Designing the Nature of the Green Belt

Euroleague for Life Sciences Summer School
University of Natural Resources and Life Sciences (BOKU), Vienna
August 2 - 10, 2014

ILA + IRUB
University of Natural Resources and Life Sciences, Vienna
Department of Spatial-, Landscape- and Infrastructure- Sciences

Introduction

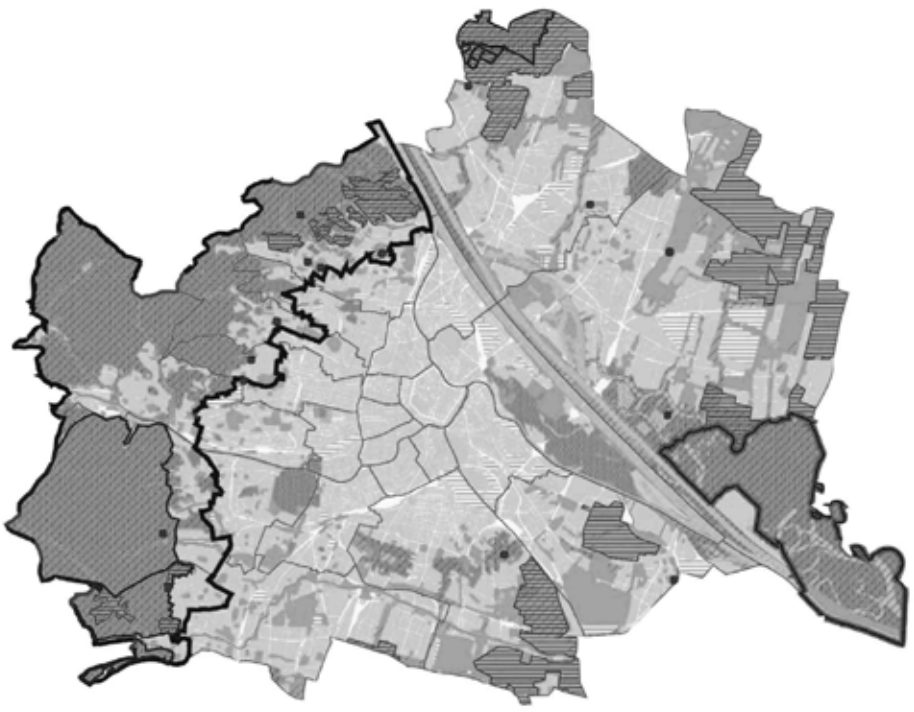
In 1905, Vienna's municipal government established the city's Green Belt, when the city council approved a scheme to expropriate large areas of meadows and woodland on the city's periphery. The initial phase of Eugen Fassbender's original vision designated nearly 6,000 ha for preservation, and included such diverse and established landscapes as the Vienna Woods, the Park of Schloss Schönbrunn, Prater, the central cemetery, Laaerberg, and the Lobau wetlands. The Lobau wetlands were the only area north of the Danube integrated into the original scheme. Although Vienna's population hovered around 2 million in 1910, decision-makers at the time did not foresee great development pressures being exerted upon the agricultural and rural area which represents Vienna's 22cd district today.

The green belt has continued to act as a planning instrument for the city, and in 2005, the year of its 100th anniversary, its size had grown to more than 21,500 ha, including 12,000 ha of designated protected areas. The green belt extends around much of Vienna's territory, and an overarching goal of Vienna's urban development strategy seeks to increase the amount of protected landscapes and improve connectivity between protected areas, particular in the North-eastern peripheral territory initially left out of the original vision. This North-eastern territory is characterized by a wide range of built and unbuilt elements, including 1960s social housing, historical village structures, and empty voids, and marks the juncture between the Marchfeld, the largest contiguous agricultural plain in Europe, and urban development.

After a decline in population during the mid – late 20th Century, Vienna has reached a stage of intense growth again, and the population is expected to reach 2 million people by 2029. Thus, the city is expanding rapidly, and the need for new housing and related infrastructure is driving the process, particularly in peripheral areas such as those the Viennese term trans-danubia.

The Institute of Landscape Architecture (ILA) and the Institute for Spatial Planning and Rural Development (IRUB), University of Natural Resources and Life Sciences, Vienna (BOKU), organized a summer school from 2-10 August, 2014 to research and reflect upon this territory of diverse landscape, historical, agricultural, and urban elements.

Twenty students from twelve different countries, with varied backgrounds in landscape architecture, environmental protection, and ecology, participated in an interdisciplinary workshop. A combination of lectures, excursions, and group work served as a basis for the development of design and planning strategies for a project area within Vienna's 22cd district. Staff members from six different countries, representing the fields of spatial planning, landscape planning, landscape architecture, and urbanism, as well as members of Vienna's city council and the municipal department of open space and landscape provided input and led discussions throughout the week.



Work Process

Students were asked to address a number of questions pertaining to three different scales, and were provided with texts, plan and image documentation, as well as lectures to encourage an integration of approaches and disciplines.

<u>Metropolitan Scale</u>

The Metropolitan Scale was defined as the spatial assemblage of both autonomous and inter-linked urban units, defined in terms of territory as well as political boundaries. Students were asked to reflect upon the historical and contemporary framework of the green belt in Vienna and review its role as a planning instrument and its manifestation spatially as compared to other cities internationally.

Agata Cieszewska from Warsaw Agricultural University, began the workshop with a lecture comparing the various theoretical models and spatial structures of green belts, as well as the associated functions and services. Thus, the international group understood quickly that Vienna's green belt is in fact a system of open spaces, under different degrees of protection, and in no way a spatially connected ring around the city.

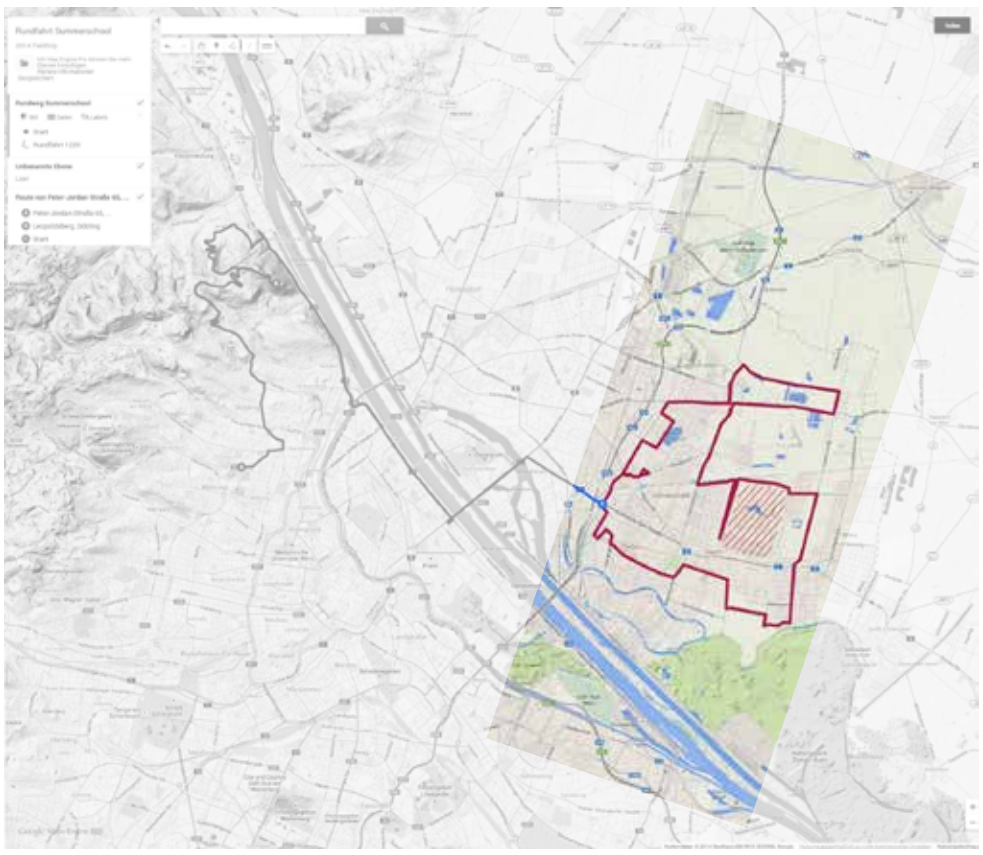
Christoph Chorherr, a member of Vienna's City Council, and the green party's spokesperson for urban planning and development, outlined some of the challenges that Vienna is facing, noting in particular the current and ongoing phase of rapid population growth which is exerting a high level of development pressure. The issues of ownership, land use, and the roles both investors and the municipal government play in urban development as well as the proposed expansion of the green belt was addressed. Questions were raised as to how the green belt needs to perform in the contemporary and future Viennese Metropolis, and what legislative and economic instruments and processes can be used to secure and expand the projected open spaces in the city? How can the implementation of new protected open spaces be paid for?

At this scale, students were asked to drawing/diagram/collage their understanding of the green belt at the metropolitan scale, and suggest an overall strategy for its future expansion.

The district scale

The first excursion of the week introduced a territory within the 22cd political district of Vienna, and the program slowly shifted to a discussion of the district scale. The various structures - landscape (agricultural, waterscapes, forest, planned and unplanned) and the urban (built up areas, infrastructure) – of the territory were pointed out, including those parcels already designated SWW (protected forest and meadow belt). Students quickly recognized the heterogeneity of the area, with the diverse functions, densities, spatial conditions, and habitats.

Isabel Wieshofer, MA 18, head of municipal department for open space and landscape, introduced the recently updated draft of the open space strategy for Vienna, part of STEP 2025, and assisted with the transition from the metropolitan scale to the district level. After presenting the newly revised strategy's emphasis on open space network, citing the importance connectivity plays in the quality of green spaces, Dr. Wieshofer outlined six types of urban open spaces within the network, ranging from streets and pedestrian zones to green corridors, and four functions from everyday walking and biking to nature protection. Attention was then given to the proposed networks within the project territory and key areas requiring input.



Lone Søderkvist Kristensen, from the University of Copenhagen gave a lecture on agriculture in the urban Periphery, and presented different strategies for protecting agriculture in urban-fringe areas from urban development. Examples were presented demonstrating multi-sectoral, area-based approaches which stressed stable borders, long-term development, new residential typologies, and improved frameworks for professional agriculture. Students were encouraged to consider the value and qualities of the agricultural landscape of the Marchfeld and incorporate these elements in their work.

At this level, students were asked to define an open-space framework, and define a strategy for landscape-driven urban development in the territory which addressed the following questions:

What key open spaces need to be secured, and how does an overall open-space framework for the district correlate with the metropolitan strategy? What parameters are used to define the framework and make decisions about open spaces? What patterns of urbanization (found in the area, in Vienna, and historical typologies) would interact well with the framework, and in what form, without overreaching the framework's carrying capacity?

Following a mid-week presentation of the student's progress, a second excursion introduced Vienna's Urban Lakeside (Aspern Seestadt), one of Europe's largest mixed-use development projects, a 200 ha site that will be home to 20,000 residents in Vienna's 22cd District. Kurt Hofstetter, project manager for urban planning and development, Wien 3420, generously took time to outline the unique planning process, and the role mobility infrastructure, open space, and participation play in the development of the area. Subsequently, students were able to visit the construction site and conduct further field research in the adjacent territory for their ongoing project work.

Project Scale/ Site scale

The scale of the project offered the opportunity to deepen the strategy at the district scale via conceptual development of a particular site. Students were asked to identify a key site within their open-space framework for a more detailed project development, and were asked to define the spatial, functional, and aesthetic characteristics, qualities, and programs their site should exhibit or develop over time.

Tanja Simonič Korošak, lecturer in urban and landscape design, University of Maribor, and Gloria Font, Lecturer in Landscape Architecture, Amsterdam School of the Arts, both practicing landscape architects in addition to their academic work, offered students insight into different design approaches. Tanja Simonič Korošak presented a range of examples of multi-scalar design processes, demonstrating how one can move from the abstract to the concrete project, and cited the roles of analysis, synthesis, evaluation and communication and their respective interaction. Gloria Font discussed the process of discovering the qualities of a site - physical, as well as the historical and cultural aspects of a place, and incorporating these back into the creative process for site transformation. Both lectures inspired the groups to generate diagrams, plans, and sections for their project site, keeping in mind the declared strategies at the other two scales.

Student Projects

It is important to mention that students were not asked to work in a linear fashion, moving from one scale to the next, but in fact to develop ideas at the different levels and test them against each other throughout the week. The student projects generated a substantial number and diversity of ideas and concepts, and demonstrate a high level of effort and energy put into the group process, no easy task across disciplines and cultures, and one to be applauded. Projects are documented in the following pages, and serve as inspiration to consider where and how protected areas in the 22cd District of Vienna may be used as active instruments in the face of urbanization.

Thanks and Acknowledgements
A great deal of effort by a number of people made the summer school a success both organizationally as well as intellectually. The time and energy contributed by the following external lecturers in preparation of the course, as well as during the summer school itself is highly appreciated:

Dr. Agata Cieszewska, Senior researcher and lecturer of Landscape Architecture at Warsaw Agricultural University, Poland

Mag. Christoph Chorherr, member of Vienna's City Council, and green party spokesperson for urban planning and development

Ms. Gloria Font (MLA), Lecturer in Landscape Architecture, Amsterdam School of the Arts, Atelier Font, Amsterdam

DI Kurt Hofstetter, project manager for urban planning and development, Vienna 3420, Aspern Seestadt

Dr. Tanja Simonič Korošak, Lecturer in urban and landscape design, University of Maribor, Landscape design studio Oblikovanje krajine Tanja Simonič Korošak s.p., Maribor

Prof. Lone Søderkvist Kristensen, Department of Geosciences and Natural Resource Management, University of Copenhagen

Dr. Isabel Wieshofer, MA 18, head of municipal department for open space and landscape, Vienna

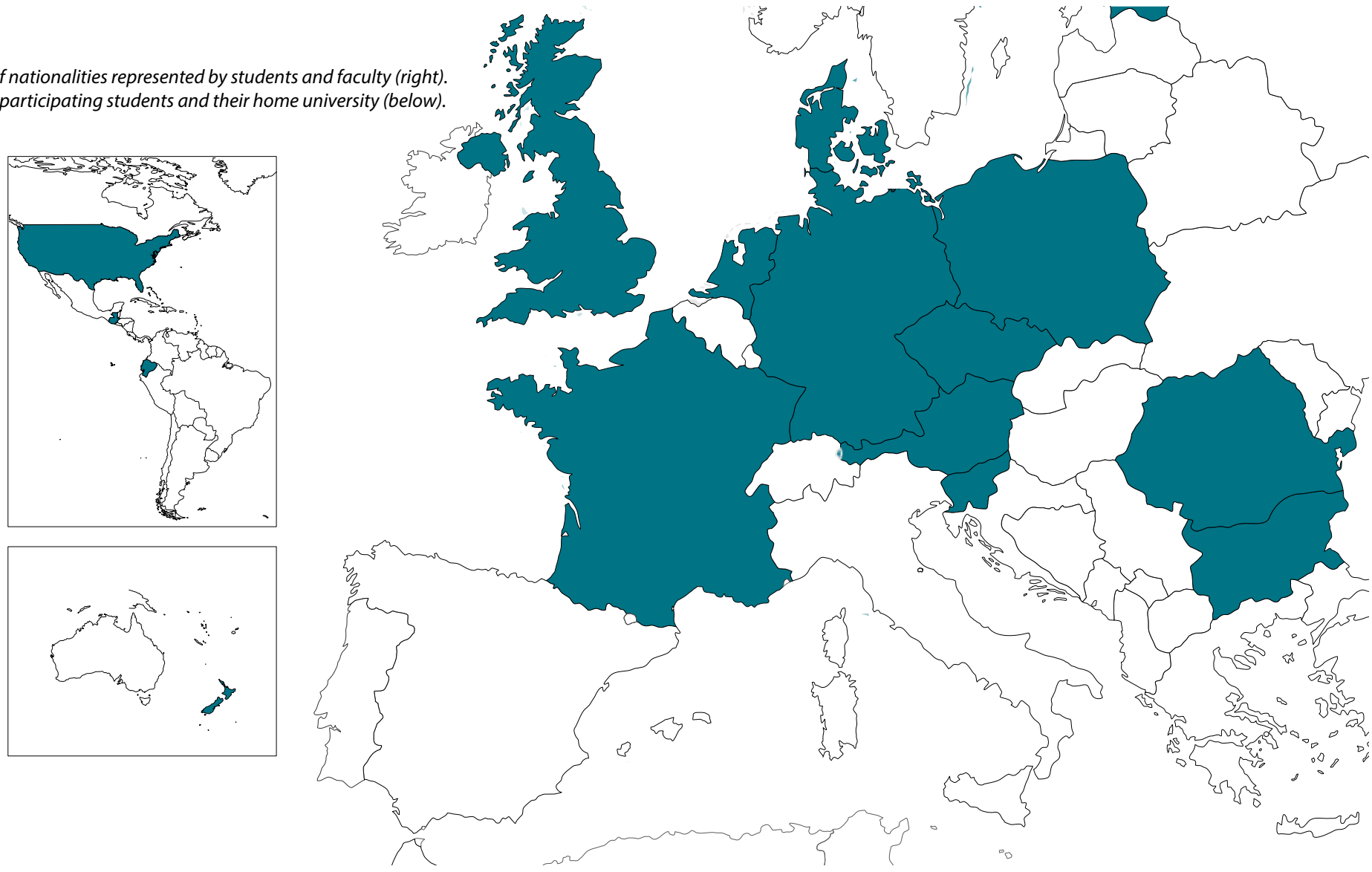
DI Nicole Theresa Raab served as course coordinator over the past months, ensuring a smooth organization for students and lecturers from start to finish, and students Claudia Kurz, Angelika Lutz, and Andrea Schratzberger-Schindelar assisted with organisational tasks throughout the week. Christoph Graf prepared plans, data, and images for the project work, and Cornelia Korsalka, secretary at ILA, offered continued support before, during, and after the workshop.

Thanks to the Euroleague for Life Sciences, and subject coordinator Adri van den Brink for their organizational and financial assistance in preparing the summer school.

Finally, many thanks to the students, who despite spending summer days in a beautiful city, took on the tasks of the intensive workshop with enthusiasm and dedication. It was a pleasure working with all of you.

The BOKU summer school team,
DI Franz Grossauer, Senior Lecturer (IRUB)
DI Paul Himmelbauer, Senior Lecturer (IRUB)
Assoc. Prof. Dr. Gernot Stöglehner (IRUB)
Kim Thornton, MA, Scientific Research Assistant (ILA)
DI Roland Wück, Senior Lecturer (ILA)

Map of nationalities represented by students and faculty (right).
List of participating students and their home university (below).



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RADU, Mihaela	USAMV Bucharest; Horticulture Faculty
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1 THE (In)GLORIOUS ONION

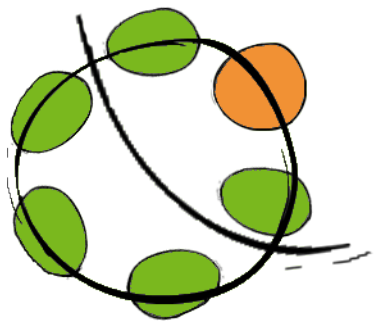
(METROPOLITAN SCALE)

OUR POSITION OF THE GREEN STRUCTURE FOR THE METROPOLITAN SCALE OF VIENNA.

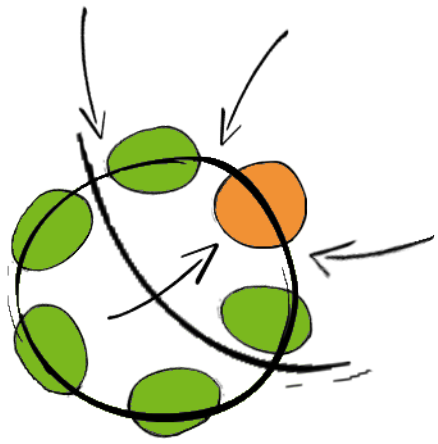
Vienna, just like many other cities around the world, faces the issue of population growth and lack of housing. The prediction forcast an increase of approximately 25000 people per year coming into the city over the next 2 decades. The cities reputation as one of the most livable cities in the world playes another role. One of the reasons for its popularity is its surrounding of green & forested area. The cities geography and historical layout has lead to a belt like island structure of numourous green spaces with forests, vinnyards, parks and a national park. In order to grow as a city, the council is now seriously aiming to develop the 22 district at the same time aiming to avoid uncontroled sprawl and providing green space for its people. A key challenge will be to preserve the districts unique „rural-agricultural patchwork“ in the very east and the identity of not living in „the city“ and at the same time connect it with the city witout leading it into a „getto“ like structure. The future development should include a point of difference.The east needs a clear oustanding landscape feature that links allready existing lakes, reserves and parks and has a better link into the city.

ANALYSIS:

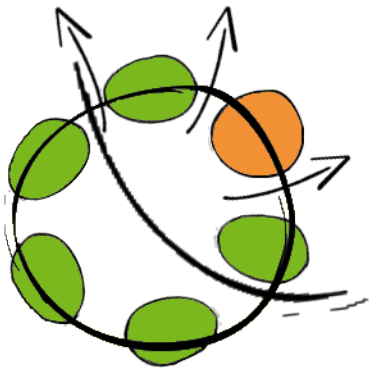
What is Green Belt?!



Vienna's Green Beld

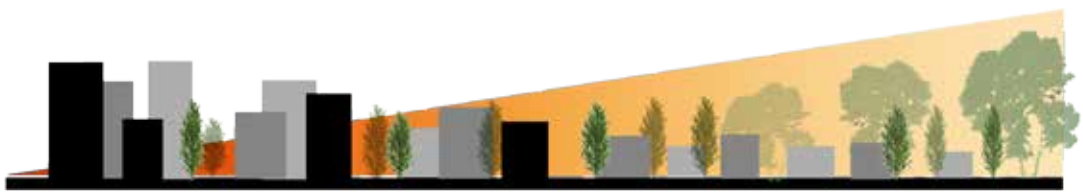


Problems



Directions of growth

GRADIATION



density - green space - environment ecology - building ecology - transport system

ELEMENTS

STRIPES

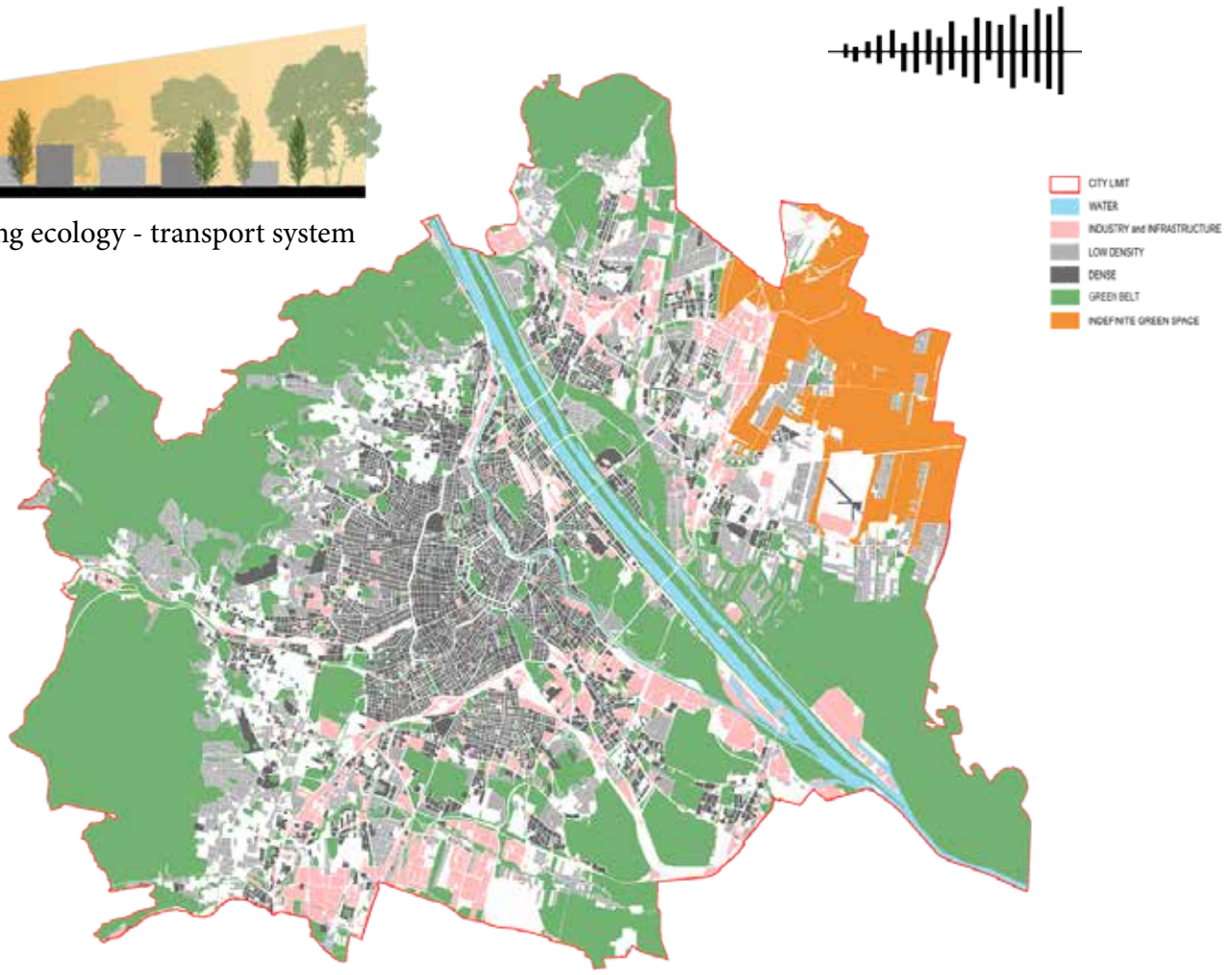
LEVELS - raise the soil

SHAPES

GRADIENTS - WEDGES

woven, smooth and soft borders

+ HUMAN SCALE + DIALOGUE + VARIANCE

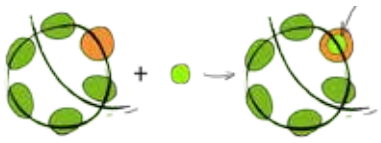


2 THE (In)GLORIOUS ONION

OUR POSITION AT THE METROPOLITAN SCALE AFFECTS THE GIVEN DISTRICT (22)

The overal landscape of the district highligts numerous green belts and designated areas to be greened, the birds eye view provides numerous ideas of how to create green open spaces both public and private within the area. The aspiration is to create a new green forested feature for the east by linking up already existing green networks and re-use the human waste land „hills of 70m“ as outstanding landscape features that will provide a never seen before perspective onto the district and the city as a whole. In the backdrop towards lower Oestereich will a forest and adacent patchwork agricutlure hedges and pathways highlight the beauty and current identiy. Moving from the hill towards the east, a network of reserves, parks, lakes and restoration projects will provide the ideal green area for human activities and high ecological values. The link beween the green features and the national park will be a patchwork of preser ved agricultural production and medium density housing fuctioning as an allready defined buffer zone.

