

**EUROPEAN  
BIENNIAL  
OF LANDSCAPE  
ARCHITECTURE  
BARCELONA**  
ROSA BARBA  
EUROPEAN  
LANDSCAPE  
PRIZE

2010

Međunarodna izložba krajobraznih projekata studija arhitekture i krajobrazne arhitekture  
International exhibition of landscape projects from schools of architecture and landscape architecture





**EUROPEAN  
BIENNIAL  
OF LANDSCAPE  
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BARCELONA**  
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PRIZE

INVITATION TO THE  
**INTERNATIONAL EXHIBITION  
OF UNIVERSITY PROJECTS  
IN THE SCHOOLS OF ARCHITECTURE AND LANDSCAPE**

Since its first edition, the **Barcelona European Landscape Biennial** has expressed its desire to intently study and discuss landscape interventions, from the perspective of all disciplines that are linked to its study and evolution.

The Biennial has been consolidated on a European scale in its five previous editions: "Remaking Landscapes" (1999), "Gardens in Arms" (2001), "Only with Nature" (2003), "Landscape: a Product / a Production" (2006) and "Storm & stress" (2008).

**Program**

On the 30th of September, 1st and 2nd of October 2010, Barcelona will guest in some of its most exceptional sites a landscape symposium.

During these three days, the calendar includes the presentation of the finalist projects competing for the 6th "Rosa Barba" European Landscape Award, conferences, seminars, roundtables and exhibitions, contributing to trace and discuss the state and the evolution of landscape design in Europe.

The Biennial is organized by the Association of Architects of Catalonia (COAC), the Polytechnic University of Catalonia (Master's Program in Landscape Architecture and the Association of Friends of the UPC), and the Department of Territorial Policy and Public Works (Architecture and Landscape Division) of the Autonomous Government of Catalonia.

One year more Barcelona will host the **International Exposition of University Projects in the Schools of Architecture and Landscape**. The organizing committee considers that the participation of the didactic works remarkably contributes to enrich the debate on the landscaping. For such reason, we further encourage the acceptance of our invitation to this call, promoting the most valuable projects of your school.

It is in our best interest to stress the submission of those that you consider the most representative projects of the last two years, that summarize somehow the work of investigation and projecting of the school.

A selection of these projects will be part of an exhibition, that will be celebrated in the Technical School Superior of Architecture of Barcelona, **from the 27th of September till the 15th of October of 2010**. Such as in the past the exhibition will be visited by several European universities.

**Results**

The organizing committee of the International Exhibition of University Projects in Schools of Architecture and Landscape, through an international jury, will award the winning school with a **prize to the best project** presented. Moreover, all the works that emphasize the treated themes and their solutions will receive a special mention.

All the projects that will be shown in the exhibition are subject to the a selection carried out by the organizing committee.

**Set of rules**

A **maximum of 10 and not less than 3 projects** that develop the theme of landscape in a very wide meaning, from ecology to urban public space, will be accepted on behalf of the students of each school.

The deadline for the delivery of projects is **30 June 2010**.

Each school will send in one package all their proposal and pay the shipment costs. Each project shall include the following documentation:

**Printed documentation**

- a) 3 panels, DIN A3 format, presented horizontally, printed on soft paper that incorporates:
  - General plane of situation
  - Plane of location
  - Project: plans, sections, details...
  - Projectile processes: sketches, schemes, notes...
  - Images: aerial photographs, views, renders, photomontages, photos of scale models, collages...
- b) a written statement, that includes a short description of the project in English, no more than 250 words, vertical DIN A4 format
- c) form including the following data:
  - Title of the project (objectives, site)
  - Authors (students name)
  - Title of the course (subject, study, diploma and grade, workshop, research)
  - Academic year
  - Teaching staff (Names of professors and tutors)
  - Department/Section/Program of belonging
  - University/School

**Copy of the documentation in digital format (CD or DVD)**

- a) panels, .JPG or .PDF format, 300 dpi high resolution
- b) statement, .DOC or .PDF format
- c) data form, .DOC or .PDF format

**Committee**

**Maria Goula**, University Masters in Landscape (ETSAB, UPC) Coordinator  
**Anna Zahonero**, Master de Arquitectura del Paisaje (UPC) Profesor  
**Jordi Bellmunt**, Master de Arquitectura del Paisaje (UPC) Director  
**Isabel Núñez**, Secretary (DUOT, UPC)

**Coordination**

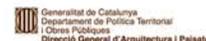
**Sergio Sanna**  
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**Postal address for deliveries**

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Avenida Diagonal, 649  
08028 Barcelona - España

Telephone (10:00 a.m. - 2:00 p.m.): +34 93 401 5870 - +34 93 401 6411

<http://www.coac.net/landscape/>





University of Zagreb  
Faculty of Agriculture  
**School of Landscape Architecture**  
Academic year: 2009/2010  
Course: Landscape design  
Professor: Ana Kučan, PhD  
Tutor: Ines Hrdalo Avdić, MLA

Project:

## **LANDSCAPE DESIGN FOR “STARA TREŠNJEVKA“ PARK**

Author: **Andrea Milovac**, MS LA – 1<sup>st</sup> year

### **ABSTRACT**

The “Stara Trešnjevka” park shows possibilities of transformation between day and night, at the same time the park also becomes important by creating an active area for visitors, and producing a safe and interesting environment. Also at the same time the park becomes an important point, it becomes one of the city’s main focuses of orientation, creating a better understanding of the city’s cultural structure.

The goals were to integrate and connect all existing green spaces into one large area as the main connecting point with the main detail being a tree line. To create a highly interesting visual environment by producing a comfortable, creative, an interesting space for visitors to enjoy and discover and to create a culturally and educationally rich area by integrating different elements that would support possibilities of different events and public projects.

Lighting plays an important role in defining the city and its uniqueness. Light defines appearance, color and texture of the city and its landscape. By outlining the cities architectural and urban structures, the city becomes more visible and at the same time easy to orientate yourself around.

The “Stara Trešnjevka” park lighting project is designed to support landscape design. The park covers four types of lighting. A functional lighting that light up the walk ways, lighting that illuminates and emphasizes vegetation, linear lighting which connects the active areas and interactive lighting as well as attractive part of the area.



1.

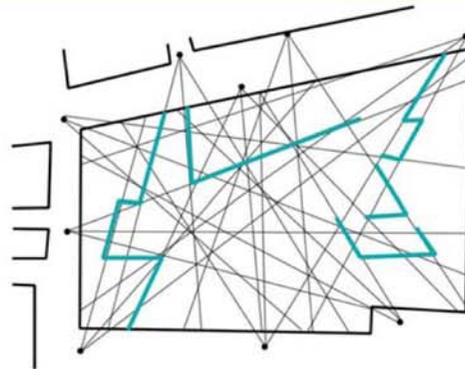
The based park is situated outside of the city center of Zagreb allowing easy pedestrian and car access.

The area-surrounding park mainly consists of businesses, residential buildings, and offices.

“Cibonin” center and theatre “Tresnjevka” are located around the public park area and state institutions.

2. Forms hold potencial view points

2.



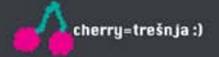
# Landscape design for “stara Trešnjevka” Park

6

Biennial Europea de Paisatge

location: “Stara trešnjevka” Park, Zagreb - Croatia

University of Zagreb / Faculty of agriculture / school of landscape architecture / professors name: prof.dr.sc.Rna Kučan, ; mag. Ines Hrdalo and prof. Stanko Strgašek / Student: Andrea Milovac/MS LA/academic year 2009./2010.



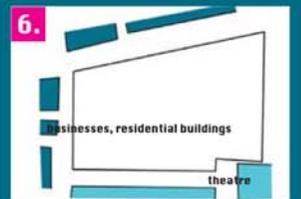
3. The goal is to integrate and connect all existing green spaces into one large area as the main connecting point with the main detail being a tree line.

- To create a highly interesting visual environment by producing a comfortable, creative, an interesting space for visitors to enjoy and discover.

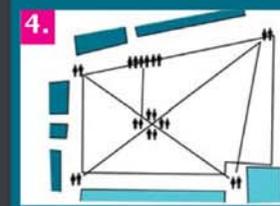
- To create a culturally and educationally rich area by integrating different elements that would support possibilities of different events and public projects.

