

INTRODUCTION

The Solovetsky archipelago is a region of vast cultural, historic and religious values. It has been an important part of the history of Russia including prosperous periods in the 19th century during the reign of Alexander III, who heavily contributed to the archipelago's rapid development, preserving its religious prosperity and peace. However, after the foundation of the Soviet Union in the 20th century the archipelago was invaded by the Red Army and the Solovetsky monastery was confiscated and religion was banned. This period has been most destructive in the history of the Solovetsky archipelago. It was violently converted into forced labour camps (GULAG), which were the destination for political prisoners who actively opposed the Soviet regime. During Soviet era the islands had several different militaristic functions each destroying the essence of the values that the islands used to possess as an untouched natural landscape and a religious hideout.

After the collapse of the Soviet Union religious activity on the archipelago was restored but the rebuilding of the island was a slow process. In one hand, this was the result of the terrible events in the recent history - the Solovetsky archipelago was carrying a bad reputation and was therefore an unpopular destination. The remote location of the islands made any kind of transportation and connection difficult and therefore unattractive. On the other hand, the reasons for the moderate development was caused by the conflict between the church and the government. The islands had always been managed by the monastery, which wanted the archipelago to be a religious territory and to be only visited by pilgrims but after the disappearance of the Soviet Union the power over the islands was divided by the church and the government. They found it difficult to agree on different decisions that needed to be implemented on the islands and that is what made the development of the islands nearly impossible.

After a 2-decade long rally of discussions the church and the government have succeeded in reaching an understanding between one another and as a result the municipality of the Arkhangelsk region has decided to allocate funds for the development of major infrastructural issues on the archipelago. It is commonly understood that in order to enhance the vitality of the territory, certain improvements have to be carried out which in return will provide better living standards to the local people and also increase the public attention and travels to the islands.

The cultural and historic importance of the Solovetsky archipelago has been acknowledged by different professionals and institutions all over the world. It has been enlisted in the World Heritage List by UNESCO in 1992 and it is proudly portrayed on the back side of the Bank of Russia's 100-ruble note. Solovetsky complex is an outstanding monument representing the apogee of the Russian Orthodox fortitude and courage; outstanding example of a monastic settlement in the harsh conditions of Northern Europe, is a perfect example of faith, determination and courage to the religious communities of the late Middle Ages¹. Despite the controversial history of the archipelago, it is still widely recognised as a unique destination where both religious and non-religious people can embark on a spiritual journey among the picturesque scenery of the untouched Solovetsky nature.

The Solovetsky islands are primarily associated with spirituality and religion. A lot of monks went to the Solovetsky monastery because the archipelago is considered to be a holy land. Religious people believe that a lot of miracles took place on the island and therefore for them it is a sacred place. Religion is a special part of the islands on a daily basis which defines the archipelago as a spiritual destination. Full preservation of the religious quality is an objective in our thesis project. We desire to enable people to experience the ambience of the religious presence at the islands.

The islands have a wide variety of traits which can be exposed to a wide-ranging audiences that can have an important influence on the economic improvement of the archipelago. We believe that given the right strategy and tools, the archipelago's popularity can be improved with a series of small interventions which will increase the quality of stay for the visitors of the islands. We want to discover and emphasise on the islands' distinctive qualities which in the long run will increase the income, the mood and the quality of life of the community.

In our thesis project we will set out to investigate the current cultural, economic and social status of the Solovetsky archipelago. We will explore for possible answers to how to sustainably improve the islands. Different natural, religious and cultural qualities of the island have a great potential to boost the local quality of life. Our goal is to build up a strategic plan of development to reverse the on-going decaying process and bring the archipelago to an improving state.