LOCATION ANALYSIS



- city border
- danube
- buildings
- buildings
- up-cycHILLs
- agricultural landscape
- national park
- border zone to national park
- new forest
- wedges -green open space
- up-cycHILLs
- mosaik - area
- existing green open space
- inner fringe zone

MASTERPLAN/ VISION/ CONCEPT/ FOR THE GREEN STRUCTURE Of THE METROPOLITAN AREA OF VIENNA

Up-cycHILLs

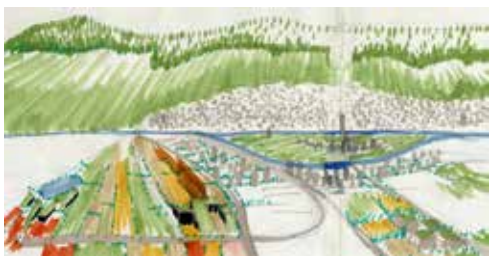
agricultural landscape

mosaik - area

new forest

wedges -green open space

inner fringe zone



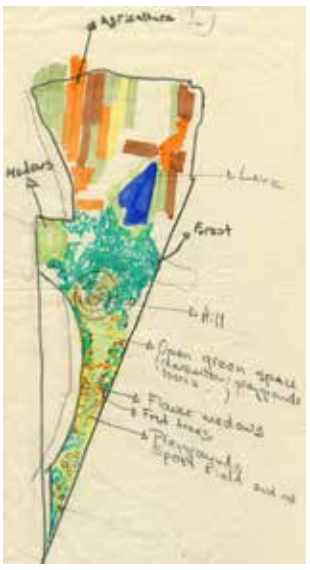
new view of Vienna from the new Hills

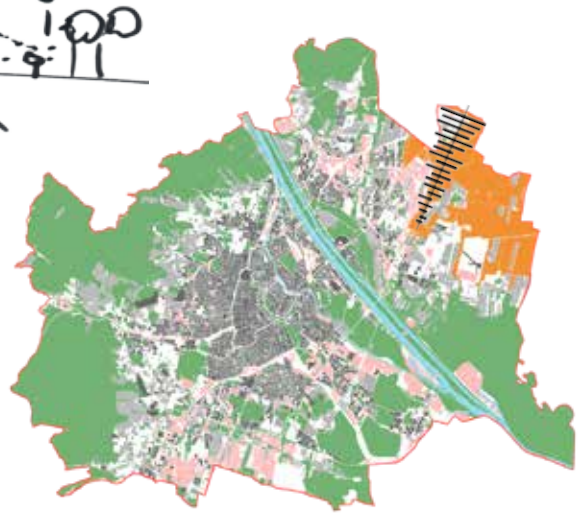
border zone to national park

3 THE (In)GLORIOUS ONION

HOW WILL THE PROPOSAL AFFECT THE LOCAL SCALE IN THE DISTRICT 22 Of VIENNA

From the hill, a green „wedge“ will lead the way into the city, bordered by newly built medium density housing in combination with existing low density housing to create a soft edge. Going down the terraced re-used hill side, through parklands of wild woody features, wild flower meadoes, picnic areas with outdoor adventure playground areas for all ages, adjacent to newly created ponds and leasure areas. Further inside the city, uncontroled nature gives way to more human dominated spaces such as sport fields, playgrounds and more maintenance driven parklands with urban community gardens and fruit tree orchards for urban foraging. Close to the old Danube, open space with green elements dominate the free open space for human activity.
Rural islands:
In order to maintain some of the outstanding rural identity of the area, small rural settlements will be „greenbelted“ in, in order to prevent further sprawl into the agricultural land. At the same time increasing local environmental condition by creating new woody-scrub and fruit orchard features that represent the cultural landscape and soften the edge to the production land.





Transportsystem: new connections are needed

22. district: area= 102,29 km² inhabitants: 168.394 Bevölkerungsdichte: 1646 Einw./km²

Up-cycHills

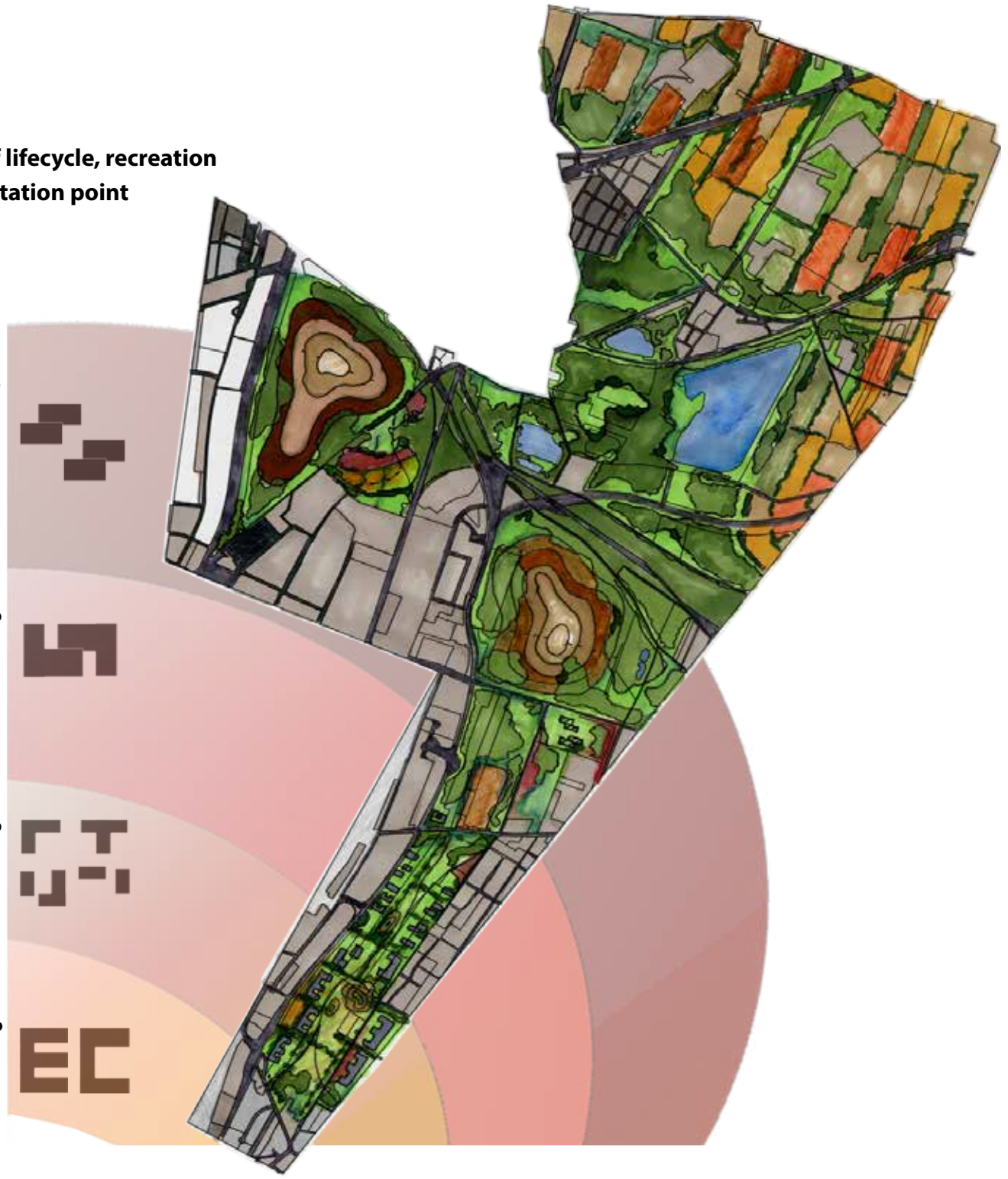
Up - reuse of waste deposit area
CyCl - recycling land, closing of the product of lifecycle, recreation
Hills - new view point, landmark, spatial orientation point

Buildup space: 60%
Open space: 40%
People: 675

Buildup space: 50%
Open space: 50%
People: 544

Buildup space: 42%
Open space: 68%
People: 396

Buildup space: 70%
Open space:30%
People: 675



density

new Hills on "waste land" = up-cycHILLs...recreation

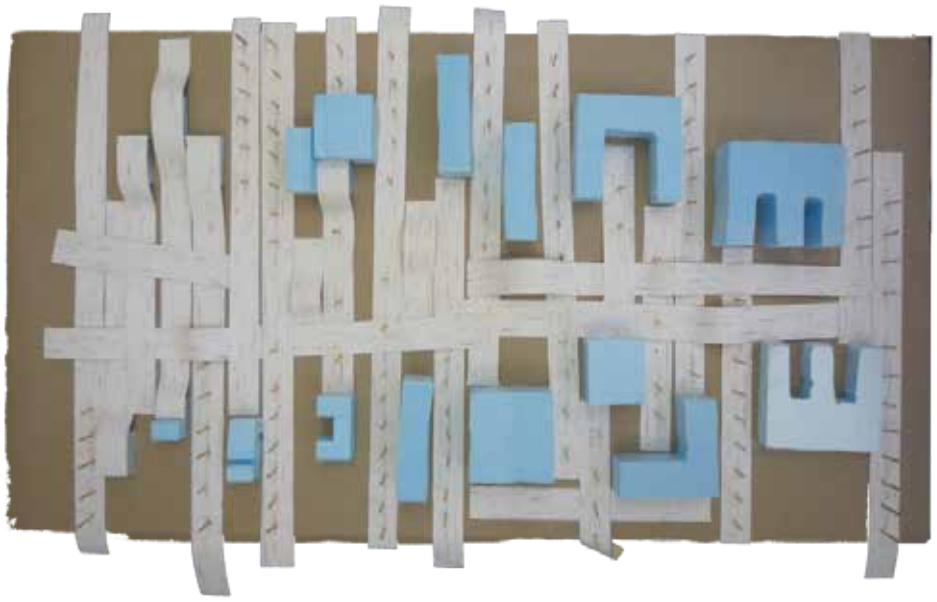
low urban density...2-3 floor apartment houses, orchard, green community,

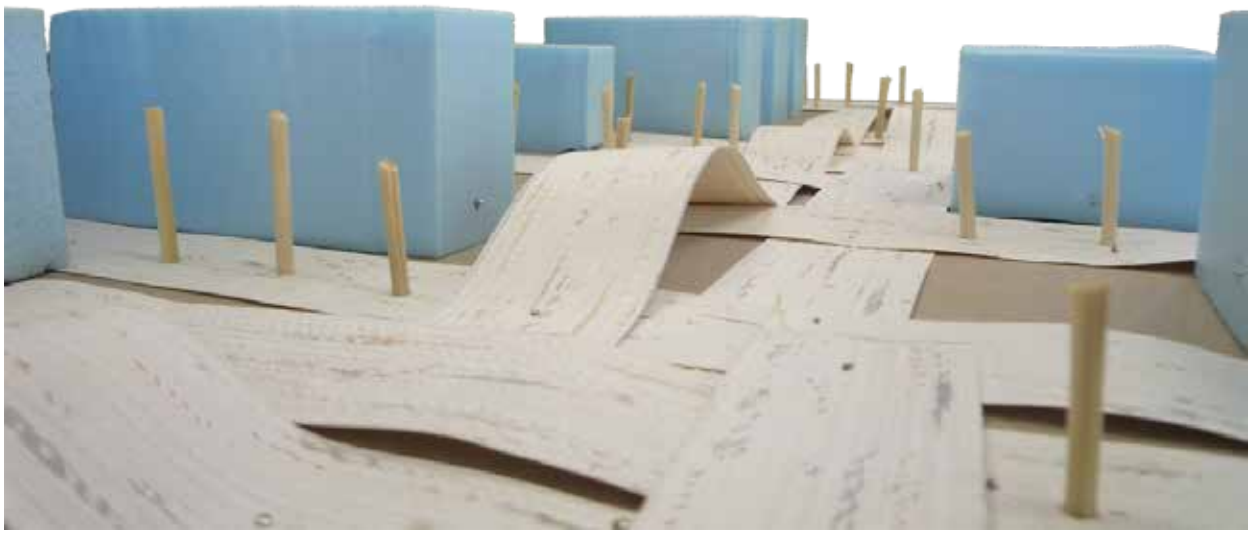
medium urban density...apartements, parks,

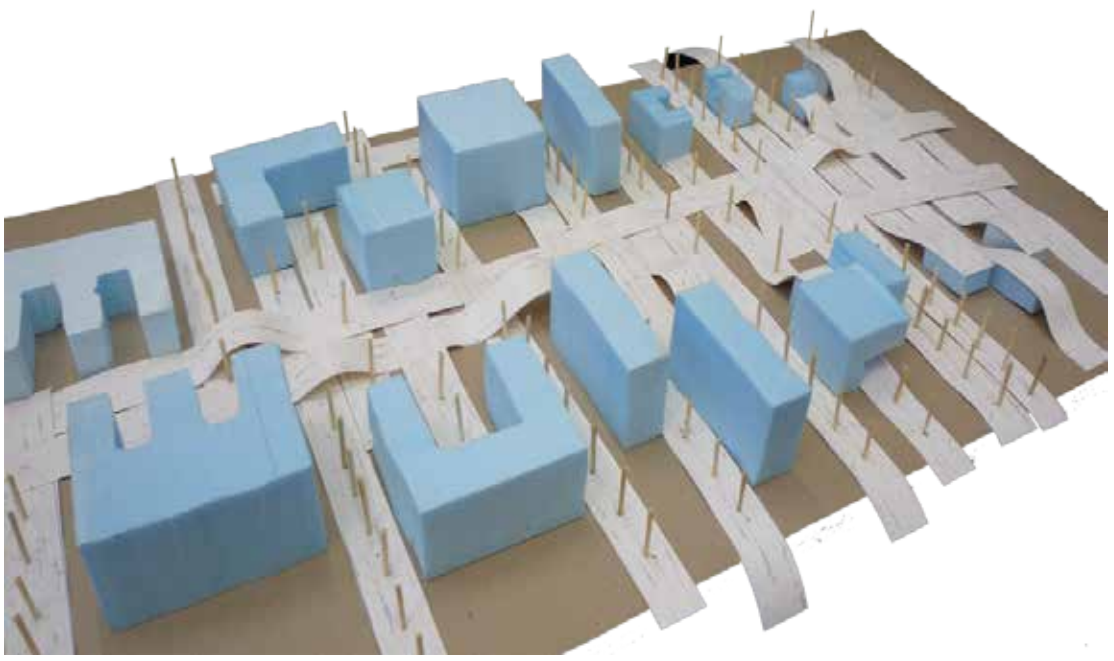
highest urban density.....hightowers, industry, offices

crosssections

ABSTRACT/ SHEMATIC VISION /MODEL:







Agriscape patchwork

Lakeside within area protected by natura 2000

UPcychills on the waste deposit grounds

Small density housing, green roofs, comunity gardens

Medium density housing, with smaller parks inbetween

High density housing, with narrower elongated parklands

SKETCH BOARD, aka PROCESS TRACING

group 2

Lavender Plains “The Music of the Ground”

Multifunctional Production Landscape

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1 Lavender Plains

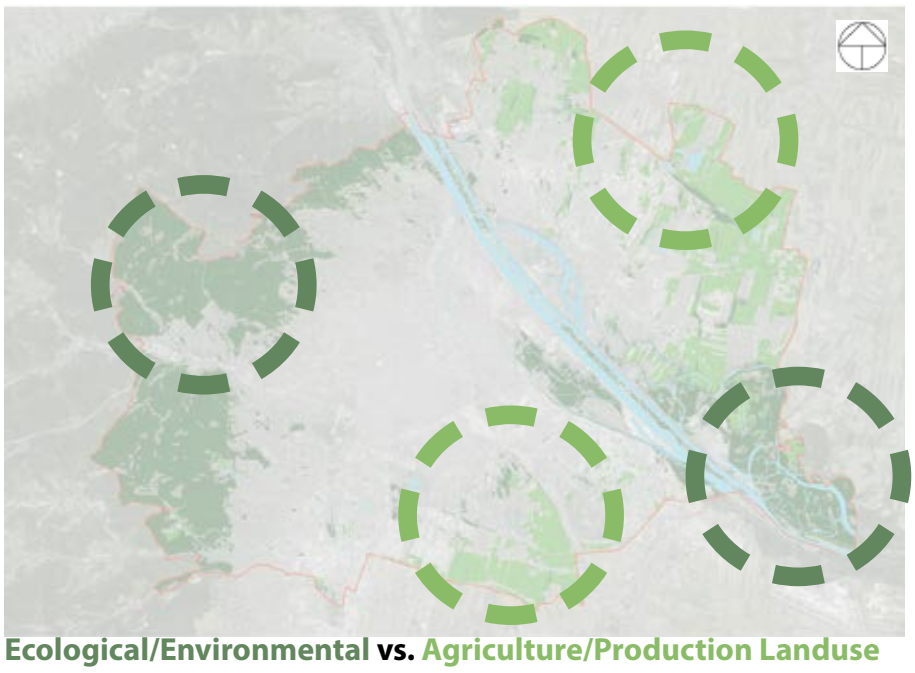
METROPOLITAN SCALE

OUR PROPOSITION FOR THE GREEN BELT STRUCTURE WITHIN THE METROPOLITAN SCALE OF VIENNA.

The green belt was designed to create and keep a healthy environment for the city. The intention of having a multifunctional productive landscape is holding that principal aim but adding conceptions, which can evolve in time to provide the essence of a healthy urban environment.
Enhancing the functions of every section and adding new ones derivate from their interactions, following the historical and trending paths of the Metropolitan area. These were the drivers for this vision of design for the Green Belt.
The Vienna Green Belt was the design driver used to structure and improve connections between the ecological, environmental and urban agricultural development functions utilizing connections which perform like life corridors and linear parks create green networks.
A wide range of well-defined and strengthening multifunctions were provided by the metropolitan area, with set of elements from the Green Belt in urban and peri-urban areas were used to assure the sustainability of the Green Belt in order to increase the population and life quality of the citizens within Vienna.
The existing functional landscapes are mainly ecological and environmental. By increasing these throughout agricultural regions we can provide better quality soils, water and air, with the respective biodiversity preservation and synergy within the entire metropolitan unit. This works in conjunction with the urban agricultural landscape framework providing a mini-ecosystem that fluxes in and out interacting between each other.

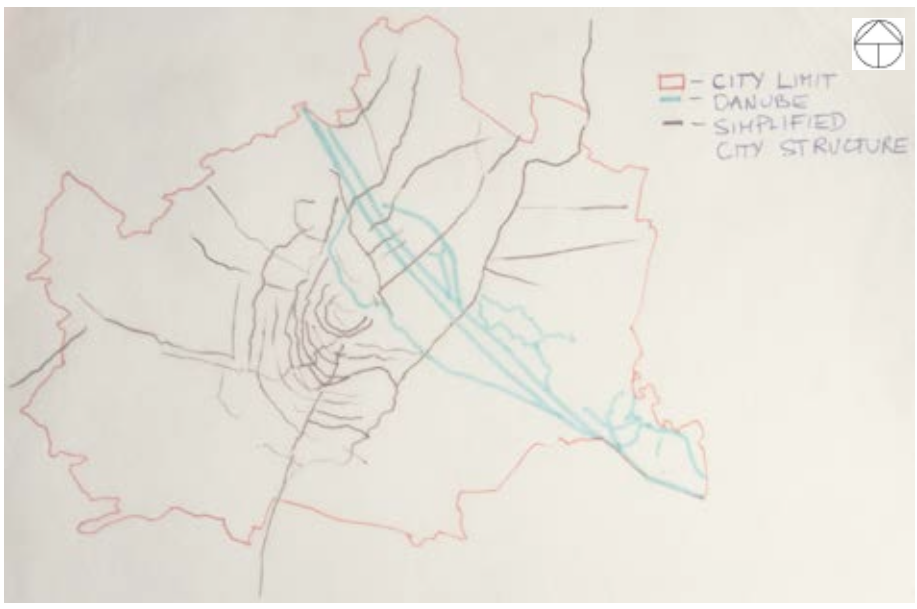
ANALYSIS DRAWINGS

Green Belt Connections



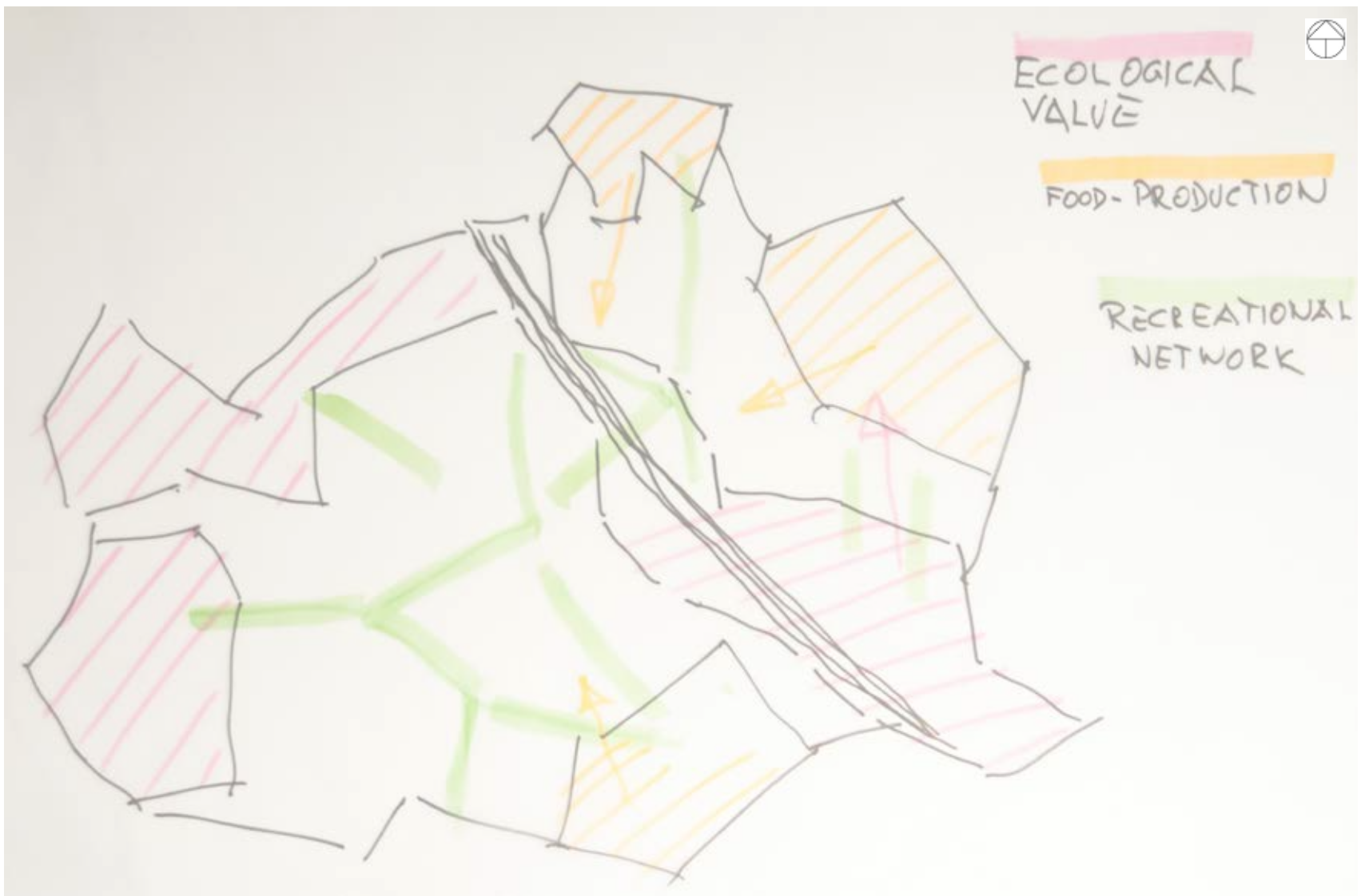
Ecological/Environmental vs. Agriculture/Production Landuse

Settlement Patterns



Sporadic development vs. Lineal development

CONCEPT FOR THE GREEN STRUCTURE OF THE METROPOLITAN AREA OF VIENNA



City development pressure impacts on Ecological/Environmental and Agricultural regions. More connections need to be established between the city and the Green Belt. Bring the Green Belt into the city out to the Green Belt.

2 Lavender Plains

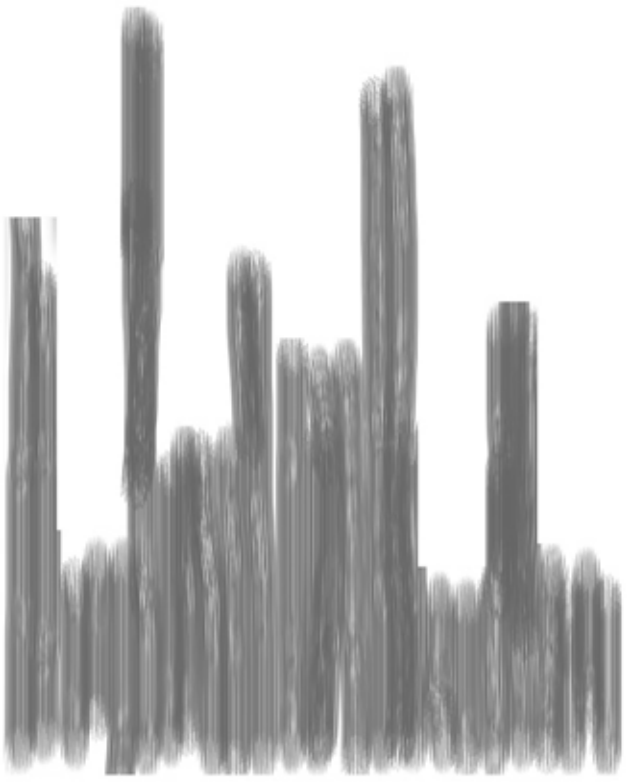
DISTRICT SCALE

HOW OUR POSITION AT THE METROPOLITAN SCALE AFFECTS DISTRICT (22)

Within the metropolitan scale at macro level we obtained interactions and fluxes from mainly ecological, environmental, recreational and urban agricultural functions. These forces were replicated at district level, taking in mind the primary goal of the district to function as an urban agricultural development.
Once the landscape functions were linked at metropolitan scale, the ecological, environmental, recreational, and structure at the district level could be explored. In this case we defined the urban agricultural (feeding, structure and recreation) as the structure, and connected them with land cover areas as a plausible way to evaluate the multi-functional areas in terms of their function capacity.
All the functions at this level are productive, therefore linked to a Life Cycle thinking of the resulting design area, so that the procedure claims for a "proxy variable" due the anthropogenic land use and the possible conflicts derivate from their interactions. These variables relay on aspects of yield and farm sizes for urban agricultural functions, preservation, conservation and provide a value index for ecological and environmental regions and provide potential or suitability for leisure "touristic" and cultural activities.
This scale includes different specific functional units from land cover defined areas to extrapolate the multifunctional productive landscape to strengthen their management under the anthropogenic pressure.

