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Bu yayının her hakkı İTÜ Mimarlık
Fakültesi Peyzaj Mimarlığı Bölümü'ne
aittir. Ticari amaçlar için çoğaltılamaz
kopyalanamaz.

peyzaj tasarımı IV

landscape design IV

PEM 411E

Yürütücüler/ Lecturers
Prof. PhD. Gülşen Aytaç
Res. Asst. Gizem Aluçlu

SPORADIC GROWTH

IN BODRUM PENINSULA

Since the outbreak of the Covid-19 pandemic, we have been witnessing a new migratory flow of people. Previously known rural to urban migration flow is today reversed from urban to rural for a more isolated way of living to avoid the socially inflicted problems. Many small holiday towns are affected by this phenomenon. This could cause a disorder in these rural areas or it could be an opportunity to have an equally distributed population in the small and large towns in the country. The class will do research on 'what does living in a metropolitan mean versus living in a small town?' and 'the change on the city dwellers' needs, desires and behaviors'.

sporadic growth, migration, disease, urban, rural, coastal, archeological, architecture, marina, street scape, translocation, wind, fish farms, air, olives, citruses, ficus, resiliency, sustainability.

PROJECTS

I OCCUPY CISTERNs | Eyşan Yazıcı

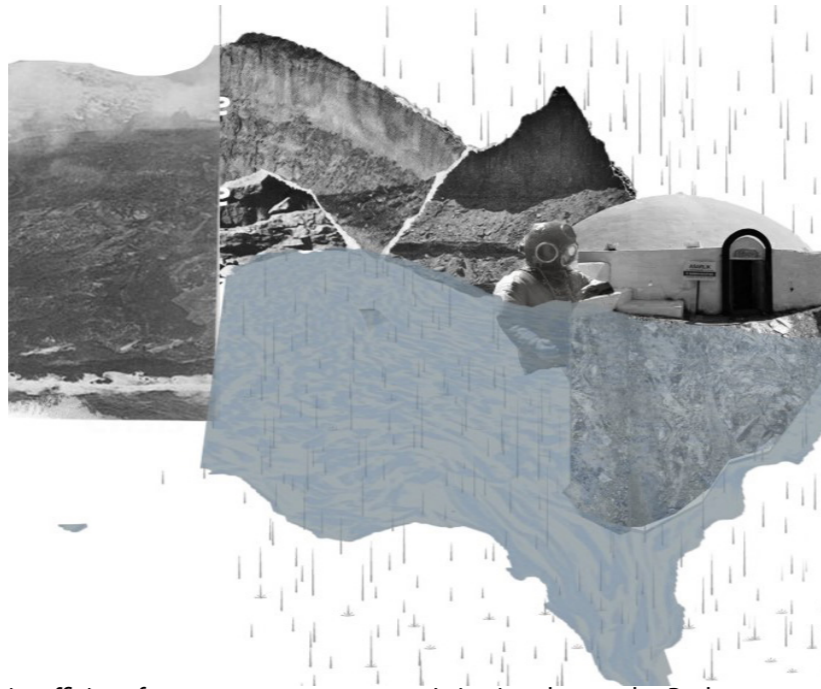
II ATMOSPHERE | Ayşenur Kaynak

III ABSENT | Eylül Akkaya

OCCUPY CISTERNS

Eyşan Yazıcı

Bodrum Peninsula is experiencing drought and flood problems. Although the region has been struggling with this situation for a long time, the peninsula remains under strong pressure only with the pandemic and overpopulation. There is a rapid migration from metropolitan cities to Bodrum. Local governments' difficulties in accessing sufficient resources for the approaching wave of people can cause infrastructure problems. The Mediterranean climate in which Bodrum is located also triggers drought. The most important problem of the city is seen as "water". Regular rainfall does not occur in the region, and climate change triggers droughts and flash floods. The location of the dams may be



insufficient for water management. Bringing water to the peninsula is costly and unsustainable. With the increasing urbanization, the management of water resources cannot be done effectively. Already a small amount of water falling on the island is mixed with the sea because it cannot be caught. This situation causes the water not to be used effectively and sustainably. For this reason, a design approach that brings social layers together with water and increases water storage has been adopted in the project.

It is aimed to make Bodrum more sustainable in terms of water use by creating a huge design whole with rain gardens, buffer zones and existing cisterns. In addition to all these, a voluntary organization is recommended for people to internalize the water situation. With this organization, it is aimed to create a public awareness by aiming that people learn from each other. Depending on the population growth, it is recommended that each house start using its own water collection system in the long run.



WATER, CLIMATE & MORE

bodrum population: (up to date)	750.000	summer population exceeds a a million
water consumption per person daily:	.224 m ³	water consumption increases on year over year.
yearly water need predictions:	2025 .32 m ³	2040 .52 m ³
	2050 .70 m ³	
total water consumption in the Peninsula is 7.8million m ³		

existing water sources

mumcular dam

5x10⁶ m³

geyikli dam

5x10⁶ m³

çamköy well

total

22x10⁶

missing
10x10⁶

CLIMATE

Bodrum has characteristics of the Mediterranean climate. It is hot and dry mostly, whereas most of the rain it receives comes in **January** and **December**.

FLORA

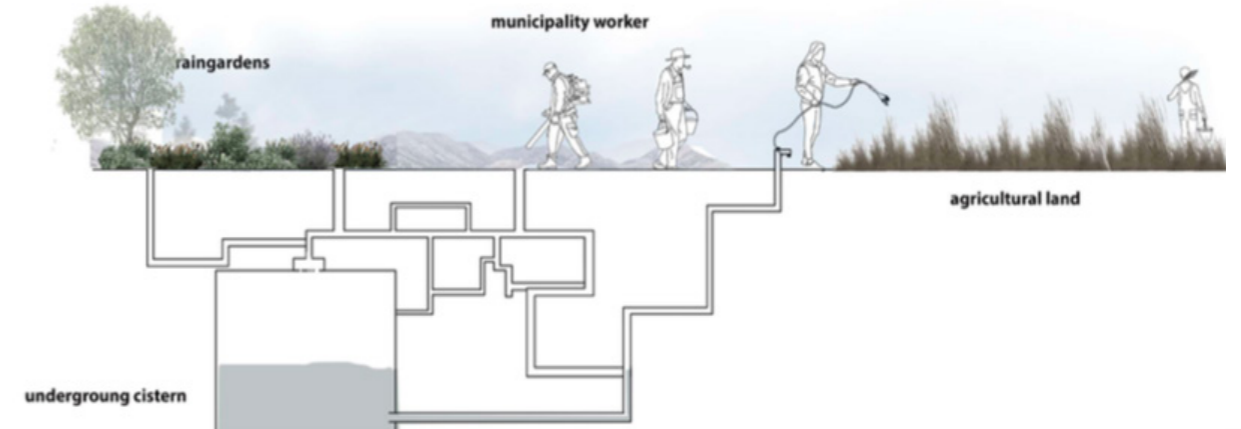
maki good for purification resistant to drought.

red pine forests

A solution was sought for this problem, which is unique to Bodrum, both in the peninsula and in Bitez-Gumbet scale. As a result, a design has been developed that includes the Kumbet Cisterns unique to Bodrum.

In the project, water is handled in three layers; Water as resource, water as social element, water as future.

HOW DO WE COLLECT WATER AND WHERE DOES IT USED?



Three Layers of Water

WATER AS A RESOURCE



Collecting rainwater in to use it in later purposes.



Purifying collected water through green systems so it can be used later by humans. Also decrease the risk of flash floods.



Purifying collected water through green systems so it can be used later by humans. Also decrease the risk of flash floods.

WATER AS A SOCIAL ELEMENT

Experience



Cisterns are a huge part of water print of Bodrum thus it connects people between yesterday and tomorrow. While also collecting water, cisterns will be used to create a water memory and awareness.