TABLE OF CONTENTS

Introduction	3
--------------	---

1 | **CHAPTER | RESEARCH**

Location introduction white sea. archipelago. government. how to get	5
Historical overview timetable of events. original structure of sketes	7
Geographical analysis/statistics topography. forests. lakes. infrastructure	10
Section study of the island solovetsky. sekirnaya. pechak	17
Classification of the resources economy. climate. energetics. soil. building material	24
People of the Solovetsky island	32

2 | **CHAPTER | REFLECTION**

Solovetsky components	5
Religion elements table description. map	7
Memory elements table description. map.	10
Nature elements table description. map.	17

Synthesize of all elements overall structure. selected areas	45
-----------------------------------------------------------------	----

3 | **CHAPTER | STRATEGY**

Intervention areas strong nodes. degrading villages. abandoned settlements. landscape sightseeing	5
Strategic approach concept. users. functions	7
Intervention inventarisation	10
Program masterplan of the island places. connections. energy	17
Views of the program	24

4 | **CHAPTER | ARCHITECTURE**

Accommodation cabins seashore cabin. forest cabin. floating cabin	5
Harbour visiting center	7
Sustainable justification energy requirements. renewable solutions	10
Project documentation energy requirements. renewable solutions	100

5 | **CHAPTER I** CONCLUSION

| Conclusion 85

6 | **EXTRAS I**

| Definitions 5

| References 7

table description. map

| Impressions of the archipelago 10

table description. map.



RESEARCH
SOLOVETSKY ARCHIPELAGO



LOCATION INTRODUCTION

65.02° N, 35.84° E

The Solovetsky archipelago is situated in the north-western part of Russia in the western part of the White Sea at the entrance of the Onega Bay. The islands are the biggest complex in the White Sea and they belong to the Far North area and are located approximately 165 km away from the Arctic Circle.

The Solovetsky archipelago by territorial division belongs to the Solovetsky cadastral area that is included in the Primorsky Municipal District of the Arkhangelsk region. The Arkhangelsk region contains the Nenets Autonomous District, the islands New Earth and Franz Josef Land. This region is the biggest province in the European part of the Russian Federation and its size is comparable to either Ukraine or France. It is the primary port in the White Sea and for a considerable time in Russia's history it served as the dominant bay of maritime trade.

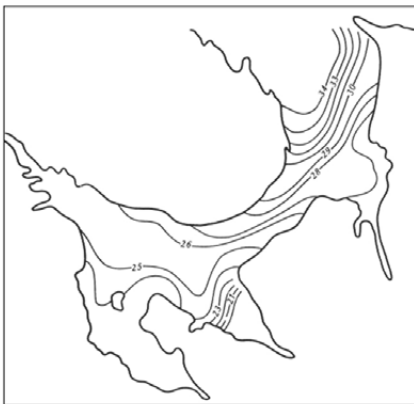
The territory of the region of Arkhangelsk on the mainland has a border with the Republic of Karelia in the west, Vologodekoy and Kirovekoy areas in the south, with the Komi Republic in the south and south-east, with the Tyumen region in the east. On the north-west side of the territory it shares a sea border with the Murmansk region¹. The shores of the Arkhangelsk region are washed by the White Sea, the Barents Sea and the Kara Sea.

Aquatorium of the White Sea.

The most important sea in the Solovetsky archipelago region is the White Sea, which is the inlet of the Barents Sea. The White Sea is considered to be a territory of the Russian Federation and is even considered to be one of the internal water systems of the nation². According to administrative rights the White Sea is shared between the regions of Arkhangelsk, Murmansk Oblast and the Republic of Karelia.

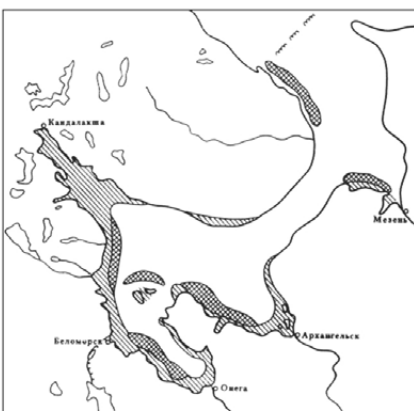
In the Norse mythology the White Sea is referred to as the 'Gandvik', which is also known as the 'Bay of Snakes' due to its twisting shape of the coastline³. The White Sea consists of a number of bays and gulfs which are all in connection with the funnel-shaped Gorlo Strait that opens up to the Barents Sea, it is called 'gorlo (Russian: Горло)' because of its shape and in Russian language it stands for 'throat'.





1.

Salinity levels



2.

- 1. drifting ice
- 2. polynya
- 3. clean water
- 4. boundary of floating ice

Ice coverage



3.