4. Pedestrian movement, vehicle, and public traffic.  
5. Purpose of surrounding buildings and faculties

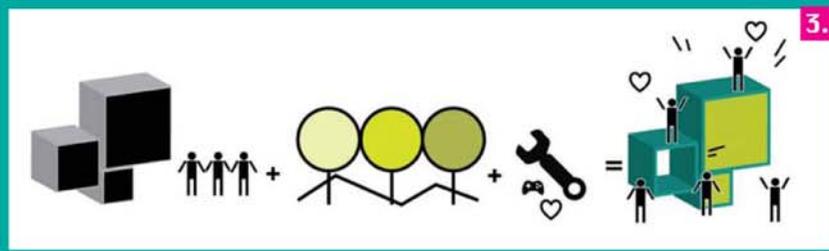
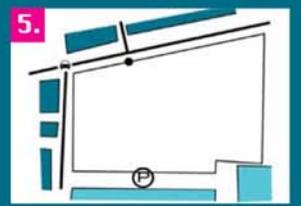
6.



4.



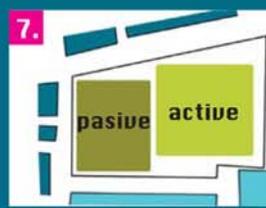
5.



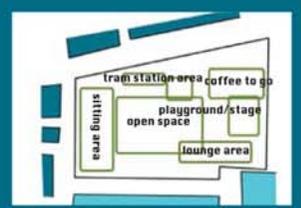
3.

7. Area divisions

7.

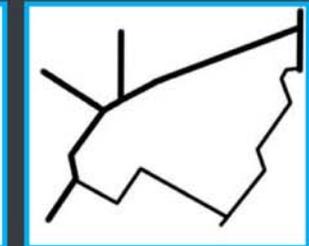
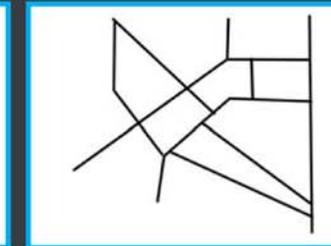
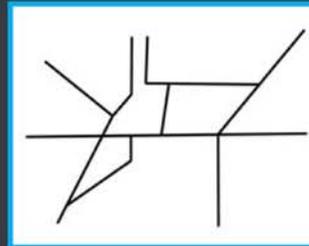
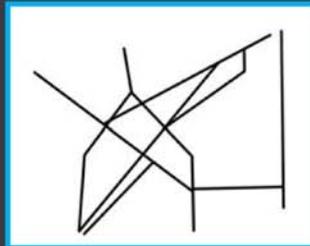
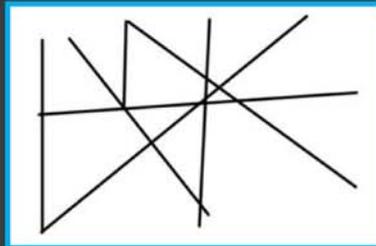
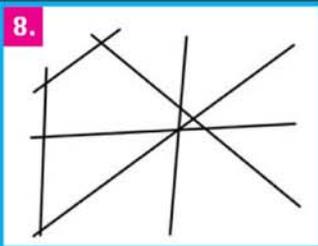


7.



8. Communication development

8.



## 9. Ground plan



9.

The park is divided into two sides, active and passive. The passive side is made for the elder people where it is made for walks and general sitting area. There have been provided and appropriate views that contribute to the space. There is also a resting area with flowerbeds, seating walls, the water surface through which the trail leads to produced a special atmosphere. The water feature is also supported with a deck which enables a walking area close to water as well. Through the park leads a circular walk way which leads to an active part of the park with a different character. Places with chairs and tables for dining, sitting and study area for the break time with space that arranges elements that makes your stay, play and, where necessary merger a stage for social and cultural events.



10.



10. Sketches

## 11. Lighting plan

Lighting plays an important role in defining the city and its uniqueness. Light defines appearance, color and texture of the city and its landscape. By outlining the cities architectural and urban structures, the city becomes more visible and at the same time easy to orientate yourself around.

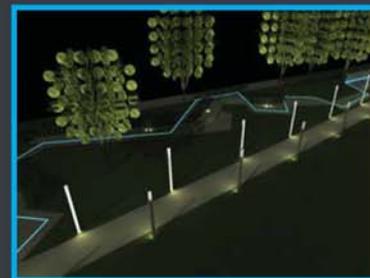
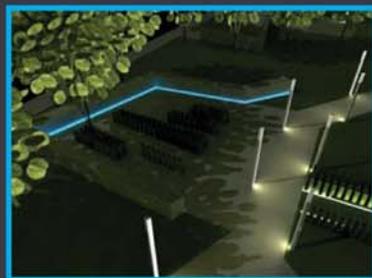
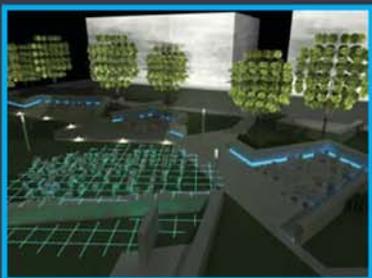
For example, park "Stara Trešnjevka" shows possibilities of transformation between day and night, at the same time the park also becomes important by creating an active area for visitors, and producing a safe and interesting environment. Also at the same time the park becomes an important point, it becomes one of the city's main focuses of orientation, creating a better understanding of the city's cultural structure.

The old Trešnjevka Park covers four types of lighting. A functional lighting that light up the walk ways, lighting that illuminates and emphasizes vegetation, linear lighting, which connects the active areas and interactive lighting as well as attractive part of the area.

The lighting poles that illuminate the path reflect on the water surface, which is located along the main path, which makes the water surface become attractive as it is during the day as well. The active zones are decorated with LED lighting strips and also projections. Along the wall there is also a linear lighting system which changes colours which adds to the atmosphere, they also connect the different areas with colourful feel. Lighting elements that illuminate the trees and flowerbeds have been set to address the texture, and to contribute to security and ambient feel of the area.

In the east part of the park a different lighting set up is used. It is a interactive lighting system which is projected on a child play area. The projections are completed with sensors that are activated by movement or touch with the element and thus starts the animation point of contact.

The lighting project of "stara Trešnjevka" park is designed to support the landscape design. The shapes and different intensities create the ambient atmosphere, which invites people to come and spend their time in the park





University of Zagreb  
Faculty of Agriculture  
**School of Landscape Architecture**  
Academic year: 2009/2010  
Course: Landscape design  
Professor: Branka Aničić, PhD  
Tutor: Mirjana Miškić Domislić, MLA

Project:

**LANDSCAPE DESIGN FOR “MARKO MARULIĆ” SQUARE IN  
VUKOVAR (CROATIA)**

Author: **Vilma Stopfer**, MS LA – 1<sup>st</sup> year

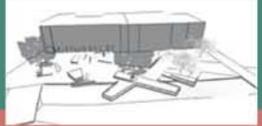
**ABSTRACT**

The Marko Marulić Square is situated in the centre of the town of Vukovar by the river Vuka that runs through the town and flows into the Danube, the big river on the east end of the town that is also a state border. The river banks of the Danube and the Vuka make a green frame of the town and have a great potential to become a nice walking trail. Unfortunately, that possibility of landscape organization is still unused. Although a small segment of the ensemble, with some landscape intervention the Marko Marulić Square could revitalize that part of the town and bring citizens closer to the river and nature in whole. With innovative contents and useful adjustments it would bring new perspective and enrich a green system of the town.

The Marko Marulić Square is situated near the recently renovated main square and is separated by the main street which is a pedestrian zone. In close vicinity there are the town market, department stores, cafes and restaurants. All those facts attract pedestrians to the area.

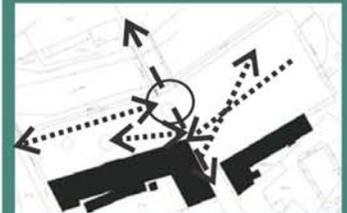
The Square is narrow and long with three old plane trees that are recommended to be fit in the project of landscape design, while provide give shadow and pleasant environment. The building that is situated along the Square was destroyed during the Homeland War in the 90', but it is being renovated into a cultural centre. For that reason, it is necessary to arrange the space in front of the new cultural institution and enable cultural programmes to transcend the walls.

