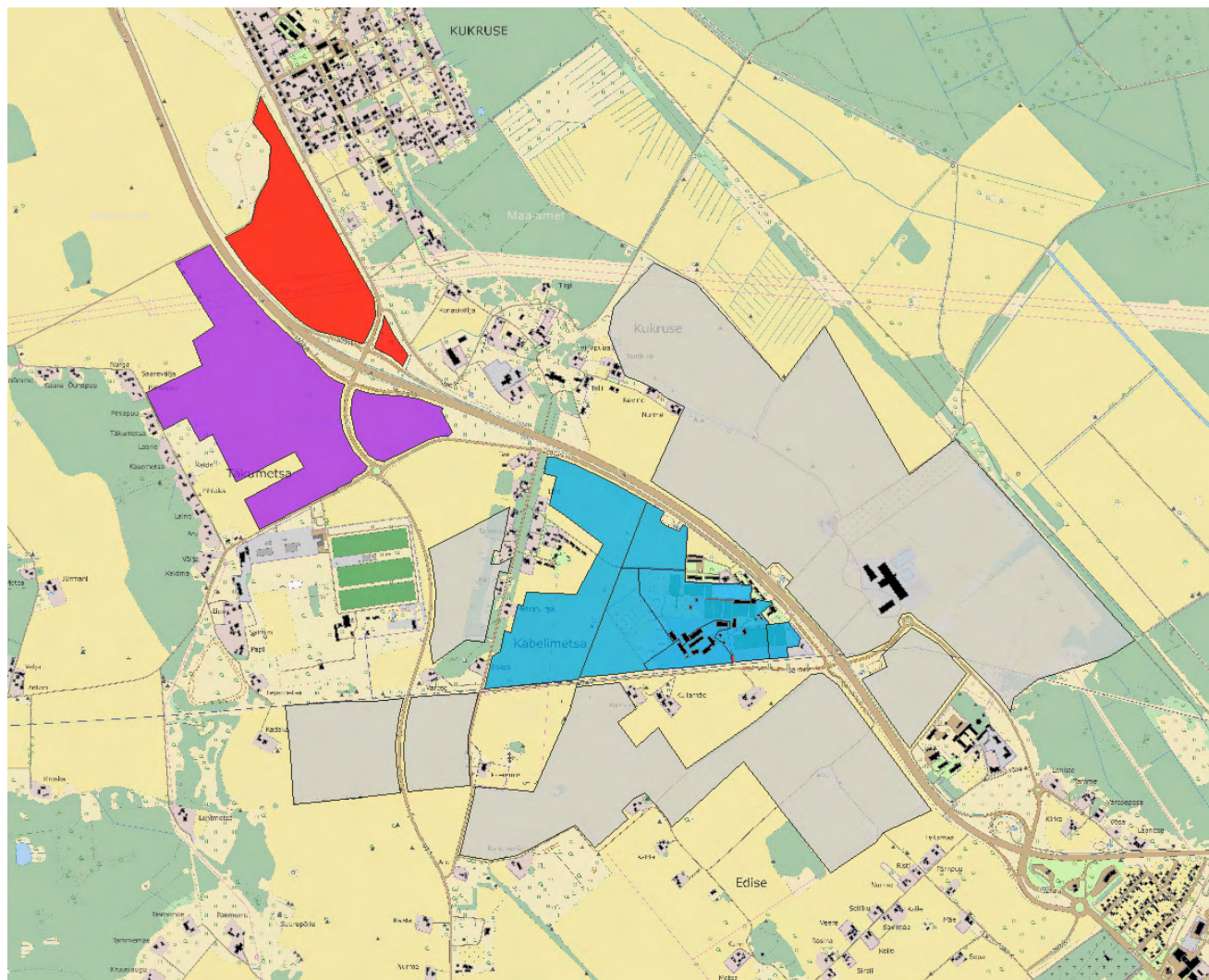
Detail planning 1,5 years

Building period 2 years

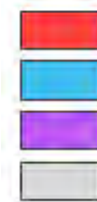
Finishing time 3,5 aastat

Strategy

Strateegia



Ownership types of owned land



Commercial

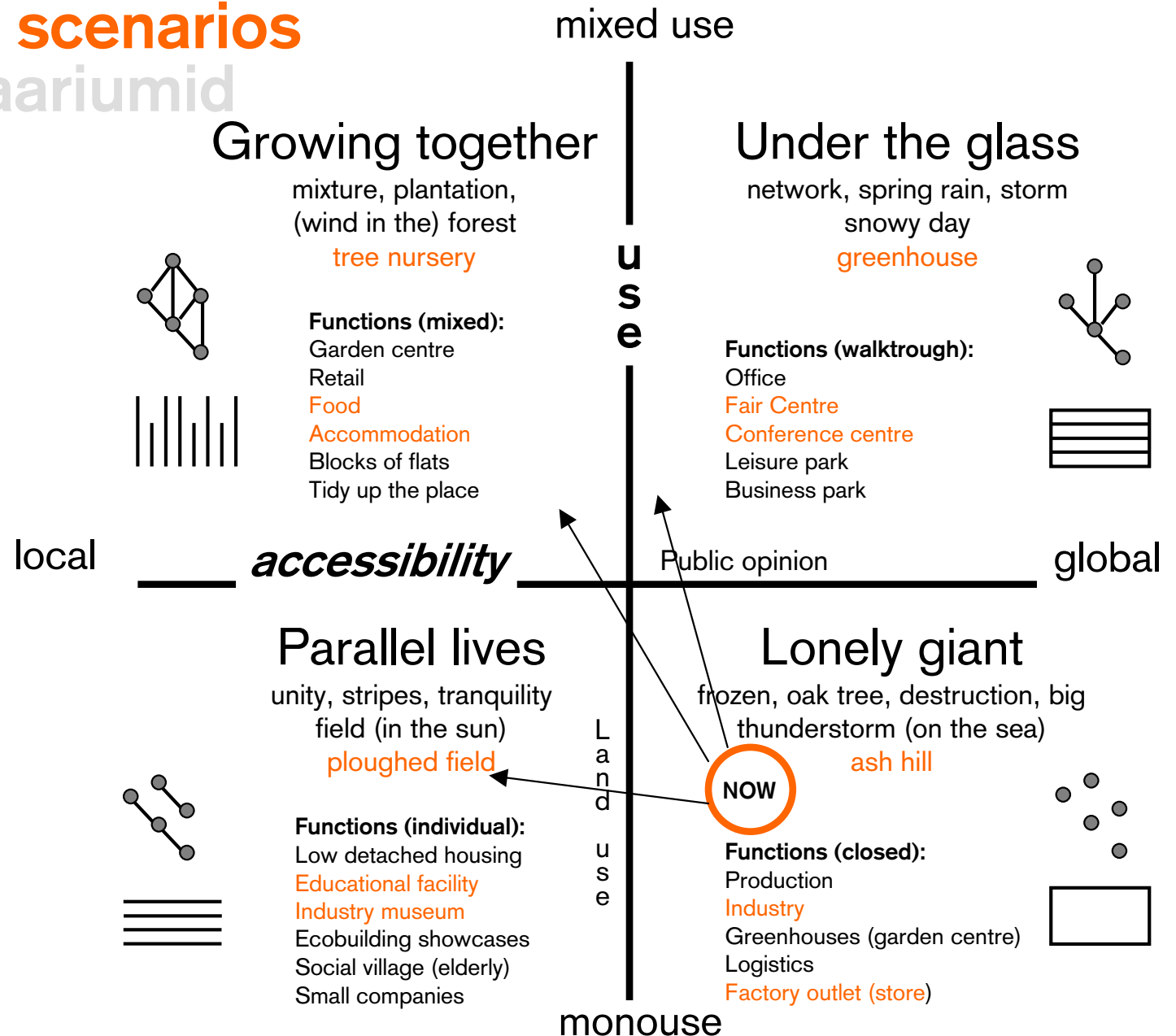
Edise development

Logistics

Agriculture

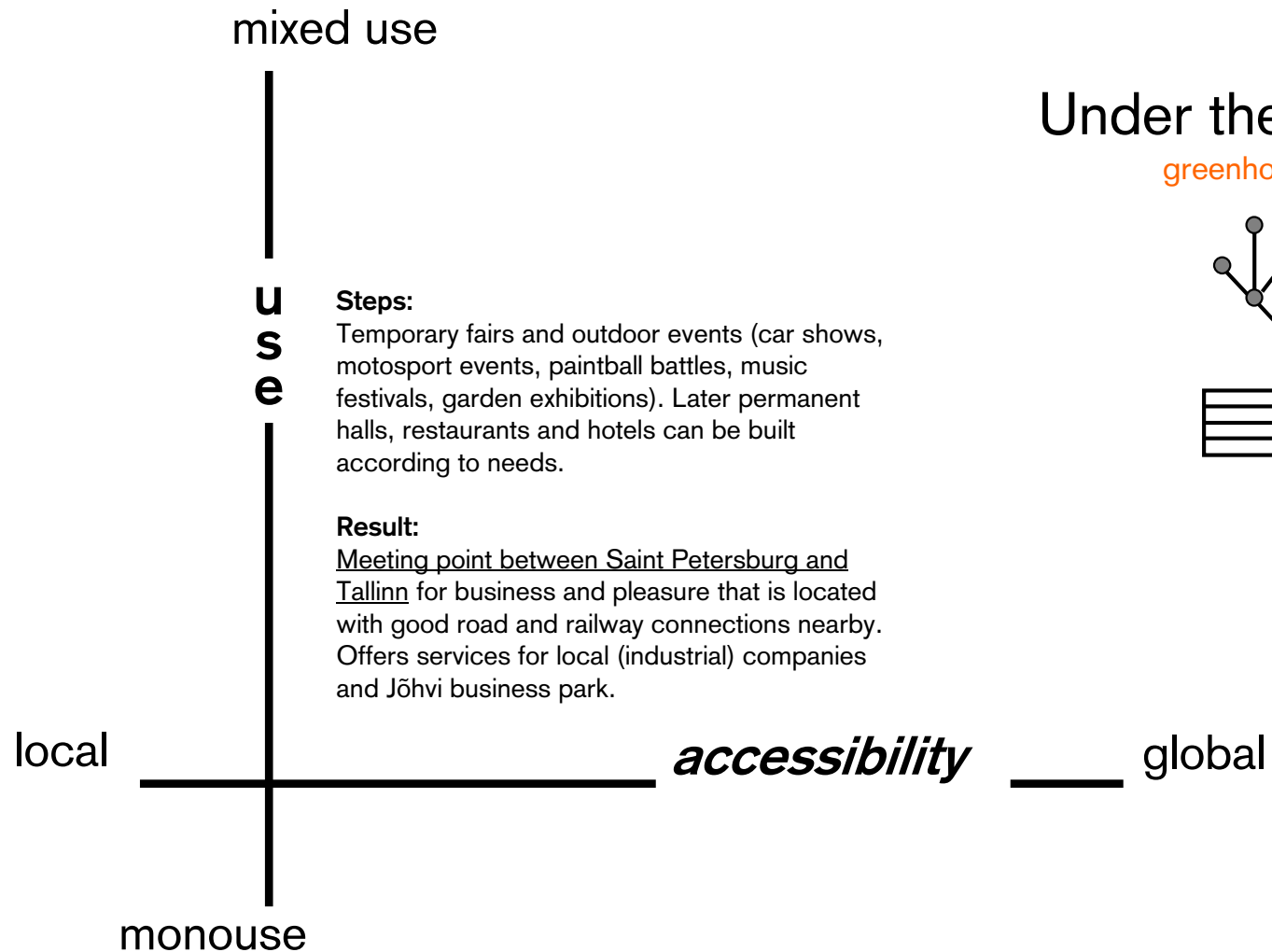
Development scenarios

Arengustsenaariumid



Development scenario - Under the glass

Arengustsenaarium - Klaasi all



Reference cases – Under the glass scenario

Referentsobjektid – Klaasi all tsenaarium



Trade fair city Riem (Germany) Multiple functions combined

Town and fair centre were created as one entity.
<http://www.messestadt-riem.com> (1990-2013)

Dense and mixed district of high standard in the limited space of Old Munich-Riem airport area. The total area of 556 hectares is divided into 99 ha for residential areas, 68 ha for commercial real estates, 73 ha for the New Munich Trade Fair Centre, 28 ha circulation area and about 279 ha for green and open spaces. Various innovative approaches are part of the project (for transport, housing, citizen's participation, culture, social infrastructure ...).