Initiative



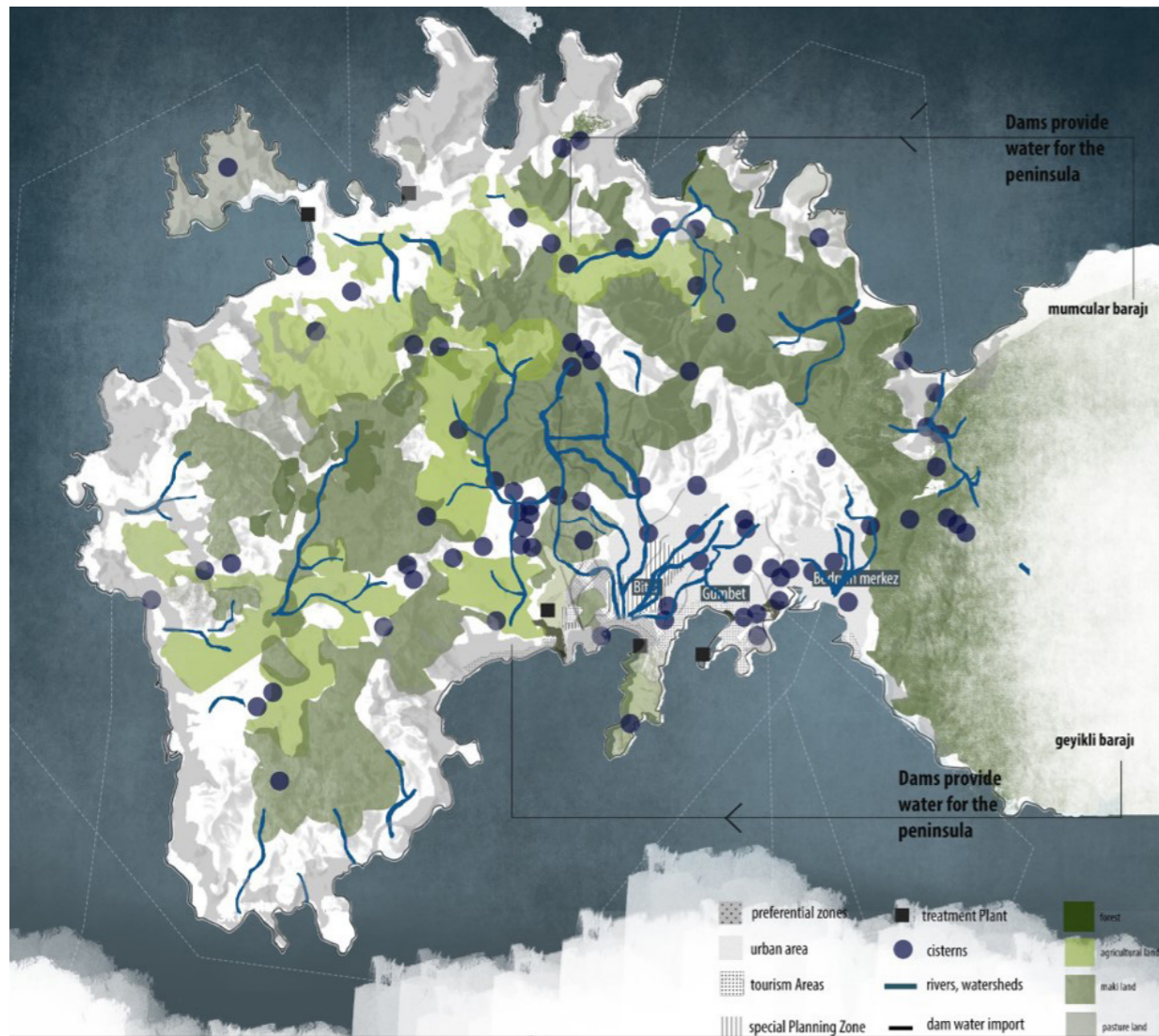
WATER AS FUTURE

climate change is real and Bodrum will effect from this proportionally. The design itself will not be sufficient in anyways to this extreme **drought threat**. only option for Bodrum is to desalinate.

Bodrum is also needs to be **depopulated**. the land has more than it can take.

vision beyond

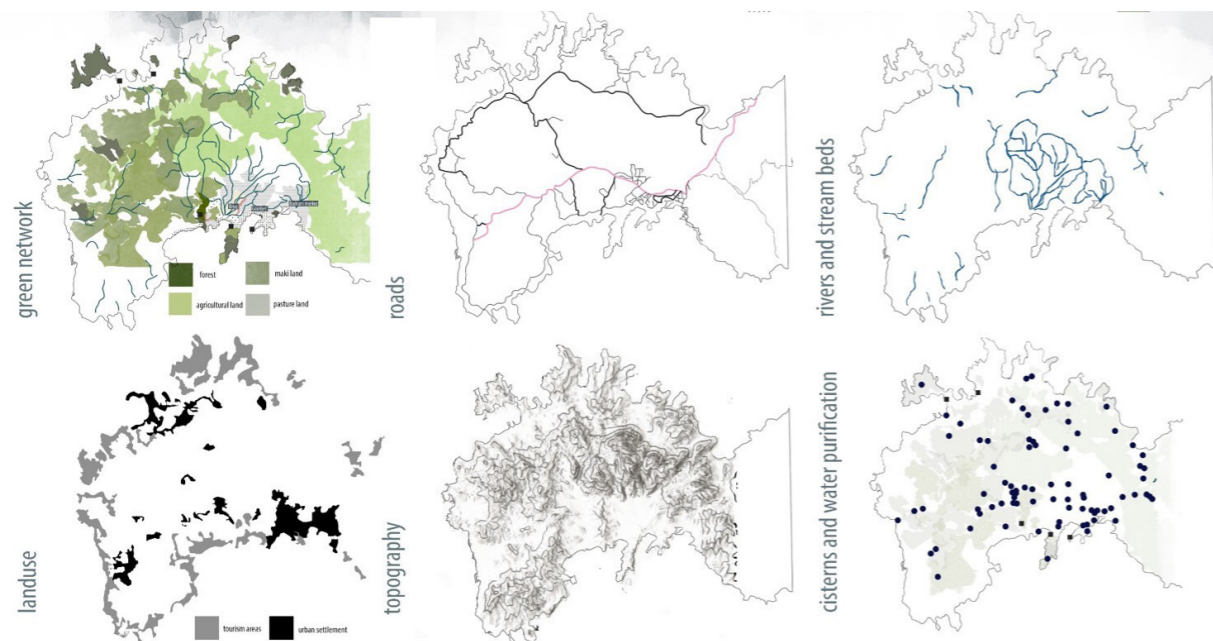




In order to activate all these layers and pour them into the design; cisterns and water collection areas (rain gardens) are used. In addition, a web page was created for the water initiative to inform the public and be active about water.

Potential cisterns and water collection areas in the Bitez-Gumbet scale were determined in the plan. A "buffer zone" has been created between the urban fabric and agricultural areas. The critical points are located according to the

water flow directions, the programs assigned to the cisterns are according to the surrounding tissue, and the buffer zone is located in such a way as to cut the flooding from the city, protect the agricultural land, and prevent greater urbanization.