# :: LANDSCAPE DESIGN OF MARKO MARILIĆ SQUARE IN VUKOVAR ::



THE MARKO MARULIĆ SQUARE IS SITUATED IN THE CENTRE OF THE TOWN OF VUKOVAR BY THE RIVER VUKA THAT RUNS THROUGH THE TOWN AND FLOWS INTO THE DANUBE, THE BIG RIVER ON THE EAST END OF THE TOWN THAT IS ALSO A STATE BORDER. THE RIVER BANKS OF THE DANUBE AND THE VUKA MAKE A GREEN FRAME OF THE TOWN AND HAVE A GREAT POTENTIAL TO BECOME A NICE WALKING TRAIL. UNFORTUNATELY, THAT POSSIBILITY OF LANDSCAPE ORGANIZATION IS STILL UNUSED. ALTHOUGH A SMALL SEGMENT OF THE ENSEMBLE, WITH SOME LANDSCAPE INTERVENTION THE MARKO MARULIĆ SQUARE COULD REVITALIZE THAT PART OF THE TOWN AND BRING CITIZENS CLOSER TO THE RIVER AND NATURE IN WHOLE. WITH INNOVATIVE CONTENTS AND USEFUL ADJUSTMENTS IT WOULD BRING NEW PERSPECTIVE AND ENRICH A GREEN SYSTEM OF THE TOWN.

THE MARKO MARULIĆ SQUARE IS SITUATED NEAR THE RECENTLY RENOVATED MAIN SQUARE AND IS SEPARATED BY THE MAIN STREET WHICH IS A PEDESTRIAN ZONE. IN CLOSE VICINITY THERE ARE THE TOWN MARKET, DEPARTMENT STORES, CAFES AND RESTAURANTS. ALL THOSE FACTS ATTRACT PEDESTRIANS TO THE AREA. THE SQUARE IS NARROW AND LONG WITH THREE 100 YEARS OLD PLANE TREES THAT ARE RECOMMENDED TO BE FIT IN THE PROJECT OF LANDSCAPE DESIGN, WHILE PROVIDE GIVE SHADOW AND PLEASANT ENVIRONMENT. THE BUILDING THAT IS SITUATED ALONG THE SQUARE WAS DESTROYED DURING THE HOMELAND WAR IN THE 90', BUT IT IS BEING RENOVATED INTO A CULTURAL CENTRE. FOR THAT REASON, IT IS NECESSARY TO ARRANGE THE SPACE IN FRONT OF THE NEW CULTURAL INSTITUTION AND ENABLE CULTURAL PROGRAMMES TO TRANSCEND THE WALLS.



BORDERS INCLUDES

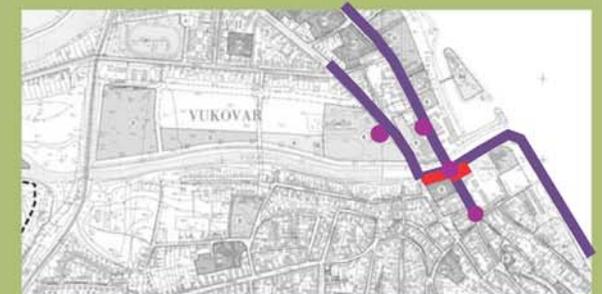
PEDESTRIAN MOVEMENT



PUBLIC, VEHICLE AND RIVER TRAFFIC



GREEN SPACES



PEDESTRIAN MOVEMENT

# :: LANDSCAPE DESIGN OF MARKO MARULIĆ SQUARE IN VUKOVAR ::



## :: GROUND PLAN ::

## :: CONCEPTUAL DESIGN DESCRIPTION ::



THE SQUARE IS DIVIDED IN FEW DIFFERENT AREAS: THE AREA BY THE RIVER, THE RESTAURANT, THE REPRESENTATIVE SPACE BY THE STATUE AND THE FOUNTAIN TOGETHER WITH THE ANNOUNCEMENT BOARD.

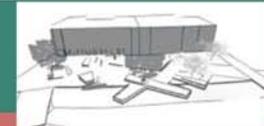
THERE IS AN AREA BY THE VUKA RIVER MADE OF THREE WOODEN PLATFORMS IN THE SHAPE OF BOOMERANG, OF DIFFERENT SIZES AND HIGHNESS. THE BIGGEST PLATFORM IS SITUATED IN THE MIDDLE OF THE SQUARE AND SURROUNDS ONE OF THE PLANE TREES, PROVIDING A NICE SHADE FOR RESTING AND SITTING UNDER THE TREE. THE SMALLEST PLATFORM IS SITUATED IN THE EAST PART OF THE SQUARE, NEXT TO THE MIDDLE BRIDGE. IT RISES INTO THREE LEVELS AND GIVES A VIEW ON DIFFERENT PERSPECTIVES OF THE ENVIRONMENT.

THE AREA BY THE ANNOUNCEMENT BOARD AND THE BIG PLANE TREE IS TURNED TO THE INTERIOR OF THE SQUARE WITH BENCHES AND FOUNTAIN IN THE SHAPE OF A 60 CM HIGH WALL.

NEXT TO THE RESTAURANT, THERE IS A STATUE OF MARKO MARULIĆ SURROUNDED WITH FLOWER SURFACES AND BENCHES IN FRONT OF WHICH THERE ARE TWO FOUNTAINS (DIFFERENT SIZE SPRAYERS, FROM 40 CM TO 1 M).

WITH THE AIM TO KEEP THE THIRD PLANE TREE, THE SPACE SURROUNDING IT IS USED FOR A RESTAURANT OBJECT, WHICH IS, DUE TO SLIDE DEPRESSION, ON A LOWER LEVEL THAN THE REST OF THE SQUARE. THIS WAY, ALL THE PLANE TREES, WHICH PROVIDE BEAUTIFUL SHADOW AND PLEASANT ATMOSPHERE, ARE SAVED AND NEW CONTENTS ENRICH THE SPACE AND DIRECT PEDESTRIANS TOWARD THE SQUARE.

**:: LANDSCAPE DESIGN OF MARKO MARILIĆ SQUARE IN VUKOVAR ::**



**:: PERSPECTIVE VIEW ::**





University of Zagreb  
Faculty of Agriculture  
**School of Landscape Architecture**  
Academic year: 2009/2010  
Course: Environmental planning  
Professor: Ivan Marusic, PhD  
Tutor: Vesna Koscak Miosic Stosic, MSc

Project:

**STRATEGIC ENVIRONMENTAL ASSESSMENT OF SPATIAL  
DEVELOPMENT STRATEGY FOR ŽUMBERAK-SAMOBORJE  
HIGHLANDS NATURE PARK**

Author: **Viktorija Cikač**, MS LA - 2<sup>nd</sup> year

**ABSTRACT**

Žumberak–Samoborje highlands Nature Park is located in the northwest region of Republic of Croatia and extends over 33,300 ha. This area was protected and declared as category of Nature Park in 1999. Its status of protection is considered to be the key resource for potential development of this area, but also as its limiting factor.

Strategic environmental assessment (SEA Directive), as an integrative part of plan preparation and plan evaluation process, requires an assessment of the expected environmental effects of plans and programmes, simultaneously with and within planning process, before plan is implemented and is requiring that public participation is integrated too. Giving sufficient weight to environmental protection in planning process can prevent damaging effects that new development could have on existing natural qualities, qualities of human habitat and resource qualities. At the same time it allows, supports and suggests environmentally acceptable and sustainable forms of proposed land use.

A “formal” assessment process for protection and development acceptability for the alternative proposals of spatial development strategy for the Nature Park is based on comparative analysis of average vulnerability with integrated protection criteria, for alternatives. They differ in development vision and strategy of spatial development for this area, so they require different priority in hierarchy of locating land use activities, meaning also respecting different protection criteria. Described process of searching for alternative locations for unacceptable proposed land use activities ensures fully implemented ‘creative protection’ in spatial planning, meaning also optimization within planning process and prevention rather than normative protection.



# STRATEGIC ENVIRONMENTAL ASSESSMENT OF SPATIAL DEVELOPMENT STRATEGY FOR ZUMBERAK-SAMOBORJE HIGHLANDS



ZUMBERAK – SAMOBORJE HIGHLANDS NATURE PARK is located in the northwest region of Republic of Croatia and extends over 33,300 ha. This area was protected and declared as category of Nature Park in 1999. Due to its preserved richness of natural and cultural heritage, especially cultural landscapes diversity as a result of characteristic traditional human activities characterising rural way of life throughout this predominantly mountainous area. Its status of protection is considered to be key resource for potential development of this area, but also as its limiting factor.