Helsinki Exhibition & Convention Centre (Finland) Mnofunctional business area

Traditional fair centre inside the city.
<http://web.finnexpo.fi>

130,000 m² of premises, 4600 parking places. 58 000m² of exhibition area (7 exhibition halls) that can also be used for large international conventions, entertainment events, and celebrations. Hall 1 accommodates 4400 people. Congress wing has 40 meeting rooms for events from 8 to 1200 guests. The Holiday Inn hotel with 244 rooms is located nearby.



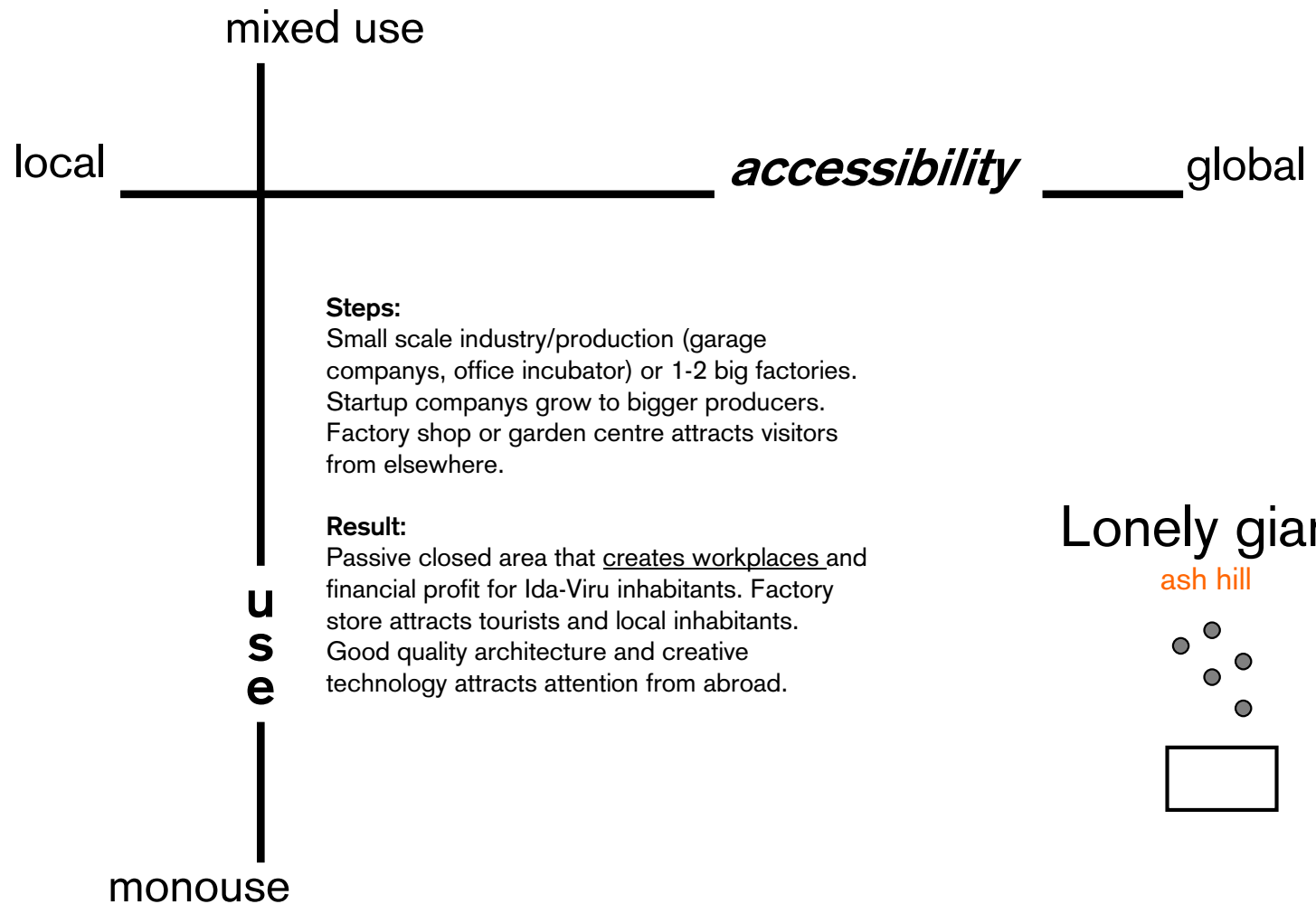
Garden centre (Netherlands) Leisure and business combined

Big exhibition gardens with cafes and sitting areas.
<http://www.appeltern.nl>

23 ha garden information park gives inspiration and advice with garden issues. The quiet, the space and the nature ensure a great day out. More than 200 model gardens including latest garden trends. Large collection of plants. Delightful restaurants and outdoor cafés. Vast sculpture garden and plant market. Treasure trail for the little ones and natural playing ground for children. Information about products, plants, horticulturalists and designers.

Development scenario – Lonely giant

Arengustsenaarium – Üksik hiiglane



Reference cases – Lonely Giant scenario

Referentsobjektid – Üksiku hiiglase tsenaarium



Aplix factory (France)
Invisible building

Huge building that disappears into landscape.
Architect: Dominique Perrault Architecte (1999)

29 000 m2 factory building for a manufacture of hook and loop fasteners (production spaces, storage, laboratories, administrative offices, cafeteria, restaurant, delivery areas) with 98 000m2 green area. Optimal work conditions and possibility of adding new spaces. Main facades metallic sliding reflects surrounding nature and integrates factory into the site.



Nestle factory chocolate museum (Mexico)
Entrance building

Visitors entrance to the chocolate factory.
Architect: Rojkind Arquitectos (2007)

300-meter long façade along the motorway gave new image to the factory. 634m2 building is the main entrance for visitors. Voyage into the chocolate factory starts as soon as they enter this playful yet striking space. Space is divided into reception area, theater that introduces visitors for the Nestle experience, store or museum shop, and passage to the visitors tunnel inside old existing factory.



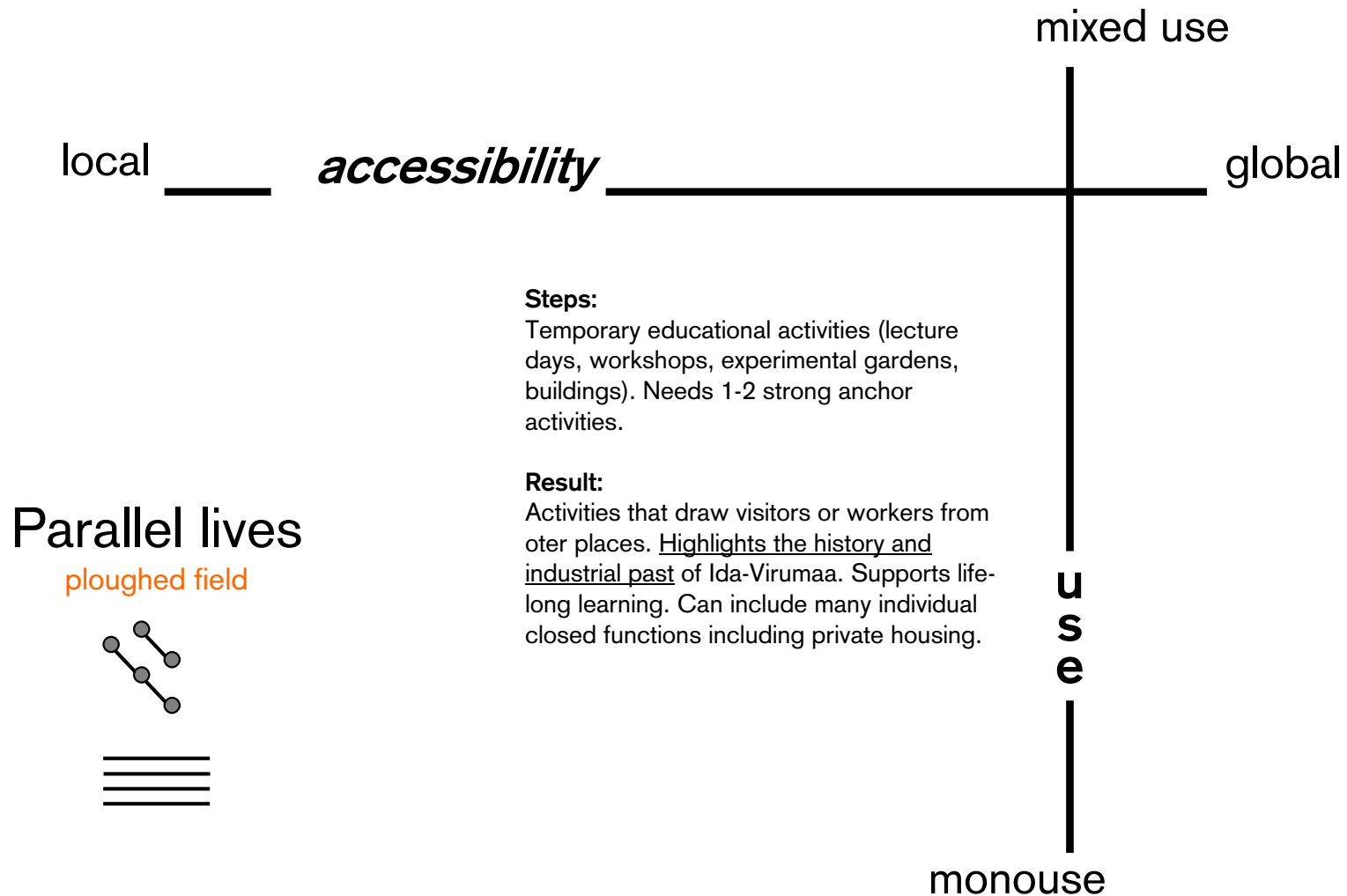
Little Factory (Netherlands)
Landmark building

Artists workshop that looks like small factory.
Architect: Florentijn Hofman (2012)

5x12x14 meters metal frame, corrugated steel roof sheets, rolling shutters and stone pavers. Little Factory is a three-dimensional oversized pictogram of an industrial zone made out of steel frame and corrugated steel roof sheets. It is a landmark building near highway for an industrial site in progress. It can be used for an artist in residence program.