- 1. semidiurnal
- 2. shallow semidiurnal

Currents directions

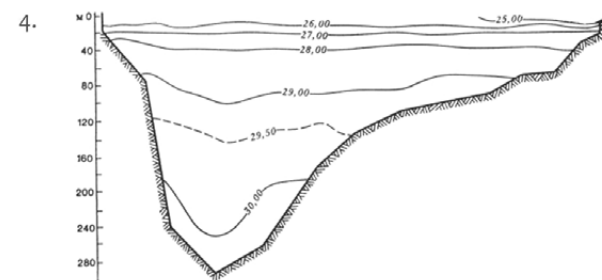


65.02° N, 35.84° E

In the western part of the White Sea is located the Kandalaksha Gulf which has a deepest point at around 340 meters below sea level, whereas the average depth of the White Sea is around 60 meters below sea level. The southernmost and also home to the Solovetsky islands is the Onega Bay. It is a relatively shallow bay with an average depth of only 16 meters below sea level. This is also the reason why sometimes during the winter period it can freeze over¹.

In the south-eastern part of the White Sea there lies the Dvina Bay. This bay receives the Northern Dvina River at the region's capital of Arkhangelsk. Also a relatively shallow bay with a large number of small islands created by the streams of the Northern Dvina River. The fourth bay is called the Mezen Bay. It is the easternmost and furthest bay from Solovki. The tides in the Mezen Bay reach up to 10 meters, which is the highest of the White Sea². This is also the only bay which is crossed by the Arctic Circle.

The seasonal changes have significant effect on the temperatures of the White Sea water. The temperature varies immensely from one part of the White Sea to another. In summer the water temperature in the bays can reach up to 16 degrees while at the same time the temperature at the Gorlo Strait does not exceed 9 degrees. The tidal movements of the cold Barents Sea mixes the temperatures of the water in the northern part of the White Sea. In winter the temperatures of different parts of the White Sea are more comparable ranging from -2 to -0.5 degrees. Deep water layers as low as 50 meters below sea level have an annually stable temperature from -1 to +1.5 degrees.



Territorial section

65.02° N, 35.84° E

The White Sea is constantly supplied with streaming fresh water from the surrounding rivers. The majority of the freshwater supply arrives in May when warmer weather in spring sets in and starts to melt the snow. Therefore, the salinity of the White Sea is relatively low. The average salinity of the top layer (5-10 meters) of the Onega Bay is around 23 ‰ (parts per thousand) whereas the salinity of the Kandalaksha Gulf water reaches 27 ‰. The lowest salinity of the White Sea is in the Dvina Bay at the mouth of the Northern Dvina River where the salinity can drop down to 10-12‰. The salinity of the central part of the White Sea is at around 30 ‰ and it increases towards the Gorlo Strait up to 34 ‰ where due to the tidal effect the White Sea releases its salinity into the Barents Sea¹.

The White Sea is strongly influenced by the repeated tidal currents. At Solovki the difference of tide and ebb is up to 2 meters, so the island is surrounded by a well-developed littoral zone. The water of the Onega Bay around the Solovetsky Islands is in a constant movement in a clockwise direction. The velocity of surface currents are small and are usually at 10-15 cm/s at narrow spaces and at the capes they reach up to 30-40 cm/s. The presence of circular currents in some areas of the White Sea leads to the appearance of zones with high concentrations of zooplankton, as the surface waters are saturated with nutrients (mainly phosphorus and nitrogen) from the bottom layers. The existence of flourishing territories of plankton attracts numerous species of fish and marine animals to these areas.

The White Sea is home to more than a thousand species of animals and plants. They are distributed unevenly. The water area of the Onega Bay of the richest in diversity and biomass of biota in comparison with other areas of the White Sea.

Solovetsky archipelago

The total area of the Solovetsky archipelago, which is the largest archipelago of the White Sea, covers an area of around 347 km². The archipelago is consisting of six relatively large islands and about 250 small islands which are located in the Sosnovaya Bay and the Dolgaya Bay of the Big Solovetsky Island and in the surrounding coastal waters. Big Solovetsky Island is by far the largest island of the archipelago, its area with the nearest small islands, totals to 246 km² and the length of its coastline is approximately 208.2 km. The distance between the

furthermost points of the south and north of the island is 24.7 km and the distance between the most western and the most eastern locations amounts to 15.8 km.