LOCATION



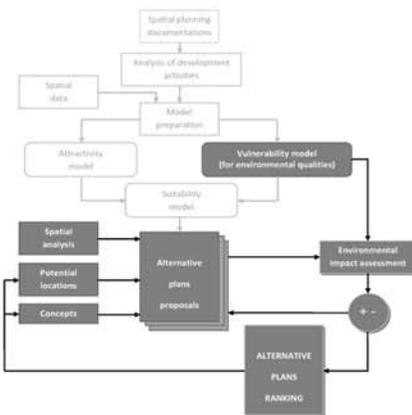
STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA), as an integrative part of plan preparation and plan evaluation process, aims to ensure environment protection and sustainable development. It requires an assessment of the expected environmental effects of plans and programmes, simultaneously with and within planning process before plan is implemented and is requiring that public participation is integrated too. Giving sufficient weight to environmental protection in planning process can prevent damaging effects that new development could have on existing natural qualities, qualities of human habitat and resource qualities. At the same time it allows, supports and suggests environmentally acceptable forms of proposed land use. Searching for alternative proposals for locations of ineffective planning proposal of land use activities ensures fully implemented 'creative protection' into spatial planning.

## STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

### LEGISLATION

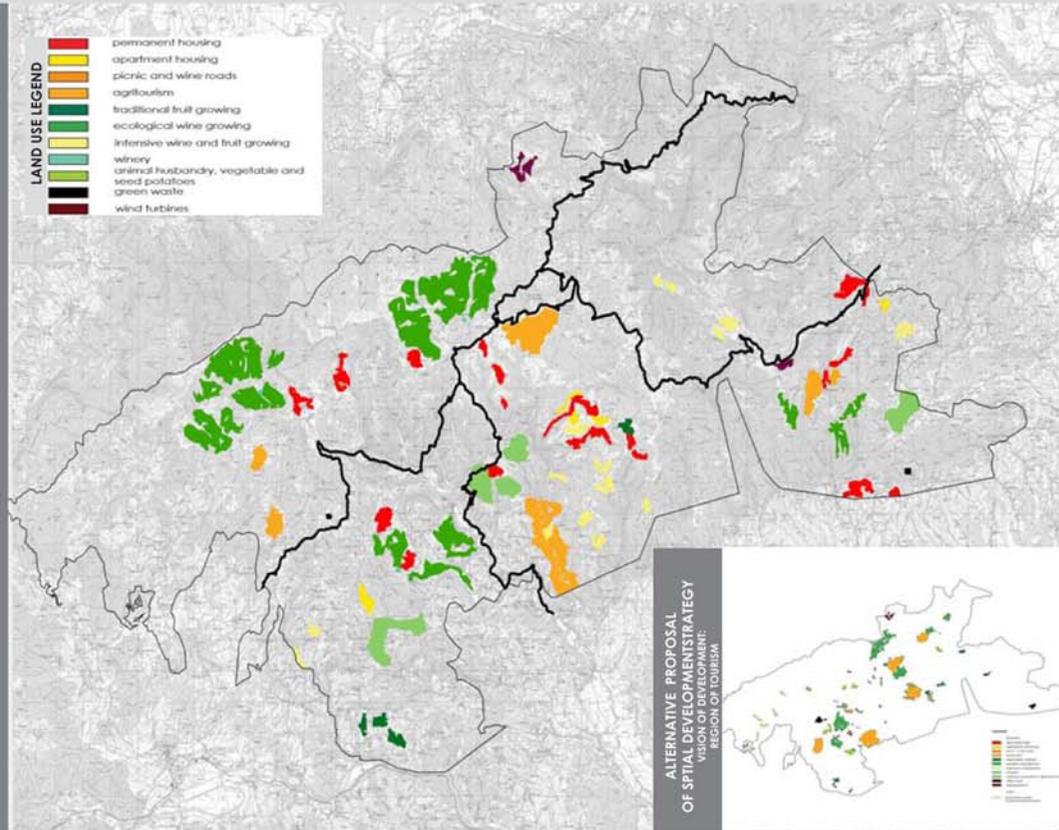
- EUROPE:
1. Directive 2001/42/EC (known as 'Strategic Environmental Assessment' – SEA Directive)
- REPUBLIC OF CROATIA:
2. Environmental protection act (N.N.110/07)
  3. Regulation for strategic environmental impact assessment of plans and programmes (N.N. 64/08)

### METHODOLOGY OF ENVIRONMENTAL PLANNING

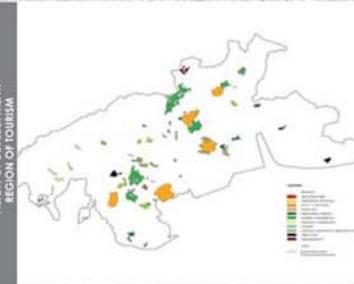


## PROPOSED SPATIAL DEVELOPMENT STRATEGY FOR ZUMBERAK-SAMOBORJE HIGHLANDS NATURE PARK

VISION OF DEVELOPMENT: ECOLOGICAL VITICULTURE



ALTERNATIVE PROPOSAL OF SPATIAL DEVELOPMENT STRATEGY VISION OF DEVELOPMENT: REGION OF TOURISM





INTRODUCTION OF PLANNED ACTIVITIES WITH VULNERABILITY MODELS

1. ecological wine growing

2. winery

3. picnic and wine roads

4. agritourism

5. permanent housing

6. apartment housing

7. animal husbandry, vegetable and seed potatoes

8. traditional fruit growing

9. green waste

10. wind turbines

11. intensive wine and fruit growing

vulnerability 0
vulnerability 1
vulnerability 2
vulnerability 3
vulnerability 4
vulnerability 5

ENVIRONMENTAL VULNERABILITY ANALYSIS results in classification of the entire area into five classes, representing where in Natural Park Zumberak - Samoborje Highlands, due to environmental protection values, activity should not, or is more or less acceptable to occur, in proposed form.

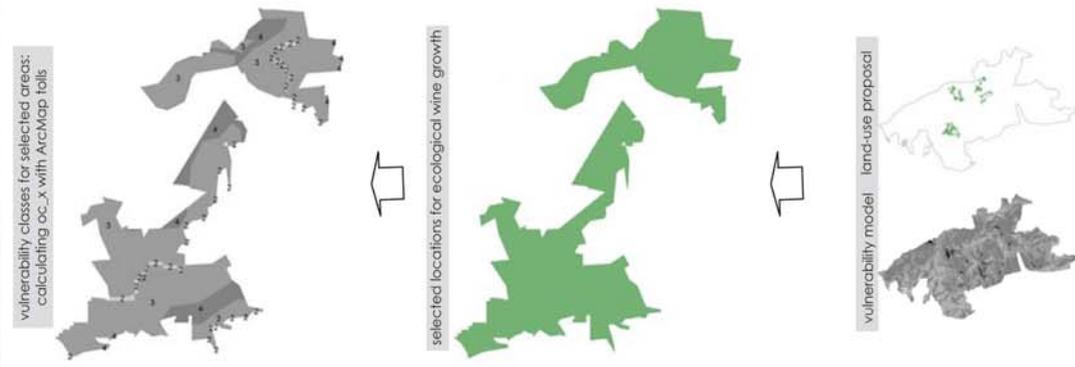
GIS-BASED VULNERABILITY ANALYSIS AS ASSESSMENT TOOL

Area<sub>x</sub> means average environmental vulnerability of the entire Nature Park area for specific activity (x - land use activity), while loc<sub>x</sub> represents average environmental vulnerability of proposed sites for the same activity. Coefficient (k) that shows their relationship can be defined by dividing loc<sub>x</sub> with area<sub>x</sub>. If the coefficient is smaller than one, it means that our planned activity is in the area whose average vulnerability is smaller than average vulnerability of entire Park area for this activity. Therefore we can assume that this activity location is planned with fully implemented environmental protection criteria. If the coefficient is equal to one, specific location is vulnerable as average vulnerability of the Park, and if is higher than one, means we have chosen a location that is more vulnerable than the average vulnerability of the Park and we should search for another location. Result of efficiency is shown as percentage ratio (%): (1- k)x100.