Development scenario – Parallel lives

Arengustsenaarium – Paralleelsed elud

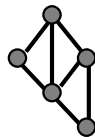


Development scenario – Growing together

Arengustsenaarium – Koos kasvamine

Growing together

tree nursery



Steps:

Temporary leisure activities
(pop-up restaurants, seasonal markets,
parties, gardening plots)

Result:

Vibrant self serving housing area with
activities that draw visitors from other places.
Unique high living quality and excellent
services for Ida-Virumaa residents.

local

accessibility

mixed use

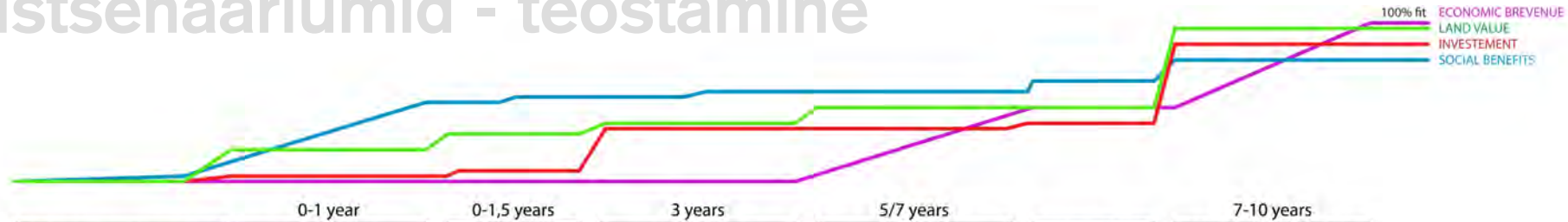
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Development scenarios - realisation

Arengustenaariumid - teostamine

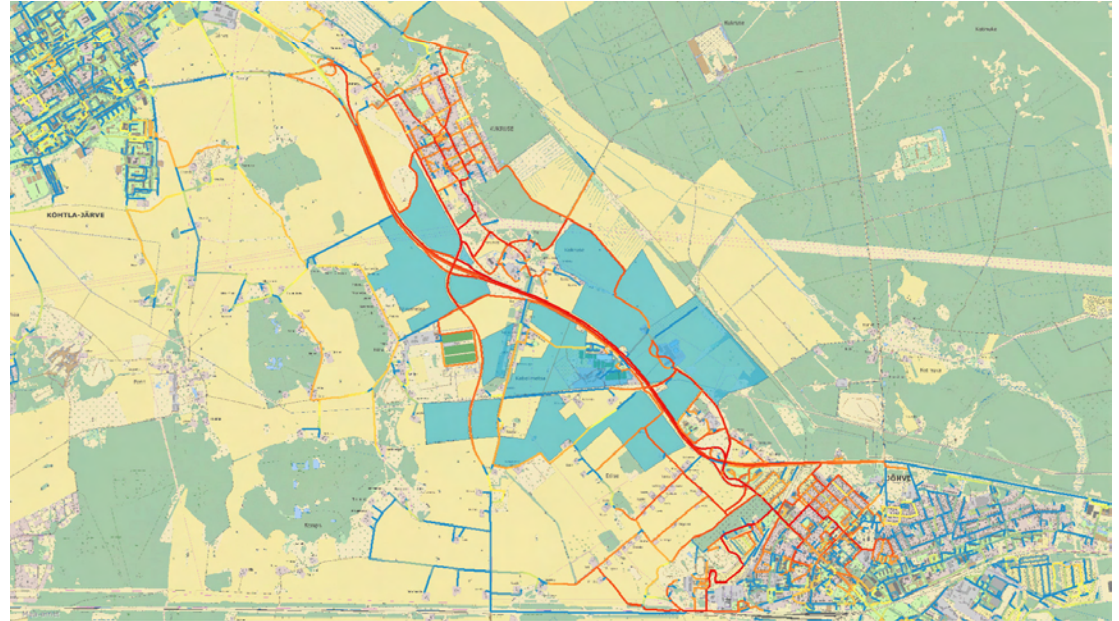


		0-1 year		0-1,5 years	3 years	5/7 years	EVALUATION II economic benefits evaluation expansion only revenue=investment	7-10 years
		COMMUNITY BUILDING investigating demand study - local's association - clubs - hobbies	PLACE MAKING satisfying the demand with minimum efforts reuses - renovations - temporary uses	DETAIL PLAN project design carried out meawhile place- making	SETTLE DOWN I local development first buildings near the active core (Edise)	EVENTS becoming attractive: the community will be hosting events based on local production		ARCIPELAGO DEVELOPMENT expansion: surrounding areas are developed to form a new town
S C E N A R I O S	MIXED USE REAL ESTATE DEVL.	Gathering local gardeners to join in association for the development of coordinated gardening activity	The Gardening association transfers the gardening activity from the highway to the garden houses.	Meawhile gardening goes on, the detail plan is being drafted	After three years since day zero, the first bricks are settled in Edise	Local raw or processed goods are hosted by periodic market for gardening and fair for industrial products		
	INDUSTRIAL POLE	Gathering local emergent entrepreneurs and informal workshop tenders (garage mechanics) to join in association for the development of complementary workshops pole	Warehouses in Edise are converted for temporary workshops	Meawhile workshops are working on, the detail plan is being drafted	After three years since day zero, the first industrial hangar are being built	Edise, together with the logistics' cluster, is holding an annual fair of industry and logistics		

Accessibility analysis

Ligipääsetavuse analüüs

Regional Centrality

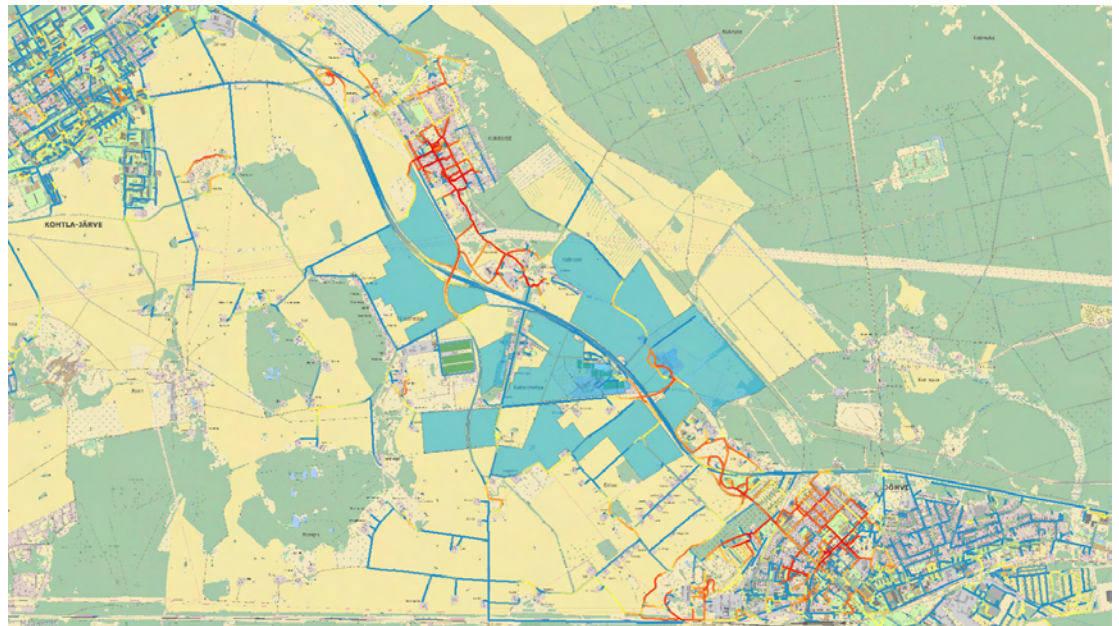


In local scale more roads reached inside the 400m radius.
Shorter roads are more dense.

In regional scale there are no restrictions to the radius
(calculating whole map). In local scale its calculated from
the road to the radius of 400m (5-10 min walk).

Street network

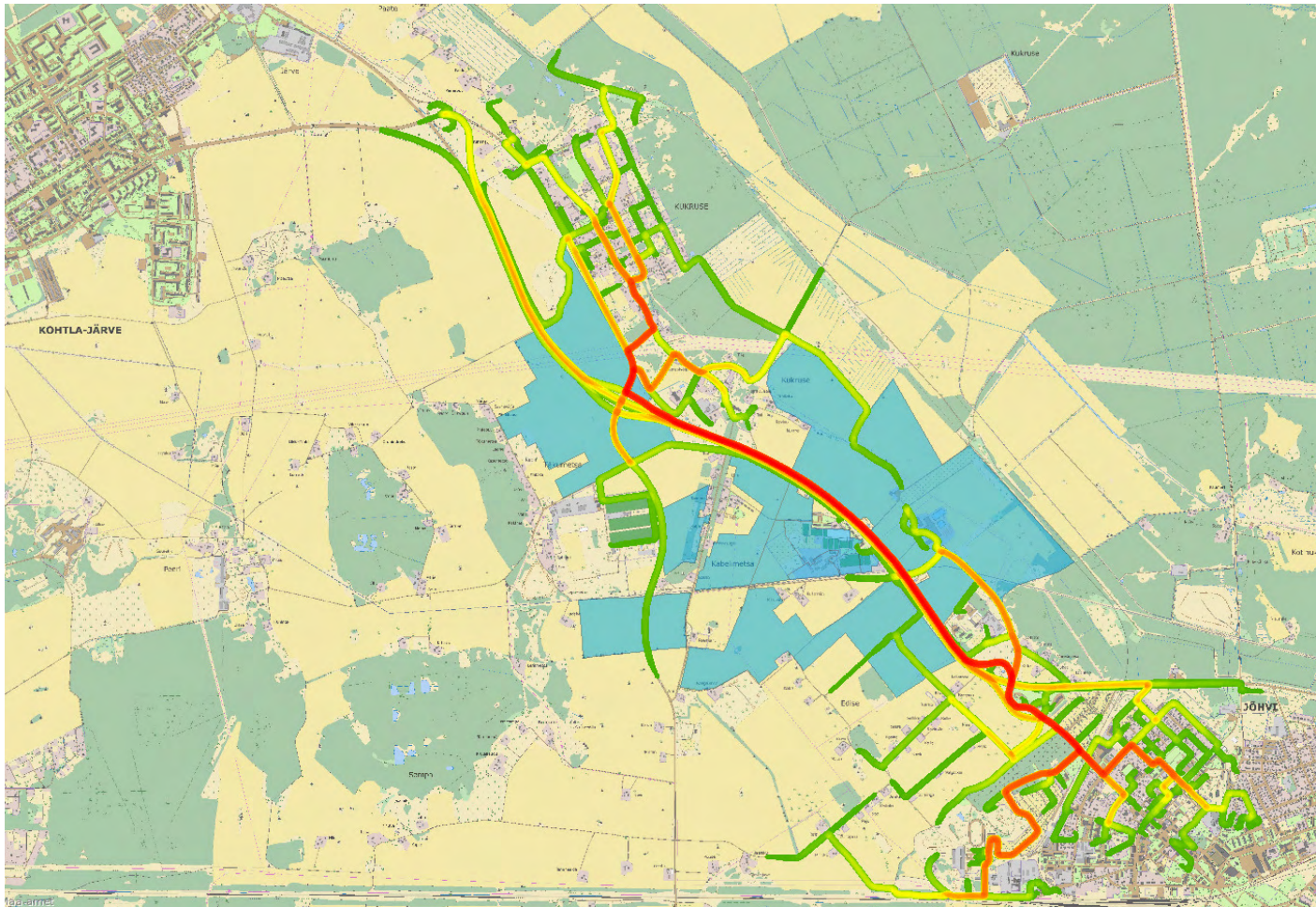
Local centrality



MCA –multiple centrality assessment – that measures centralities

Accessibility analysis

Ligipääsetavuse analüüs



Estimated traffick density (regional) statistical method kernel dencity
Street network