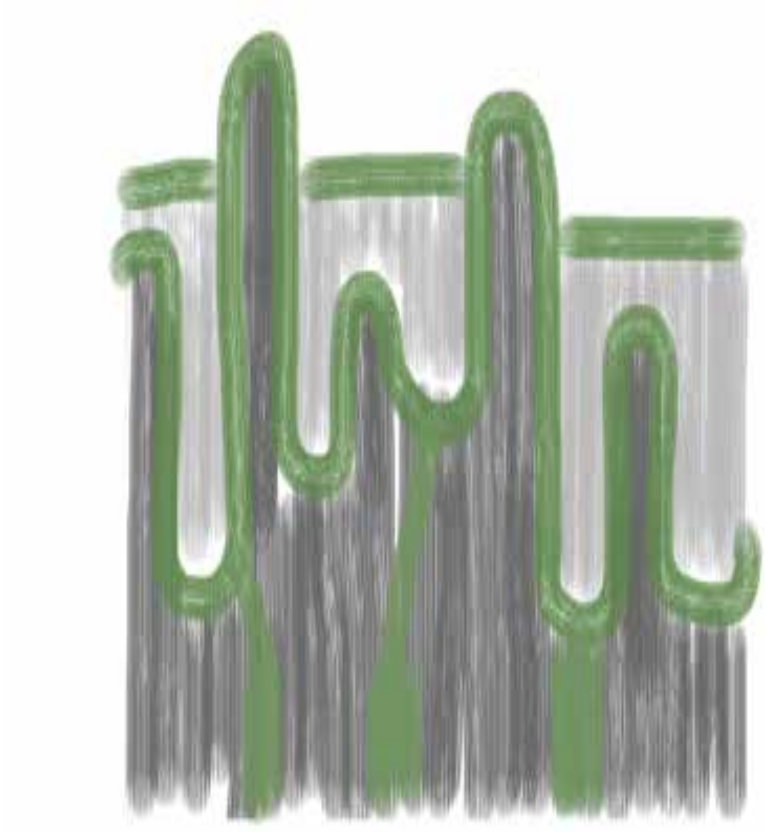
SCHEME CONCEPT

Urban vs. Agriculture

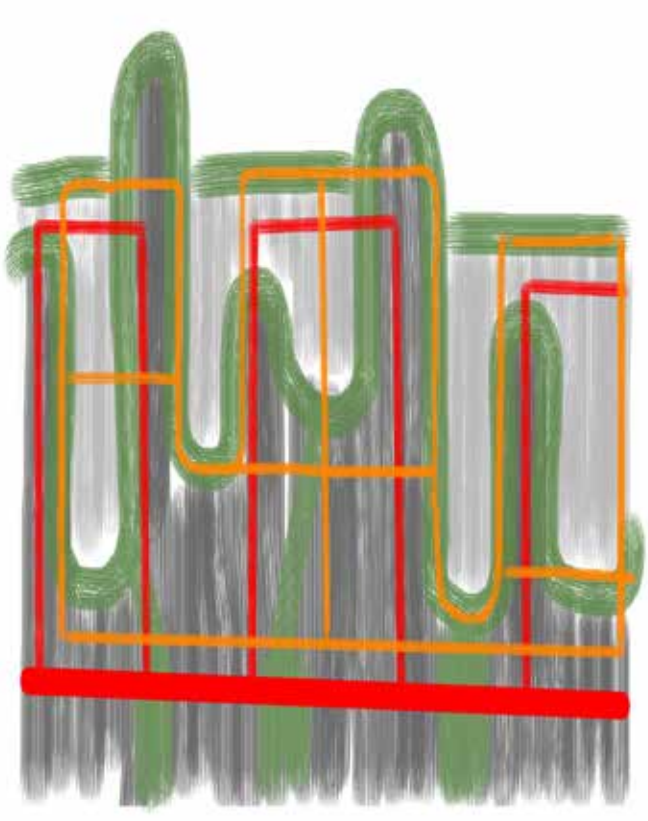


Allotment Gardens

Green Buffer



Transport



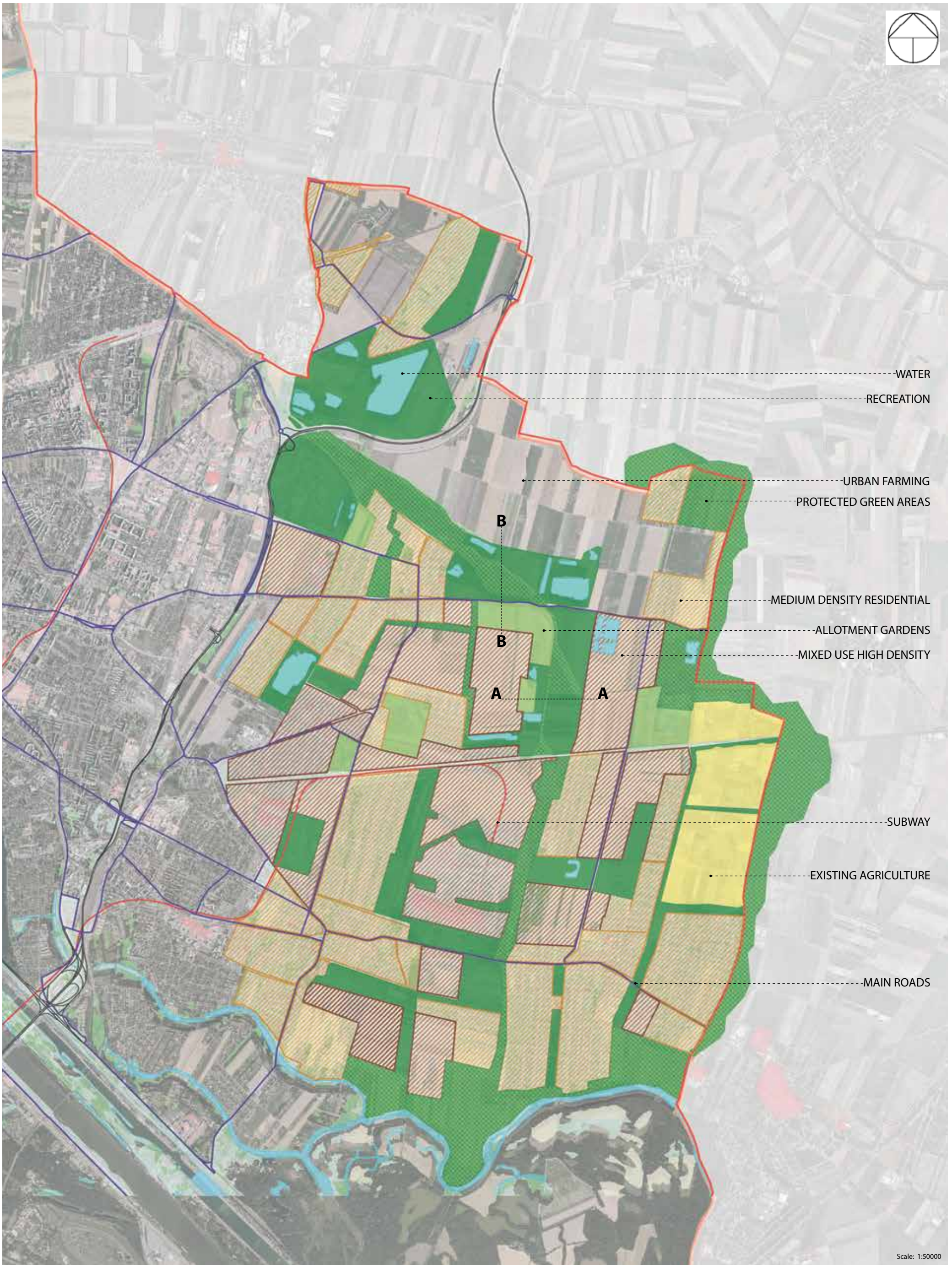
These exploratory drawings provided an analysis of linkages of the different functions required to create a successful development design scheme at district level. These included the interlinking of mixed use urban development, allotment gardens, green buffers and transport.

POPULATION ESTIMATE

The design scheme allows for:

- For the high density mixed use development the maximum possible population of this model would be 133,000 people.
- For the medium density housing areas (FAR 1) the maximum possible population of this model would be 167,000 people.
- This model allows for a total population of 300,000 people

(MAP) MASTERPLAN/ VISION/ CONCEPT/ FOR THE GREEN STRUCTURE Of THE METROPOLITAN AREA OF VIENNA



TOTAL LAND AREAS

Recreation = 1200ha Ecological = 170ha Mixed Use High Density = 1165ha Medium Density = 720ha
Allotment Gardening = 120ha Urban Farms = 570ha


GREEN BELT
GREEN NETWORK
VIENNA 22. DISTRICT
ECOLOGICAL AREAS / CORRIDORS
RECREATION - EXTENSIVE
RECREATION - INTENSIVE
ALLOTMENT GARDENS
URBAN FARMS

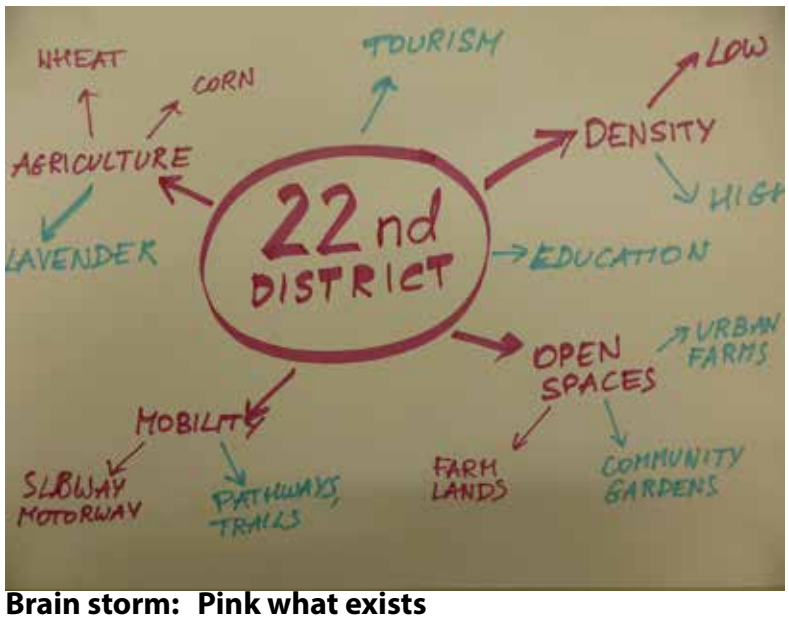
3 Lavender Plains

LOCAL SCALE

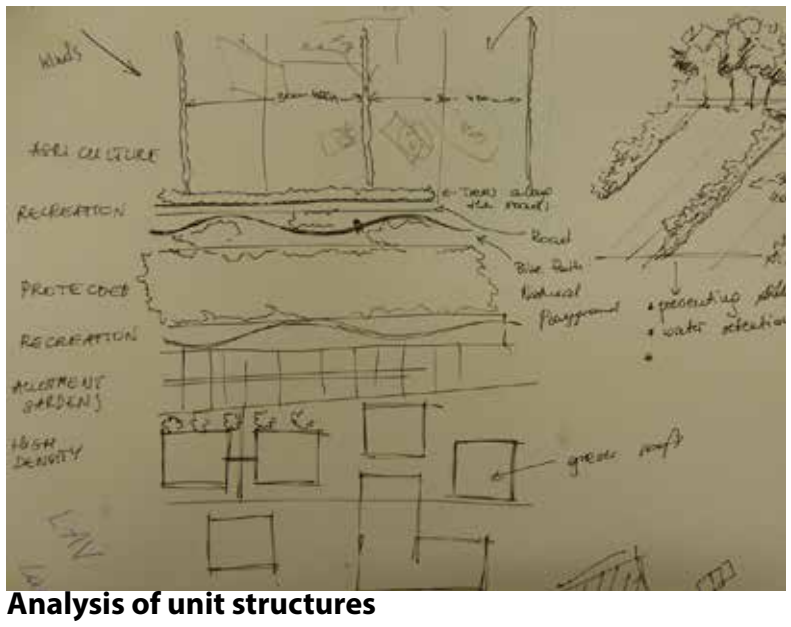
HOW WILL THE PROPOSAL AFFECT THE LOCAL SCALE IN DISTRICT 22 Of VIENNA

At the project scale the urban development unit is mixed use residential with high and low density sub-units. The medium density unit is kept from previous existence like some high density and the density indicator is moved to new high density areas with multi-storey greening buildings.
According to the location and conditions of zones some areas combine ecological, environmental and recreational purposes as a solid unit; these may also contain protected areas. Within these areas there will be buffers to ensure the protection of protected areas whilst allowing for other active recreational areas like camping, hiking and mountain biking. The mixed recreation areas combine eco-enviro functions, with ecotourism activities as well as recreation like playgrounds and outdoor entities respectively.
As the mixed use high density areas are a primordial unit within the urban agricultural framework they come with allotment gardens and green houses. The allotment gardens constitute huts, summer cottages, fruits trees, vines and small animals.
Existing agricultural areas that contain elements like green houses are maintained for crop productivity yield-size component. Urban farms will be dedicated to purchase products within the surrounding environment, creating a closed circle systems waste management system with the additional element of the formation of a professional farmers association. The urban farming region could provide an identity for the district linking to it's history of lavender production.
An overall integrated element is the mobility that is composed by the subway connection and pedestrian access together with hiking, biking routes, assembling all units into one network.

ANALYSIS DRAWINGS



Brain storm: Pink what exists
Blue what we want to achieve

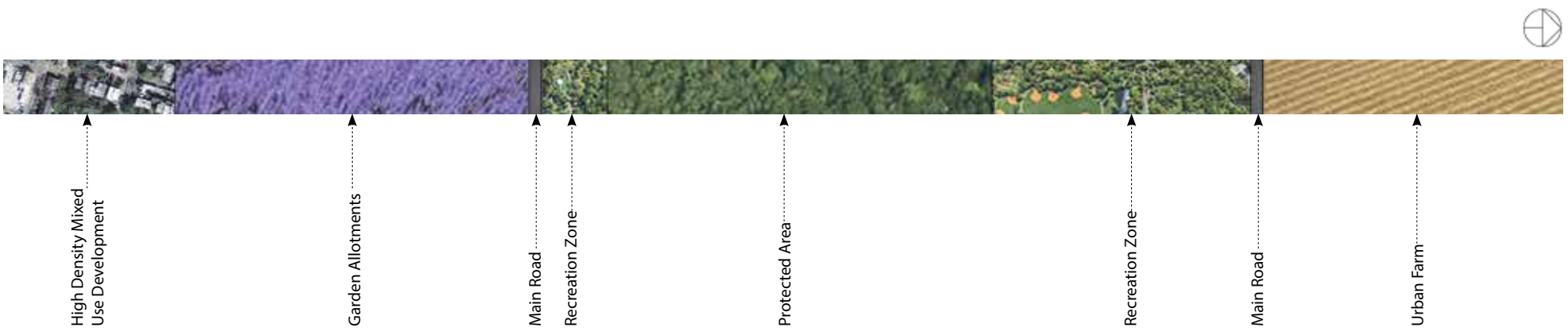


Analysis of unit structures

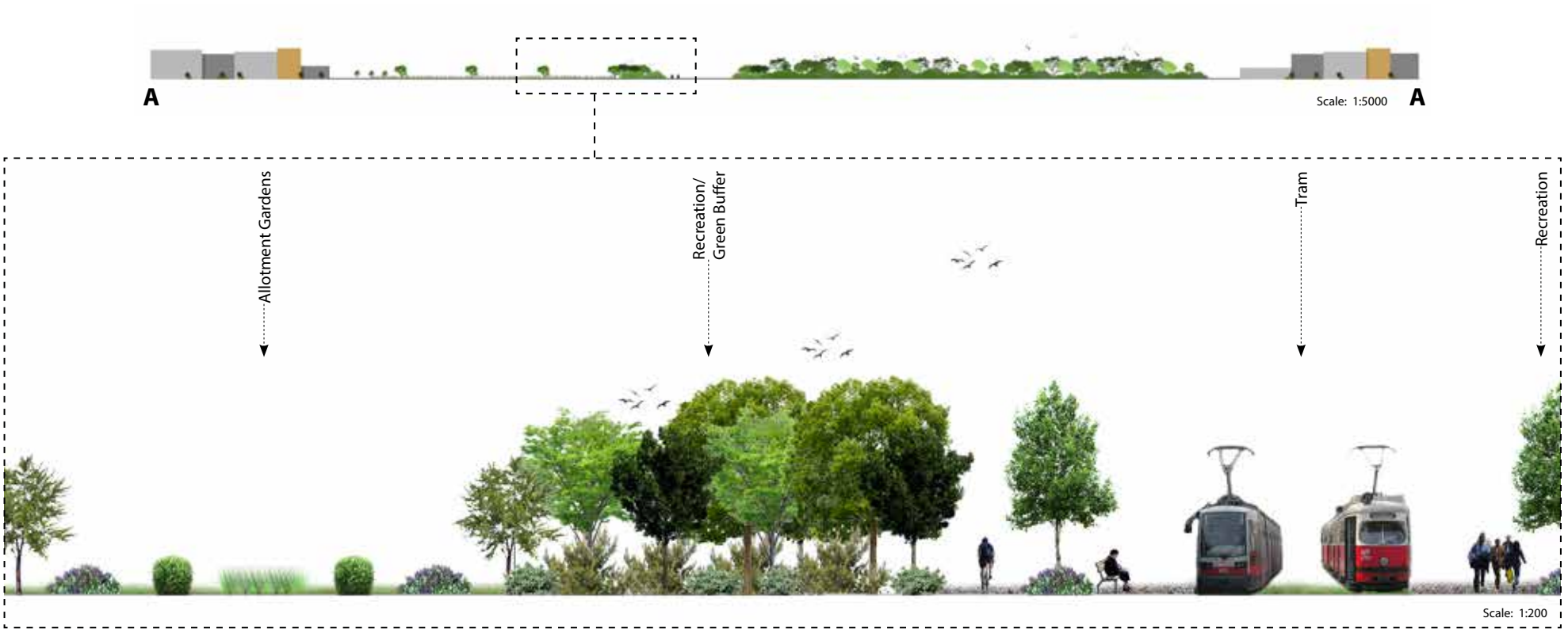
MAPS OF DESIGN CONCEPT

SECTION A_A Scale: 1:5000

SECTION B_B Scale: 1:5000

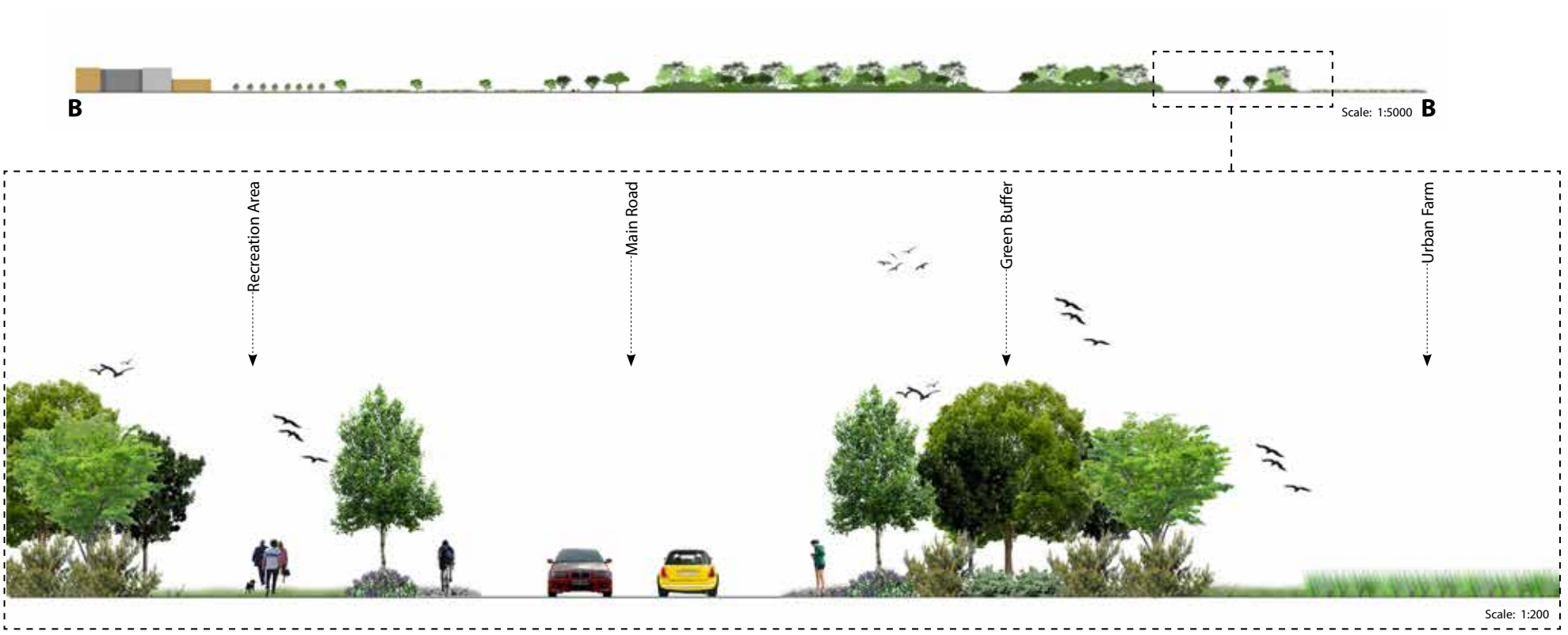


CROSS SECTION A_A

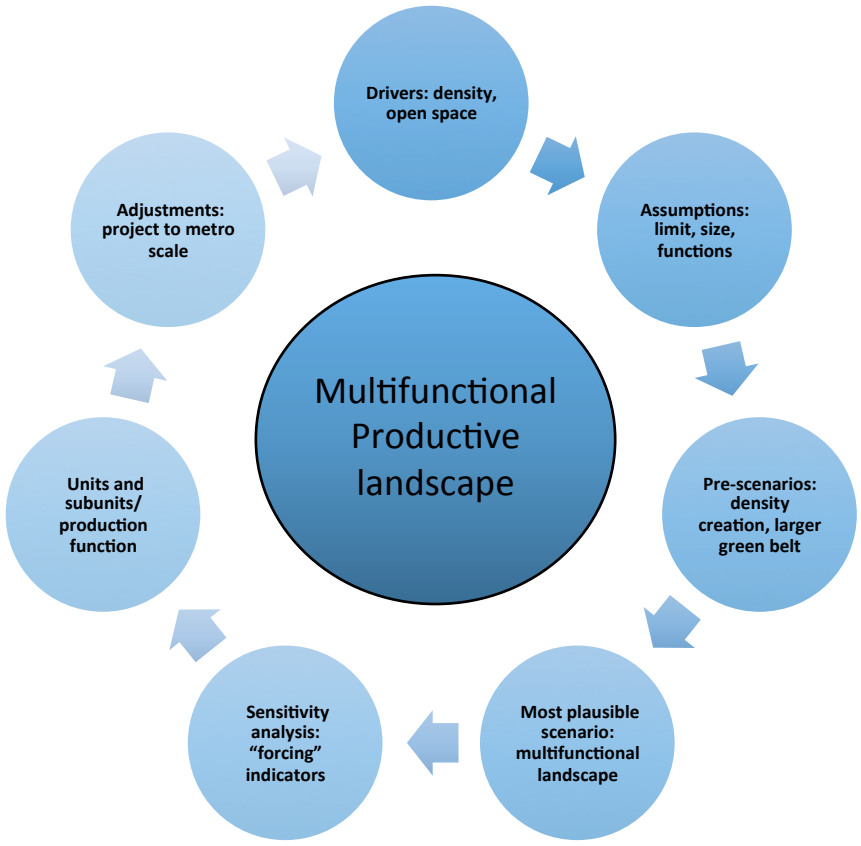


Cross section A_A illustrates how the Green Structures (allotment gardens, protected areas and recreational areas,) provide buffer zones between high density mixed urban living areas. The Green Structures also provide infrastructure elements like footpaths, transport (tram lines) and ecological services.

CROSS SECTION B_B

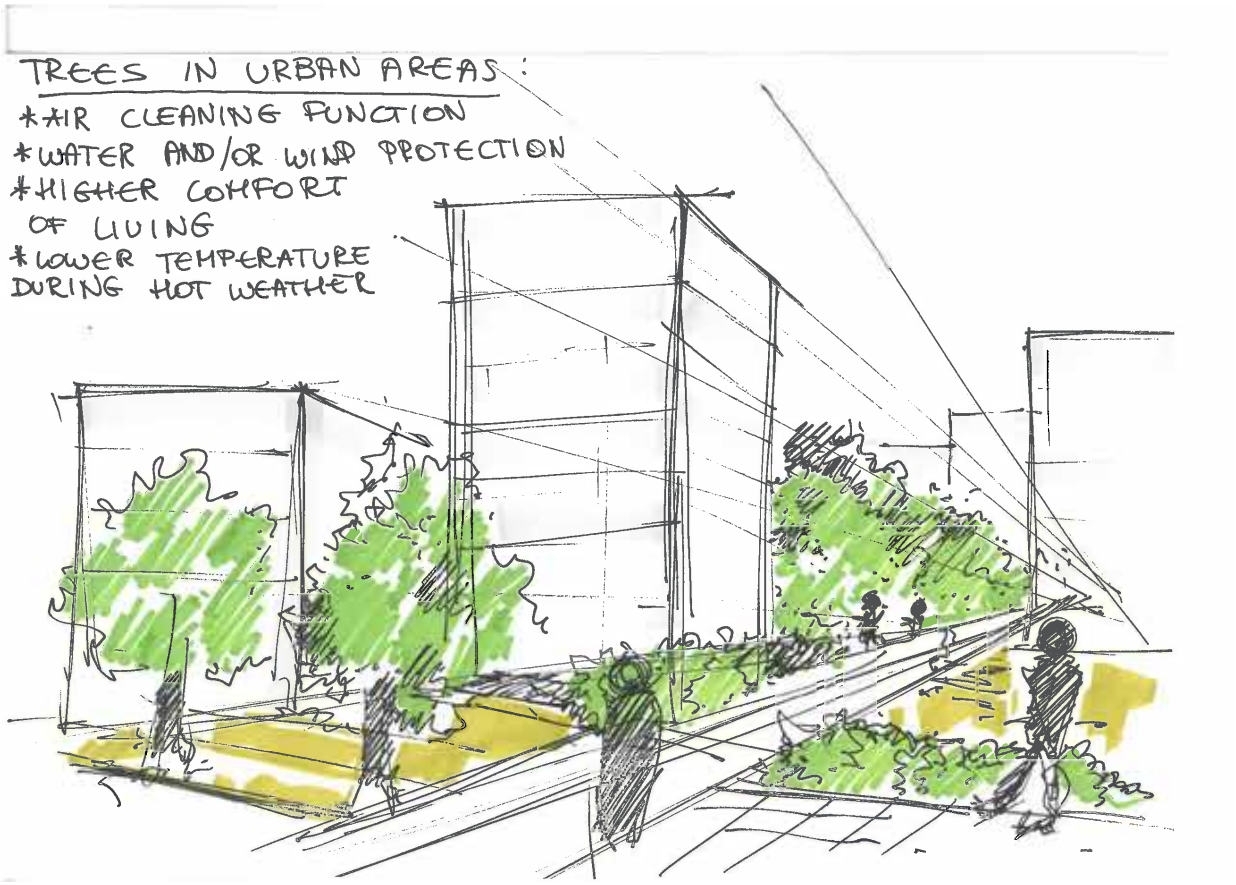


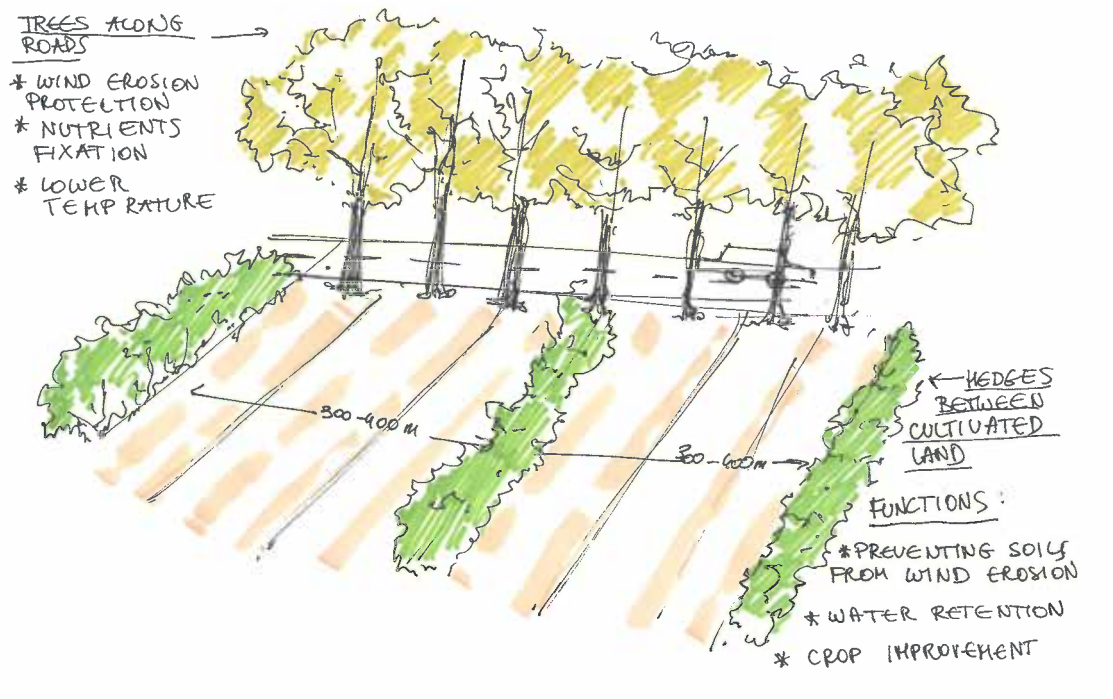
Cross section B_B illustrates how the Green Structures (protected areas and recreational areas,) create buffer zones between recreational and urban farms areas. Green buffers also provide a barrier between farming activities, the main road and high density mixed use living areas.