loc<sub>x</sub> < area<sub>x</sub>      k < 1      efficacy = + %  
 loc<sub>x</sub> = area<sub>x</sub>      k = 1      efficacy = 0  
 loc<sub>x</sub> > area<sub>x</sub>      k > 1      efficacy = - %

Average vulnerability of Nature park for ECOLOGICAL WINE GROWING		
vulnerability class	area under class (m <sup>2</sup> )	vulnerability class X area
0	230331.1905	0
1	7099624.825	7099624.825
2	85092332.77	170184665.5
3	124524001.2	373572003.5
4	123236246.5	492944986.1
5	4010784.79	20053923.95
Σ	<b>344193321.3</b>	<b>1063855204</b>
area <sub>eco_wine_growing</sub> = 3,09		
Average vulnerability of proposed locations for ECOLOGICAL WINE GROWING		
vulnerability class	area under class (m <sup>2</sup> )	vulnerability class X area
0	824.606337	0
1	139093.4561	139093.4561
2	13830984.88	27661969.76
3	18711.30322	56133.90966
4		0
5		0
Σ	<b>13989414.25</b>	<b>27857197.13</b>
loc <sub>eco_wine_growing</sub> = 1,99		

coefficient (k) = 0.65  
 efficacy [%] = 35.60



GIS-STEPS IN DETERMINING ACCEPTABILITY FOR ECOLOGICAL WINE GROWTH LAND USE



NATURE PARK



# STRATEGIC ENVIRONMENTAL ASSESSMENT OF SPATIAL DEVELOPMENT STRATEGY FOR ZUMBERAK-SAMOBORJE HIGHLANDS

COMPARATIVE ANALYSIS OF ENVIRONMENTAL ASSESSMENT FOR ALTERNATIVE PROPOSALS OF SPATIAL DEVELOPMENT STRATEGY

COMPARATIVE VIEW OF VULNERABILITY FOR LAND USE CLASSES - VISION: Zumberak-Samoborsko gorje Nature park as ecological wine growing region

Hierarchy of possible land use - ecological wine growing region	area under vulnerability classes (m <sup>2</sup> )						IUC_X	IUCR_X	coefficient	efficacy (%)
	0 not vulnerable	1	2	3	4	5 most vulnerable				
1. ecological wine growing	524 85827	12062 4591	120364 88	18711 3022			1.99	3.09	0.64	76%
2. viticulture	9873 87463	4053 43728	400501 401	3812 62219			1.99	3.11	0.53	48%
3. agritourism	282029 68	1209 38	130936 11	1177128 37	20891 28	302 34	0.22	2.08	1.00	10%
4. permanent housing	303 72	816 72	116172 44	121122 88	120756 78	127859 08	2.46	2.46	0	0%
5. apartment housing	30879 078	107141 0343	29716 0553	408 290723			0.22	2.28	0	0%
6. animal husbandry, vegetable and seed potatoes			121236 9167	530590 842	116298 7058		0.19	0.22	0.83	18%
7. traditional fruit growing	37858 53453	21853	785344 47	41533 14713	12427 36334		1.98	1.83	0.52	44%
8. green waste	27244 8487	1892 081086	18472 38319				1.92	1.98	0.77	22%
9. wind turbines	410720 28						0	0.27	0	0%
10. intensive wine and fruit growing										
11. picnic and wine roads										

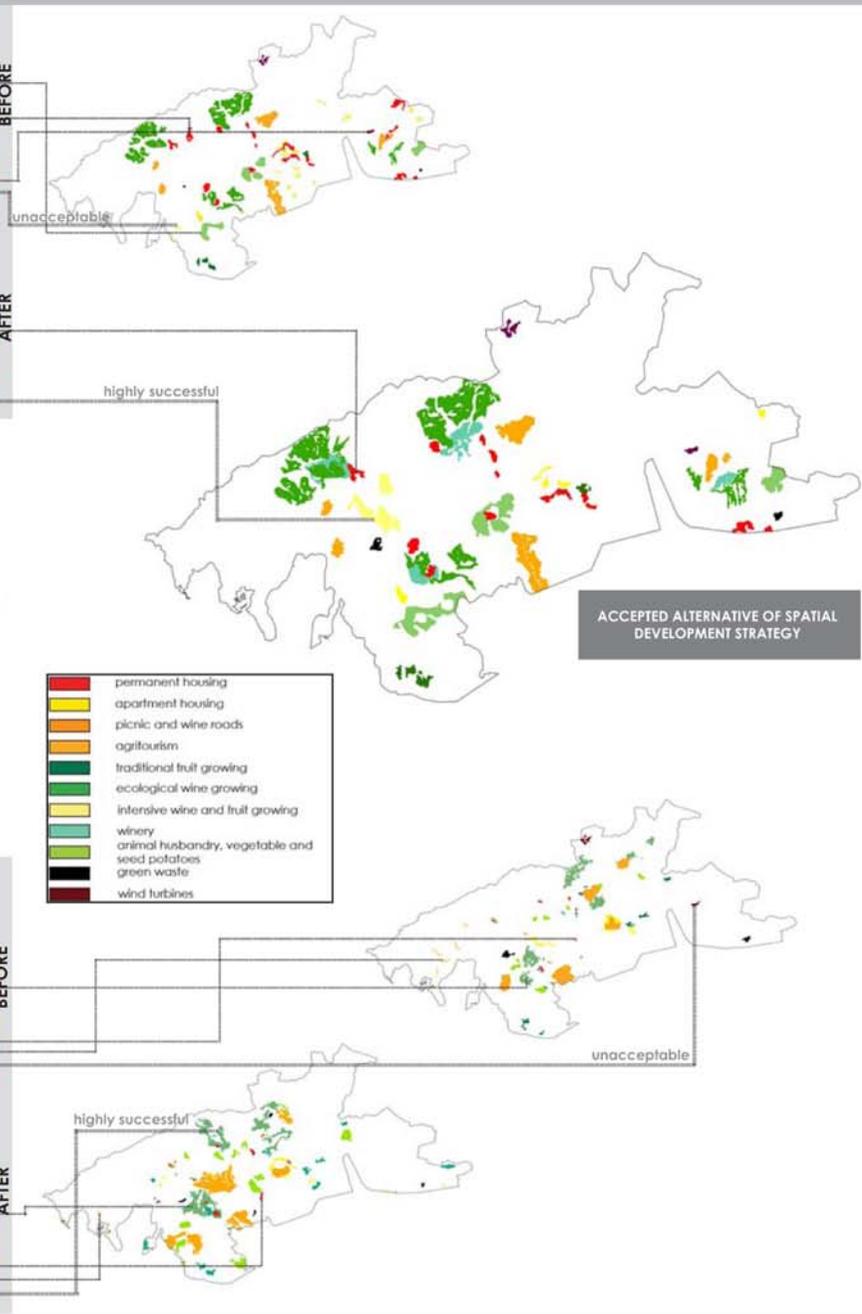
COMPARATIVE VIEW OF VULNERABILITY FOR LAND USE CLASSES - VISION: Zumberak-Samoborsko gorje Nature park as ecological wine growing region

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9. wind turbines	410720 28						0	0.27	0	0%
10. intensive wine and fruit growing	4102 48	153454 07	30272 28	1888 04			1.22	0.81	0.74	10%
11. picnic and wine roads										

A "FORMAL" ENVIRONMENTAL ASSESSMENT PROCESS of environmental protection and sustainable development acceptability for the proposal of the spatial development strategy for the Nature Park is based on comparative analysis of average vulnerability with integrated high protection criteria, for both - proposed part of plan and its alternative. They differ in development vision and strategy of spatial development for this area, so they require different priority in hierarchy of locating planned land use activities, meaning also respecting different protection criteria for natural qualities, qualities of human habitat and natural resource qualities. Described process of searching for alternative locations for unacceptable planning proposal of land-use activities locations ensures fully implemented 'creative protection' into spatial planning, meaning also optimization within planning process and prevention rather than normative protection.