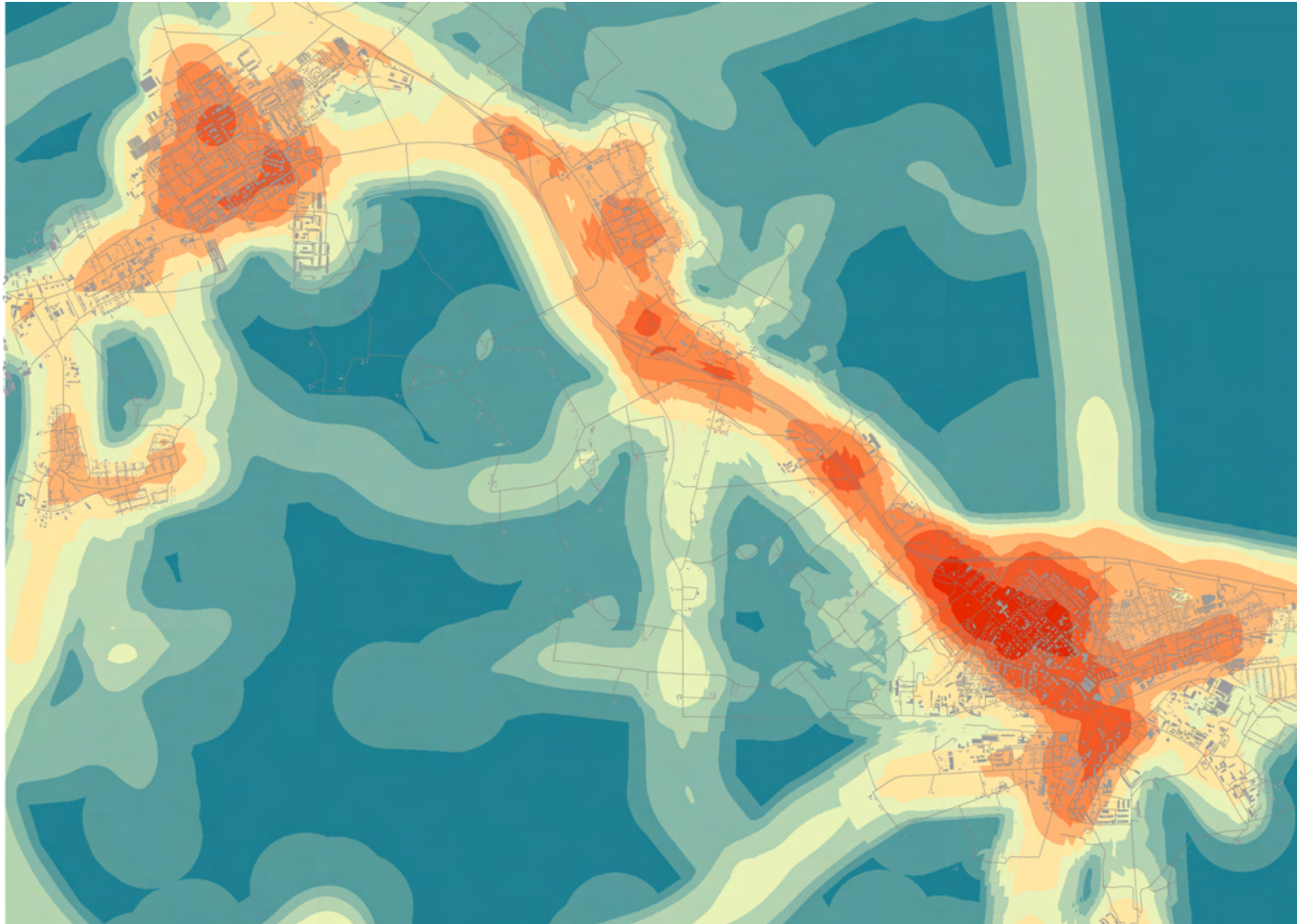
Short conclusions

- Site is hihgly integrated in the regional network
 - The site is far from local centralities, it is a disperse environment
 - The site is a end point
- ...therefore
- Connect efficiently the site to the regional network
 - Development should be design to enhance local accessibility, centrality
 - Long term: site may become the center of a K.J. To Johvi local by-pass

Place where you would expect to have more traffick density.

Suitability analysis

Sobivuse analüüs



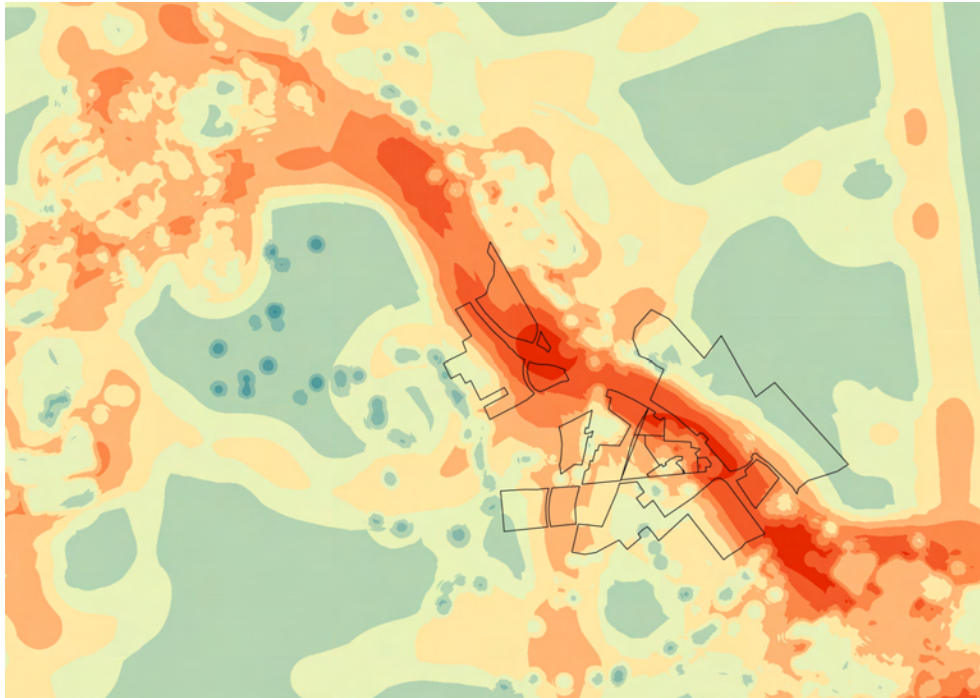
Selection criteria for centrality

- All centrality analyses are equally important (regional, local etc.)
- Overlappings between different analysis rise the centrality of the place

Most central locations
Centrality – all together – all previous in one map

Suitability analysis

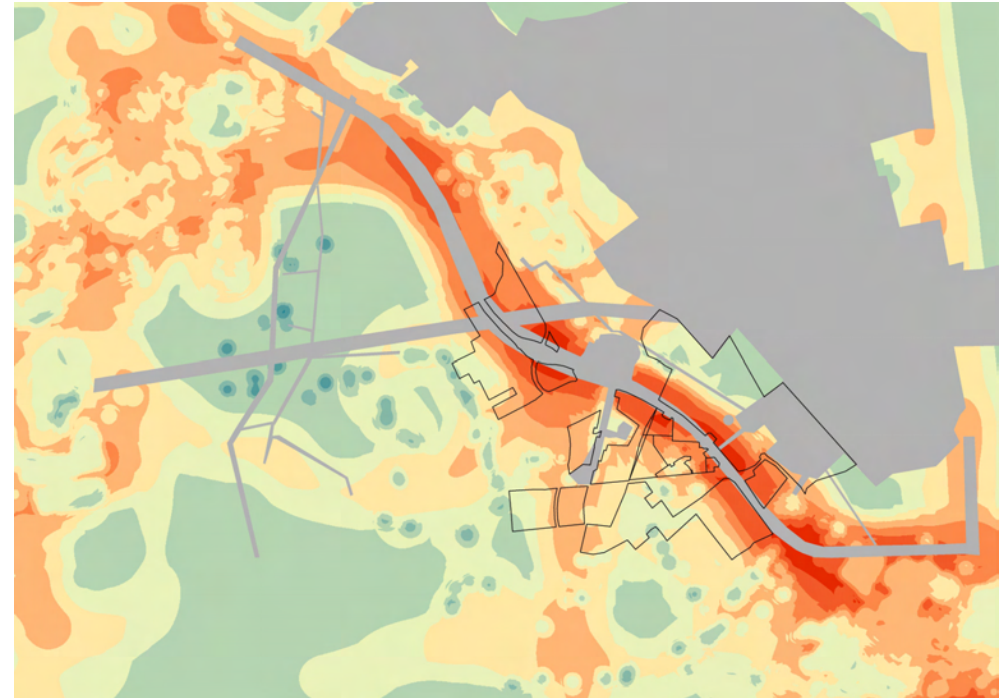
Sobivuse analüüs



Best theoretical locations for industry

Criteria for best industry locations – better to build industrial area

- Site is regionally central (big traffic flow) – the more red
- The site is far from other buildings – the more red
- The site is close to existing technical infrastructure – the more red