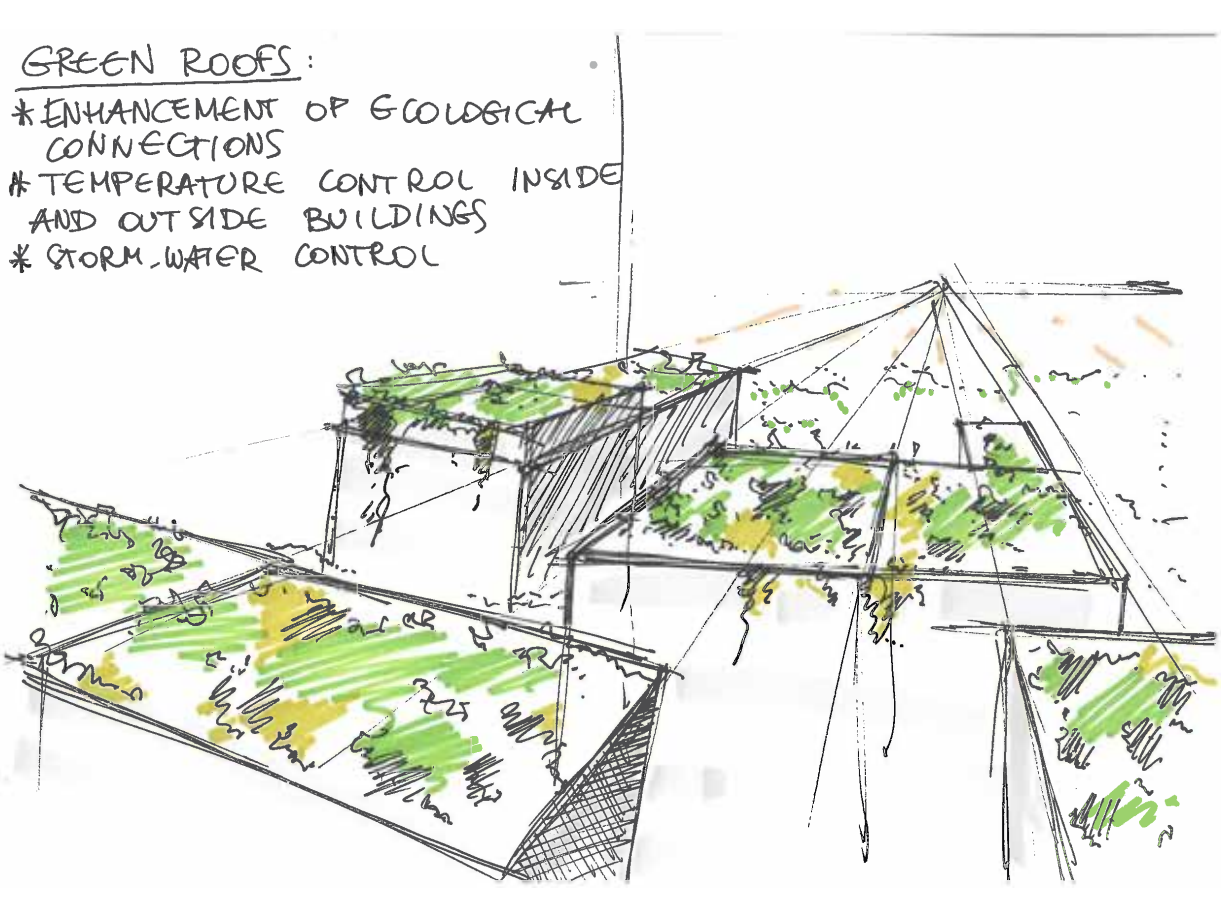


The outcome connection of the multiscaler design process.

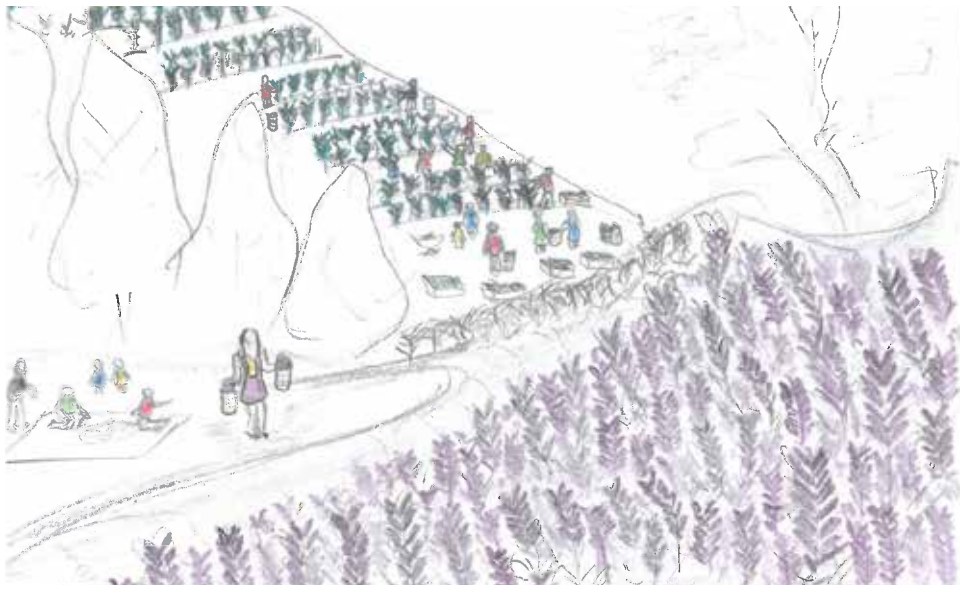
PERSPECTIVES:



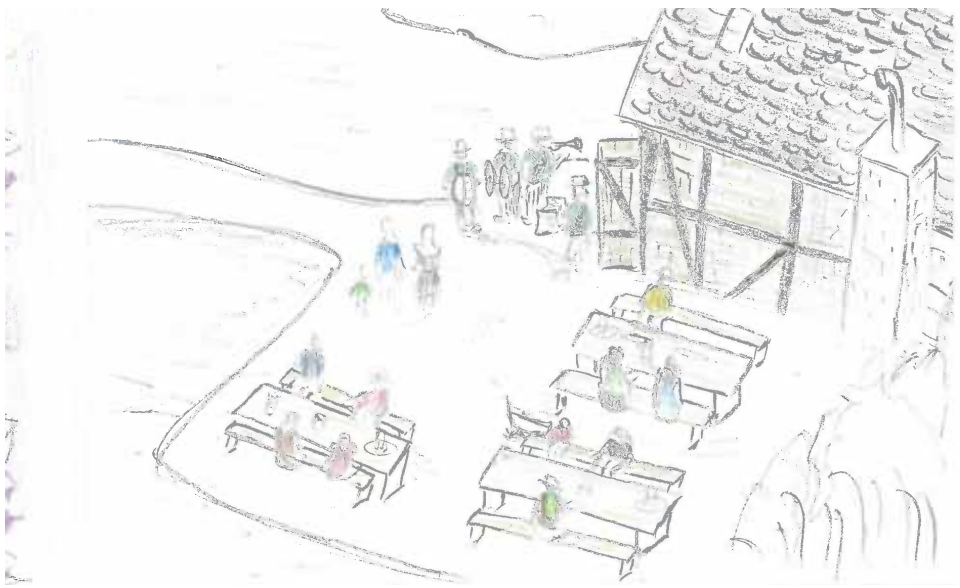




Aerial view from mixed use high density residence



This picture illustrates how visitors can interact with lavender feilds and vineyards in the urban farming areas.



Families enjoying a local resturant that uses local produce.

Farmer markets that sell local products and lavender derivits

group 3

Green Flows

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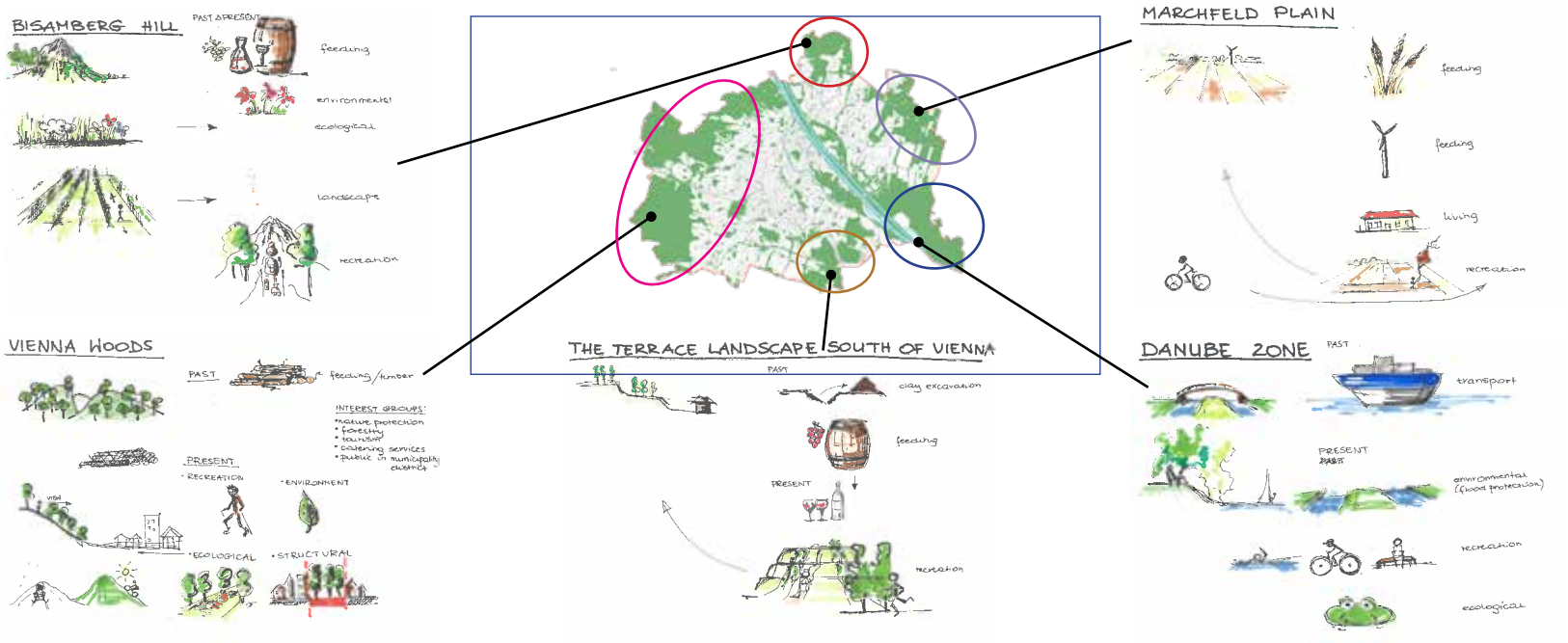
1 Green Flows

Metropolitan Scale

The existing 'Green Belt' of Vienna is a system of protected open spaces that limit city growth and provide a wide array of functions. Historically, the Green Belt was used for providing the city with a range of natural resources. The aesthetic, ecological and recreational value of these areas were soon recognized and this important factor has become vital in the need for protection.

The green belt consist of five areas, each with unique characteristics such as topography, vegetation, water elements, as well as cultural elements. Because of these unique characteristics of the protected space, the edges along the city limits have a distinct 'hard border' that do not allow any urbanization. With the projected increase in population, we not only need to keep these protected areas from degrading due to overuse but we also need to provide the new residents of Vienna with proper open space and recreation.

Urban sprawl has, in some cases, already disrupted the structure of the green belt. At the same time the pattern of agriculture fields still creates a strong character within the area. The concept of our metropolitan scale is to respond to the need of urbanization of the area, by integrating borders of green networks that include existing agriculture fields as well as proposed reforestation of certain areas. The green networks will serve as a catalysis for pedestrian networking and recreation as well as serve as an area of high ecological function. Most importantly these green networks serve as a ' last stand of nature' to protect the existing fertile land from urbanization. We see this as an area that will overtime encourage the protection of open space as well as provide a series of dense urban living.

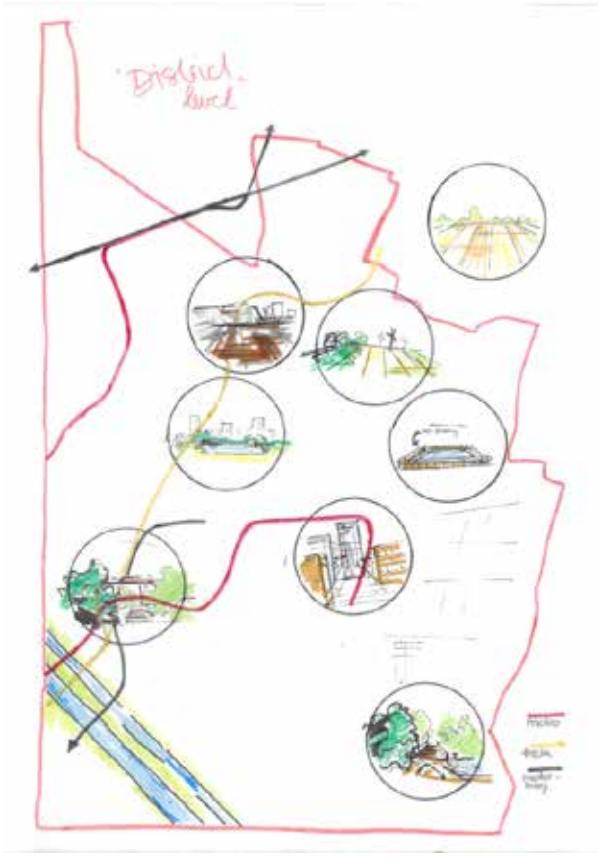


The five zones of the Vienna's Network of Protected Open Space. Clockwise from the right- The Marchfield Plains, The Danube Zone, The Terrace Landscape of South Vienna, the Vienna Wood, & Bisamberg Hill.

The city limits of Vienna. Highlighted is the area of District 22 which consists of a series of natural borders as well as a reintroduced pattern

2 Green Flows

District Scale



Strengths
Heterogeneity
Strong characteristic
Well established facilities
Surrounding green belt and inside parts (parks..)
from the dwellers
It is homogeneous at the inside
But heterogeneous between the areas
Capacity (in land use)
Infrastructure

Weaknesses
No links- with Lower Austria
No links- with inner city
No links- between the 5 areas
Lack of information / feedback

Opportunities
Find linkings between 5 areas
Find linkings between Lower Austria
Find linkings between Inner City
Satisfy peoples needs / expectations
Owner should get an idea of the value of it
Owner should change attitude in investment
Investors too- make them interested in green surrounding

Threats
Increase in population
Pressure from developers
Nature degradation

Zooming into the district scale, the 22nd district of Vienna appears as a combination of diverse areas. This area is currently undergoing pressure of development. Currently it consists of low density residential, agricultural fields, renewable energies, green and open spaces, as well as distinctive linear structures such as metro lines and exiting infrastructure.

Phase one:

Phase one of our plan involves the development of the green network which limits the growth of the first stage of highest density urban development in the district. This phase also includes recreational development within the abandoned rail tracks which act as catalysis for pedestrian networking. As well as the early stages of the green network.

Phase Two

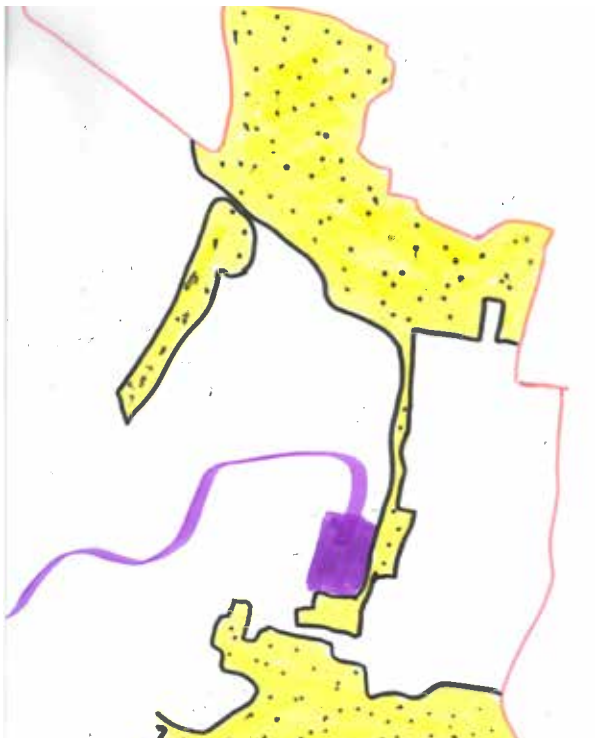
Phase two of our plan involves the development of the second stage of urban development :medium density urban residential. It also involves the intensification of green networks.

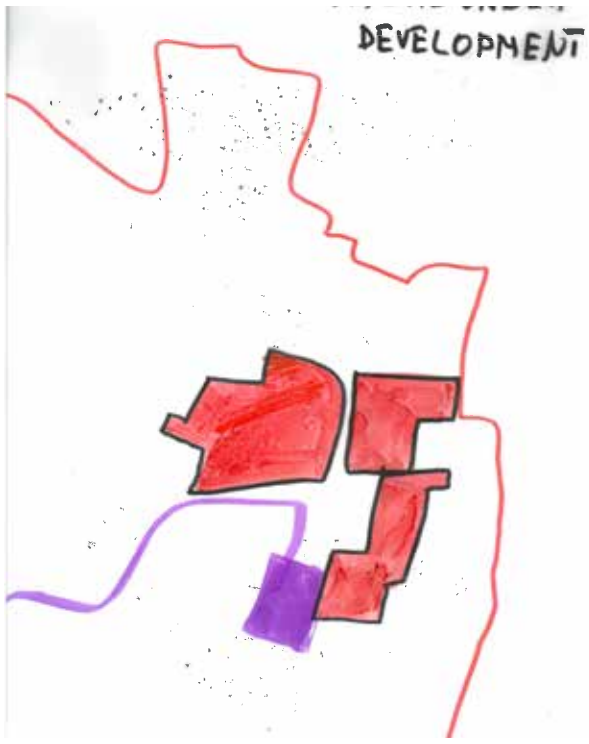
Phase Three:

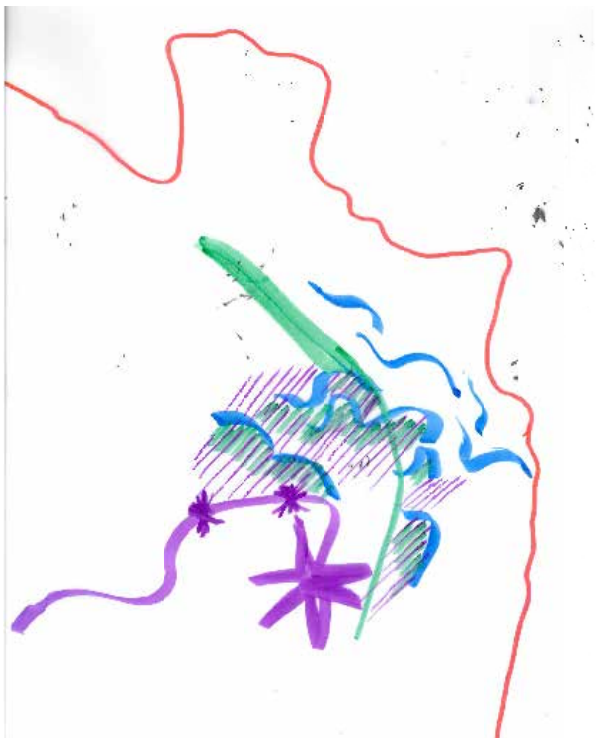
Phase three of our plan is showing our plan as a 'built-up' analysis. It represents the full imagined build out of our selected area. The main catalysis of the area is the major green networks that serve as limits to urbanization as well as strong networks of pedestrian recreational interaction.

3 Green Flows

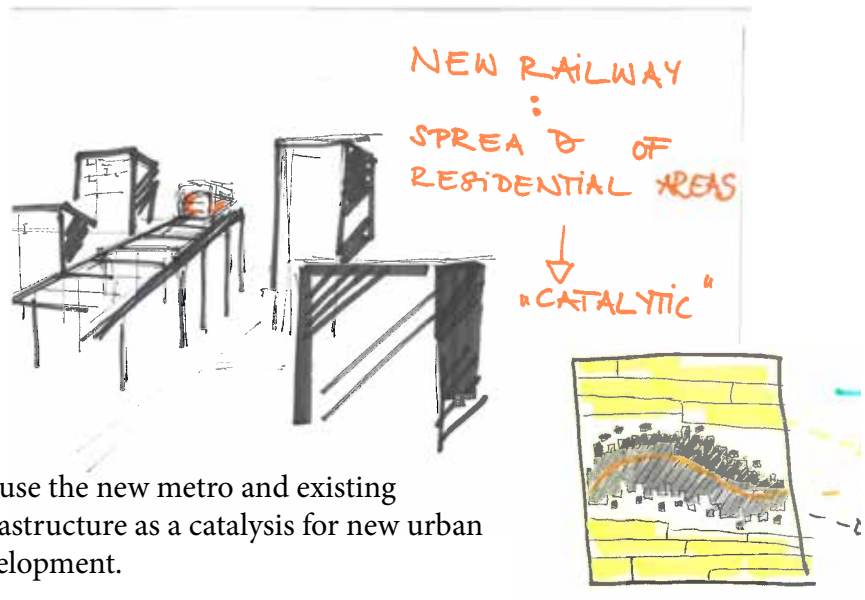
District Scale



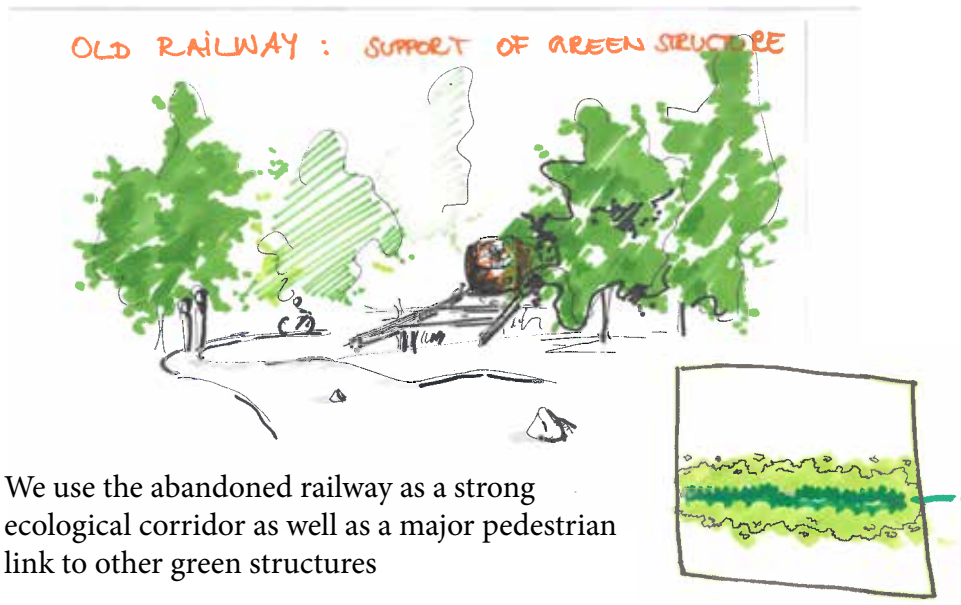




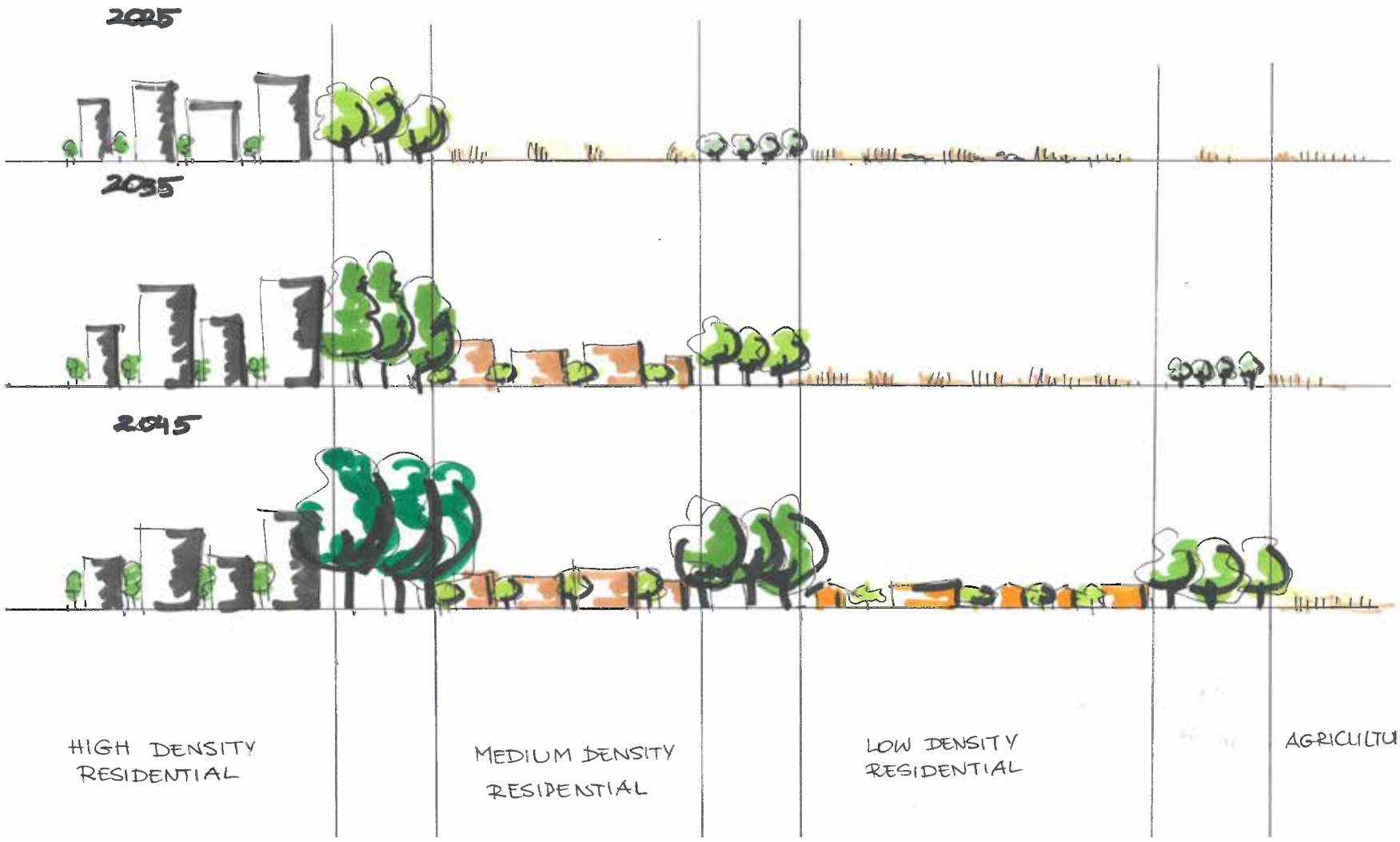
1st map is a representation for protected open space. 2nd is areas for future development and finally a conceptual map showing the metro infrastructure as a 'rocket' of development Aspern as a catalysis for urban development as well as the old railway an enhancement of new green border



We use the new metro and existing infrastructure as a catalysis for new urban development.



We use the abandoned railway as a strong ecological corridor as well as a major pedestrian link to other green structures



The proposed phases of development with the urban scale and green networks.

4 Green Flows

District Scale

The area of District 22 within the city of Vienna is undergoing immense pressure from urban development, our plan is to integrate the existing natural borders of the area as well as reintroduce the pattern that once dominated the area. Expanding on this concept we have created a series of biomorphic green networks that serve as multi-function planning practices.

For our district scale we have 666ha of total space under consideration. Within this area we have made space for a total of 89 500 residents. We have also planned 30m² of living space per person.

350ha Green Space

50% green buffer zone- includes ecological corridors as a means of pedestrian networking, series of smaller ecological habitats such as wetlands and new vegetation.