The second largest island of the archipelago is the island of Anzersky or Anzer, which has an area of 47 km². The third biggest island is the Bolshaya Muksalma (Large Muksalma) with an area of 17 km². The rest of the islands of the archipelago have a less significant total area. Neighbouring the Bolshaya Muksalma is the Malaya Muksalma (Small Muksalma) with an area of 0.57 km². The Bolshoy Zayatsky (Zayatsky Big Island) has an area of 1.25 km² and the Maly Zayatsky (Zayatsky Small Island) totals to 1.02 km². A significant area of the complex is occupied by the small islands of the Dolgaya Bay 1.2 km² and Sosnovaya Bay 3.3 km². The island Parusny in the Bay of Solovki is 0.2 km² large and Sennie islands cover a mere 0.14 km² of the archipelago.

The Solovetsky archipelago, as well as the five-kilometre radius around the island in the White Sea, are included in the list of the Federal State Institution's protected areas. It is called the 'Solovki State Historical and Architectural Museum-Reserve'. The Big Solovetsky Island has been included in the strict wilderness protection programme to preserve wildlife flora and fauna.

Government

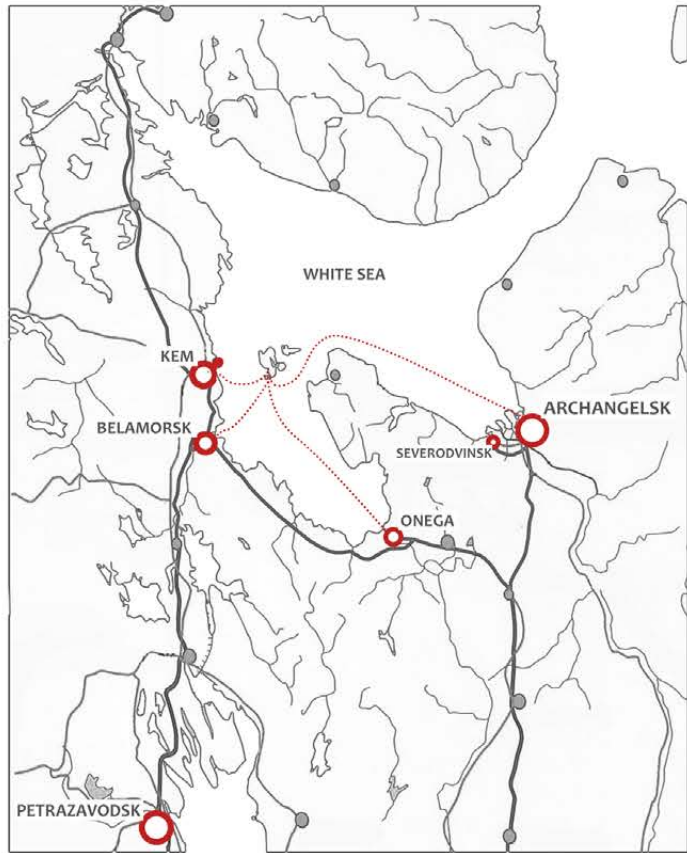
In 2004, the Arkhangelsk Regional Assembly of Deputies passed a law about the status and boundaries of municipalities in the Arkhangelsk Region, which granted the Solovetsky District the status of a municipal district with an established administrative centre in the village of Solovetsky. The municipality of Solovki includes 11 settlements around the archipelago. Seven of them are historical sketes and deserts of the Solovetsky Monastery: the village of Isakovo (Isaac's deserts), Botanical Garden (Makarevskaya deserts), the village of Muksalma (St Sergius skete Muksalomsky), the settlement of Savvatevo (Savvatiy skete), the Mountain Sekirnaya (Holy Ascension skete), and the settlement Troitsky (St. Trinity Anzer skete). Five of them are inhabited during the full year by the monks of the Solovetsky monastery. In three locations - Rebolde, New Sosnovka and Berezovaya Tonya permanent inhabitation is absent. In the very end of 2004, the law, which defined the basis of which the municipal districts were

65.02° N, 35.84° E

granted the status of urban or rural settlement, was revised. As a result, the municipal rights to districts of small population were abolished and handed over to the preceding municipal region. As in the municipal district of Solovki the population in 2003 was less than 1,000 people, they failed to comply with that specific regulation. In 2005, changes were made according to which the Solovetsky municipal district was included in the Primorsky Municipal District.