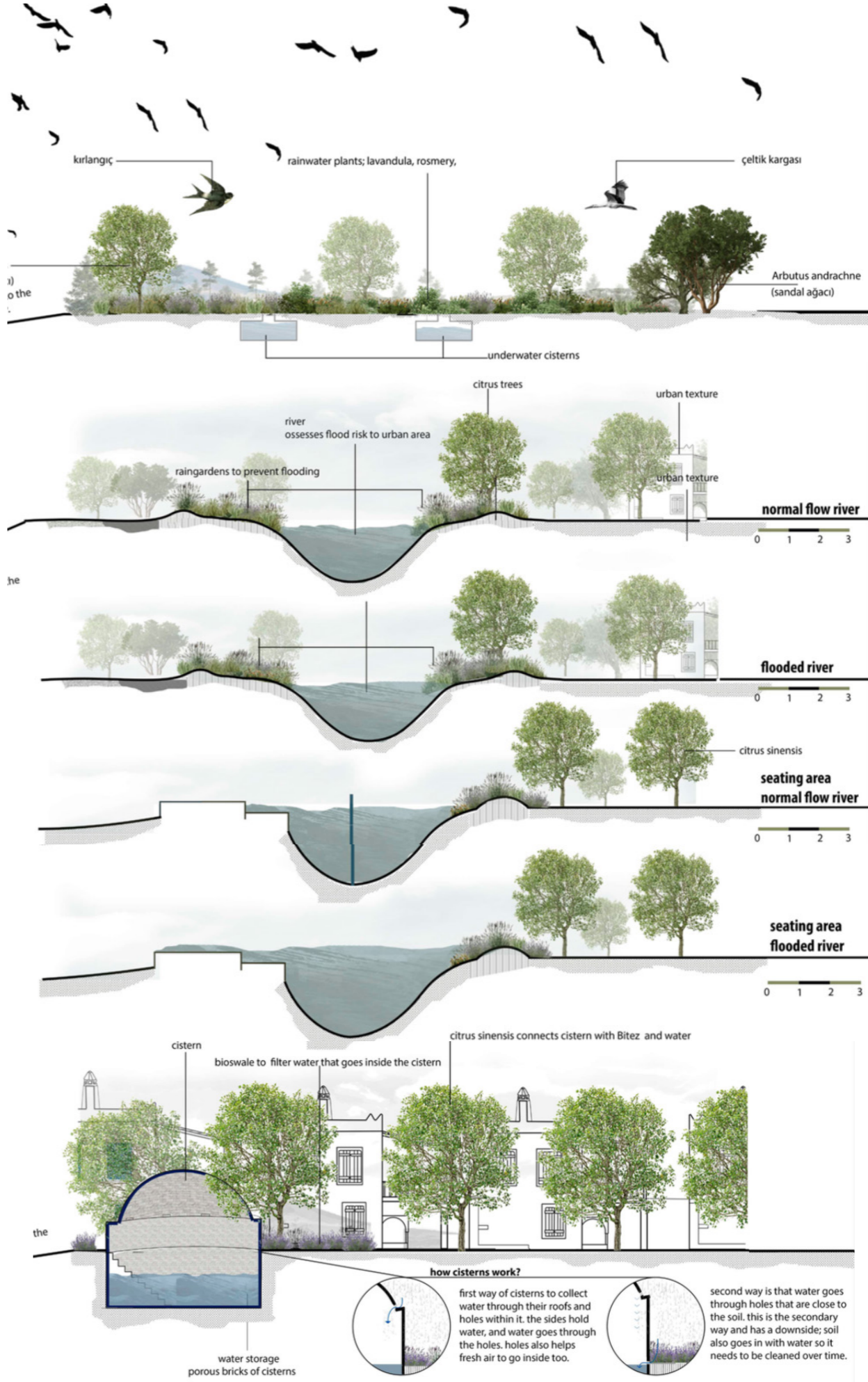


On a large scale, the focus is on the Bitez region. In the focused area, buffer zones, water, sea and cisterns were combined by appealing to the senses of sound, smell and color with trees. In this way, a holism has been achieved in the social texture of the design. The roads in the city

have been arranged. The stream was rehabilitated and a flood park was created at the starting point of the river. The beach was closed to traffic and the roads leading to the beach were vegetated to protect people from the summer heat. "Buffer" areas are positioned both to

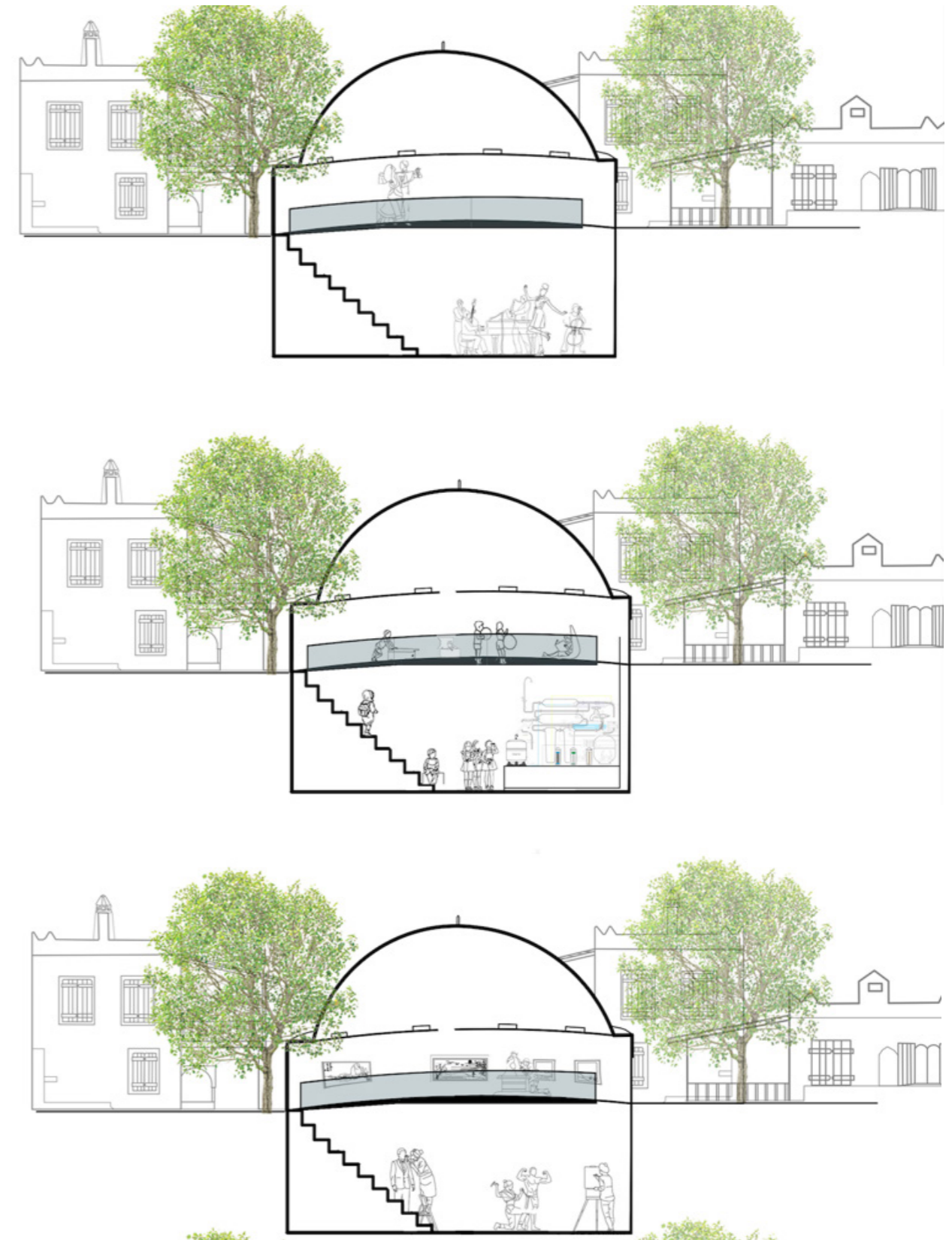
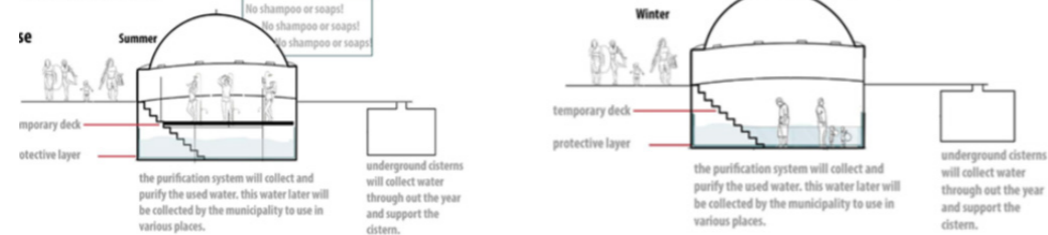
prevent the growth of the city and to provide water to the agricultural area. In order to reduce the human touches that are already too much in Bodrum, human entry to most points has been prevented by planting.