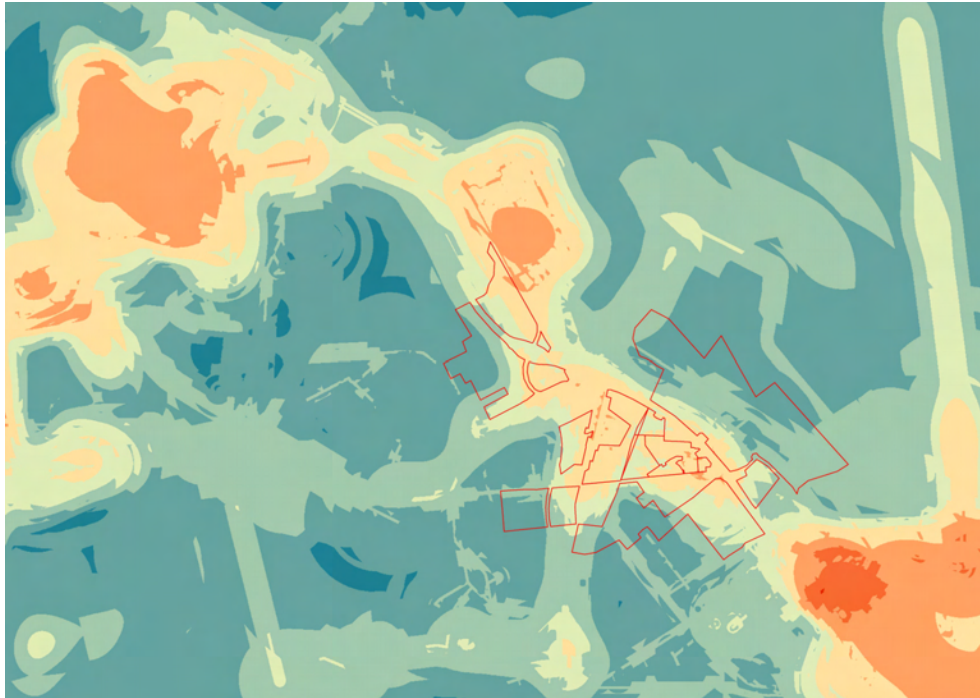
Best locations for industry (limitations, restrictions included)

Restrictions

- technical (road corridors)
- environmental (farming land)

Suitability analysis

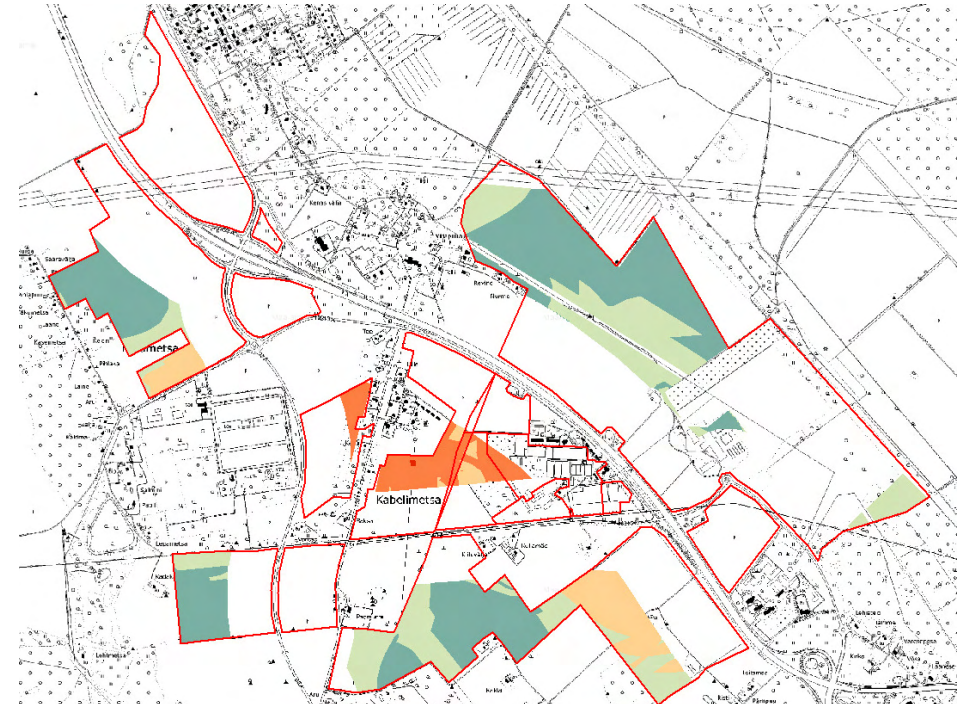
Sobivuse analüüs



Best theoretical locations for housing

Criteria for best housing locations

- Site is locally central (walking distance of 5-10 minutes (400m) from existing services)
- The site is near other buildings
- The site is close to existing technical infrastructure
- no strong red – therefore not most suitable place for housing.



Best locations for housing (limitations included)

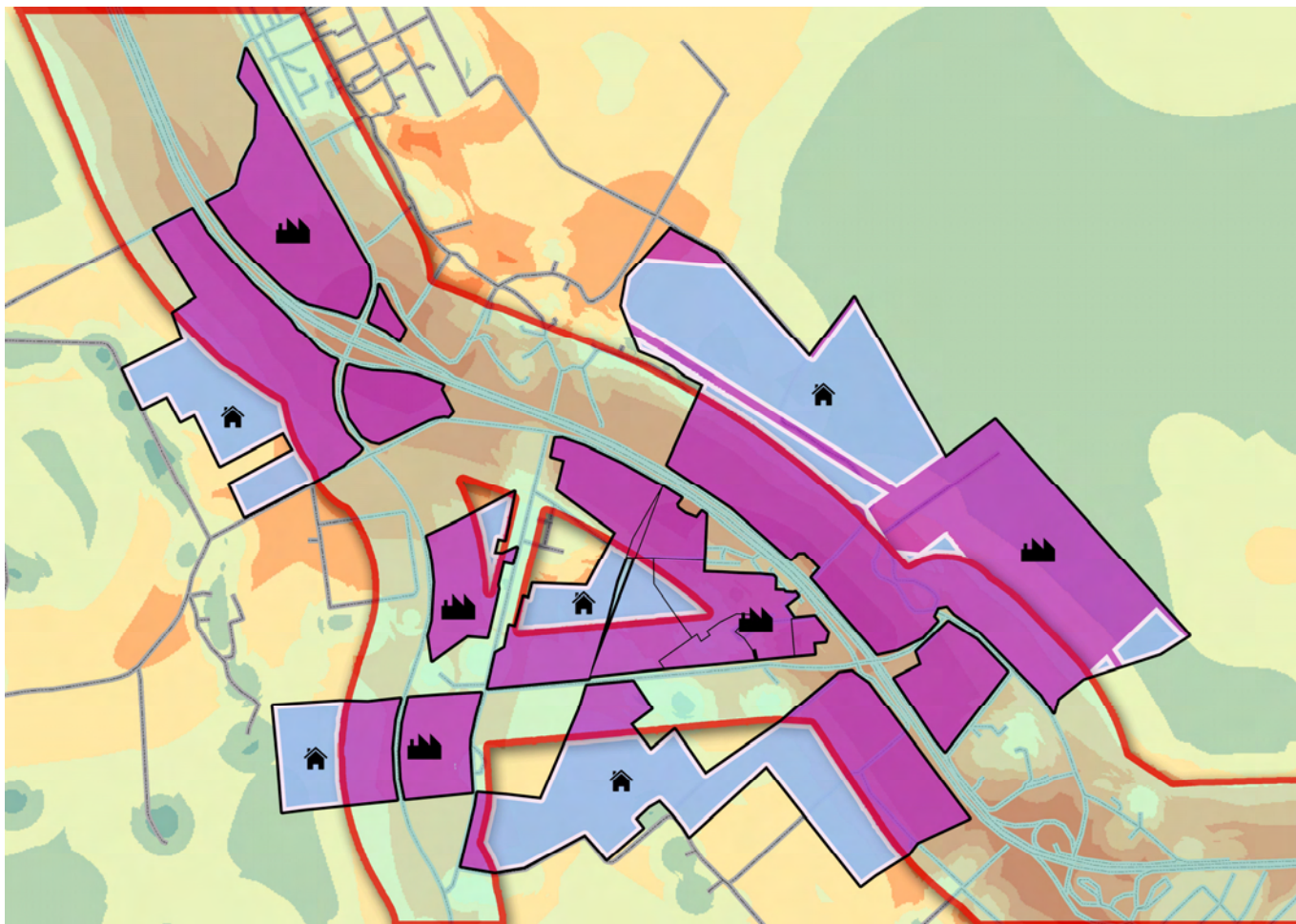
Restrictions

- technical (road corridors, sanitary)
- environmental (farming land)



Suitability analysis

Sobivuse analüüs



Best locations for housing and industry
Development corridors

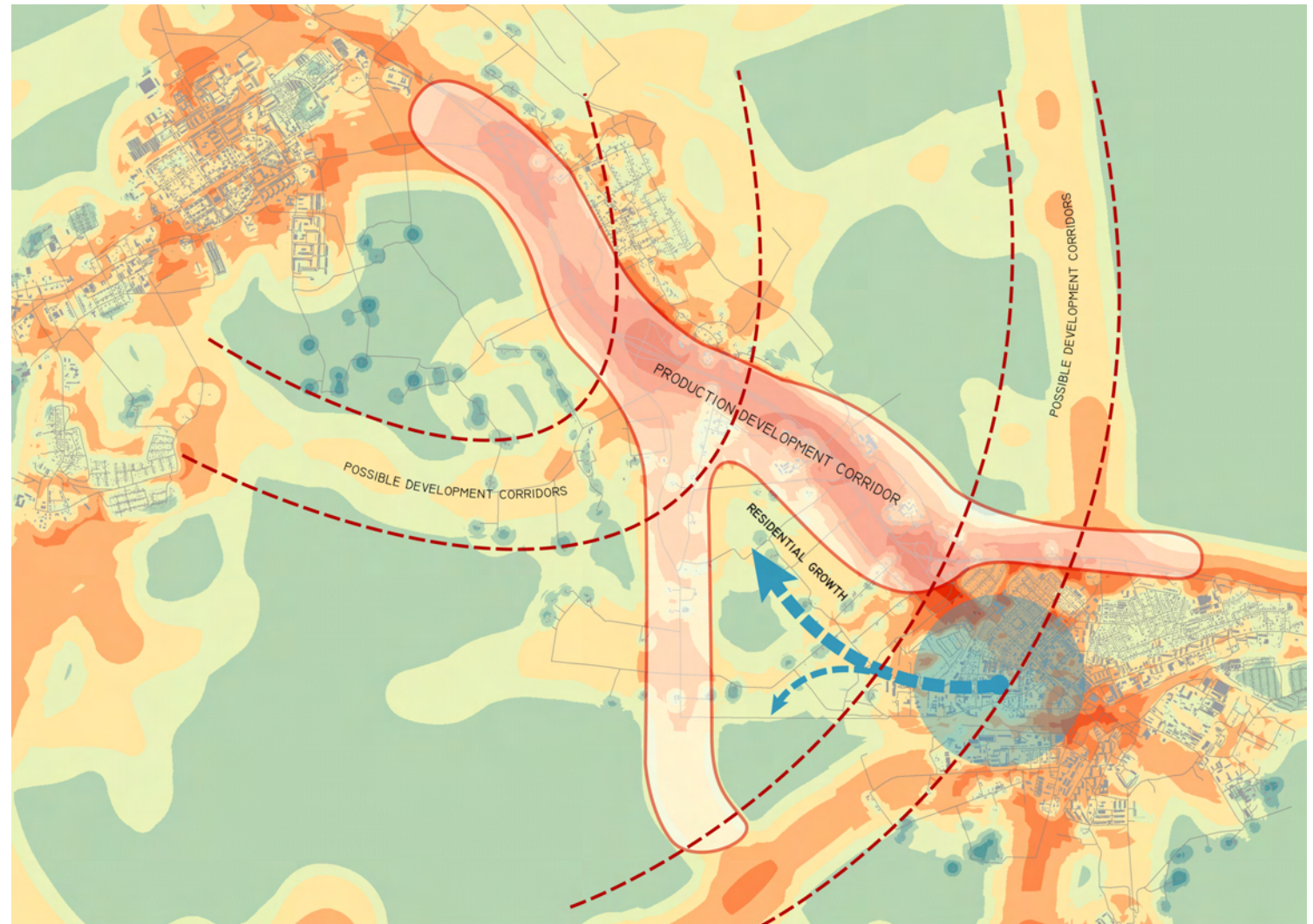
Suitability analysis

Sobivuse analüüs

Conclusion

- there is high possibility of industrial development corridor along the highway.
- in the future there might be possible to expand the industrial corridor along the two radial corridors.
- edise realestate development will be the first step of the expansion of the city of Jõhvi towards north-west.
- therefore the parcels owned by the client are very important for the development of the region, since they are suitable for both - industrial activity or residential settlements

Best locations
Development corridors



Space syntax analysis

Linnaruumi analüüs



Choice existing
Local scale



Choice scenario
Local scale

How potentially the space is passed by

Measures the probability of a space to be passed by.
It is mostly used to predict car traffic flow

red - good to pass by

blue - bad to pass by

Conclusion:

The new spatial configuration is enhancing the local centrality mostly because of the new proposed connection to Jõhvi. This creates square like spaces. It is essential to establish that.