50% green urban space Green space including urban amenities- expansion of exiting allotments zones, playgrounds, seating areas and public space

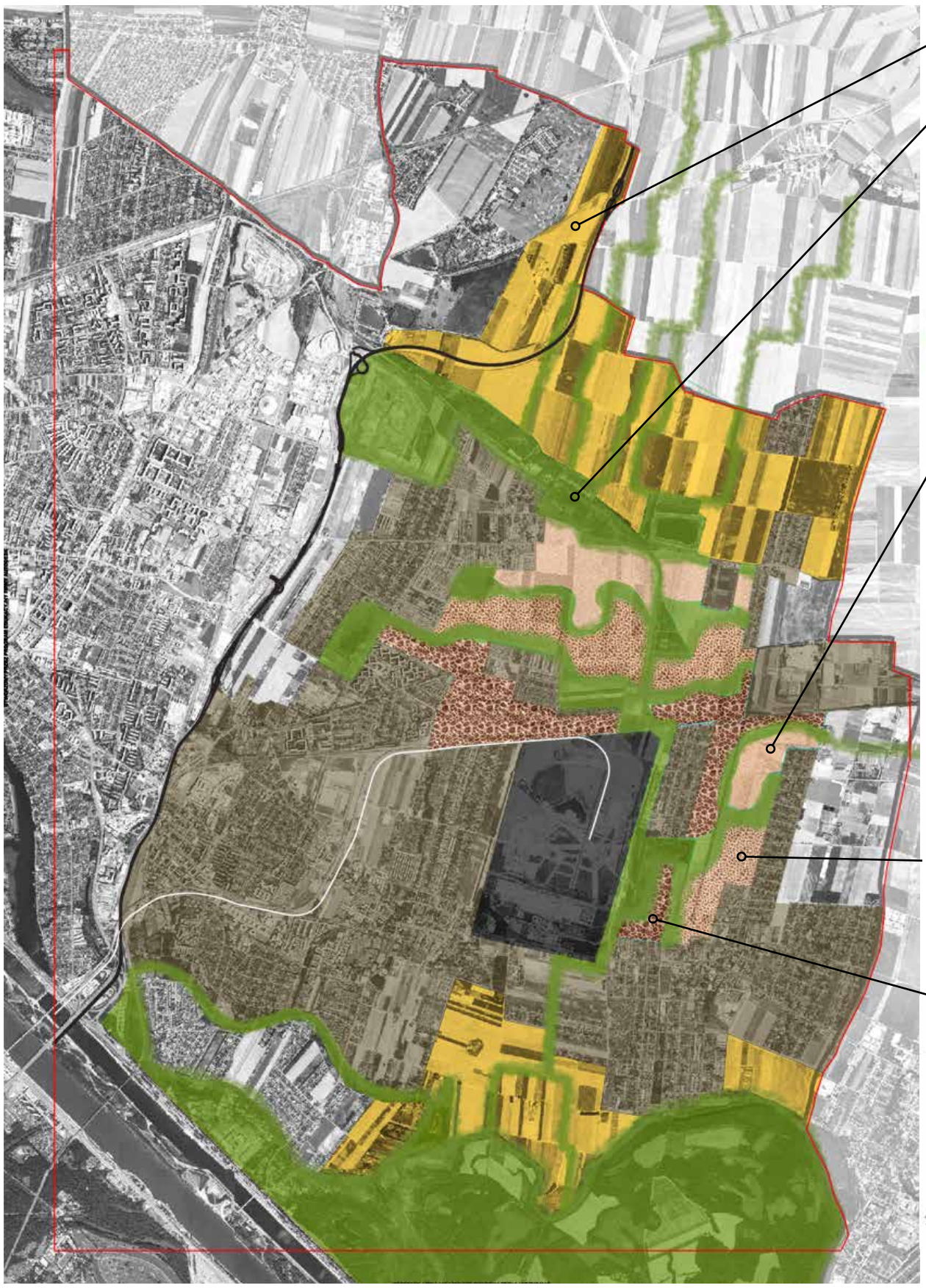
66ha Infrastructure

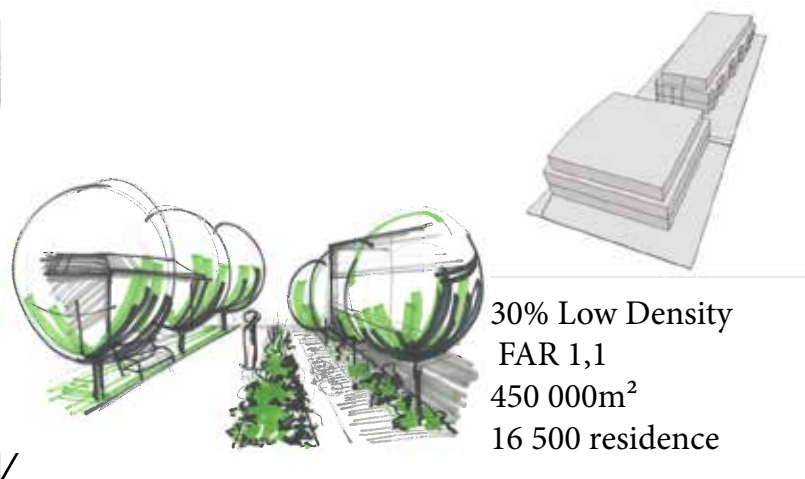
Roads, sidewalks, energy needs.

250ha Under development

60% residential; 40% other functions

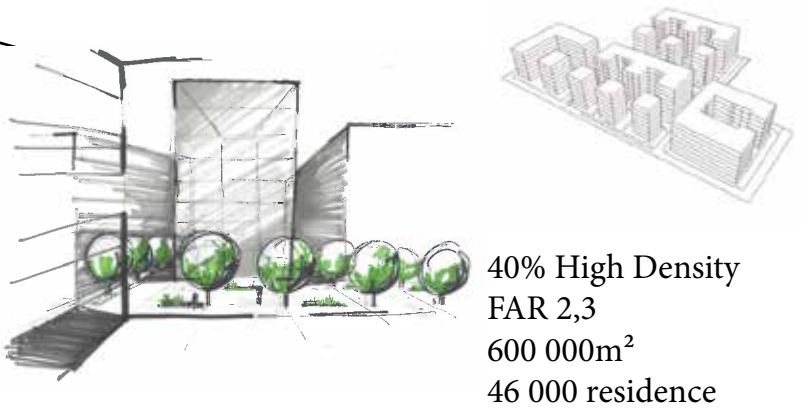
residential 150ha - 1 500 000m²





30% Low Density
FAR 1,1
450 000m²
16 500 residence

30% Medium Density
FAR 1,8
450 000m²
27 000 residence



40% High Density
FAR 2,3
600 000m²
46 000 residence

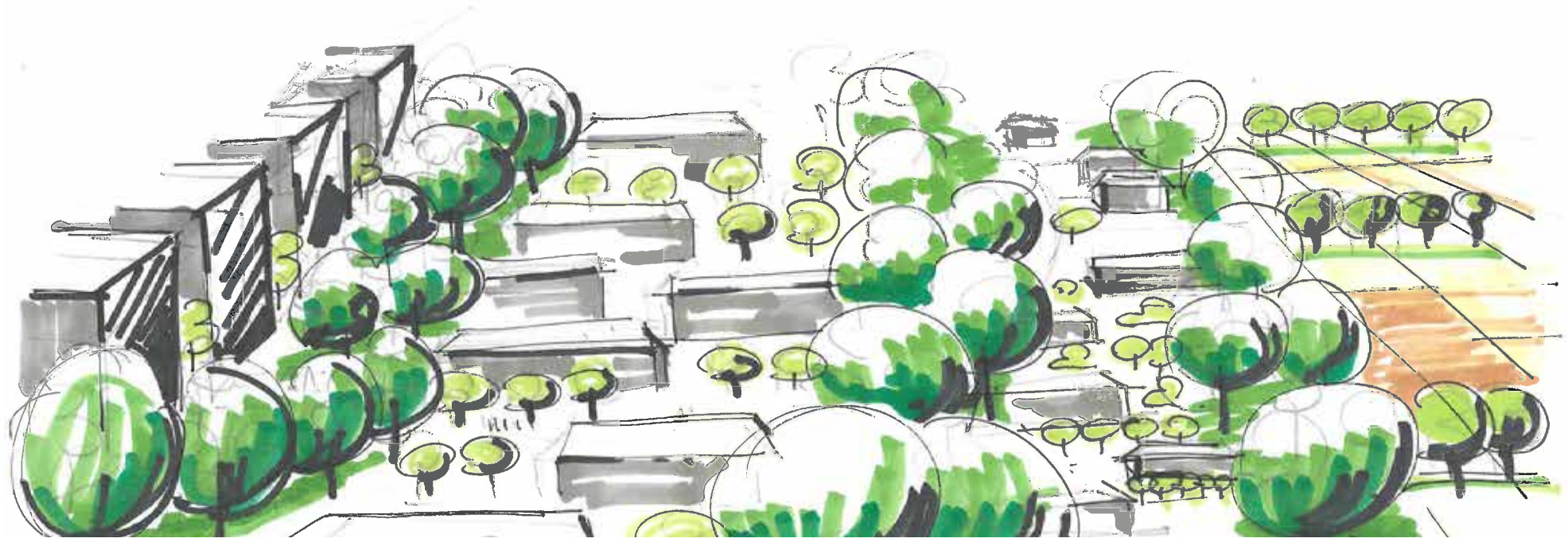
Conceptual Plan of District 22

5 Green Flows

Local Scale

For our detail scale, we re-established the organic structure and patterns of the waterways that once flowed throughout this area. We accomplished this by establishing wetlands in some areas and planting vegetation according to the conditions of certain place/soils. The green structure will 'merge' with the newly established urban space and at the same time create green corridors within the area. The phase development will create dynamic border between urban environment and agricultural area. The organic structure will also be followed in establishing a street network. The green infrastructure will support a range of experiences. Moving from Northern part where the agricultural landscape creates identity to the South where the water is the main element giving sense of place. The green network provides access for the cyclist and pedestrians within the region. Also range of urban amenities, like community gardens and playgrounds.

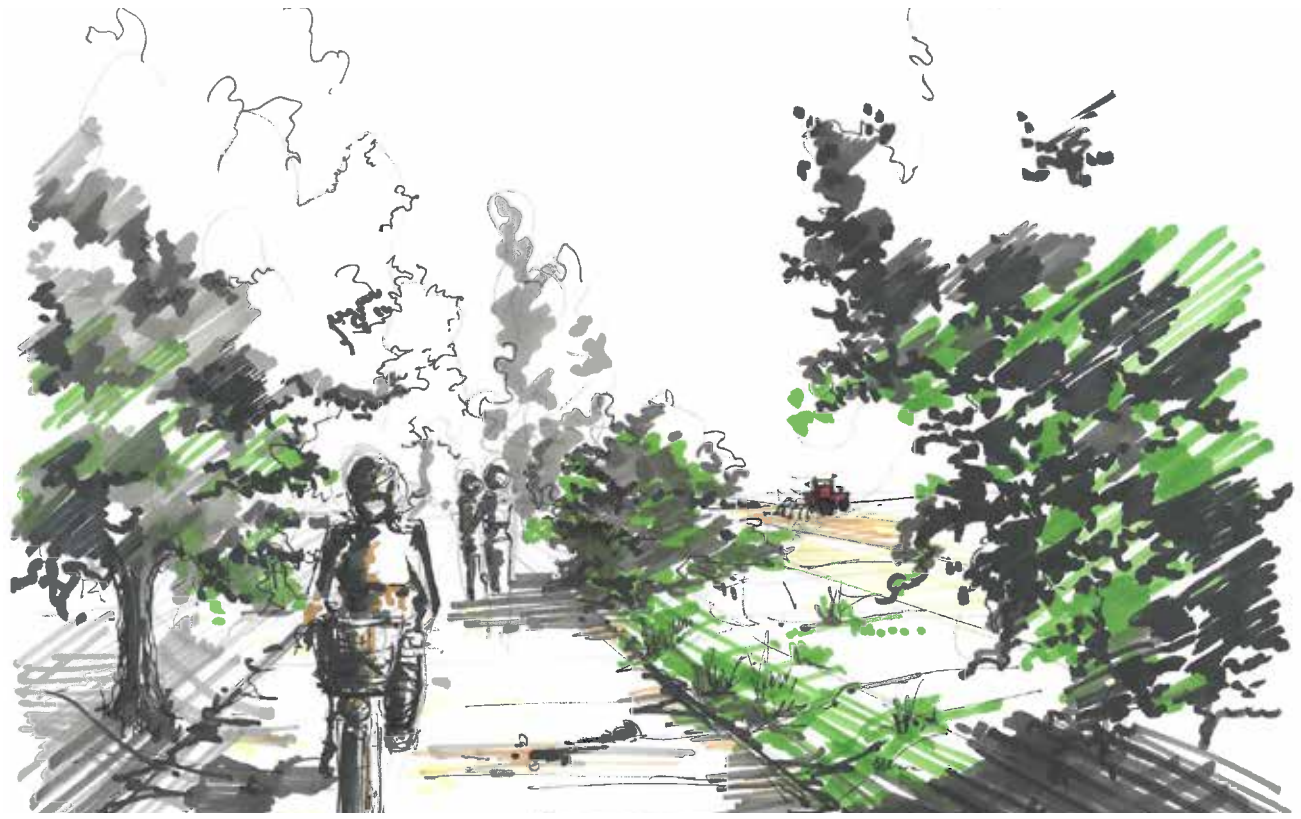
Conceptual proposal showing the green network as a catalysis for planning as well as major connection corridor.



Conceptual proposal showing the 3 phases of urban devlopment within the intergrated green network

6 Green Flows

Local Scale

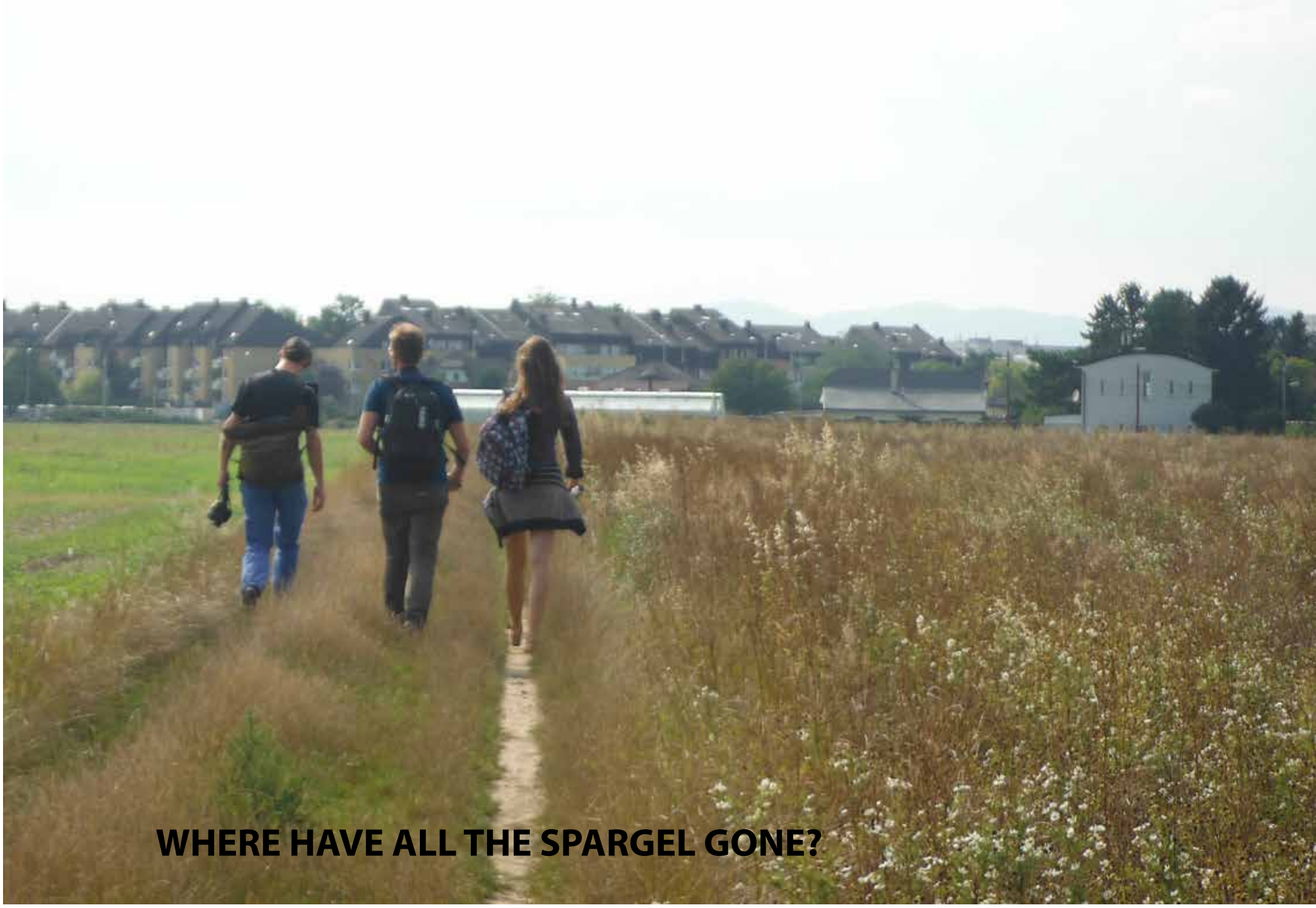


Newly established pedestrian corridor on abandoned railway provides residents of District 22 with direct access from the north to the south.

Perspective drawing of newly established wetland within the green network. This type of area will provide a place for contemplation, access and importantly habitat for ecological stability.

Another example of the green network within the dwellings. This type of green area provides a space for people to interact and is used a main corridor for connections to additional urban sites as well as other green areas.

group 4



WHERE HAVE ALL THE SPARGEL GONE?

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1 WHERE HAVE ALL THE SPARGEL GONE?

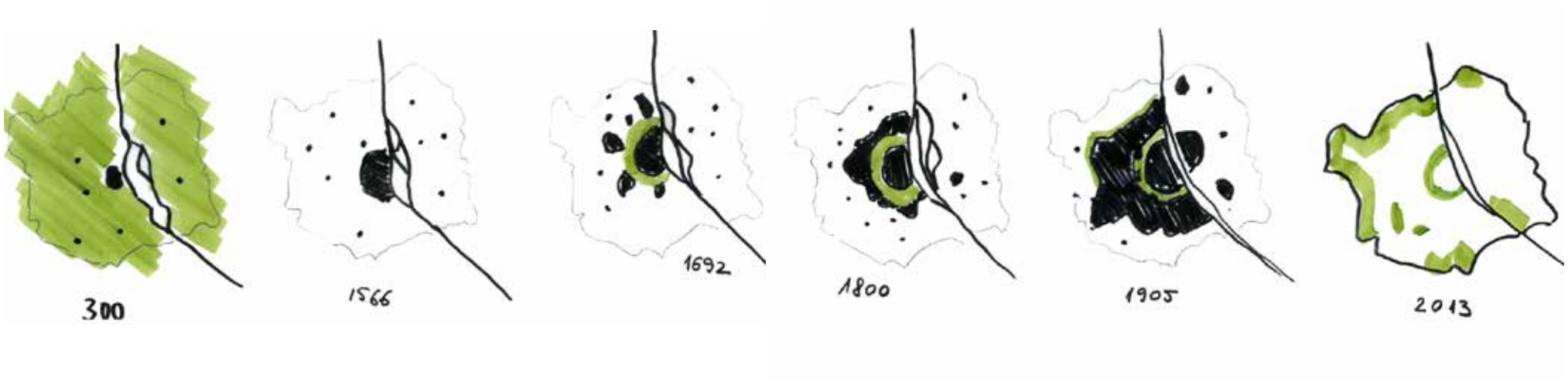
METROPOLITAN SCALE

The Viennese Greenbelt has been designated for two main purposes: to save valuable green spaces for the inhabitants and to stop the urban sprawl. Therefore, the main functions are today recreation, natural barriers and agricultural use. Other functions might be as well tourism, education and ecology.

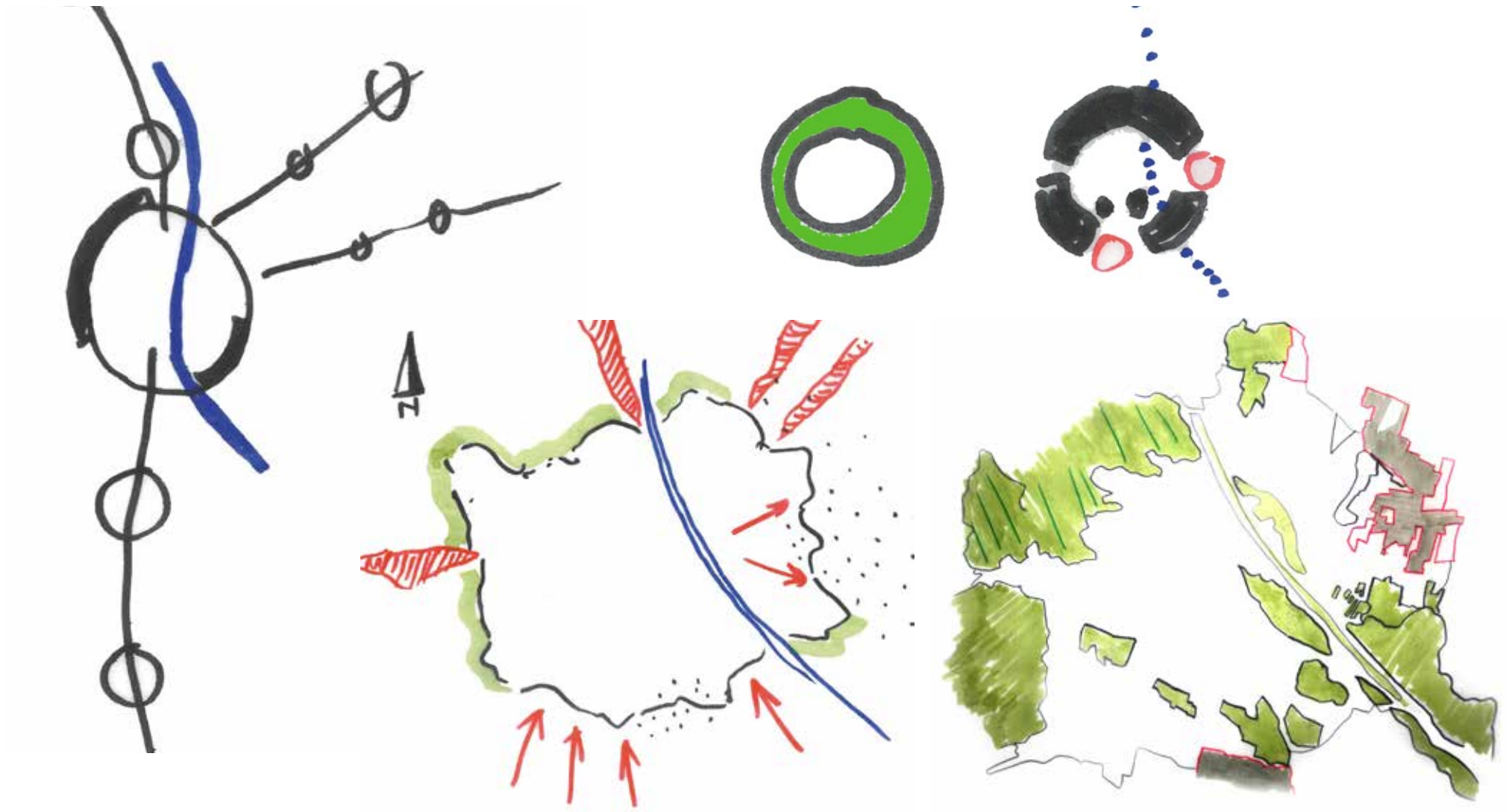
Natural hills and forests in the north and west close the greenbelt and block the urban development in these directions. The flat land in the east and in the south allows further development of the city. The connection between Vienna and other cities is facilitated by the existance of motorways and trains. Due to this, the pressure from outside is increasing in the southern part of the capital. The inner city development pressure is directing the borders in the east, where the urban sprawl is endangering the agricultural use.

In a first step we have distinguished the safe and vulnerable parts of the belt, and focused on three different areas (south, east and north). All three are part of the open space/ greenbelt and are under the pressure that in no time the land use will shift away from agriculture towards urbanisation.

In conclusio, our main idea is to keep safe the agricultural land which is of high quality soil and to ensure open spaces as important buffer zones towards urban development.



Different phases in the development of the green belt and the urbanisation of Vienna.



The greenbelt, as it is now, can be defined as a discontinuous ring around the growing city of Vienna. Though politically Vienna is not attached to its satelites, economically they are interconnected.

2 WHERE HAVE ALL THE SPARGEL GONE?

DISTRICT SCALE

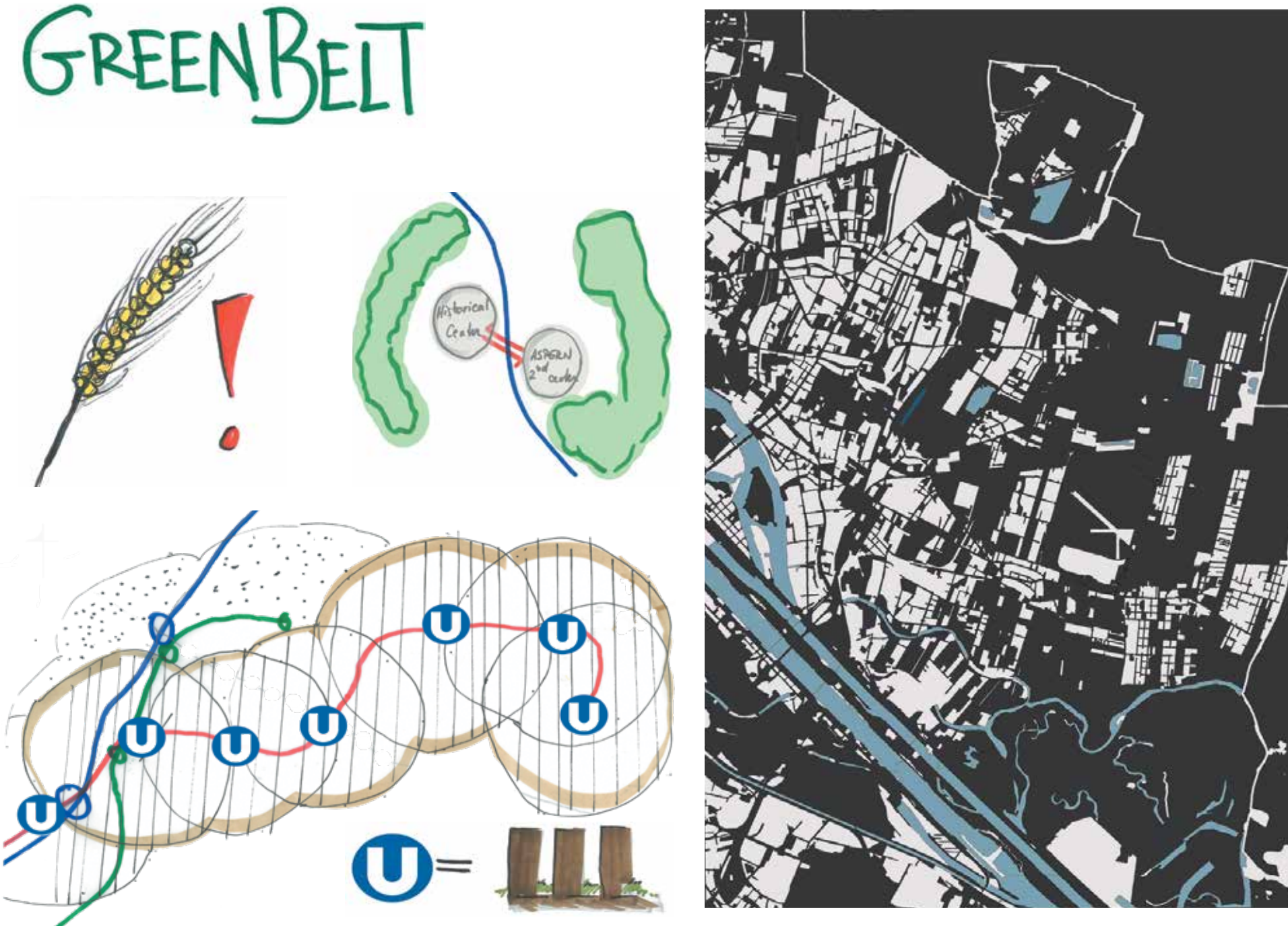
Located in the east of Vienna, the 22nd district is bordered by the left side of Danube, by the National Park in the south and it is spreading out beyond the political city borders into Lower Austria.