tern ferent use cases



Water as a social layer was the one with the connection to humans. Our buffer zone did not serve to humans since we see that Bodrum both in bigger and smaller scale is very much conquered by humans. Though, to make people understand the importance of water and make the design of theirs, we added a social layer. There are two points here; the very original cistern that Bodrum

peninsula has and the initiative that we have created. There are 70 or more cisterns in the peninsula 9 of them in the Bitez. Cisterns create their own neighborhoods and therefore we created a Radius from cisterns and examined what is around. From there, we assigned different programs each. The ones that are close to school had a program for kids and educational

activities. The ones that are close to the downtown had different experience programs, and the one that is close to the sea had a purpose of "reuse". This area in the winter time convert into something else. Water as initiative was a website and volunteer movement. This aimed to teach people to use water more consciously.

ATMOSPHERE

Ayşenur Kaynak

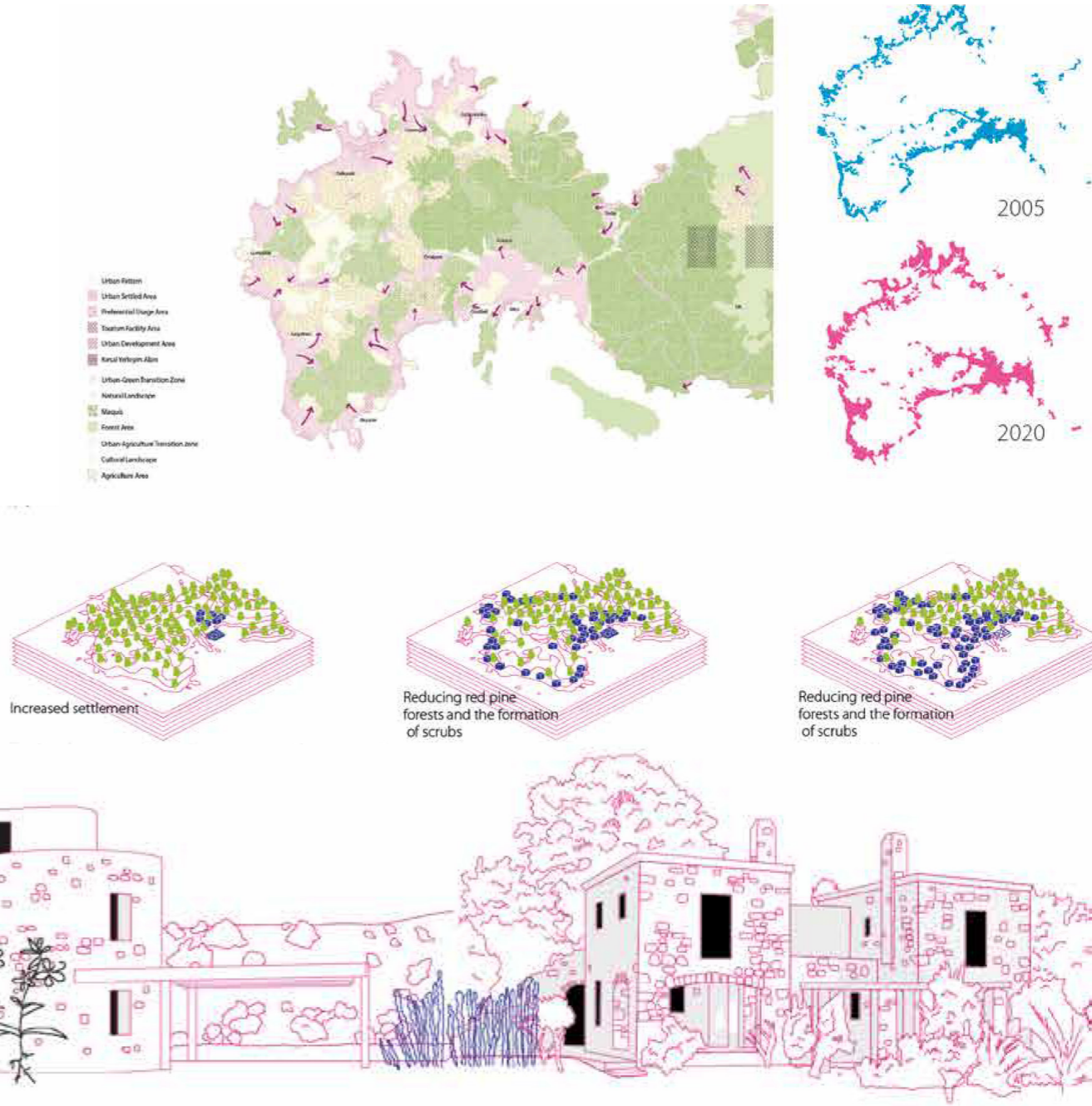
Considering the historical development of the peninsula, an urban area that has grown starting with the increase in tourism in the 1980s stands out. The urban fabric has increased, compressed, and deteriorated. As a result of overtourism, gray areas, tourism areas, residences, marinas, shopping malls have caused the natural character of the peninsula to shrink. In recent years, it has developed towards both maquis texture, red pine forests, and agricultural areas throughout the peninsula. In addition, the unique texture of the villages in Bodrum has also deteriorated because tourism activities have become widespread here as well. When we look at the growth in the sea, the damage of the

increase in fish farms and marinas to the marine ecosystem is huge. The fauna and flora of these areas especially need to be protected.

Atmosphere
These two meaningful words were deemed appropriate for the name of a project that aims to highlight and protect these features in Bodrum, which attracts attention with both its emotional and physical atmosphere.

In order to protect the physical atmosphere of Bodrum, analyzes and determinations have been made for the studies that can be done on the Bodrum peninsula, based on climate change and carbon emissions.

It refers to the cultural and social atmosphere of Bodrum. The sensual atmosphere of Bodrum is a very valuable value that has been slowly established since ancient times.



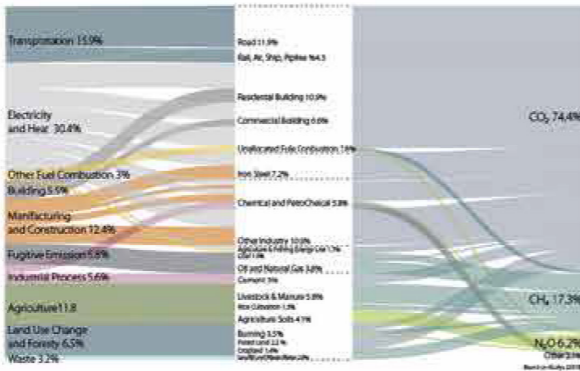
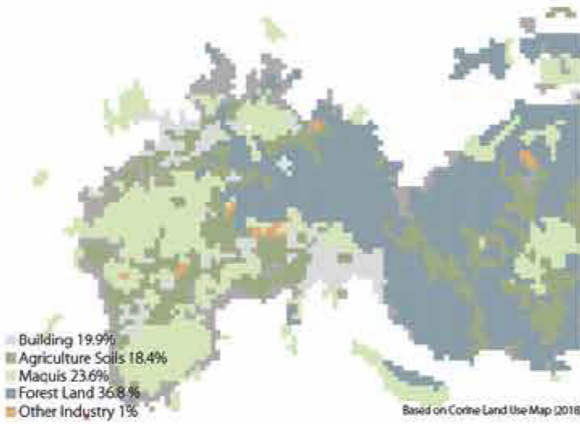
physical atmosphere

Fossil Fuel - CO₂ Zero
Production

There are more than 1000 fish farms in Bodrum bays. Only 176 of these are licensed. Hundreds of remaining fish farms were illegally made (2020). The marine ecosystem is endangered as a result of the fish farms not being licensed and inspected.