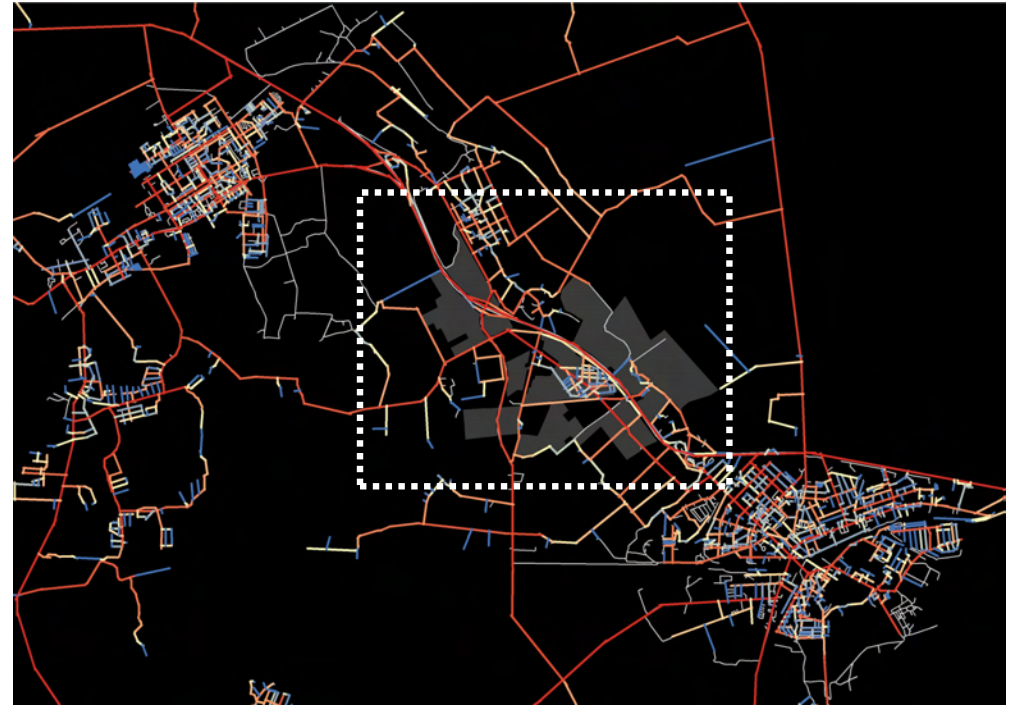


Space syntax analysis

Linnaruumi analüüs



Choice existing
Regional scale



Choice scenario
Regional scale

How potentially the space is passed by

Measures the probability of a space to be passed by.
It is mostly used to predict car traffic flow

red - good to pass by
blue - bad to pass by

Conclusion:

The new spatial configuration will be able to catch the movement (mobility) between different settlements (cities). This is because the proposed road to Jõhvi will become a shortcut between the city and Kukuruse area.



Space syntax analysis

Linnaruumi analüüs



Integration existing
Regional scale



Integration scenario
Regional scale

How simple is to access the place

How cognitively easy is the reach the space. As these are the streets that is easier to get to, they are proven to be most related with pedestrian movement.

red – easy access with less than 3 turns
blue – difficult access with more than 3 turns

Conclusion:

The new spatial configuration is creating a very pedestrian friendly walkable neighbourhood



Space syntax analysis

Linnaruumi analüüs



Integration existing
Local scale



Integration scenario
Local scale

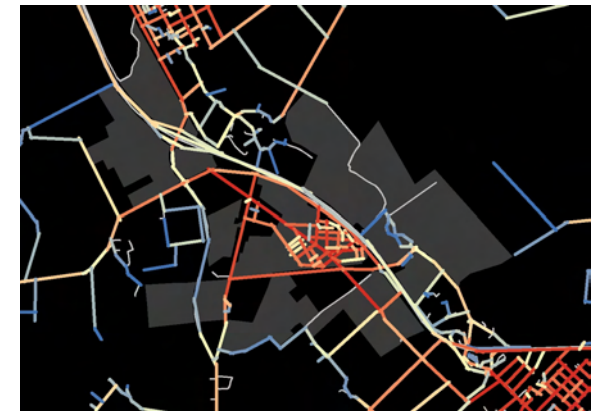
How simple is to access the place

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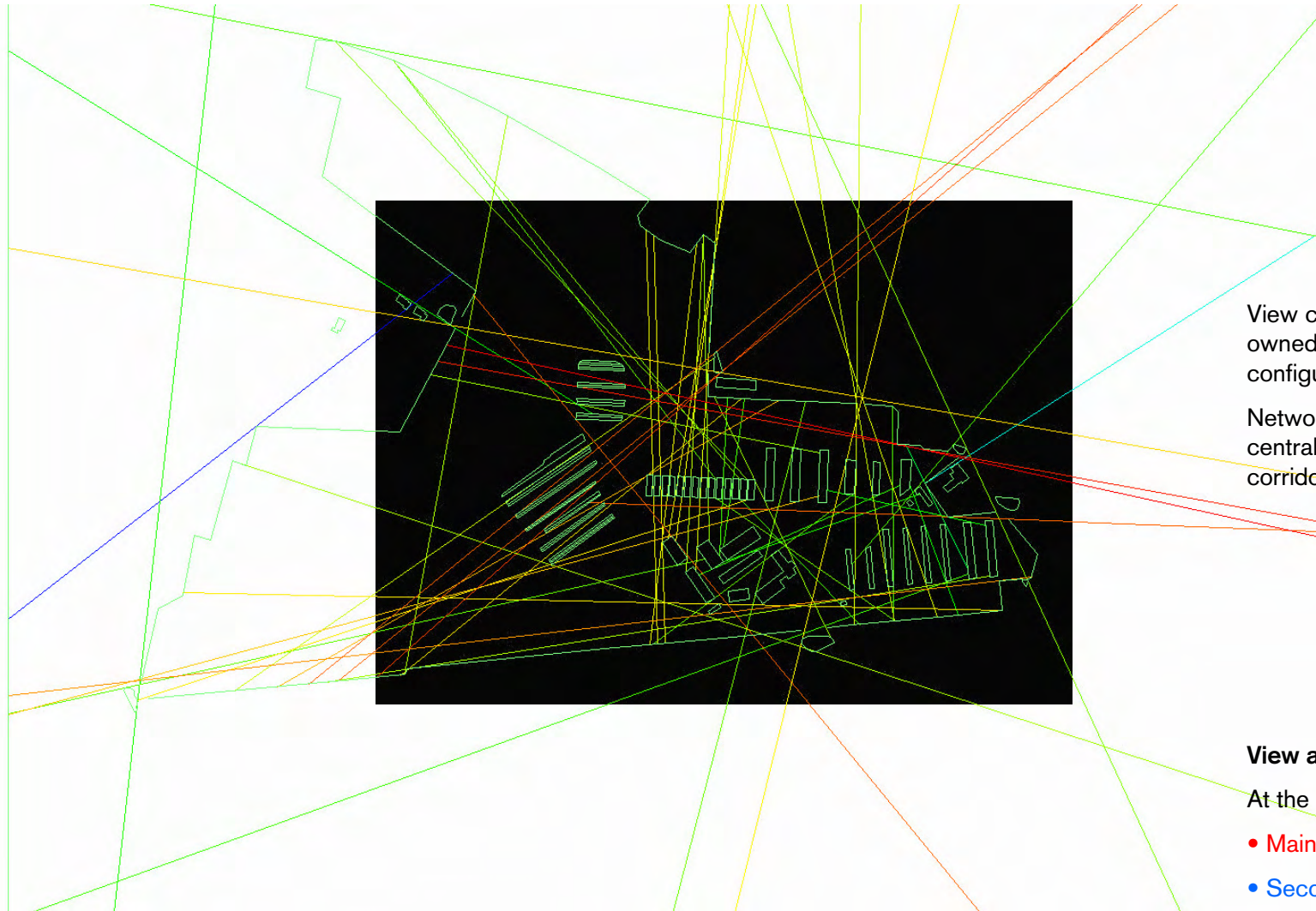
Conclusion:

The new spatial configuration is creating a very pedestrian friendly walkable neighbourhood



View corridors – generative design of the area

Vaatekoridorid – ala generatiivne disain



View corridors are computer generated within the owned parcel following the current spatial configuration.