Thus, in 2005, a new municipality was formed, which was named the Rural Settlement of Solovki. It has its administrative centre in the village of Solovetsky while being included in the Primorsky Municipal District. Today the territory of the municipality includes the following villages: Isakovo, Small Muksalma, Muksalma, Rebolda, Savvatevo, Solovetsky, Berezovaya Tonya, Mount Sekirnaya, New Sosnovka and Troitsky. All of these localities belonging to the Rural Settlement of Solovki are rural settlements.

Currently by administrative-territorial structure of the Arkhangelsk region the Solovetsky archipelago is included in the territory of the Rural Settlement of Solovki. The powers invested to the municipality allows them to be in charge of the local development. Therefore, they have the duty to maintain the roads to these settlements, provide them with power supply, water supply, sewerage, waste disposal, fire fighting and other services which comply with the legislation of the Russian Federation.



65.02° N, 35.84° E

How to get there

The Solovetsky archipelago has a very special location and getting there can sometimes prove to be a troublesome undertaking. There are several travelling routes which all have their advantages and disadvantages. However, they are all dependant on weather conditions that can delay travel by several days.

There are two main methods of travel how to get to the islands – by plane or by boat, both of which have differences in their frequencies of service throughout the year. Both boat and plane services are available during the summer period, however in the winter time the Solovki can only be reached by plane. The main advantage by travelling with plane is, of course, the speed and comfort but it comes at a cost which is approximately two times higher than travelling by boat. Also the plane service can have downtime due to high winds or low visibility and fog. On the other hand, travelling by boat takes a lot more time and 2 to 4 hours on the boat can cause nausea among travellers. Travelling this way gives the possibility experience the picturesque views that open over the White Sea and the Solovetsky archipelago with the monastery upon arrival. Also this gives travellers the experience how the first monks arrived on the islands.

In the winter on every Tuesday and Sunday there is a 45-minute flight available from Arkhangelsk. The price for the roundtrip of this flight is starting at 9000 Russian roubles, which is approximately 158 euros. There is also a flight available on Fridays which totals to 176 euros per roundtrip. Due to weather conditions and general deficit of demands on travels, the boat service for the winter period is stopped.

There are more options for travel during the summer time. Six days a week, excluding Thursdays, a flight service is provided between Arkhangelsk and the Solovetsky archipelago with prices starting from 5000 roubles or 88 euros in one direction. Also it is possible to catch a connection flight from Moscow to Arkhangelsk.

The method of travel with boat is much more cost-effective but a lot more complicated, time-consuming and dependant on the weather conditions. Typically the boat connection