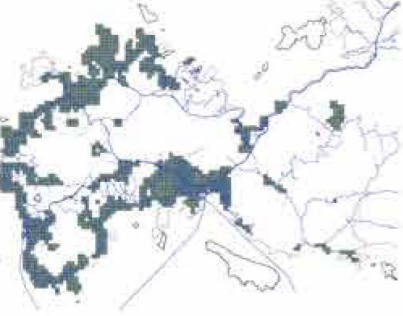


a.Agriculture
b.Fishery



According to the latest research of Ecofys, sources and industries of CO₂ emissions around the world are shown in the diagram. Using this diagram, a usage diagram has been created in order to see the sources of CO₂ emission in the Bodrum peninsula. According to this diagram, tourism activities, transportation and agriculture are the dominant CO₂ sources of the region.

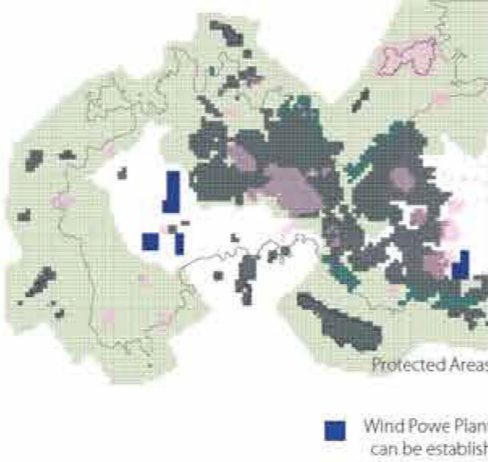
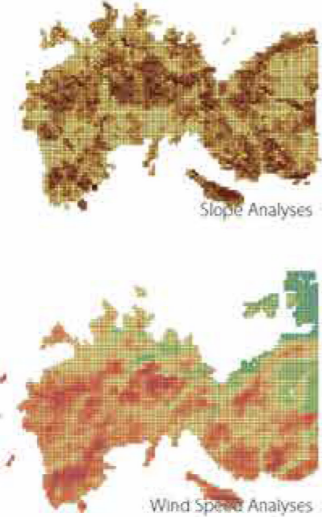
Transportation



a.Reduction of vehicle use
b. Driving an electric vehicle
c. Pedestrianization
d. Increasing the use of bicycles and electricity bicycles

Renewable Energy

Considering the wind power of the peninsula, wind speed analysis and slope analysis have been performed, considering that it is an area where a wind power plant can be installed for clean energy. With this analysis data, the protected areas in the region are combined with the regions where wind power plants cannot be installed, such as residential and tourism areas. As a result, it has been determined that a wind power plant can be established in blue marked places.

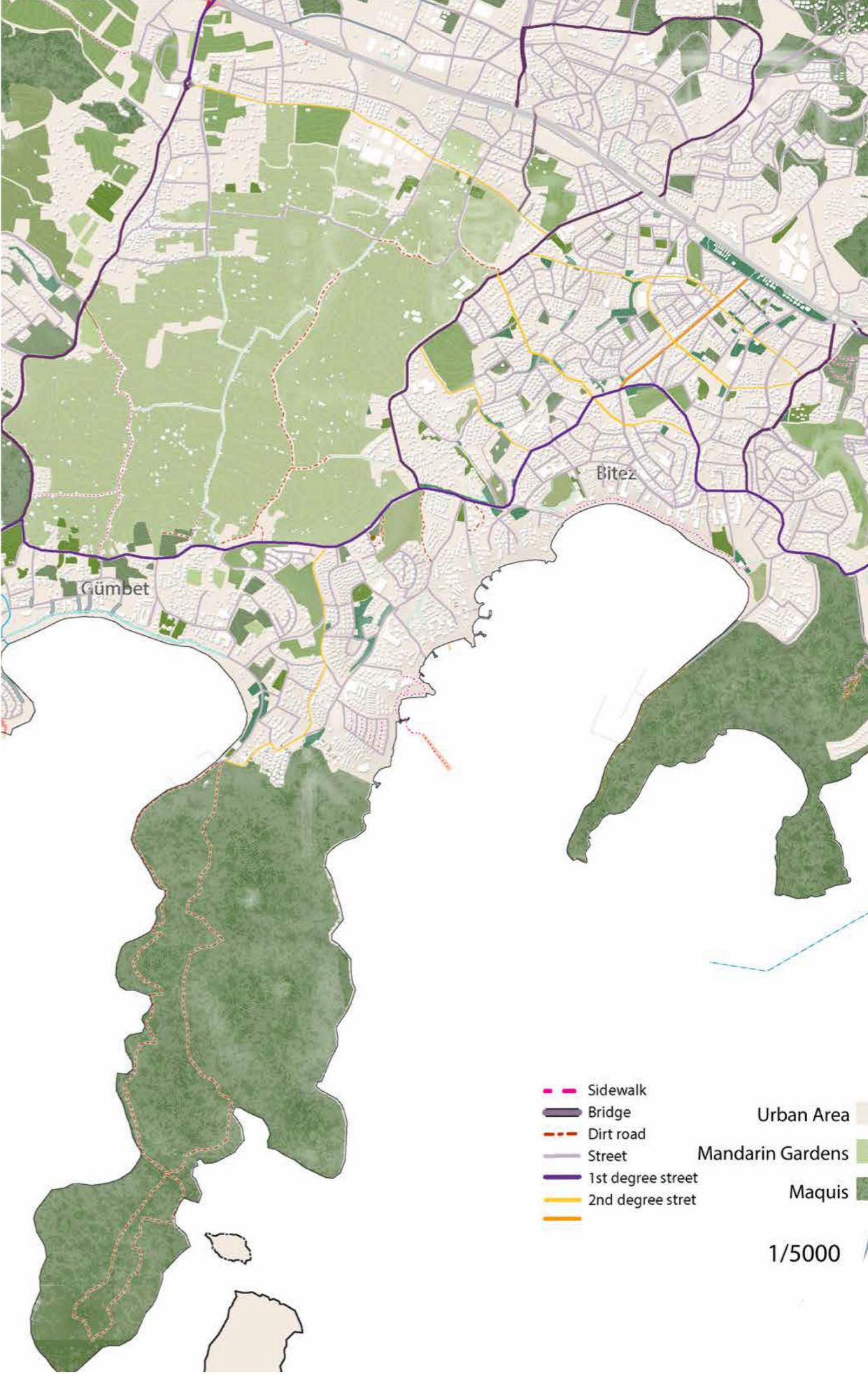


Physical Atmosphere

In order to protect the physical atmosphere of Bodrum, analyzes such as slope analysis and wind analysis were made throughout the Bodrum peninsula and the areas where wind power plants could be established throughout the peninsula were selected. It was decided to install solar power plants to help large hotels meet their energy. In order to become CO₂ Zero, a major pedestrianization in transportation has been proposed in the 5000

future. In this context, analyzes such as slope analysis and wind analysis were made throughout the Bodrum peninsula and the areas where wind power plants could be established throughout the peninsula were selected. It was decided to install solar power plants to help large hotels meet their energy. In order to become CO₂ Zero, a major pedestrianization in transportation has been proposed in the 5000

Bitez-Gumbet area. In addition to this expansion, parking areas have been transformed into green areas. In this way, while fossil fuel consumption in the area is reduced, green corridors are also created. In addition, it has been proposed to increase the fisheries inspections, especially in the northern parts of Bodrum, and to tighten the license conditions.