LEGEND

>50%	highly successful
30% - 50%	very successful
10% - 30%	successful
0% - 10%	failed
<0%	unacceptable



VISION: ECOLOGICAL VITICULTURE

VISION: REGION OF TOURISM

NATURE PARK



University of Zagreb  
Faculty of Agriculture  
**School of Landscape Architecture**  
Academic year: 2009/2010  
Course: Landscape planning  
Professor: Ivan Marusic, PhD  
Tutor: Vesna Koscak Miosic Stosic, MSc

Project:

**SPATIAL DEVELOPMENT STRATEGY OF NATURAL PARK  
ŽUMBERAK-SAMOBORSKO HIGHLANDS**

Author: **Josip Krsnik**, MS LA - 2<sup>nd</sup> year

**ABSTRACT**

Žumberak-Samoborje Highlands characteristics, its richness of plant and animal species, and particular cultural landscape represents regions exceptional value that is necessary to be preserved and protected. Due to poor socio-demographic conditions in this area (emigration, reducing of the area population) it is necessary to propose such development program for the Nature Park, which will promote and preserve the existing natural and cultural heritage, and at the same time will be in accordance with the terms and options for protection of the area.

The development of organic agriculture, in particular ecological viticulture, as the proposed primary activity in this area, might contribute in improving the overall socio-economic situation of the region. This activity fulfils the requirements to be implemented within this protected nature area, ie, will not affect the naturalness of the local ecosystem and will at the same time provide an opportunity for development of the Žumberak area as an agricultural region.

Plan proposal for development of the Nature Park Žumberak area, in this case based on development of ecological agriculture is a result of complex, comprehensive and environmentally oriented planning process. It consists of two basic steps: developing the strategy of spatial development and performing the environmental impact assessment of the plan as a basis for further development and protection of the area.



Nature Park Žumberak – Samoborje Highlands is situated in the northwestern part of Croatian territory and covers the area of 33,300 ha. It is valued by its natural characteristics, rich flora and fauna, as well as cultural heritage and particularly by its cultural landscapes as a main feature of the area identity and a result of traditional human activity characterized by rural way of life. Because of that area is protected and was declared as a Nature Park in 1999., but such status is considered to be a potential, but also a limiting factor for development of the area.



**LOCATION**

**PROBLEMS**

Even though Žumberak- Samoborje Highlands is an area with potentials (rich natural and cultural heritage, flora and fauna) for different kinds of activities, its qualities are not efficiently used. This is the reason for deterioration of the socio-demographic situation of the area, resulting in high rate of emigration, especially young people, due to poor living conditions and low income from agricultural activities that are the main forms of activities within local population.

**GOALS**

The main goal can be defined as a strategy of spatial development for Žumberak area in form of land use plan for several activities that have potentials within the area. The main activity for the development of the area is organic agricultural production, which would give the identity to the area as an ecological region. Ecological Viticulture is proposed as main development activity that need to be supported by other supplement activities.



The entire area is rich with water features represented in a number of wells (337) and streams (260) which form several major waterfalls. Those different forms of water give special attractiveness to this area and contribute to the landscape diversity of the Nature Park.



**WATER AND GEOLOGY**



Since 90% of the geological structure of the Nature Park is karst, it makes its relief the most important shaping factor, which together with other landscape elements such as vegetation cover, form the area landscape. There can be found numerous surface karst forms such as holes and caves, with frequent occurrence of the abyss and short, and numerous underground caves.



**MISSION**

Mission of the Nature Park Žumberak, which is protected as a distinct object of particular natural values and cultural landscape, is to preserve and enhance existing natural and cultural heritage by allowing and supporting the development of ecological agriculture. Such identity as a recognizable ecological agricultural region will contribute to overall sustainable development of the Nature Park area, and should encourage satisfaction of the local population to live and work there.

**VISION**

The Nature Park will become the Viticulture and Enology centre of a broader ecological agricultural area, which will also improve the spatial development based on the principles of sustainability, and will in the long-terms improve currently unfavourable social and demographic condition. Aforementioned activities will create a unique and recognizable area identity for a wider user groups.

**FLORA AND FAUNA**



More than half of the area is covered by natural forest, and the remaining area is structured by grassland vegetation of meadows and pastures, and agricultural fields. Within the borders of Nature Park, there have been registered more than 1000 plant species. Areas of different land cover combined with dynamic land forms, form specific and distinctive pattern of cultural landscape.



Žumberak area is abundant with ponds which were once used for livestock watering, today are important breeding grounds of many amphibians such as reptiles, frogs and toads. Within the territory of the Nature Park there are snakes, lizards and salamanders, but the predators are reduced to wolf and bear.



Nature Park territory has always been an area of rural character which contributed by its human activities to the cultural and landscape diversity. The cultural landscape has emerged through a long period of time, from the very beginning of settlements development in this region, and a most suitable for colonization seemed to be the central karst plateau.



**ANTHROPOGENIC LANDSCAPE FEATURES**

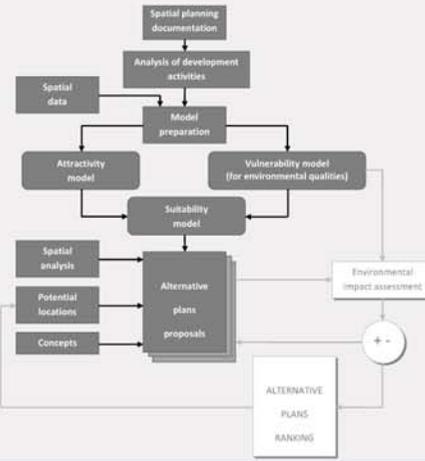


**STARTING POINT FOR PLANNING**

Overall awareness of the importance of organic agriculture is getting stronger in last decades, and tends to become a world trend. Since Žumberak is industrially unpolluted area and also area without significant human influence, gives it a great potential for this activity. According to the Nature Protection Act (NN 162/03) within the Nature Park the only activities that are allowed are those that do not impair its essential characteristics and purposes. Organic agriculture is an activity whose characteristics fulfil prescribed statutory provisions and offer potentials for overall development of the Nature Park area.

S.W.O.T. analysis			
internal origin		external origin	
strengths	weaknesses	opportunities	threats
no pollution	infrastructure	tourism development	environmental pollution
naturalness	depopulation	agriculture	changes in image of landscape
tradition	traffic	no pollution	overladdness with tourism
biological and landscape diversity	neglect of agriculture	sport and recreation	depopulation
resources	karst area	nearness of bigger towns	conversion of land use
nearness of bigger towns	nature protection area	visual qualities	nature protection
nearness of state border	tourist facilities	resources	non-enforcement of plans