The district contains typical structures of the urban sprawl (e.g. areas of low density family housing, agriculture, industrial and employment zones), but is currently facing major urban development (it is a main area for development in the master plan of Vienna). In 2013, the underground was built in order to connect the historical center of Vienna with Aspern Seestadt, which will be a new subcenter of Vienna.

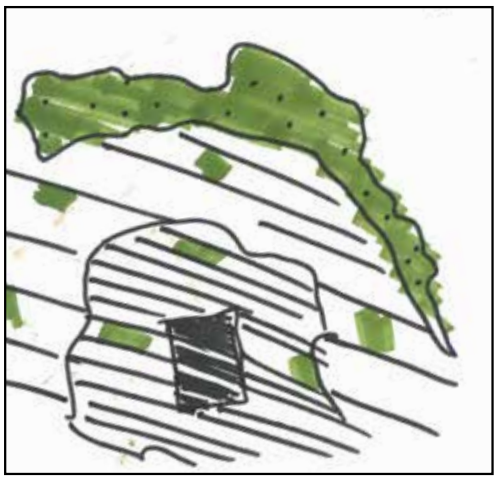
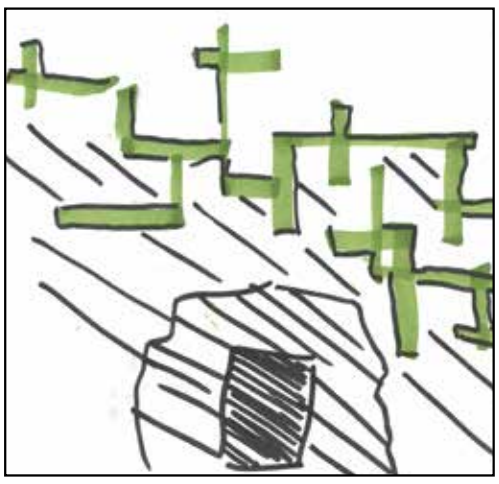
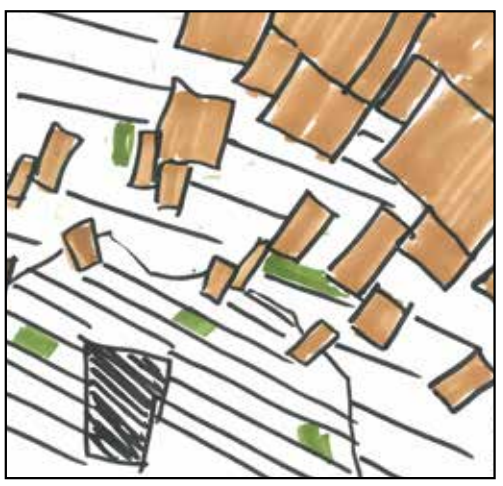
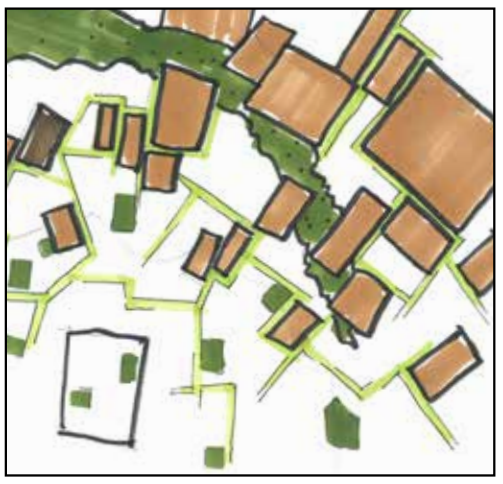
Concerning the growth of population and buildings in the next years, the district area is going to face great structural changes. The district is close to loose its identity. What we desire is to protect the best soil quality in Austria, by keeping the urbanisation under control.

In order to manage future developments (for both short and long term) it is important to provide building areas. In the same time, enough quality open space for people has to be ensured.

The proposed concept aims to connect existing and future green spaces (e.g. forests, agriculture, SWW, parks, lakes, urban plaza...) through green corridors. Main routes of the corridors are also connecting the dense areas (e.g. Seestadt Aspern) with the green ones. New built up areas should follow a density gradient, where higher buildings (no more than 7 floors) are in neighborhood to underground stations.



Main analysis concerning the district scale. Importance of the green belt, agriculture, connection, open spaces, densification.

Different typologies of green corridors are referring to different typologies of buildings and open space and therefor have different qualities. The corridors connect agriculture and urban squares, forest and parks.
Agriculture on high quality soil is integrated in the urban sprawl and needs to be protected for the future.

Open spaces dedicated to new development areas are saved in the first place and already indicate densities neighboring future buildings.

Moreover, our aim is to connect existing green spaces for the animals also, in order to maintain the biodiversity. Secondly, taking off the pressure caused by visitors from the national park, by providing alternative large green zones in the north is desired.

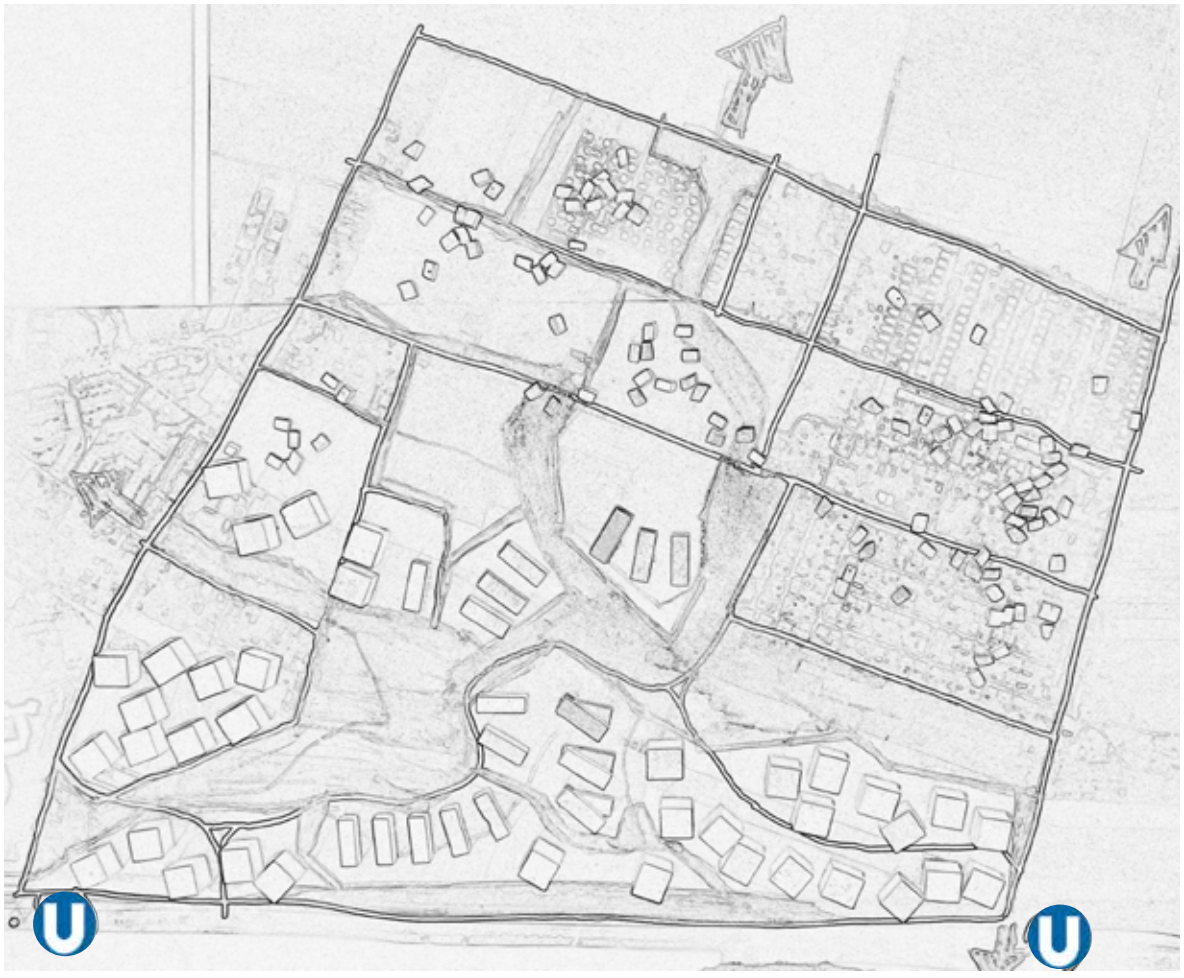
Instead of a continuous greenbeld, our decision is to bring the green areas all over the district scale, by creating a network of corridors on the fields and inside the city as well. This network is designed to connect the green areas (such as parks) with the main dense areas.

3 WHERE HAVE ALL THE SPARGEL GONE?

LOCAL SCALE

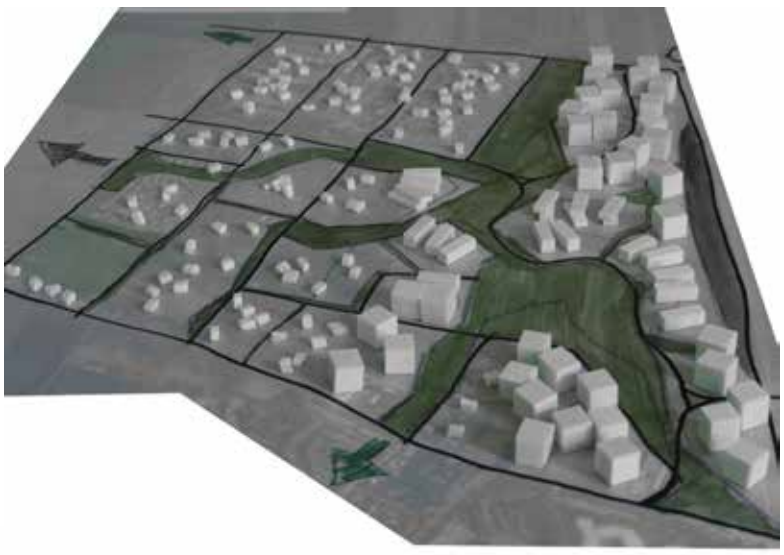
The project area has a total surface of 55 ha. At the current time, most of the area is used as farming land. Nevertheless, there are already some spaces built up as residential areas. In percentage it is 1.4 of urbanisation on this area. The new densinty of the area will be aproximately 120 persons per ha. Thereby, the density increases in the proximity of the subway stations, followed by a decrease towards the north. This will ensure an efficient and quick access to the public transport.
In the discrict scale, the concept describes a green grid (as it can be seen in the map the green structure) which goes throw the project area mainly from the north to the south-west. The idea from the project area fits the district scale, as it is important to assure that this green structure will be saved as inner city open space. Moreover, this proposed green network connects the site with Aspern Seestadt and with the large existing green area in the north. Therefore, this coridor will provide an identity for this whole area.

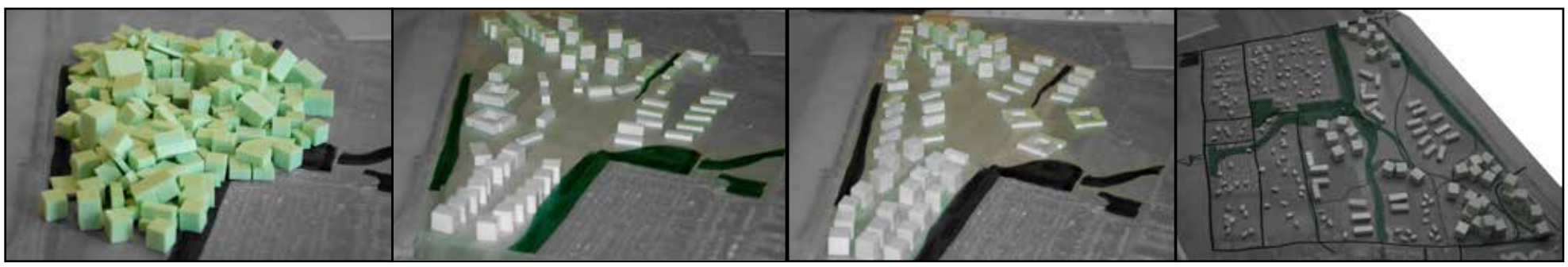
As in the south there is the U2 line of subway, the suggestion is to create a greened eminence that will lower the volume of noise and the pollution in the direction of the future settlement.



DESCRIPTION	APPROXIMATE CALCULATIONS	UNIT
total size of the project area	550000	m^2
current population	300	per
additional population	6615	per.
new built up land	**61020**	**m^2**
(This is 11% of the total area.)		
people per ha	**120**	p/ha
housing area (75%)	45765	m^2
Industrial area	15255	m^2
gross floor area	**343980**	GFA
75% of the gross floor area for housing	257985	GFA
10% of the gross floor area for industrial	34398	GFA
15% of the gross floor area for amenities,shops, etc.	51597	GFA

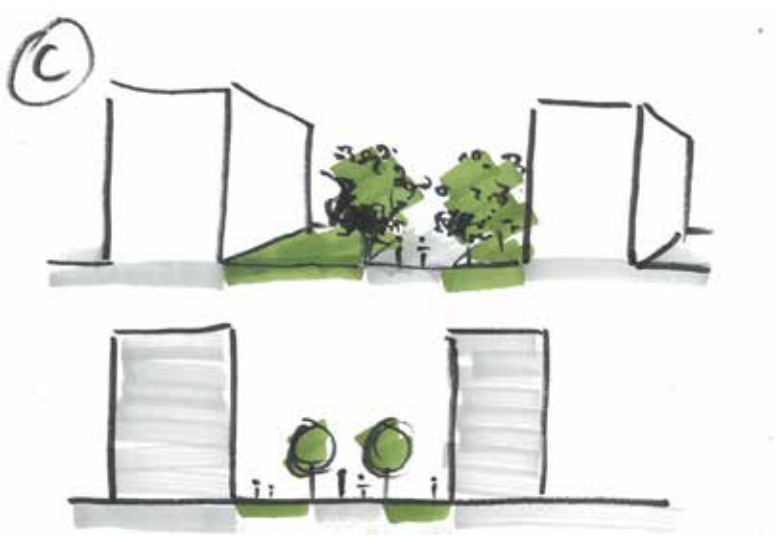
DIMENSIONS OF BUILDING TYP	L*W*H	FLOORS
I	30*30*21	VII
II	60*21*12	IV

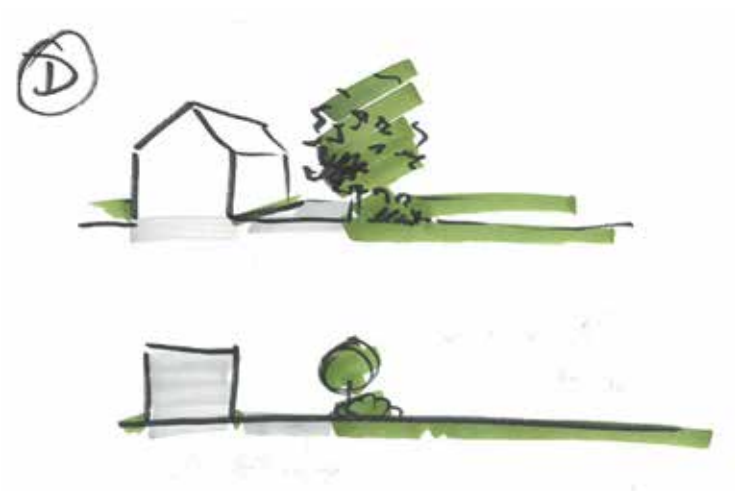


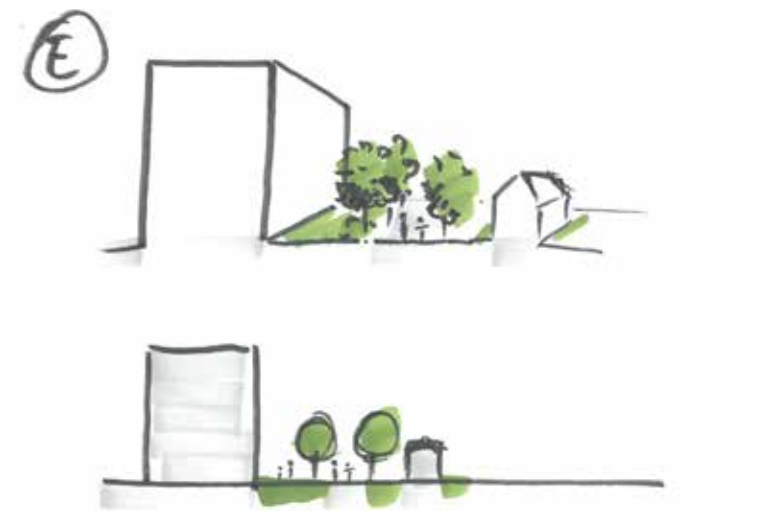


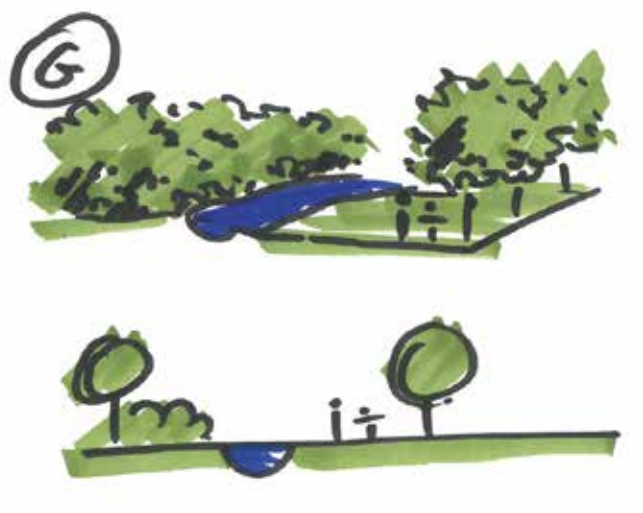
Different densities on the chosen area. In first case, 15000 people are supposed to cohabitate on 55 ha, which would mean an extremelly high density, impossible for living.

GREEN CORRIDORS



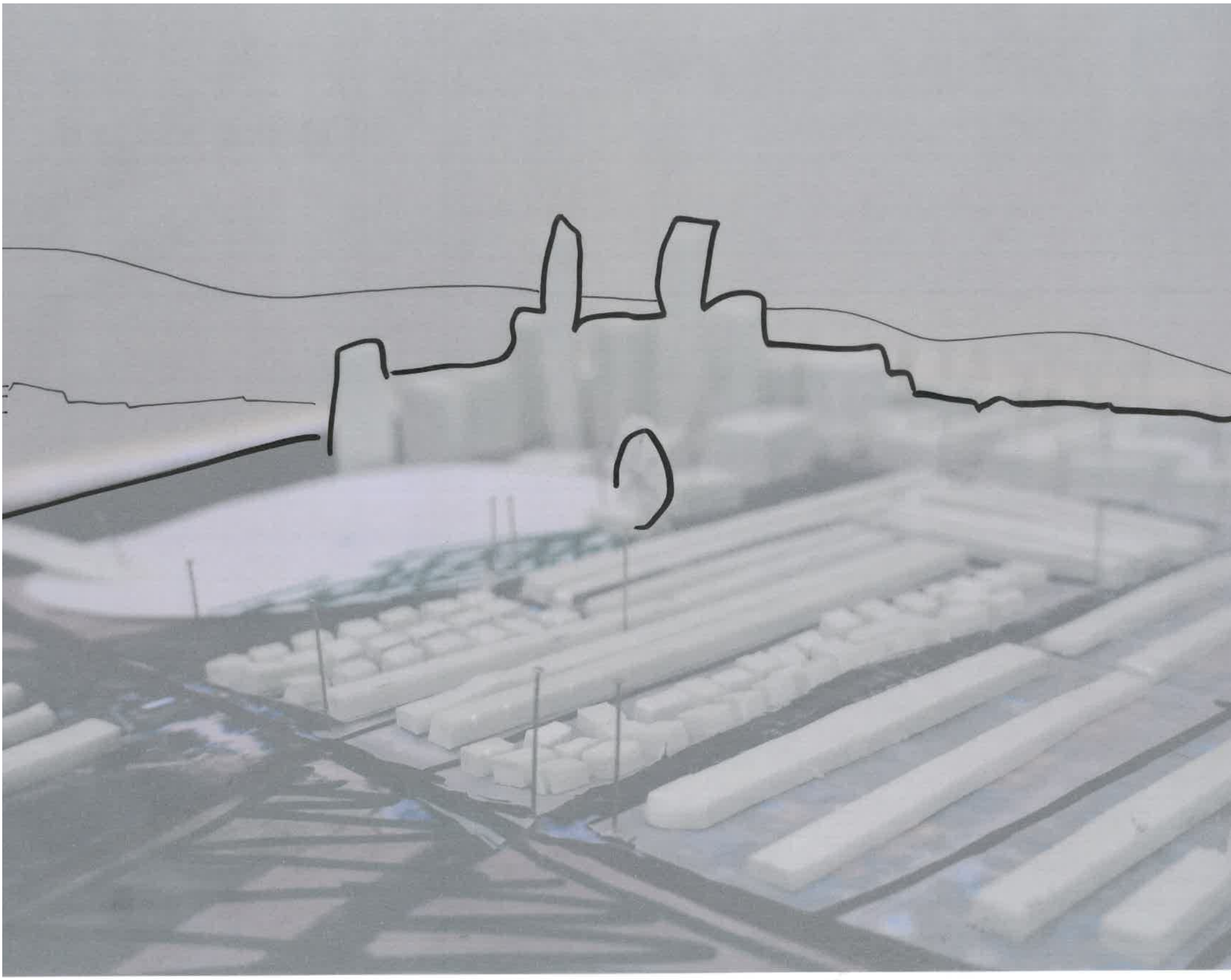






These are different typologies of proposed corridors. They correspond to different situations, both existing and possible to create. We have chosen the typologies in function of the height of the buildings and the space between them.

group 5



CULTIVATING the city

agronomical diversification area - public agriculture

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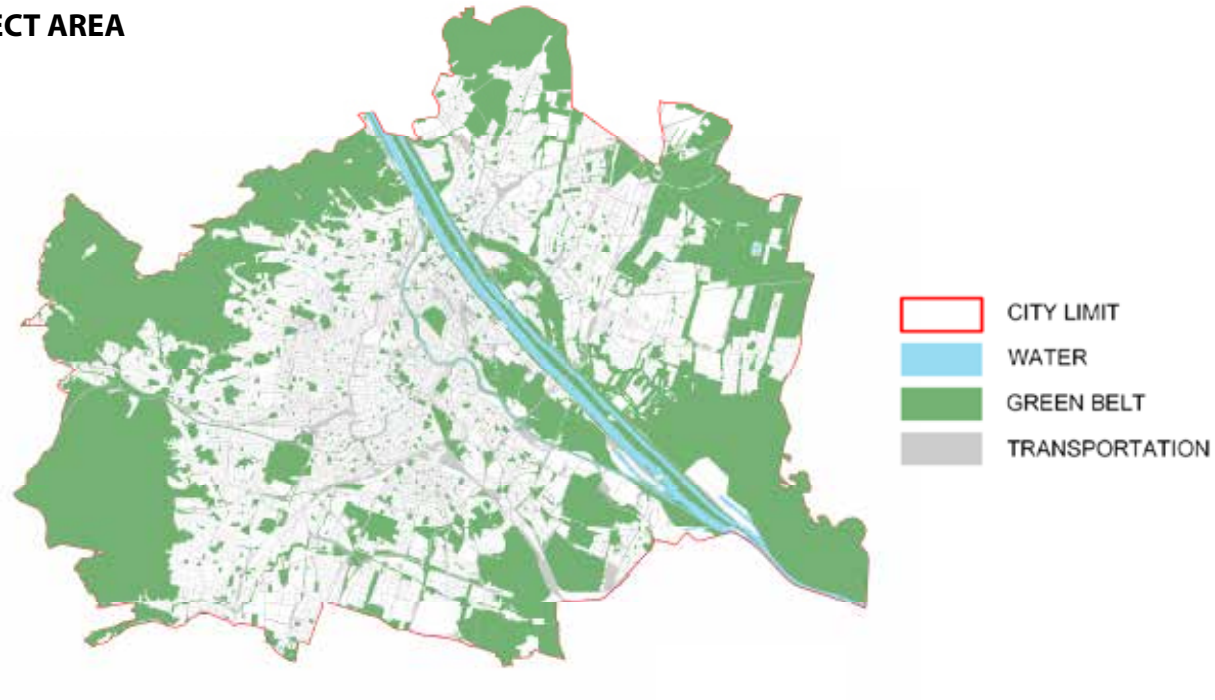
1 Metropolitan Scale

Meandering Metropolis Defined and Connected by Landscape

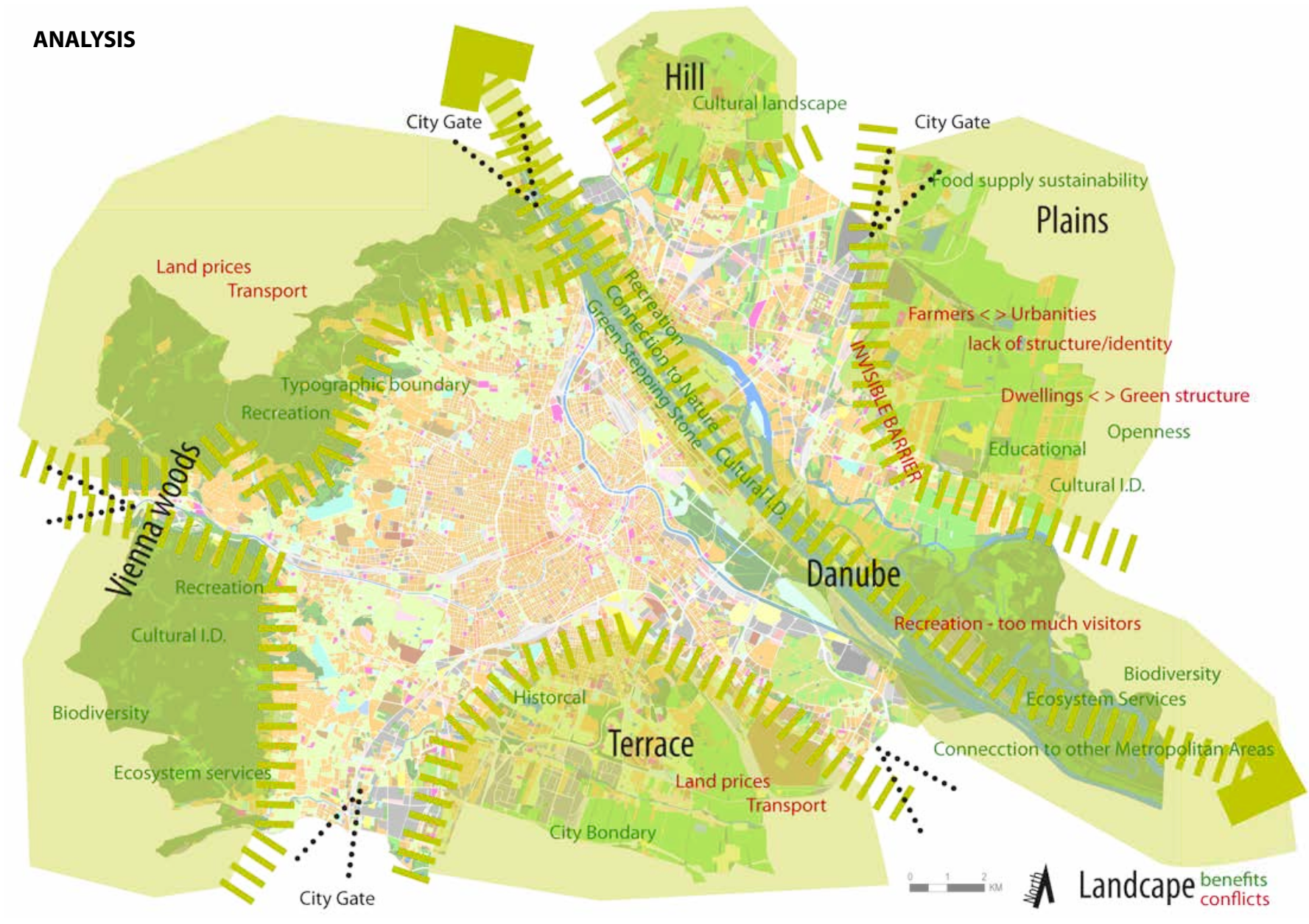
The city of Vienna is characterised by the presence of five surrounding green landscapes: the Vienna Woods, the River Danube, the plains land, the Bisamberg Hill and the terraces to the south. These areas are multifunctional providing a range of rights and restrictions for city growth, recreation, environmental services and protection and provisioning for the metropolis. Structurally these areas are located at the boundaries of the city.