- Sidewalk
- Bridge
- Dirt road
- Street
- 1st degree street
- 2nd degree street
- Urban Area
- Mandarin Gardens
- Maquis

Atmosphere

2020-2021 Landscape Design IV
Prof. Gülşen Aytaç
Res. Asst. Gizem Aluçlu

Ayşenur Kaynak 020160508

Bitez/Bodrum



A new street layout has been created to contribute to the CO2 Zero target by reducing the use of fossil vehicles above the 1/5000 plan. According to this order, the highway, its service roads, and the streets to be pedestrianized are marked. In addition, since the vehicle roads in the area were reduced, bioswale areas were added and old parking lots were turned into green areas. It is aimed to regain the balance disturbed by the structural areas in

the city. The activities and designs to be carried out in the increasing green areas will contribute to the cultural identity of Bodrum. The locations of the bioswales to be built on a 1/1000 plan and areas with different functions have been determined. While the street arrangements are being made again, although separate designs are made for each street, steps have been taken to increase the number of pedestrians and cyclists. Vehicle

access to Bitez has been blocked and parking areas have been marked on the highway. The user who left his car is provided to walk and this walk is accompanied by plants and trees. Roadside bioswale areas are important both for preventing floods and for the continuation of Bodrum's biodiversity. In addition, the plants selected from the natural fauna will both feed the natural character and be of great benefit to the area, as they will retain

carbon. In addition, it will reduce the rising temperature in the city. By enlarging the maquis areas to the right of the specified area, the maquis tissue was brought closer to the actively used area. This sensual atmosphere is valuable because the walking path in the maquis texture and the limited seating areas allow users to experience the landscape characters here. It is also valuable for the continuation of biodiversity.

Atmosphere

2020-2021 Landscape Design IV
Prof. Gülşen Aytaç
Res. Asst. Gizem Aluçlu

Ayşenür Kaynak 020160508

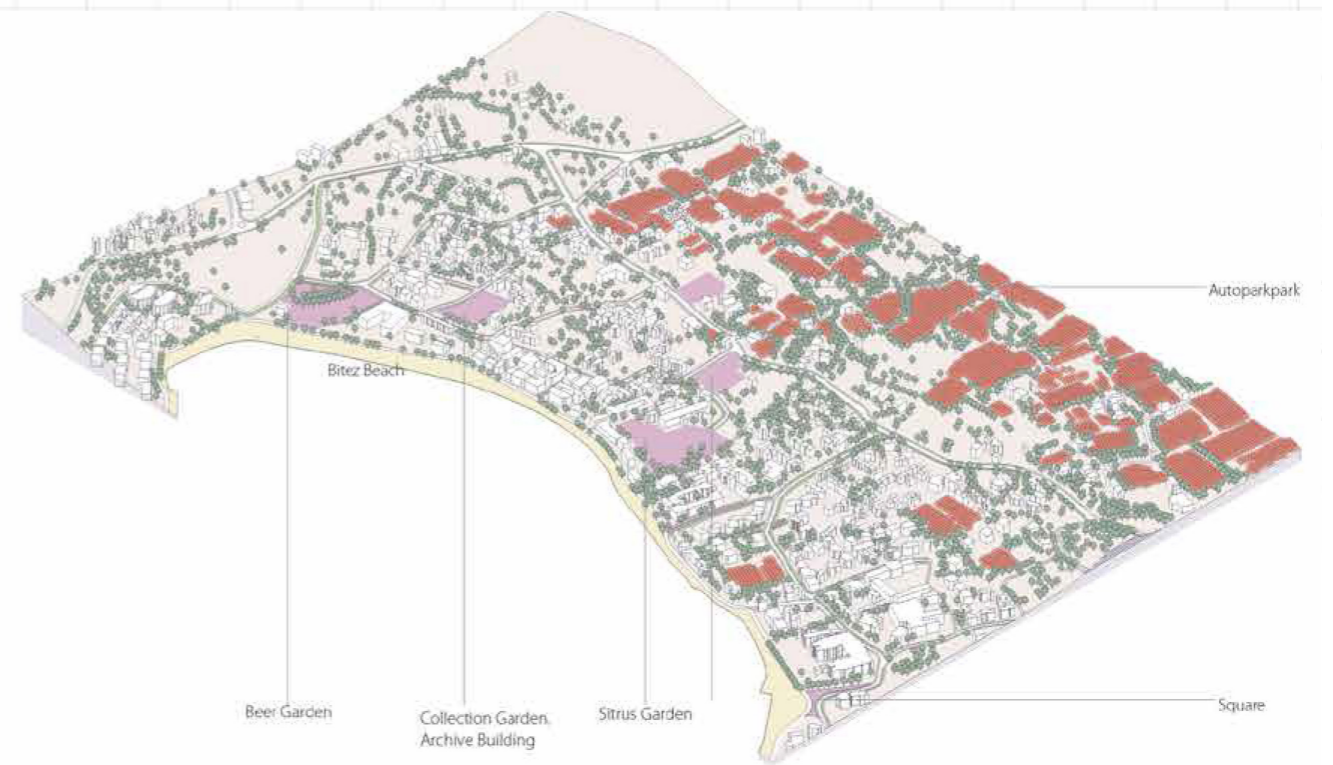


Sensual Atmosphere

It refers to the cultural and social atmosphere of Bodrum. The sensual atmosphere of Bodrum is a very valuable value that has been slowly established since ancient times. Many civilizations have come and gone from Bodrum, which has legends that it was founded by the goddess Artemisia. These have had significant effects on life, language and place names. Later, people who had very important influences, such

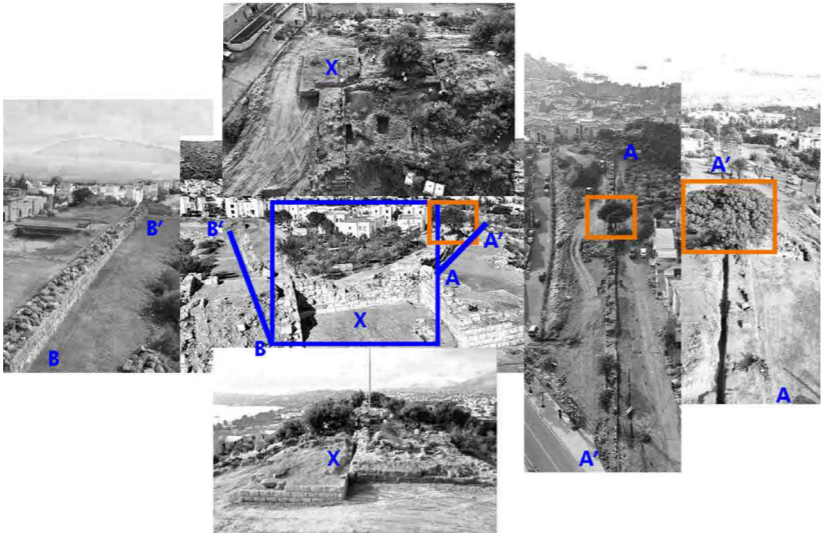
as Cevat Şakir, came here. There are also very important elements other than the tourism and entertainment sector that come to mind when Bodrum is mentioned. In the project, nature, history, and cultural aspects were chosen as the elements to be studied to highlight and remind the sensual atmosphere. When Bodrum is examined, the topography, fauna, and flora of the area, sea, and freshwater resources

create this natural atmosphere. These are endangered substances. In the historical part, excavations are carried out throughout the peninsula. Promoting them more will help them appear more. The importance of archiving studies for cultural and social values was emphasized. These works include plants, architecture, history, etc. should be increased accordingly.