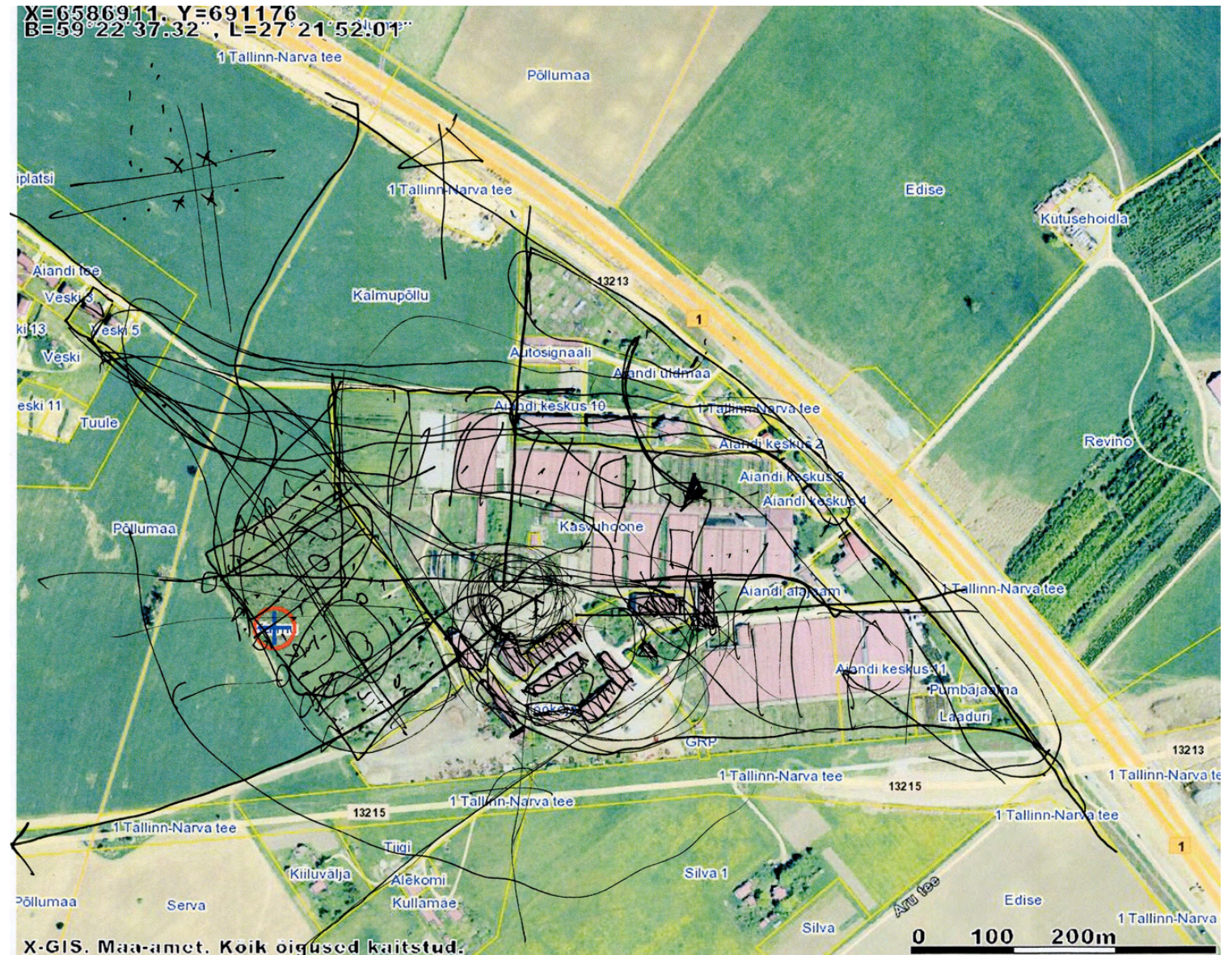
Network of lines is analysed to choose the most central one and use them as main development corridor.

View and movement corridors

At the end of axes must be landmarks

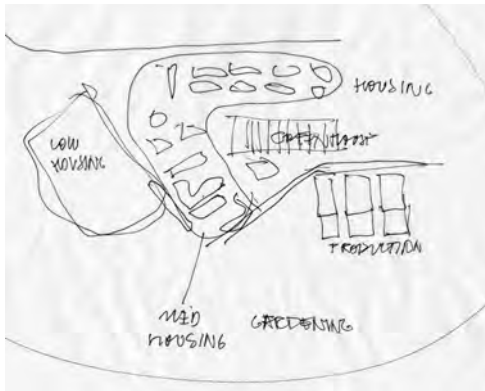
- Main views and most accessible lines
- Secondary views and least accessible lines

- Connecting plot with surroundings
- Developing complete living district
- Underlining historical background
- Usage of existing buildings and structures
- Versatile typology
- Interesting architecture
- New services
- Preservation of existing trees and nature



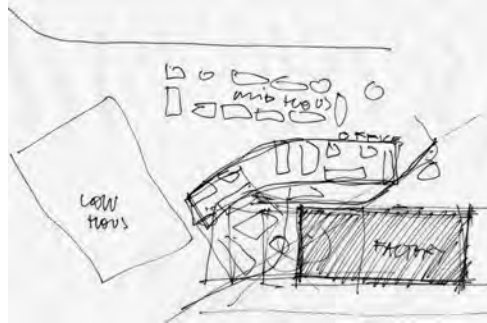
Sketch maps

Skeemid



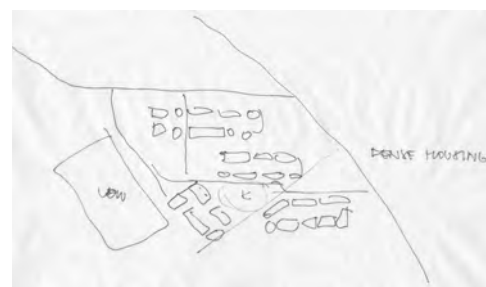
Version 1 (mixed housing)

- Production 20%
- Greenhouses 15%
- Mid-high housing 45%
- Low housing 20%



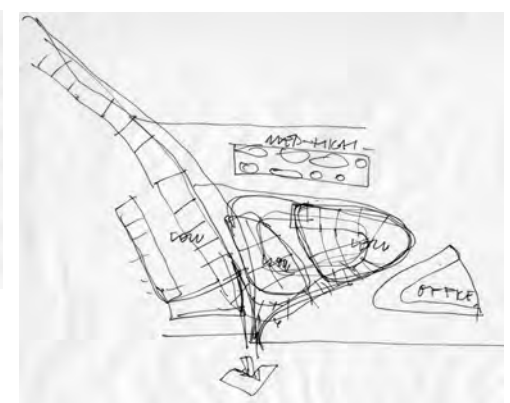
Version 2 (mixed housing)

- Factory 25%
- Office 25%
- Mid-high housing 25%
- Low housing 25%



Version 3 (Suburb)

- Mid-high housing 70%
- Low housing 30%

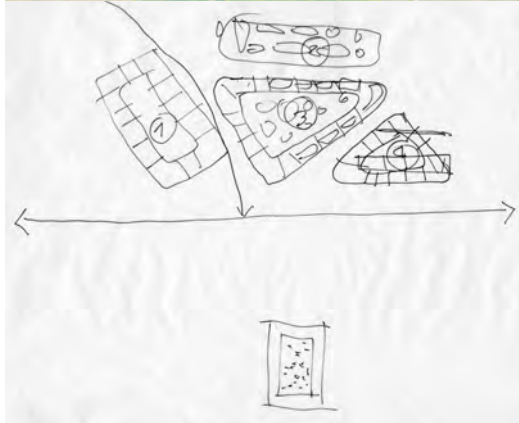


Version 4 (Mixed housing)

- Office 20%
- Mid-high housing 20%
- Low housing 60%

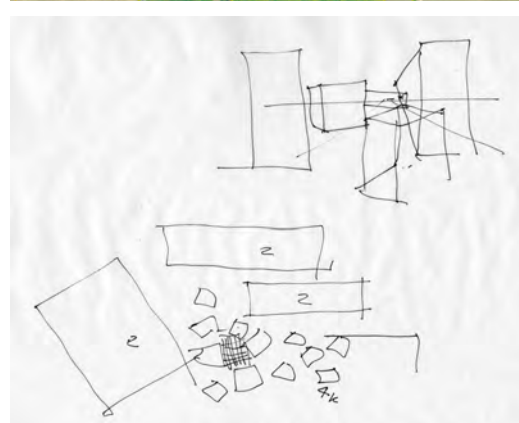
Sketch maps

Skeemid



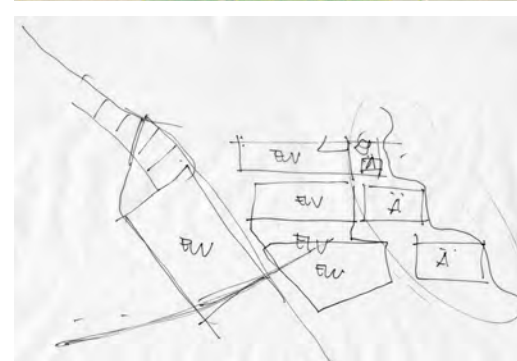
Version 5 (high density housing)

- Factory 20%
- Office 30%
- Mid-high housing 25%
- Low housing 25%



Version 6 (fair centre)

- Business 40%
- Mid-high housing 40%
- Low housing 20%



Version 7 (factory)