**METHODOLOGY OF LANDSCAPE PLANNING**



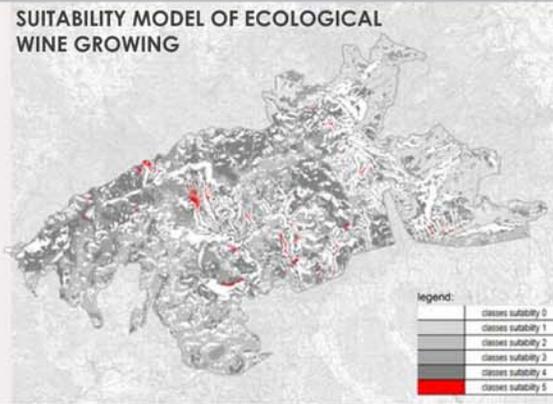
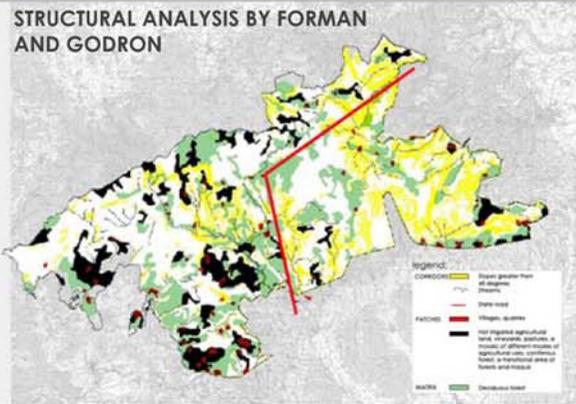
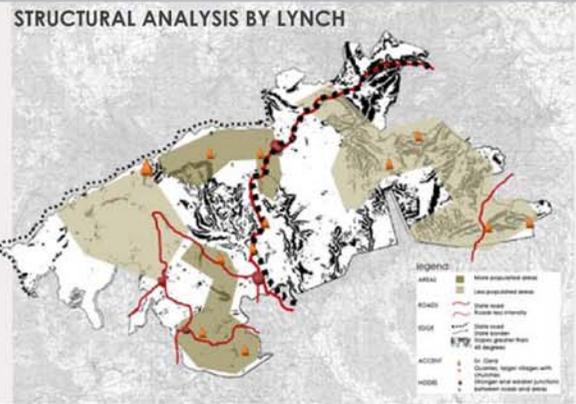
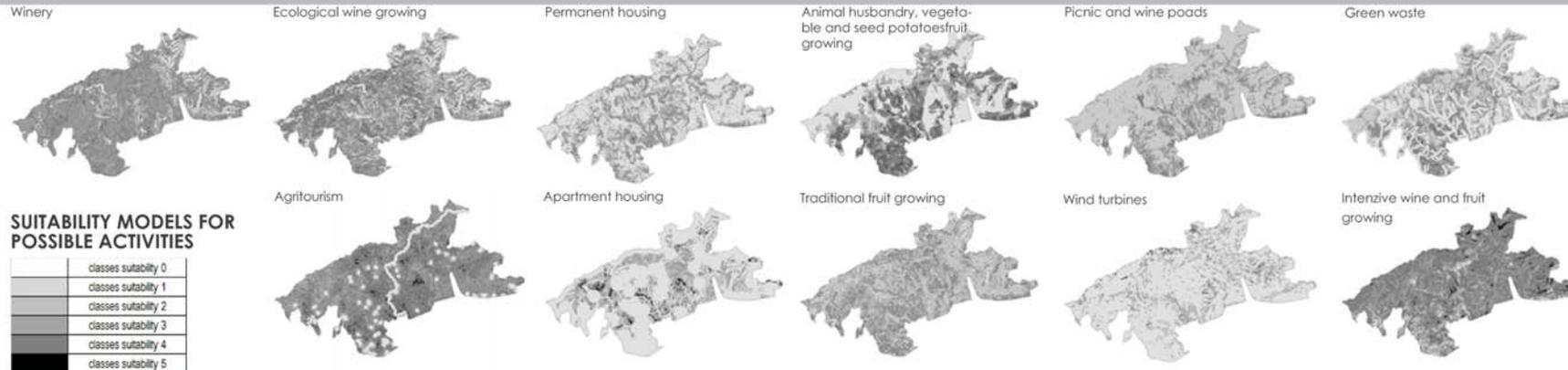
**ANALYSIS OF THE COMPATIBILITY FOR PROPOSED LAND USE ACTIVITIES**

**LEGEND**

Highly desirable
desirable
no impact
undesirable
extremely undesirable

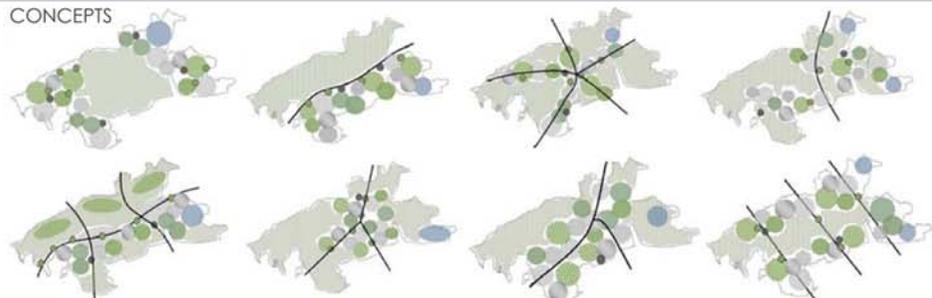
**ECONOMIC POTENTIAL - possible activities**

	ecological wine growing	winery	picnic and wine roads	agritourism	permanent housing	apartment housing	animal husbandry, vegetable and seed potatoes	traditional fruit growing	green waste	wind turbines	intensive wine and fruit growing
1. ecological wine growing	X										
2. winery		X									
3. picnic and wine roads			X								
4. agritourism				X							
5. permanent housing					X						
6. apartment housing						X					
7. animal husbandry, vegetable and seed potatoes							X				
8. traditional fruit growing								X			
9. green waste									X		
10. wind turbines										X	
11. intensive wine and fruit growing											X

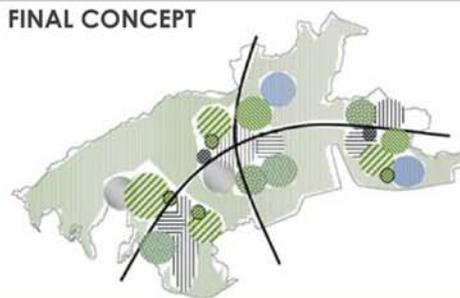




CONCEPTS

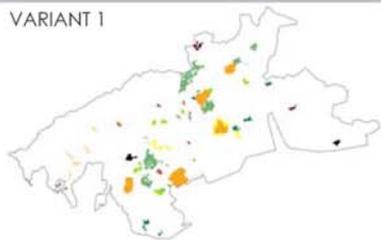


FINAL CONCEPT

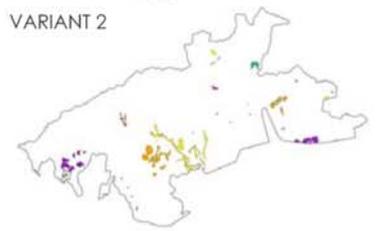


- permanent housing
- apartment housing
- agritourism
- ecological wine growing
- winery
- animal husbandry, vegetable and seed potatoes
- intensive wine and fruit growing
- traditional fruit growing
- green waste
- wind turbines