ABSENT
Eylül Akkaya

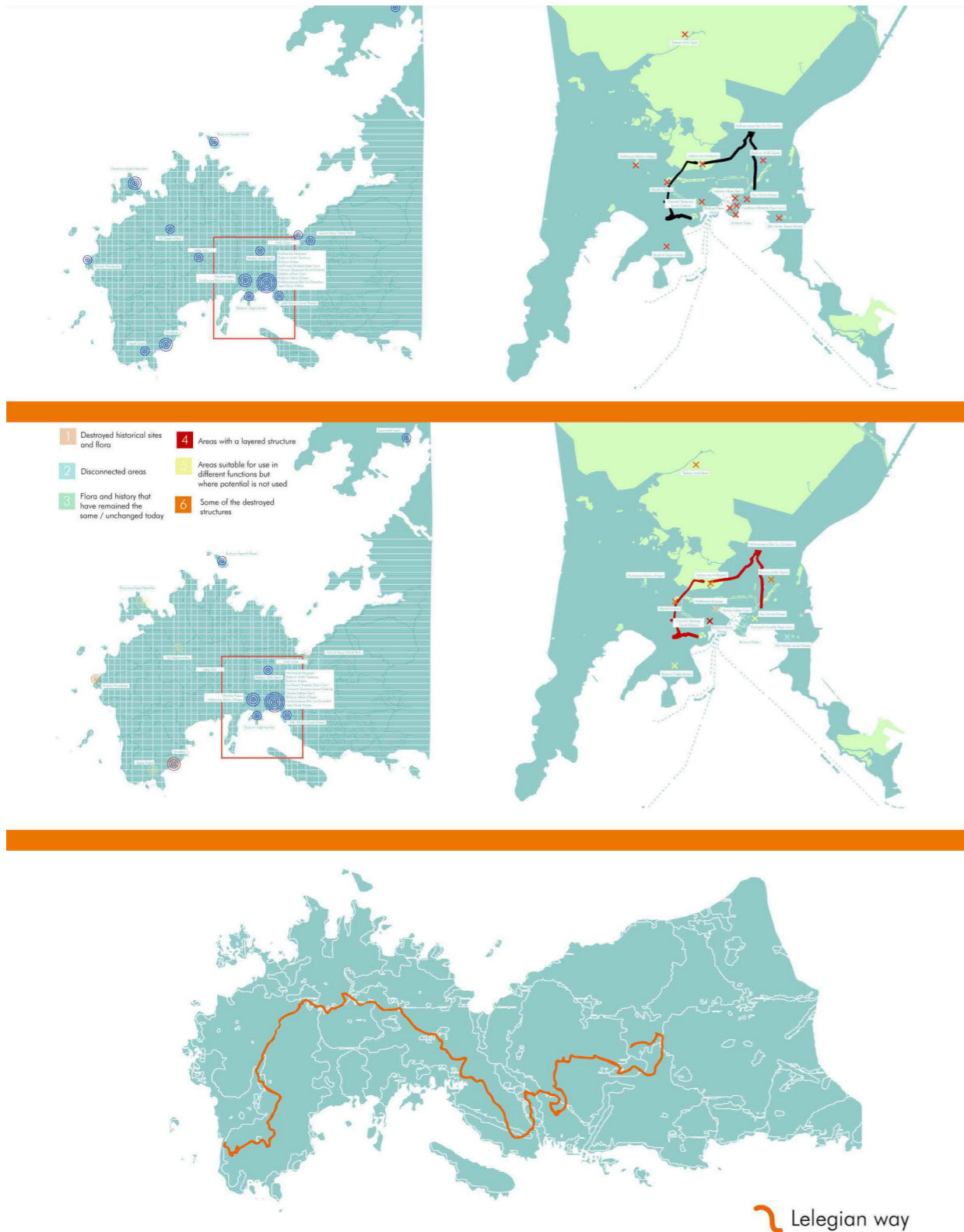
Bodrum gives the chance to discuss more than one subject in terms of history, culture and tourism. This project was developed by considering the history and flora of Bodrum. First, a sociological study of Bodrum was made and it was determined why people came to Bodrum. It turned out that those with family ties in general came to escape the bustle of the city for good. Bodrum, which receives even more people than its capacity in the summer, comes to the fore with its tourism. However, more housing is being built and its history and flora are being damaged because they are the first to be sacrificed. It is dominating tourism more and more daybydaybysuppressingratherthan strengthening its history. As a result, a historical research was carried out. As a result of this historical research, it was seen that many civilizations



passed through Bodrum and each passing civilization either left a work or destroyed that work. What has emerged as a result of this research is that Bodrum has a structure that spreads all over the place in terms of history, but this structure was not properly preserved in the past and remained under the ground. Most of the historical artifacts (for example, the west wall walls, windmills) were not restored, they were destroyed and remained under the ground. Although some buildings were destroyed in the wars, they were restored and re-emerged. This has left a stratified history today. The Halicarnassus

mausoleum is one of the works that has been completely destroyed and nothing remains. Bodrum Castle is one of the most popular works because it is located in the center and on the beach, but other works do not attract this attention. Work has recently been initiated for the Western Walls of Halicarnassus, and the project of clearing the soil, garbage, and plants has been taken into action. Some parts have already been unearthed, although not all of them can be revealed due to the fact that some parts remain in the city. This project also developed by taking the Western Walls of Halicarnassus as the center.