The concept illustrated here embodies a city in which each landscape area is defined and connected throughout the city like the meandering arms of the River Danube enabling cultural identity, movement and conservation for community and environment. The interface between each landscape is softened and extended into urbanised areas in a network framework of green open space (GrOpen space) to allow connection, appreciation and respect of the natural environment. Functions of each area are clearly defined and include movement and connection of people and landscape characteristics, biodiversity conservation, environmental protection and services, recreation and health, and future-proofing for subsequent generations.

PROJECT AREA

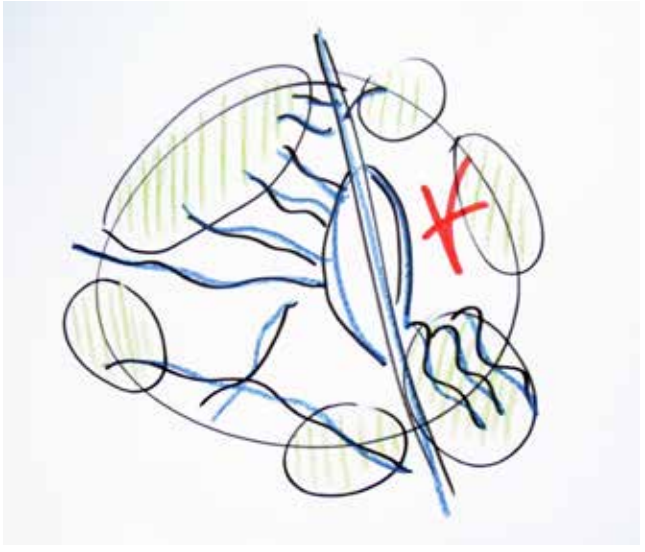


ANALYSIS

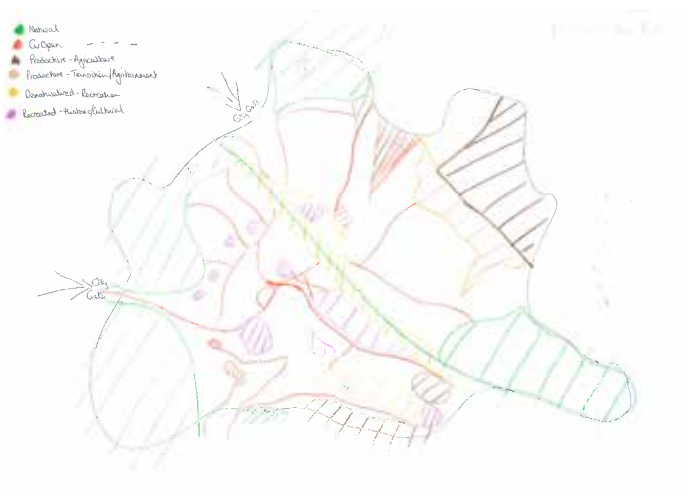


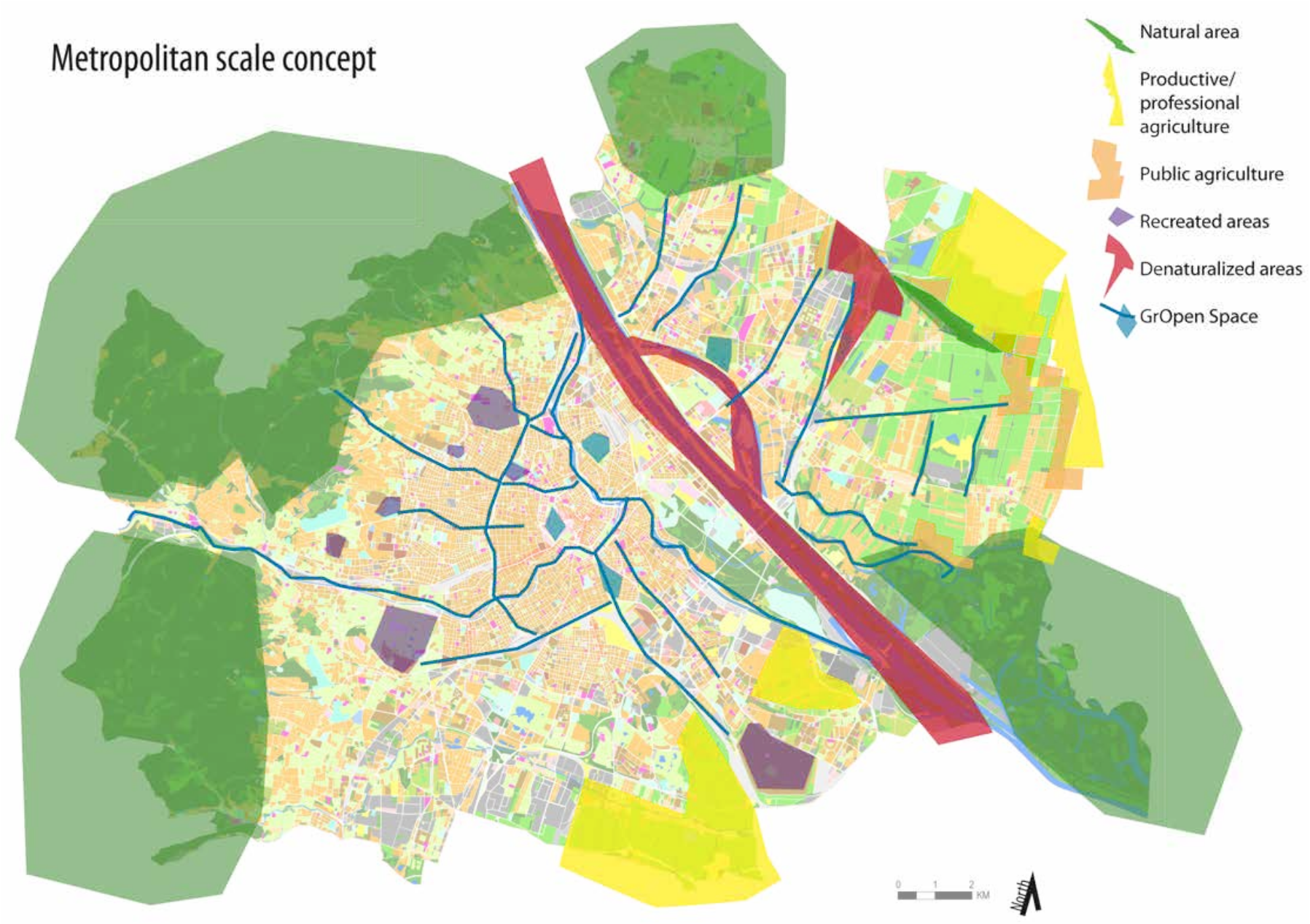
Analysis of the Vienna's Landscape Components, benefits and conflicts

CONCEPT FOR THE GREEN STRUCTURE Of THE METROPOLITAN AREA OF VIENNA



Sketch illustrating the connection between landscape and rivers





Concept of the metropolitan scale - linkage of the landscapes and green structures

LEGEND FOR THE CONCEPT OF THE METROPOLITAN SCALE

Natural Areas
Stable, protected natural resources. Culturally and ecologically important.

Urban GrOpen Space
Artificial, pedestrian highly designed links for integration/cohesion of urban, natural, culture.

Professional Agriculture
Retention of cultural land use, soil resource, cultivated land & food production.

Public Agriculture
Land under rural/agricultural use with diverse use and community involvement

Denaturalised Area
Semi-improved habitat mainly for recreation use

Recreated Area
Cultural/Historical Modified Recreation areas

2 District Scale

Cultivating a Sustainable City

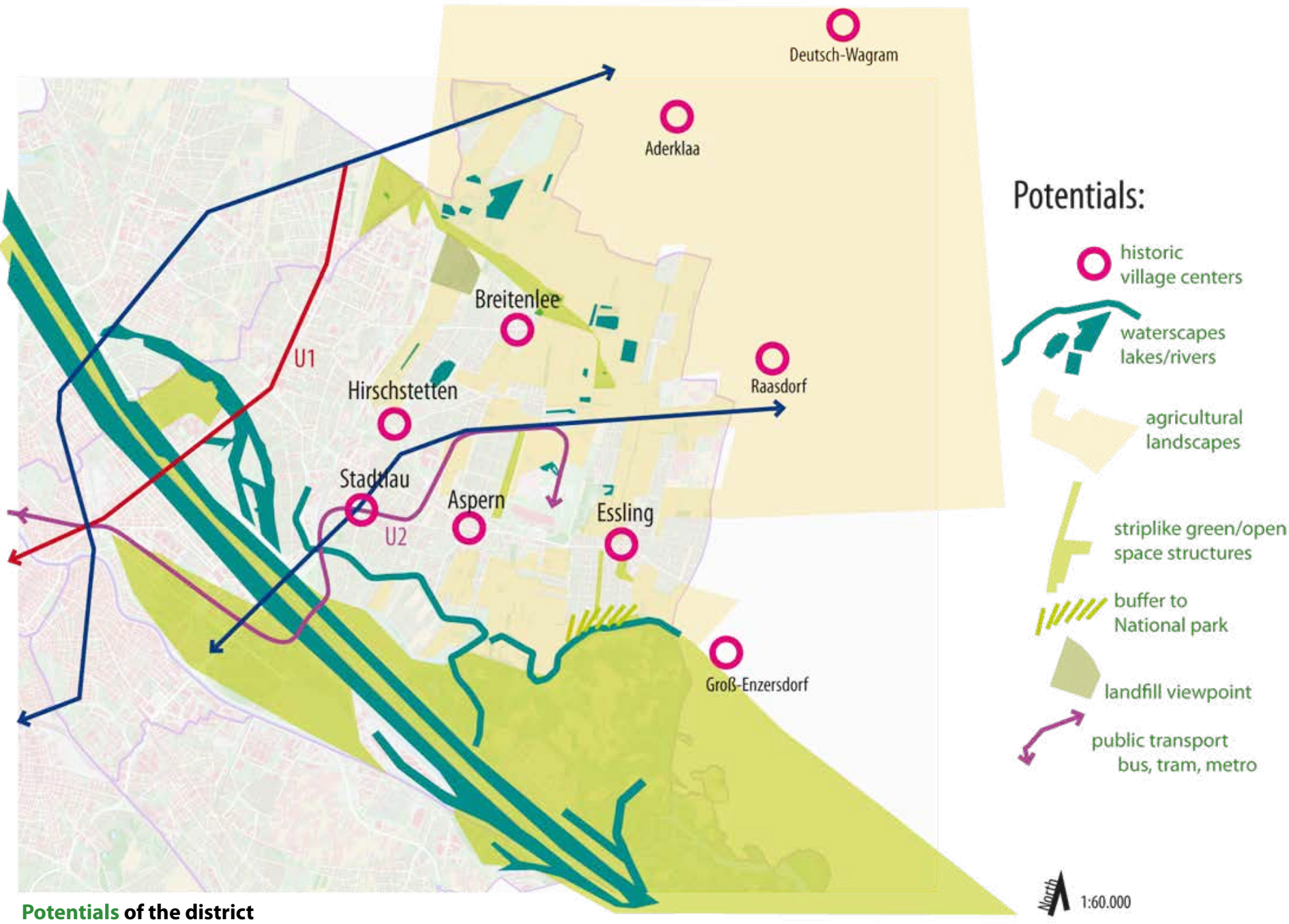
District 22 comprises is a mosaic of residential, industrial and agricultural land uses with scattered water bodies and the Danube National Park located in the south. It is important for agriculture due to the rich, black soils and also nature conservation found within the wetlands in the south. These two factors in combination provide the landscape qualities and the identity for the area.

Recent estimates predict a population increase of 250,000 people into Vienna and District 22 is the focus of development to accommodate a proportion of the increase. Effective realisation of this will involve the union of communities, both existing residents and newcomers, and efficient strategy to protect and maintain landscape functions and services. It is therefore optimal to provide concentrated areas of population to limit negative effects of urbanisation upon natural resources.

The framework outlined here attempts to create a cohesive community based on principles of sustainability which protect the sensitive wetland system and non-renewable precious soils in the plains from development whilst generating vibrant, dynamic, economically viable community driven centres where people, cultures and natural environment can integrate and harmonise. It is estimated that the concentrated urban centres will accommodate 360.000 people (including 170,000 new inhabitants) with a large number being situated within the affordable, illustrious green urban centre characterised by the large, green towers acting as focus points.

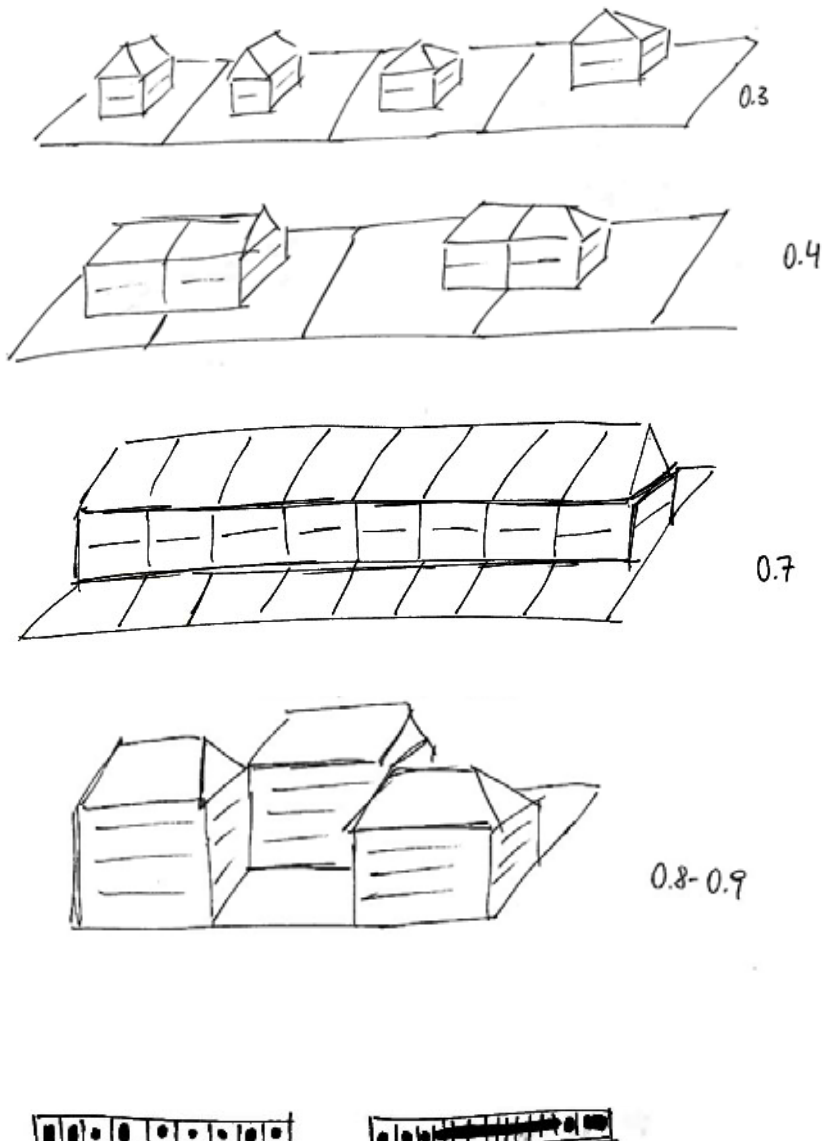
The public agriculture zone will allow for rural, agricultural development, such as farm parks and riding stables, reducing the pressure of such developments upon the pure agricultural zone. This area also allows for transition from agriculture to urban where community instigated and involved agriculture projects occur. Links to the former villages with market places and restaurant areas encourage connection of agriculture, historic culture and community whilst recreational green links and GrOpen space bring the essence of the Danube, water scapes and importance of agriculture into the fabric of the city.

DISTRICT ANALYSIS

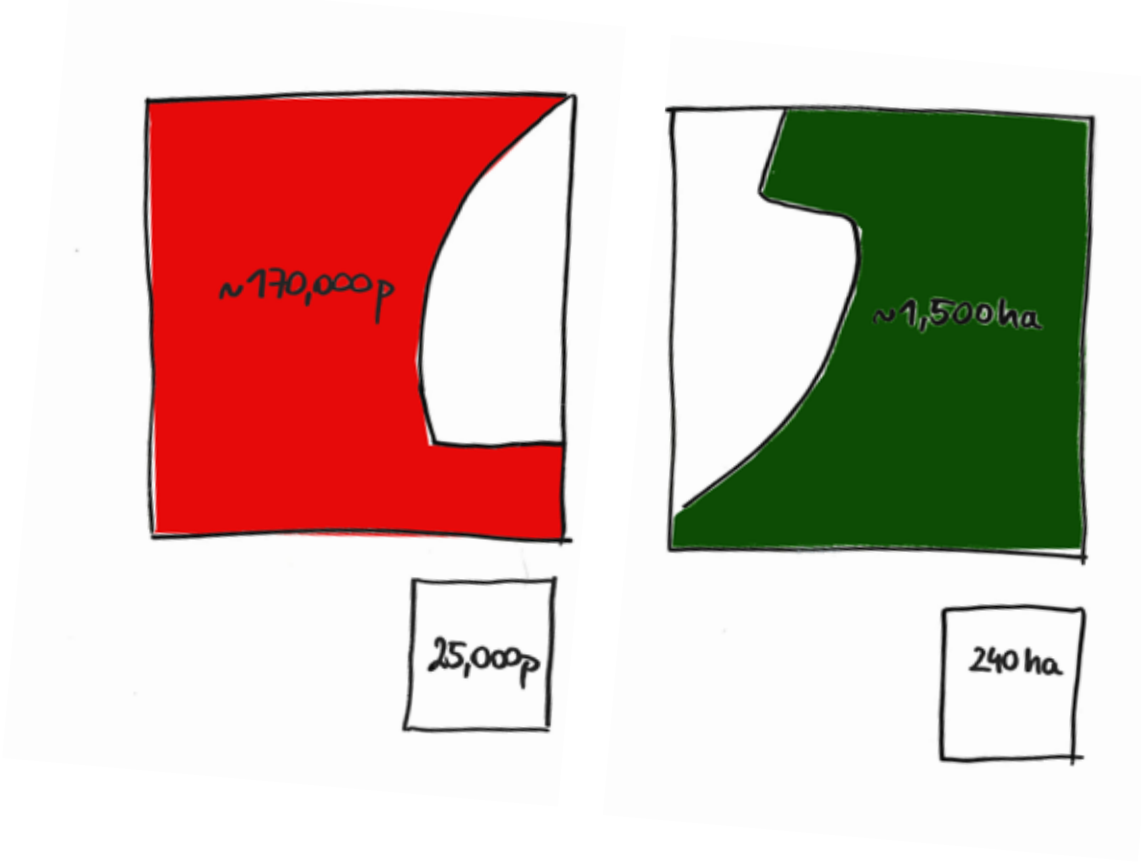


Potentials of the district

DENSITY OF THE RESIDENTIAL AREA



Floor Space Ratio of different settlement types; possible changes



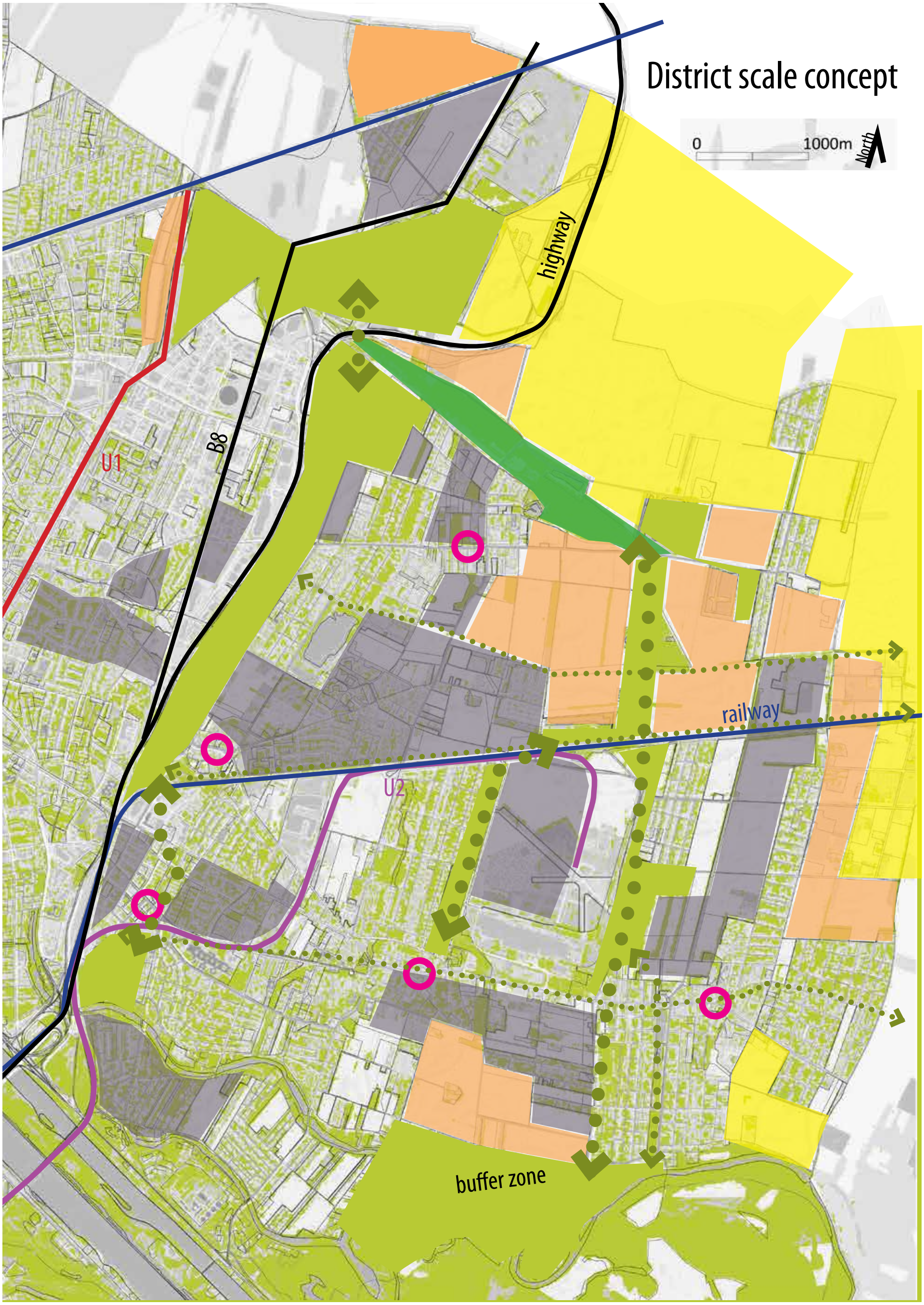
current inhabitants: 190.000
additional inhabitants: 170.000

total 360.000 people

green area (excluding National Park, agricultural area and transition zone)
1500 ha

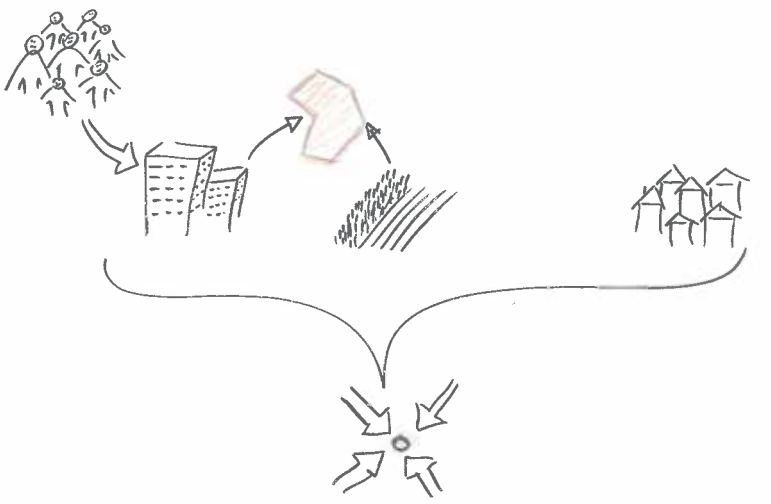
15.000.000 m² : 360.000 people = 40 m² green sp./person

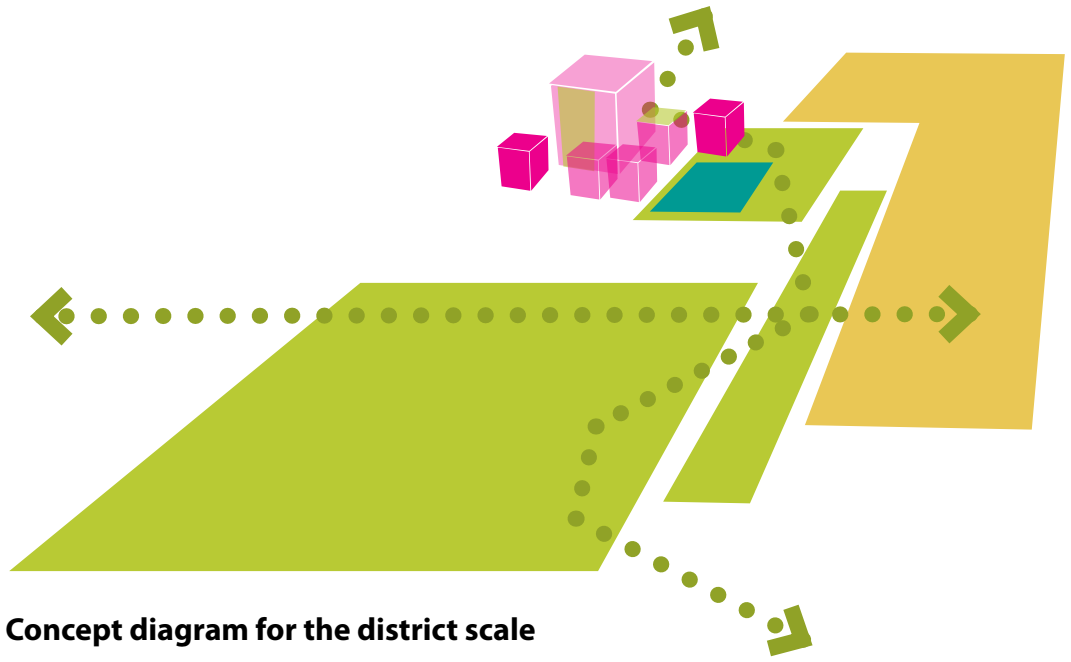
Inhabitans in relation to green space



Framework for the district scale

Concept of public agriculture transition zone





Concept diagram for the district scale

Cultivating a Sustainable City

protected area (habitat, ecological,...)