- Business 30%
- Mid-high housing 40%
- Low housing 30%

Site plans – version 1

Planeeringud – variant 1



Version 1

Growing together scenario

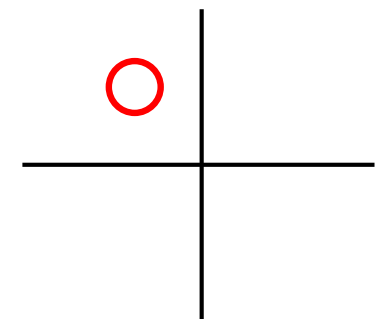


Production
26 825 m²

Office
35 000 m²

Housing blocs
22 710 m²

Private houses
5 000 -6 000 m²



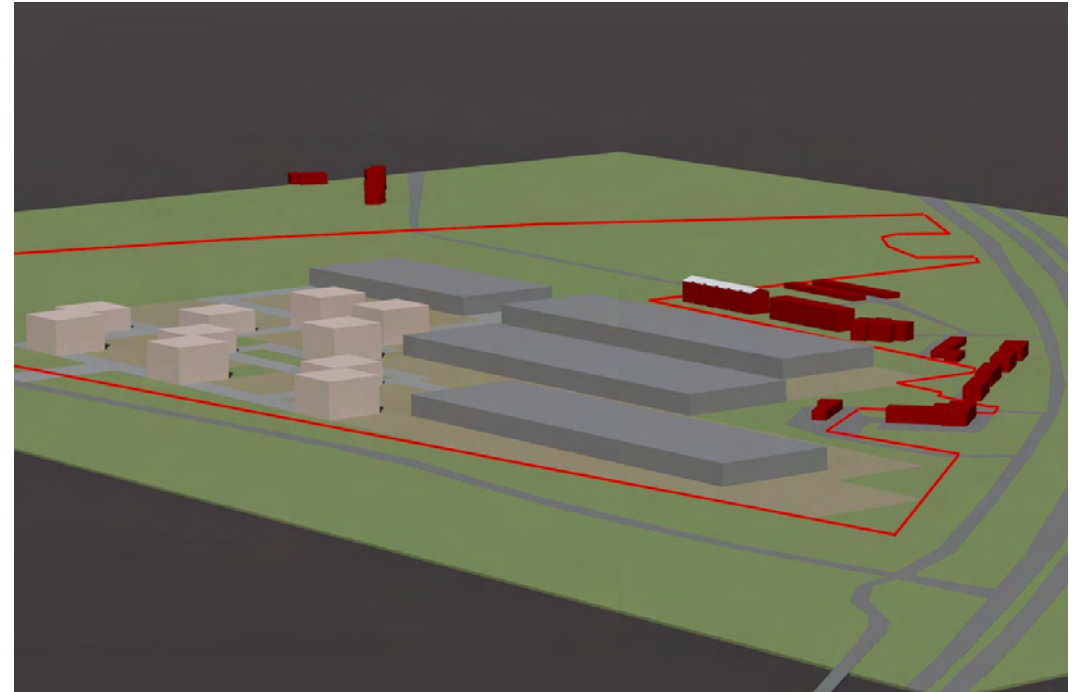
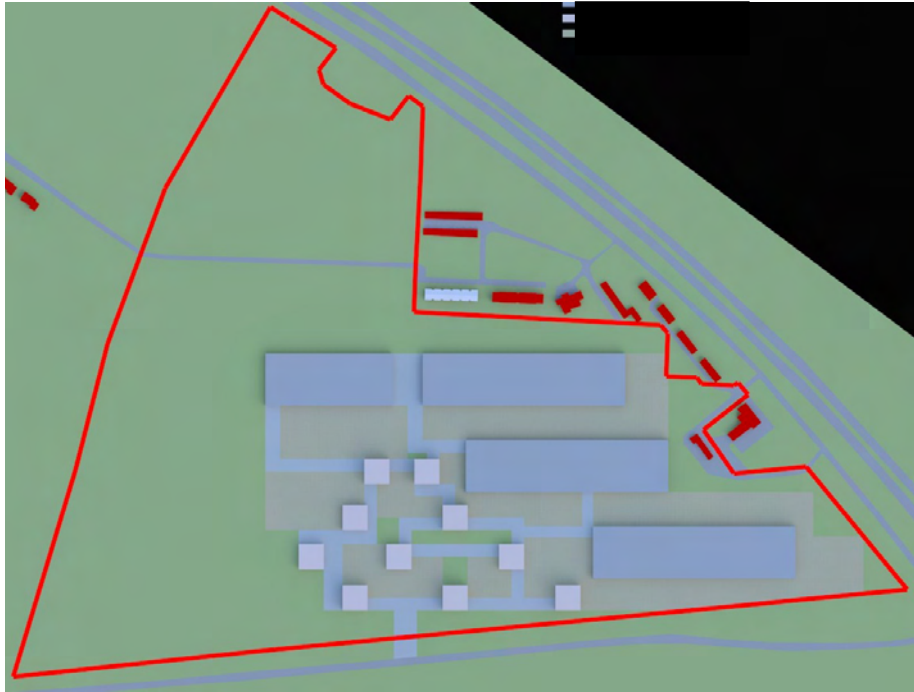
Site plans – version 1

Planeeringud – variant 1



Site plans – version 2

Planeeringud – variant 2



Version 2

Under the glass roof scenario

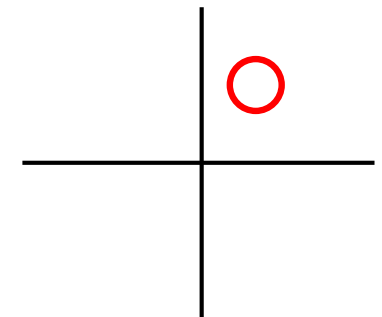


Trade fair halls

38 200m²



Conference and accommodation 13 000m²



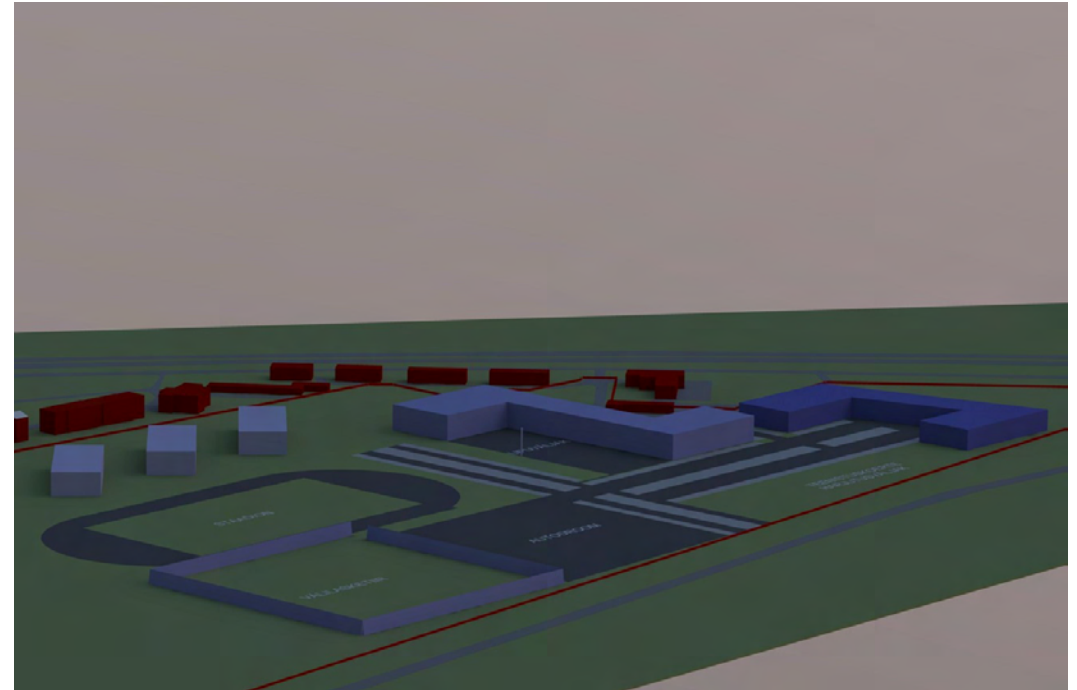
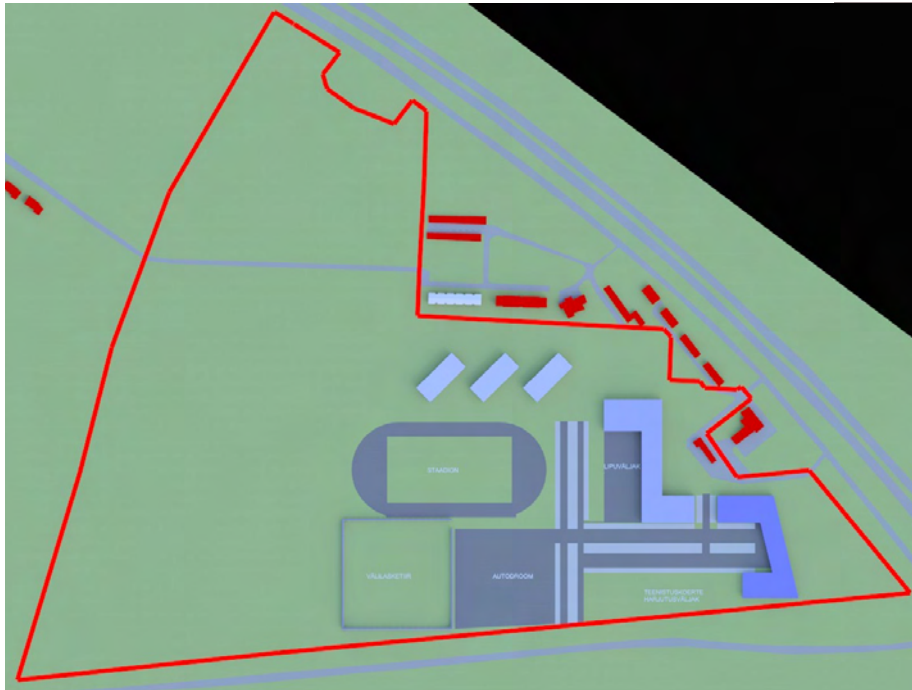
Site plans – version 2

Planeeringud – variant 2



Site plans – version 3

Planeeringud – variant 3



Version 3

Parallel lives scenario

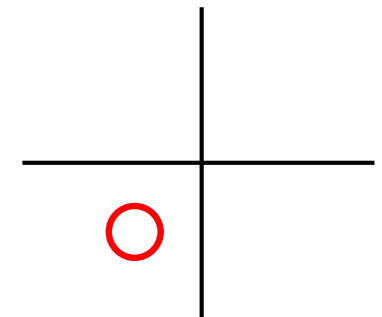


Study spaces
11 400m²

Training spaces
9 300m²



Dormitories
9 300m²



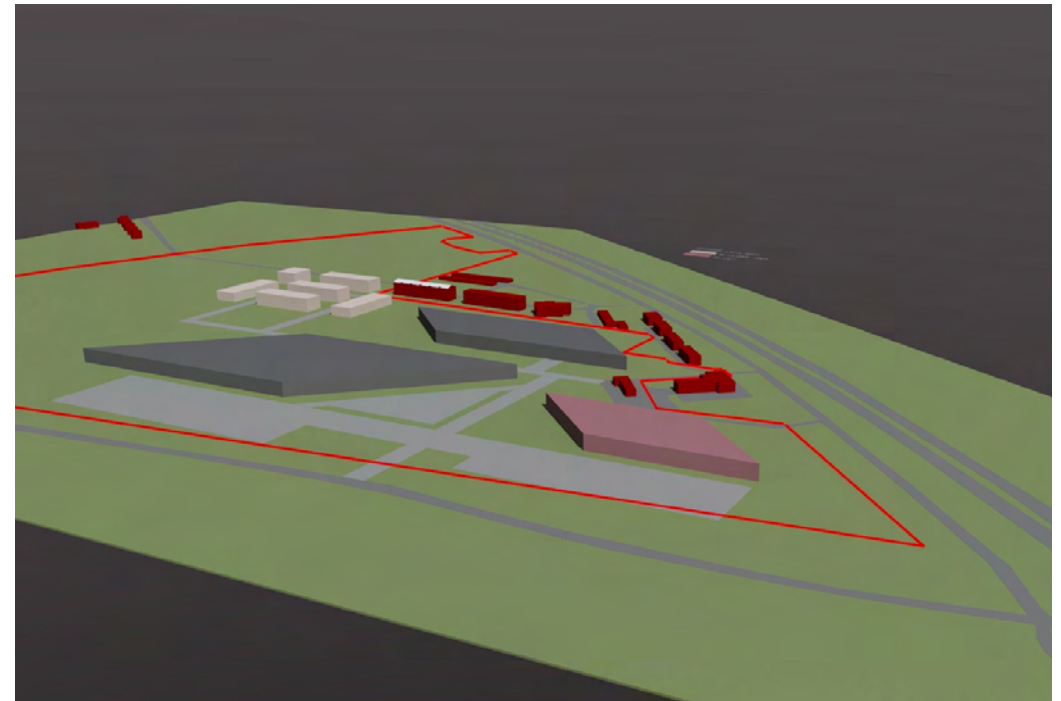
Site plans – version 3

Planeeringud – variant 3



Site plans – version 4

Planeeringud – variant 4



Version 4

Ash hill scenario

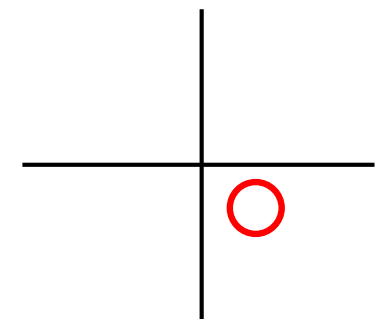


Production
23 000m²

Offices and business
7700m²



Housing blocks
7700m²



Site plans – version 4

Planeeringud – variant 4