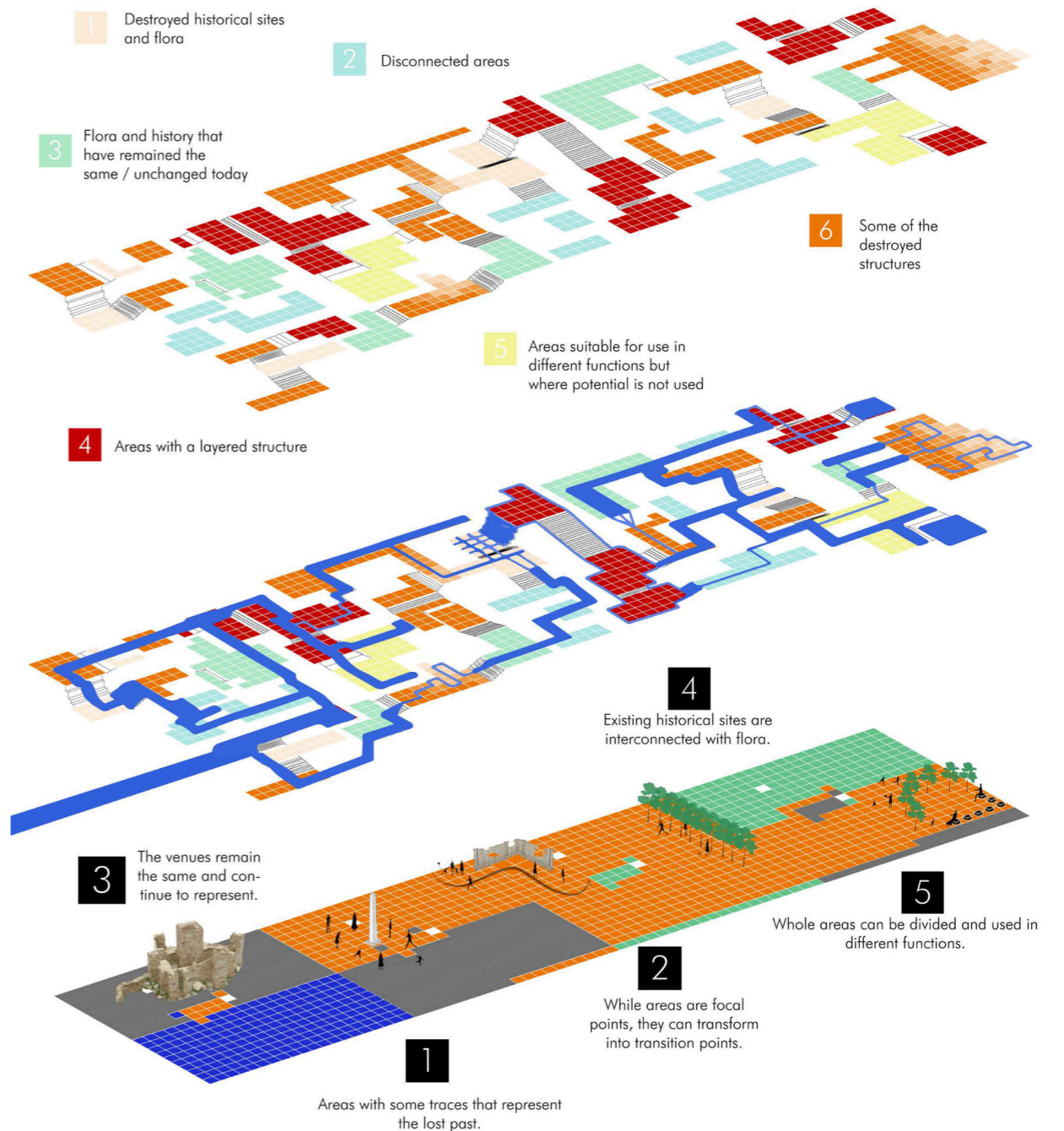




Although Bodrum is now completely under the rule of maquis, it has a rich flora both with the plants brought by the Fisherman of Halicarnassus and with the Mediterranean vegetation. While *Pinus brutias* were dense in the past, it has decreased significantly over time due to urbanization. The flora has changed in a different direction, with the fisherman of Halicarnassus bringing various plants. *Bougainvillea glabras* now cover the interior of the city. However, *Citrus* gardens

are also seen in places where the city is less frequent. Fisherman of Halicarnassus brought the *Citrus*. As a result of these two issues, the main idea for the project emerged. Bodrum's history and flora have undergone many changes from past to present. In this change, there are factors that disappear completely, undergo changes and continue to exist. The loop has created a pattern within itself. Looking at the plan, there is a history scattered all over Bodrum. There are maquis

emerging in every space in the city, and there are *bougainvillea* that exist in integration with these maquis. Along with these, a pattern emerged in the urban environment, and everywhere turned into regions with layers. As a result of all these analyzes, Bodrum flora and history are divided under certain headings. Disappearing historical sites and flora are divided into titles as disconnected, disconnected areas, unchanged flora and historical sites, stratified areas, areas with unused

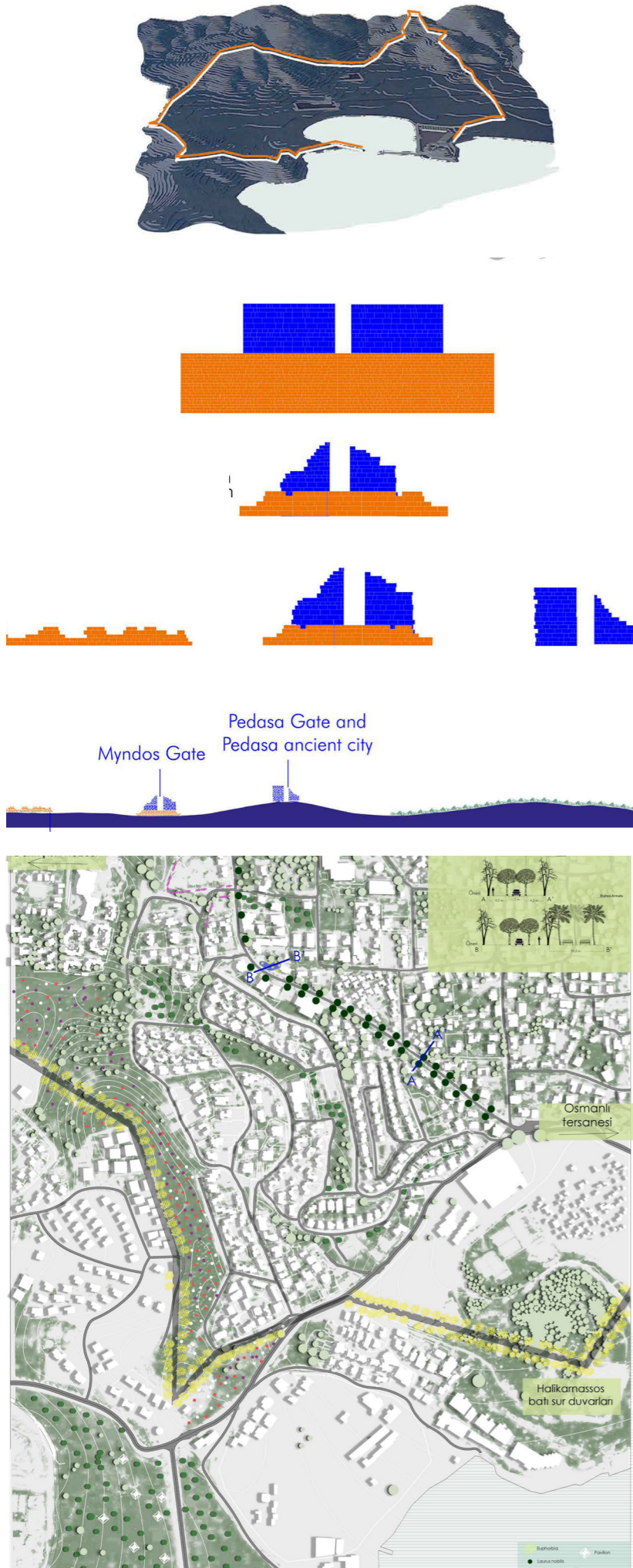


potential, and finally, partially destroyed areas. According to these titles, historical places are marked both on the scale of the Muğla map and on the scale of Bodrum. According to the markings, the focus was on the area where the project would develop.

The Absent project has emerged as a name as a result of existing and existing elements. Solutions were sought according to the headings separated in the analysis phase. At this point, the support of the existing flora and historical artifacts is required because the elements

that are in sight should reveal and shed light on the other elements that are in the background. In the 1/5000 plan, a chain-like network was established among the maquis that spread primarily throughout the city and appeared everywhere. *Pinus brutia* augmentation studies have also been carried out in high and near coastal areas. Thus, the flora that existed in the past was revealed. It was decided to have a walking route next to the western walls. Again, as in the city itself, this walking route is supported by maquis. The most important situation at this stage is to understand the places

where the walls are located and to analyze the topography. A connection with the maquis was established between the western city walls and the windmills, which are in danger of extinction. In order to draw attention to the windmills region, it was decided not to use some structures. It was decided to take the historical places away from the city by ring. Since the fisherman of Halicarnassus provided the most important change for Bodrum in terms of flora, it was decided to have an experience on the way to the Museum of Fisherman of Halicarnassus.



It was decided to completely support the Halicarnassus Western Walls area with maquis. A walking route was placed inside this scrub area. The roads in the city were rearranged, the parking areas were removed, and the sidewalks were widened instead, creating an area where people could walk more comfortably. On the same road, a route was developed to the Fisherman of Halicarnassus museum by changing the feelings of people with the flora. This route started with the Mediterranean plants found in Bodrum's past, gradually turning into palm trees, then bougainvillea, and finally citrus. It was decided to use the view by adding trees to provide shade on the windmills road. Restoration decision was taken for the windmills. Added pavilions to experience a flush pattern in the southwest direction that won't overwhelm the windmills. It was used as a scenic place both to attract attention while passing the road under the hill where the windmills are located, and to relax and cool off for the people who go there. A walking route was designed along with the city walls. 3 different entrances were placed in this area. The car park was placed because the entrance in the middle is connected by a vehicle. Crossings are provided for both vehicles and pedestrians at this entrance. A path was provided to an area covered with groundcovers for visitors coming out from the right side of the car park, and paths were established with different materials, connecting to the main walking path. Along the main route, zones separated by grating gargoyle plates were created. The reason why the cortens are grided is to allow groundcovers to come out of them. The square has been established in a wide area above, which has both a view and the fortification walls. There is a venue for the needs of tourists. Here, they can both meet their needs and watch the scenery. The route continued with the same pattern until the Myndos Gate. The area where the Myndos gate is covered with Citruses and is designed to give tourists more than one experience. Compacted soil was used in the walking parts of the area.