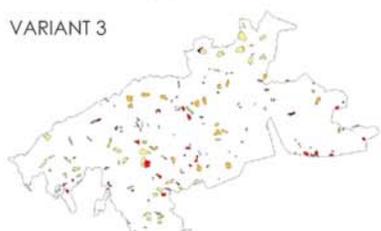
VARIANT 1



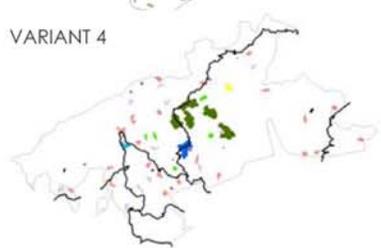
VARIANT 2



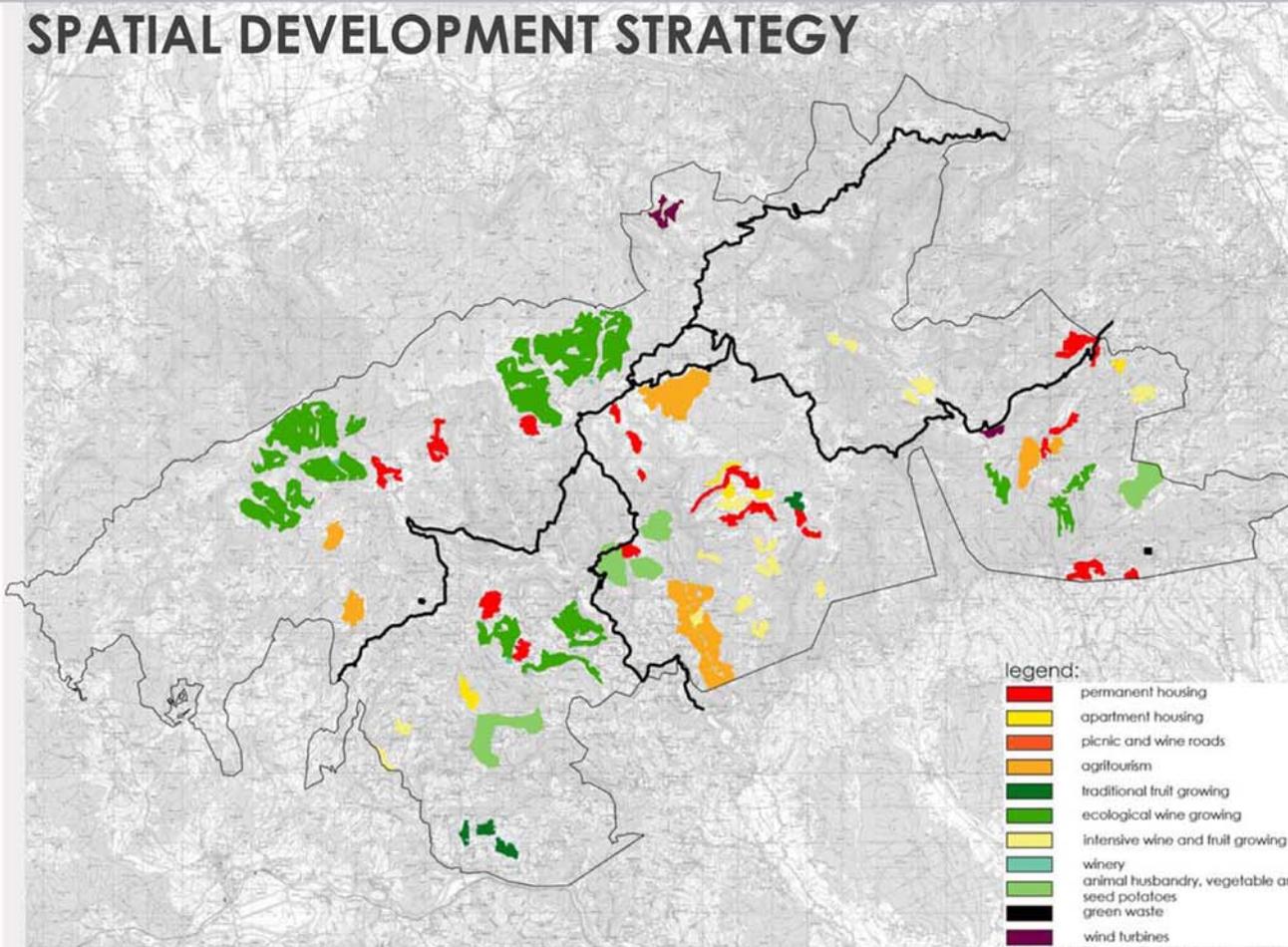
VARIANT 3



VARIANT 4



**SPATIAL DEVELOPMENT STRATEGY**



- legend:
- permanent housing
  - apartment housing
  - picnic and wine roads
  - agritourism
  - traditional fruit growing
  - ecological wine growing
  - intensive wine and fruit growing
  - winery
  - animal husbandry, vegetable and seed potatoes
  - green waste
  - wind turbines



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LANDSCAPE PROJECTS FROM SCHOOLS OF  
ARCHITECTURE AND LANDSCAPE.588 PROJECTS  
86 SCHOOLS  
32 COUNTRIES

Schools in competition

**ARGENTINA**Universidad Nacional de Rosario (9 projects)  
Universidad Nacional del Litoral, Santa Fe (9 projects)  
Universidad de Buenos Aires (9 projects)**AUSTRALIA**University of Melbourne (9 projects)  
RMIT University, Melbourne (7 projects)**AUSTRIA**

Universität für Bodenkultur Wien (3 projects)

**BOSNIA AND HERZEGOVINA**

Univerzitet u Sarajevu (7 projects)

**CANADA**

Université de Montréal (9 projects)

**CHILE**

Universidad Central de Chile, Santiago de Chile (3 projects)

**CHINA**Suzhou University of Science and Technology (10 projects)  
Tongji University, Shanghai (3 projects)**COLOMBIA**Universidad de Los Andes, Bogotá (8 projects)  
Universidad del Valle, Cali (3 projects)**CROATIA**

University of Zagreb (4 projects)

**CZECH REPUBLIC**College of Horticulture of Mělník (4 projects)  
Czech University of Life Sciences, Prague (3 projects)**FRANCE**

École Nationale Supérieure du Paysage de Versailles (10 projects)

**GERMANY**Gottfried Wilhelm Leibniz Universität Hannover (8 projects)  
Technische Universität Berlin (11 projects)  
KIT Karlsruhe Institute of Technology (8 projects)  
TUM Technische Universität München (7 projects)**GREECE**Democritus University of Thrace, Xanthi (4 projects)  
Aristotle University of Thessaloniki, School of Architecture (9 projects)  
Aristotle University of Thessaloniki, Master Landscape Architecture (10 projects)  
University of Patras (7 projects)  
NTUA National Technical University of Athens (5 projects)**6****Biennal  
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LANDSCAPE  
PRIZE****IRAN**

Shahid Beheshti University, Teheran (3 projects)

**ISRAEL**

Technion – Israel Institute of Technology, Haifa (8 projects)

**ITALY**Università degli Studi di Torino, Facoltà di Agraria (8 projects)  
Politecnico di Torino, C.I.S.D.A. (2 projects)  
Politecnico di Torino, Prima Facoltà di Architettura (10 projects)  
Politecnico di Torino, P.A.V. (2 projects)  
Politecnico di Torino, II Facoltà di Architettura (2 projects)  
Politecnico di Milano, DiAP (10 projects)  
Politecnico di Milano, Facoltà di Architettura e Società (15 projects)  
Politecnico di Milano, Facoltà di Architettura Civile (12 projects)  
Università degli Studi di Udine (7 projects)  
Università IUAV di Venezia (10 projects)  
Università degli Studi di Genova (7 projects)  
Università degli Studi di Firenze, Master (6 projects)  
Università degli Studi di Firenze, Dottorato (8 projects)  
Università degli Studi di Sassari, Alghero (9 projects)  
Università degli Studi di Cagliari (4 projects)  
Università degli Studi di Roma "La Sapienza", Prima Facoltà di Architettura (15 projects)  
Università degli Studi G. D'Annunzio Chieti Pescara (6 projects)  
Università degli Studi di Napoli Federico II (6 projects)  
Università Mediterranea degli Studi di Reggio Calabria (13 projects)  
Università degli Studi di Palermo (6 projects)  
ABADIR Accademia di Belle Arti e di Restauro Abbazia di S. Martino delle Scale, Palermo (5 projects)**MEXICO**

Universidad Nacional Autónoma de México, Ciudad de México (4 projects)

**NORWAY**Norwegian University of Life Sciences, Oslo (4 projects)  
Oslo School of Architecture and Design (9 projects)**POLAND**

Silesian University of Technology, Gliwice (8 projects)

**PORTUGAL**UTAD Universidade de Trás-os-Montes e Alto Douro, Vila Real (6 projects)  
Universidade de Évora (4 projects)**PUERTO RICO**

Universidad Politécnica de Puerto Rico, San Juan (4 projects)

**REPUBLIC OF SERBIA**

University of Belgrade (8 projects)

**SLOVAK REPUBLIC**Slovak Agricultural University in Nitra (10 projects)  
Slovak University of Technology in Bratislava (3 projects)

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SPAIN

Universidade da Coruña (6 projects)  
Universidad de Valladolid (5 projects)  
EINA Escola Disseny i Art, Barcelona (4 projects)  
Universitat Autònoma de Barcelona (4 projects)  
Universidad Camilo José Cela, Madrid (5 projects)  
UPV - Universidad Politécnica de Valencia (10 projects)  
ETSAV - Escuela Técnica Superior de Arquitectura de Valencia (3 projects)  
Universidad de Málaga (12 projects)  
Universidad de Granada (10 projects)  
Universidad de Las Palmas de Gran Canaria (10 projects)

SWEDEN

Sveriges lantbruksuniversitet, Alnarp (5 projects)

SWITZERLAND

ETH University, Zurich (3 projects)

THE NETHERLANDS

Academie van Bouwkunst Amsterdam (9 projects)  
Hogeschool Van Hall Larenstein, Velp (8 projects)

TUNISIA

7th November University at Carthage, Tunis (3 projects)

TURKEY

Akdeniz University, Antalya (8 projects)

UNITED KINGDOM

Edinburgh College of Art (5 projects)  
Manchester Metropolitan University (9 projects)  
University of Greenwich, London (1 projects)  
University of Kent (9 projects)

U.S.A.

University of Washington, Seattle (5 projects)  
University of Pennsylvania, Philadelphia (15 projects)  
Columbia University, New York (5 projects)  
Morgan State University, Baltimore (1 projects)  
Virginia Polytechnic Institute and State University, Blacksburg (3 projects)  
University of Virginia, Charlottesville (5 projects)  
Florida International University, Miami (7 projects)  
Harvard University Graduate School of Design, Cambridge (4 projects)

VENEZUELA

Universidad Simón Bolívar, Caracas (3 projects)