Denaturalised, Parks, ...

new settlement and densification

protected agricultural land

transition zone, recreational area, buffer between settelment and ...

connection between huge green and open spaces

green structure connection

historic village centers

3 Project Scale

Innovative Design for Community Sustainability

The project area is located immediately north of the Seestadt Urban development project and aims to reflect the goals of the district scale. The sustainable concept of concentrated housing with interlinking recreation and public agriculture spaces is exemplified.

The intense development facilitates a wider, more ecologically sound, distribution of functioning green and open spaces but also offers the community benefits from this housing model: inhabitant health, reduced costs of infrastructure and energy provision, concentration of knowledge and innovation, reduced environmental impacts, reduced crime rates and economic centres.

The built environment encapsulates sustainability from use of sustainable building materials, designs and functions to decrease the environmental impact of the structures and population.

It is envisaged that a proportion of the profits from land sale for urban development will be used to fund projects within the recreation and public agriculture zones. These projects aim to integrate the agricultural community and the new and existing residents in schemes such as community gardens, farmers markets and the creation of shelter belts and corridors within the cultivated landscape allowing recreation, aesthetic value and ecosystem services for a range of functions, including soil protection.

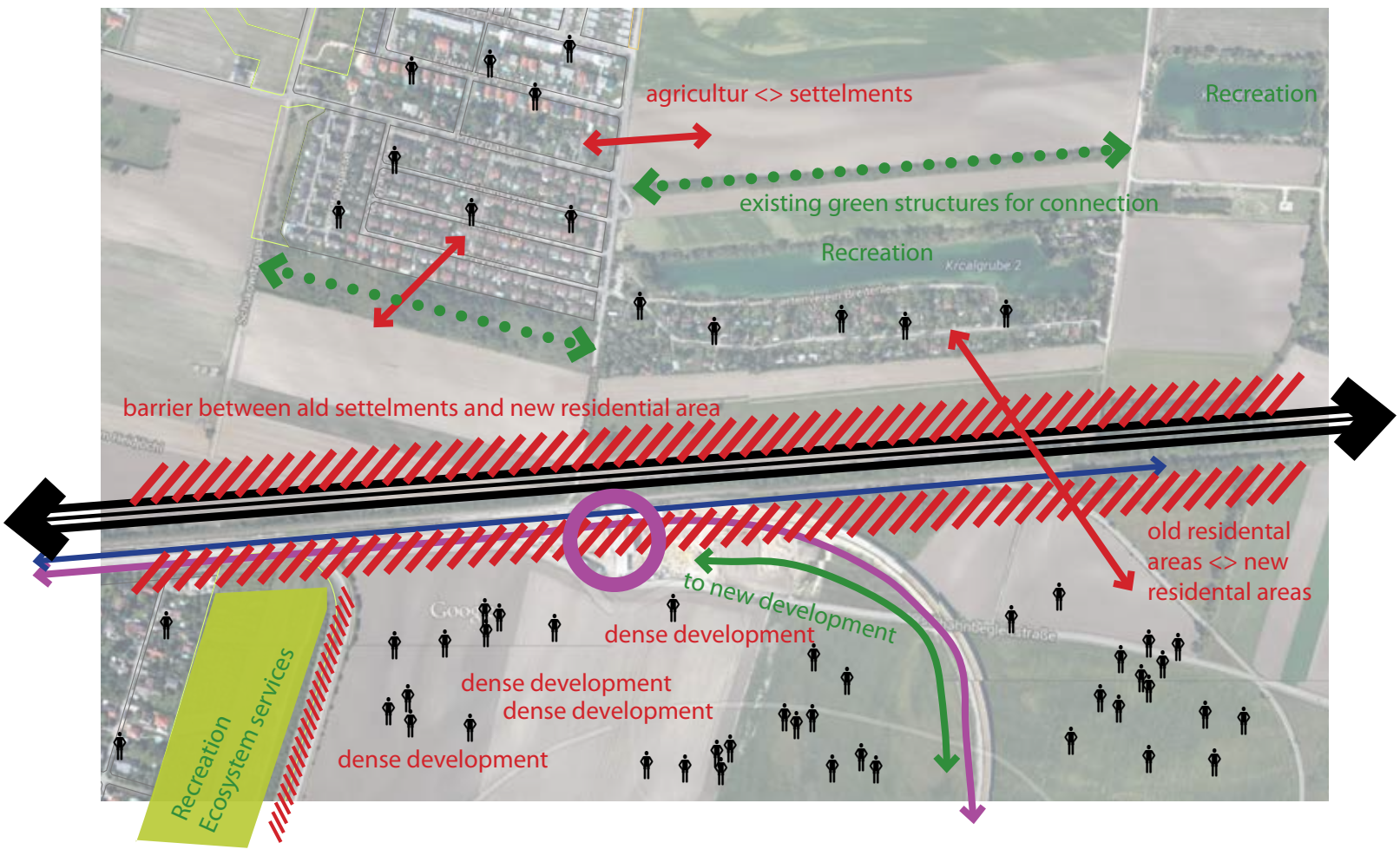
The elements of agriculture and the wetlands, both within the National Park and the scattered water bodies of the area, are integrated into the area physically through themes and activities of recreation routes. These recreation routes encourage movement through the district and, together with the buffer zone in the south, direct pressure away from sensitive areas such as the National Park.

The area boasts a connected public transport system alongside the development of major and minor road systems. However, parking is confined to the outer areas of the urban sector allowing more sustainable land use within and encouraging sustainable travel: walking, cycling, public transport.

ANALYSIS OF THE PROJECT SCALE AREA

conflicts: Agriculture - Recreation - Urban - New - Existing Residents

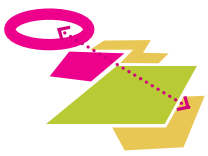
Benefits: Recreation areas



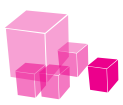
AIMS FOR THE GREEN STRUCTURE, THE RESIDENTIAL AREA AND THE ARGRICULTURAL AREA

ProjectScale

Aims:



- Connections with the surounding areas: new development areas, agricultural areas, recreational areas and old settelments

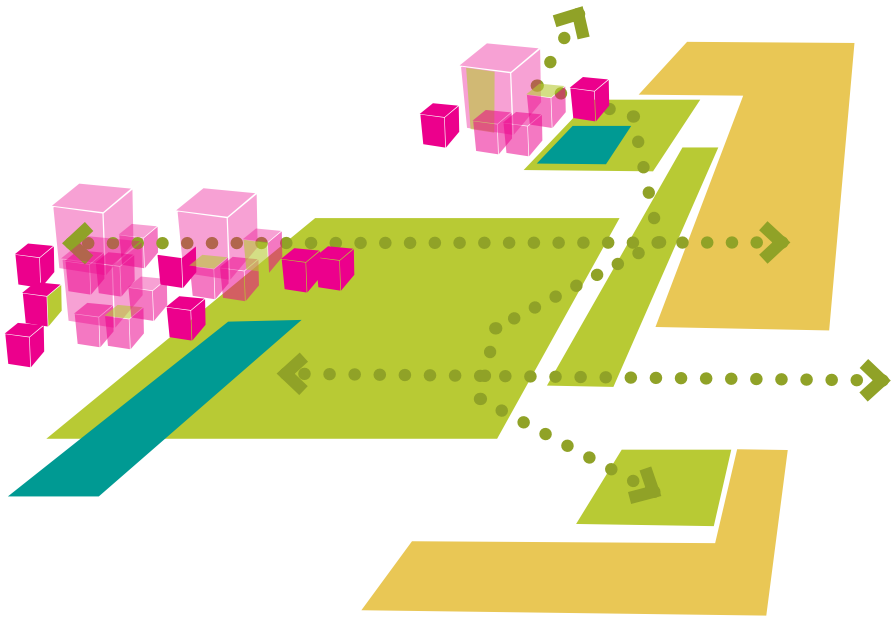


- dense residential areas in close connection to the built public transport, landmark skyscrapers

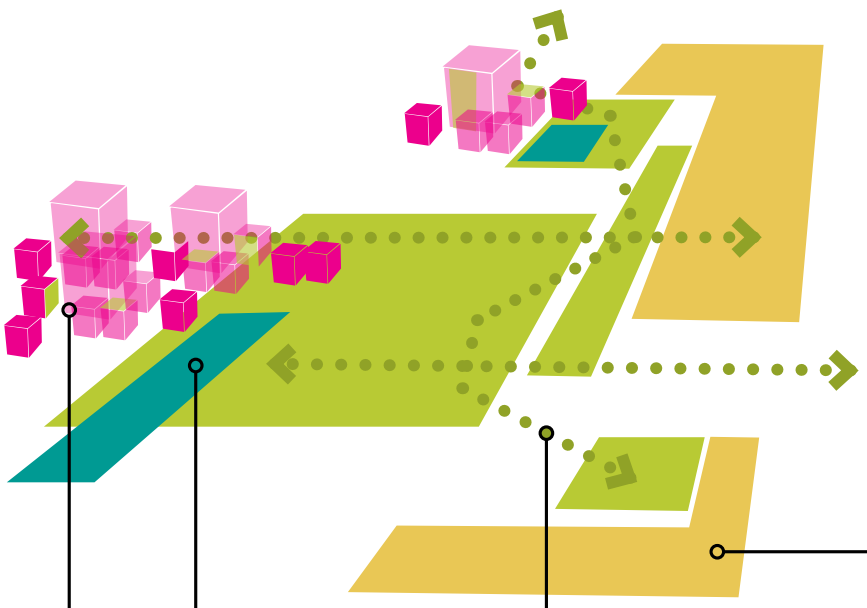
- denser green structure, conections with the huger green structures > offer special quality in correlation with waterscapes

- Add new stripes of green space connection

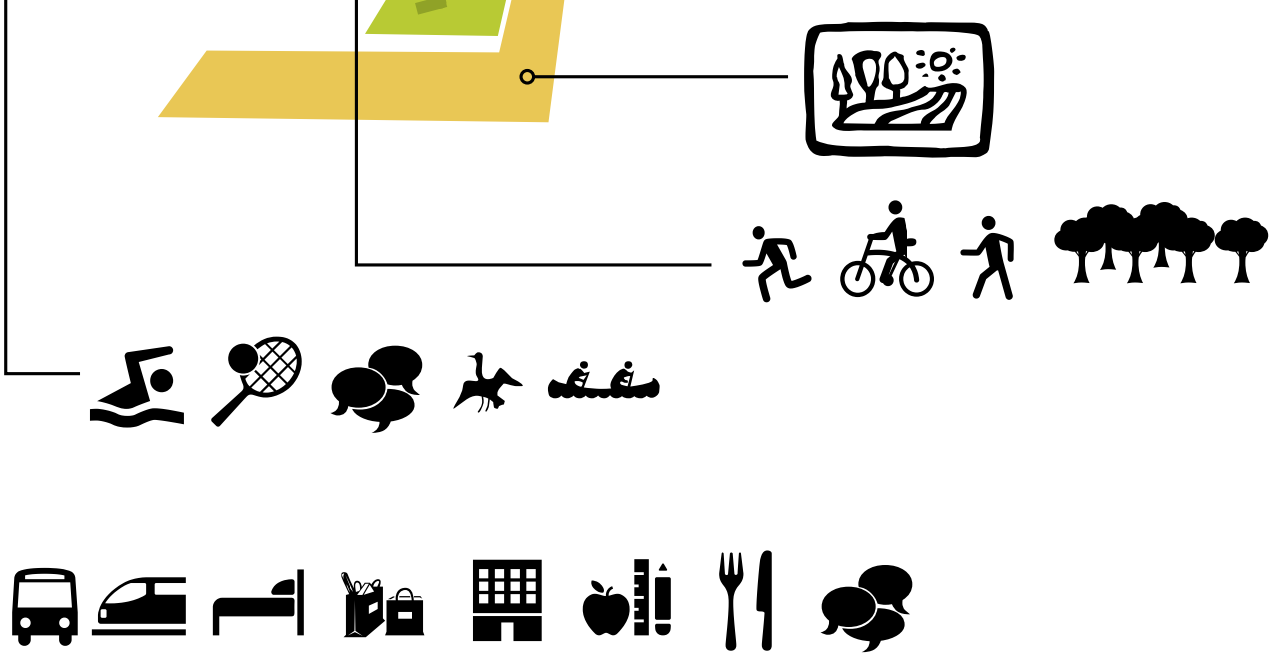
Concept diagram:

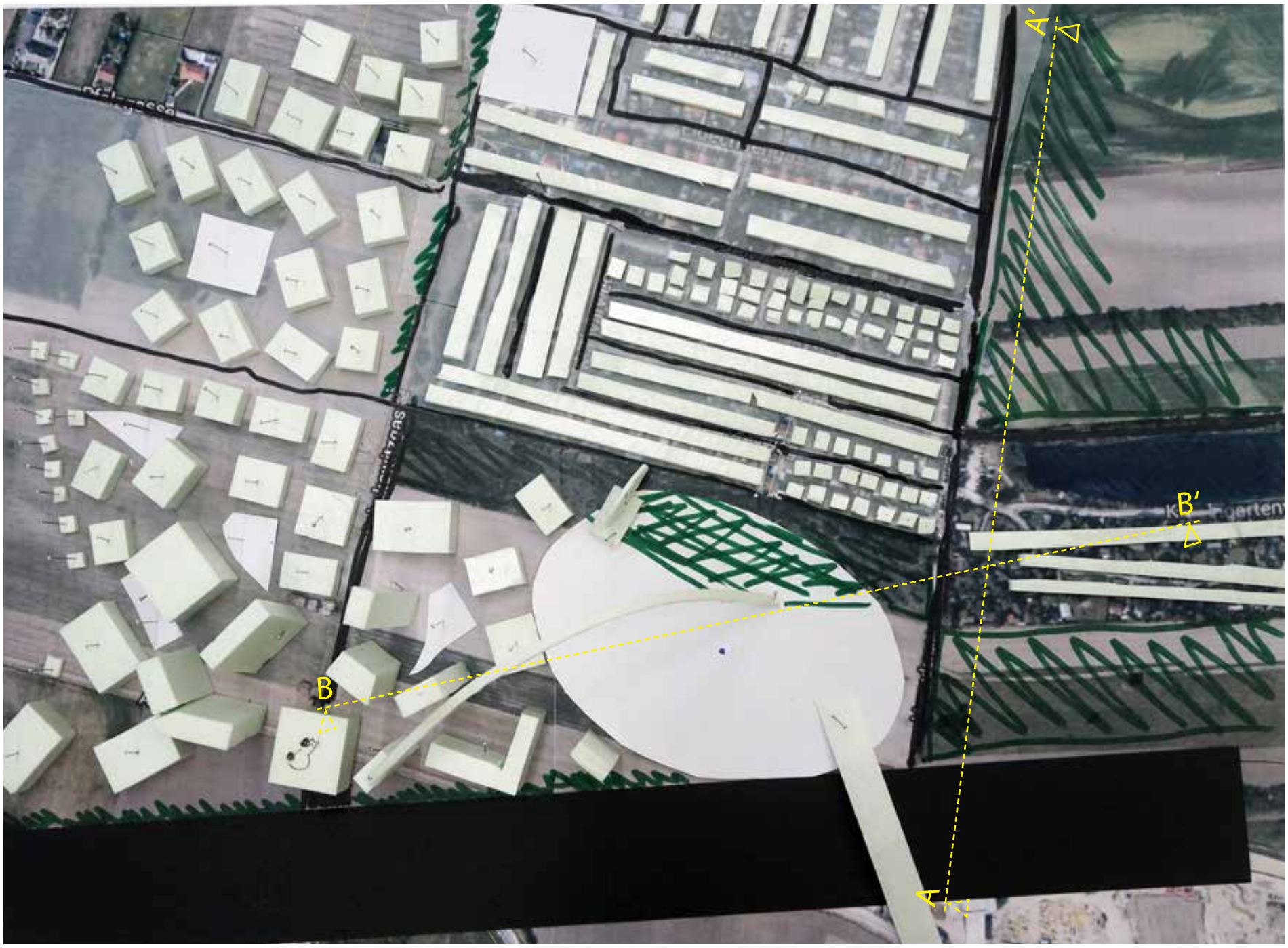


FUNTIONS AND QUALITES OF THE DIFFERENT AREAS



Functions of the diagram scale concept

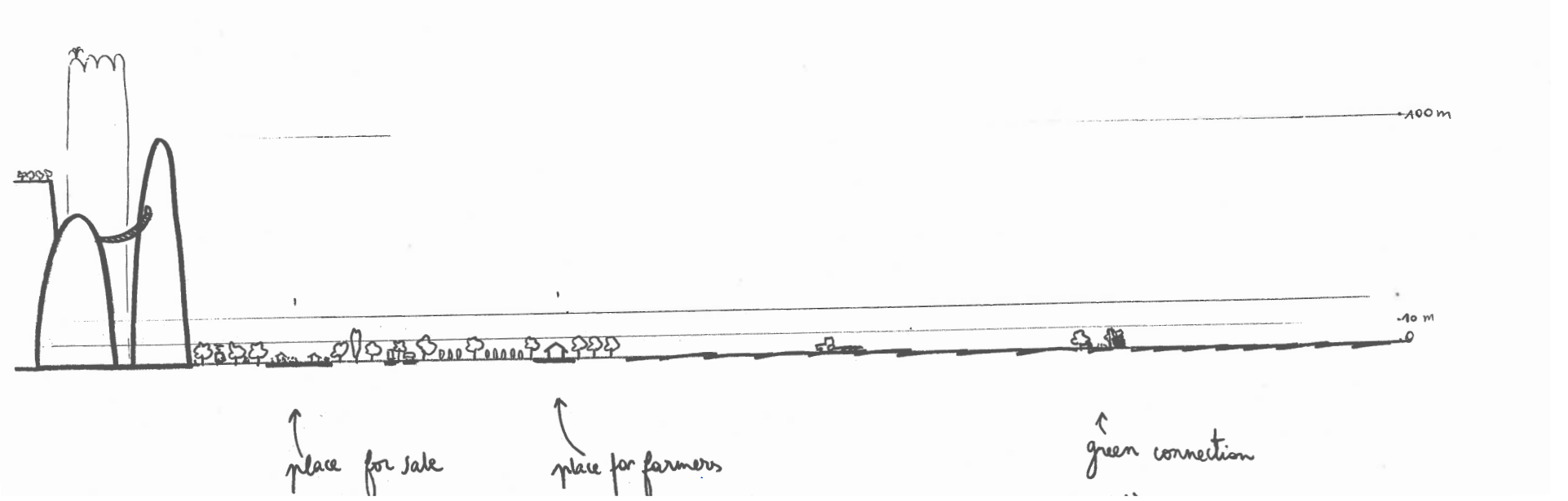




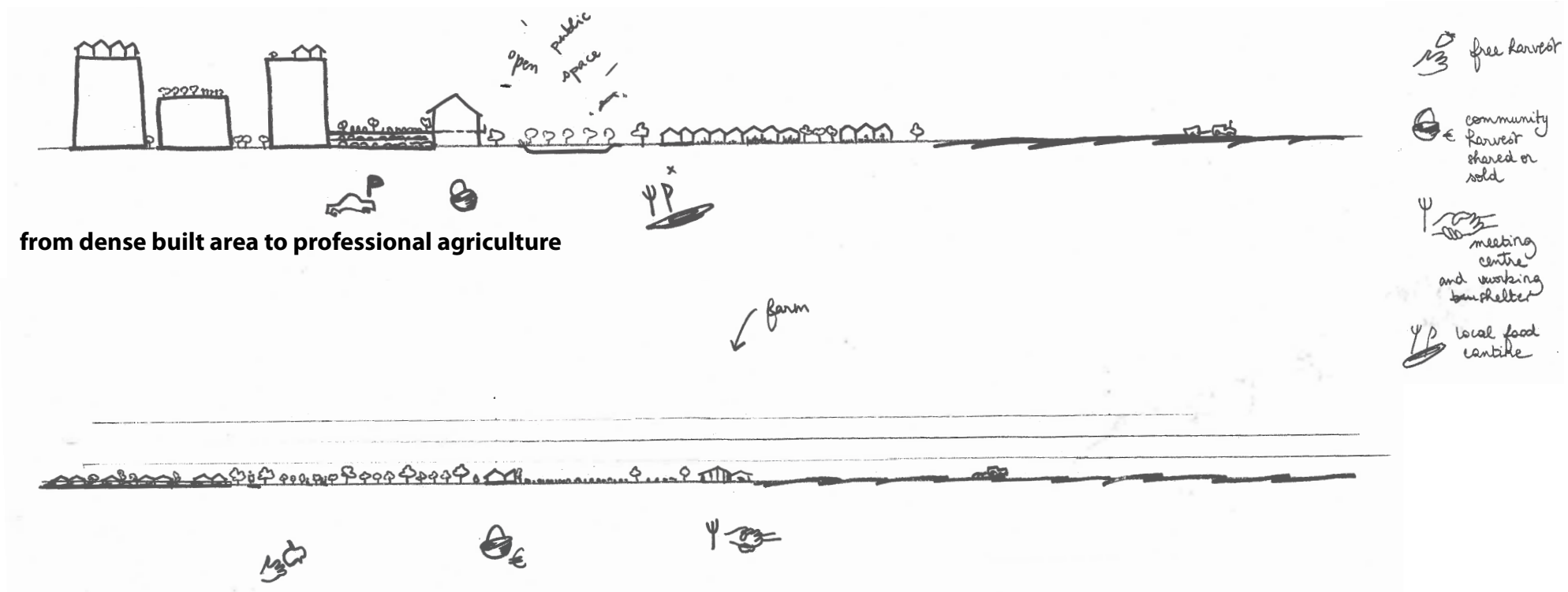
Model of the concept scale 1:2500

Public agriculture transition zone

TYPOLOGIES OF PUBLIC AGRICULTURES



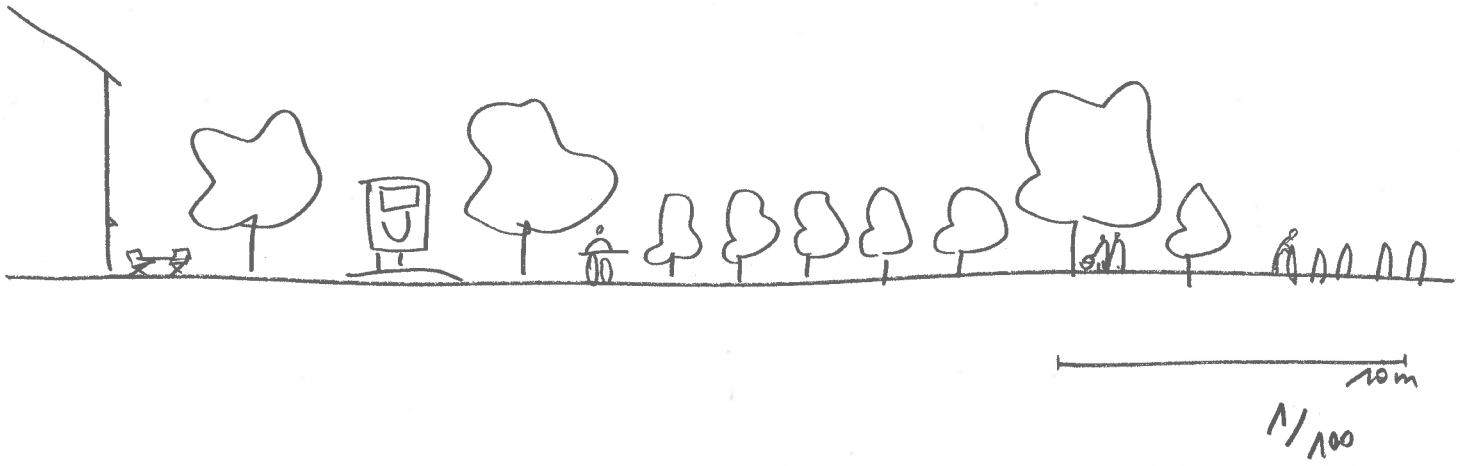
from sky-scrapers to ground scrapers (farming we mean)



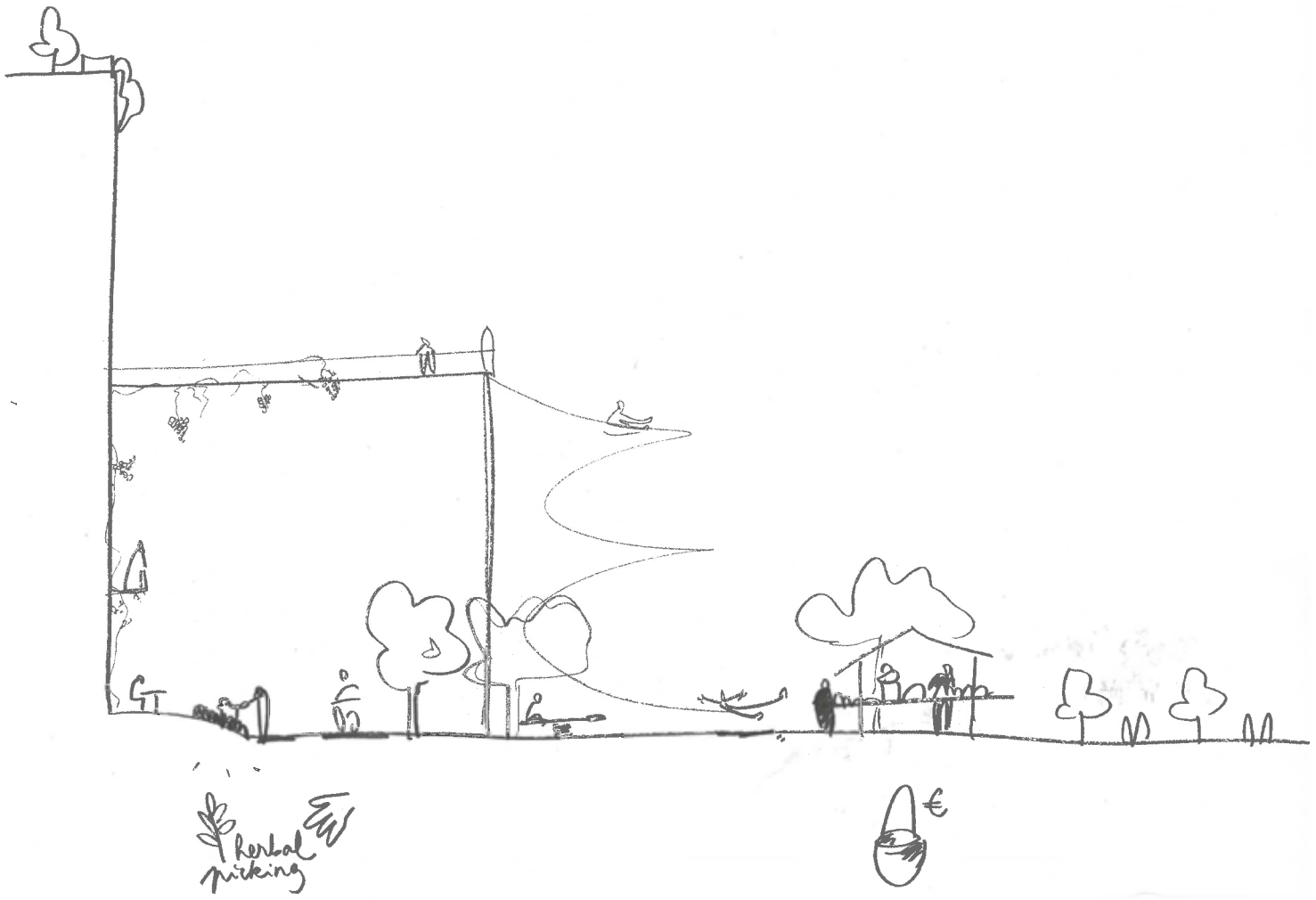
from dense built area to professional agriculture

from the low density residential areas to the agricultural lands

GREEN BOULEVARD NEXT TO THE LOW DENSITY RESIDENTAL AREA



TRANSITION FROM THE PRIVATE SPACE OF THE DENSE BUILDING TO THE PUBLIC GROUND



RECREATION AREA, LOCAL FOOD EXCHANGE

Model scale 1:2000

Model showing the shadow situation