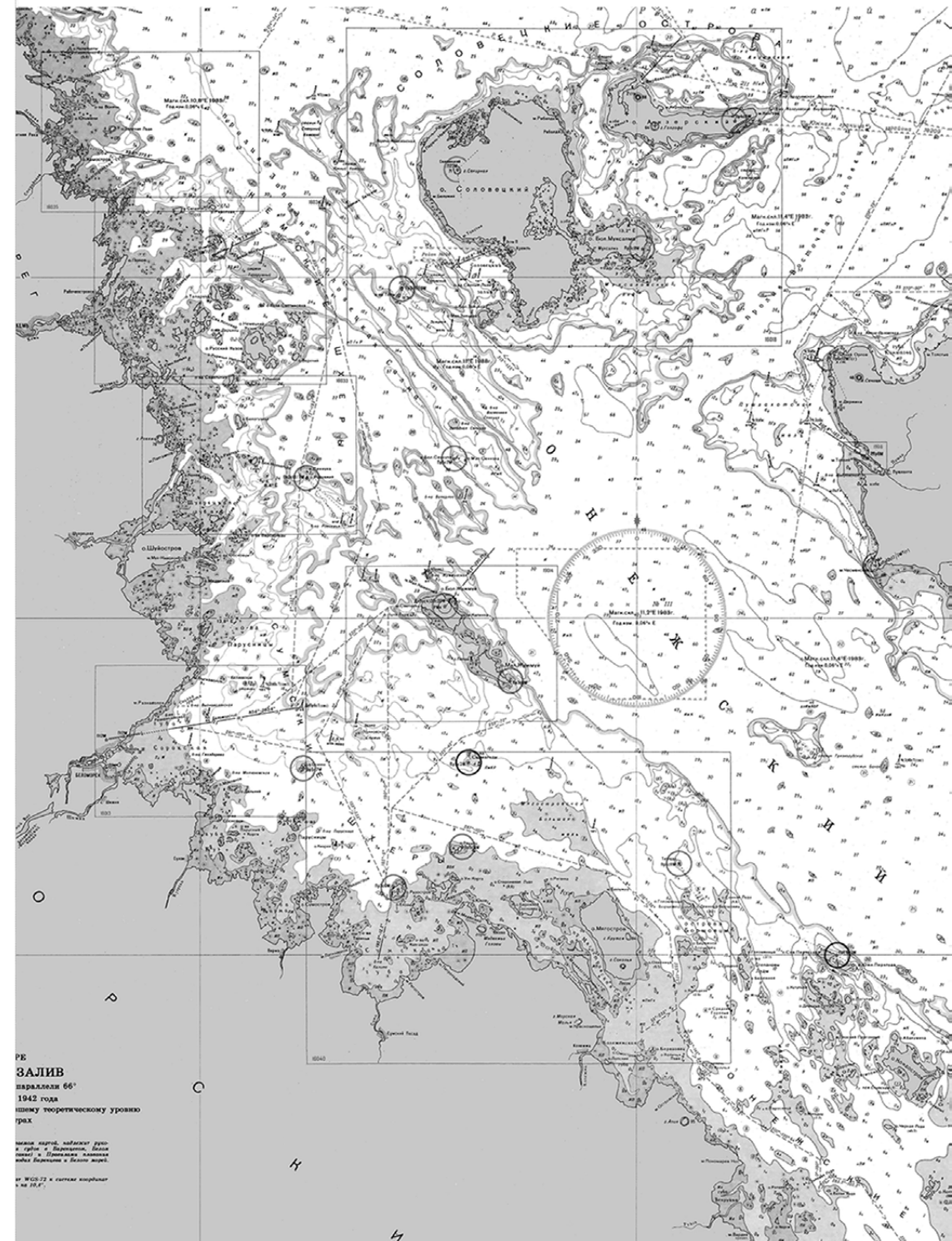
65.02° N, 35.84° E

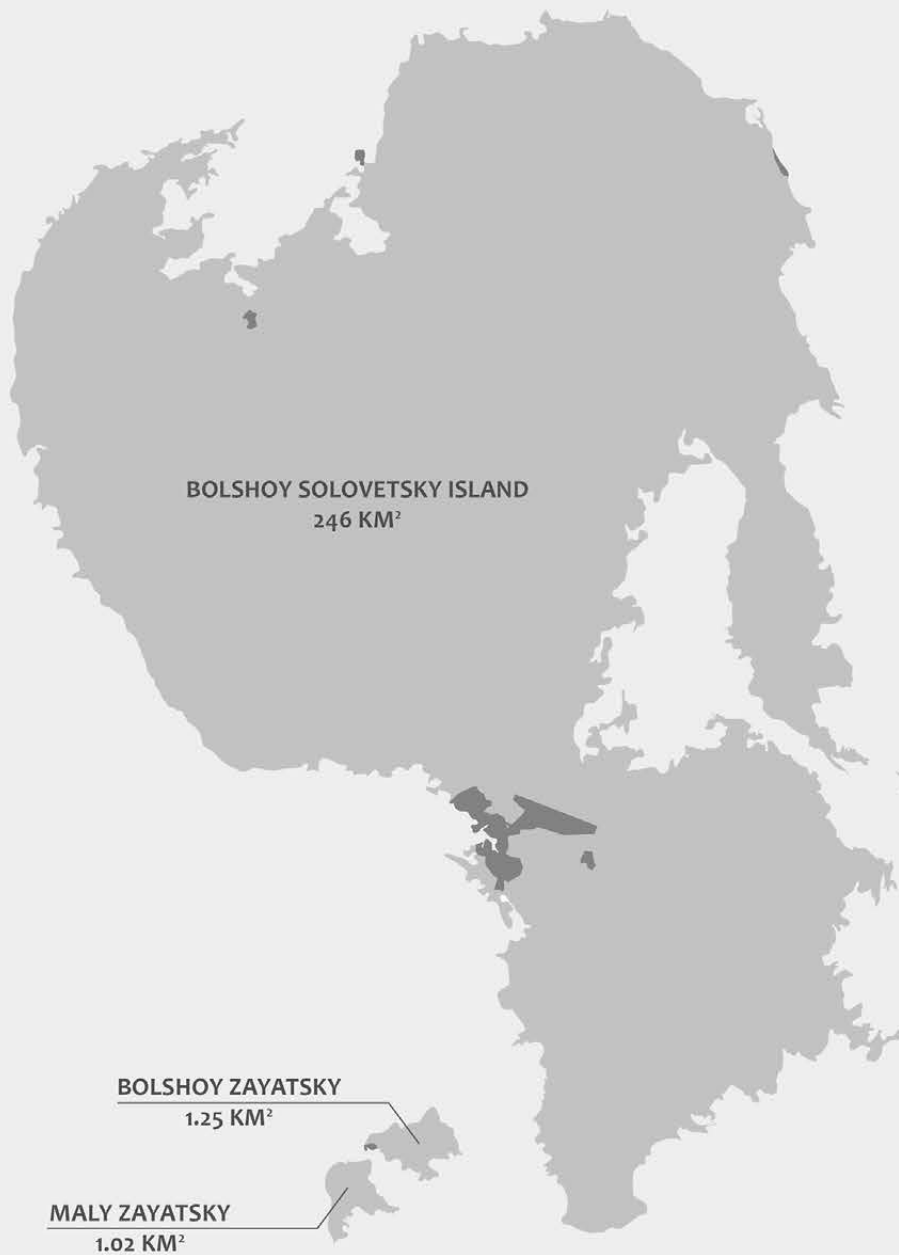
with mainland operated throughout June to August and sometimes, when the demand is higher, the boat service is kept open till the beginning of October. The service cannot be opened earlier because in May the White Sea might still contain large pieces of floating ice. There are two mainland villages that have an active boat service to the archipelago available during summer – Kem and Belamorsk.

Kem, which is situated in the Republic of Karelia and is 1358 km from Moscow and 851 km from St. Petersburg, can be reached by a Murmansk train. A second class ticket for the train either from Moscow or St. Petersburg costs roughly 1500 roubles or around 27 euros. At arrival another 30-minute drive with a taxi or private car has to be hired to reach the Raboche-ostrovsk village from where the boats for Solovki depart. Twice a day a 2-hour boat shuttle service operated at the fee of 1000-roubles or 18 euros for one direction per person and 50% discount for children.

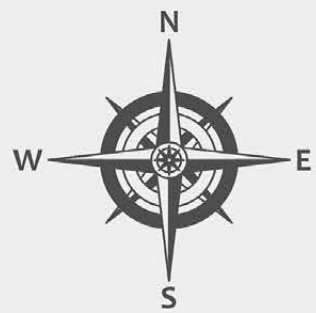
Belamorsk is the second harbour where boats to the archipelago operate. The trip to Belamorsk is very similar to the trip to Kem, they are situated just 50 kilometres from one another. However, Belamorsk has on a daily basis only one boat departure per day. The price is exactly the same as the service in Kem but the duration of travel is twice as long – 4-hour trip to reach the islands.

Additionally to these main means of travel to the archipelago, the Solovki can be reached by annually organised cruises travelling from Scandinavia.





WHITE SEA



- ARCHIPELAGO LOCATED IN THE ONEGA BAY OF THE WHITE SEA, RUSSIA
- AREA: 347 SQUARE KILOMETERS
- POPULATION – 861 INHABITANTS (ACCORDING TO 2010)

HISTORICAL OVERVIEW

Historical lifetime of the island

The Solovetsky Archipelago has a long and intriguing history full of significant events each shaping the islands' diverse storyline. Through a deep analysis of the historical timeline it is possible to map down major historic events and begin to understand why Solovki is referred to as the tormented island of spirituality.

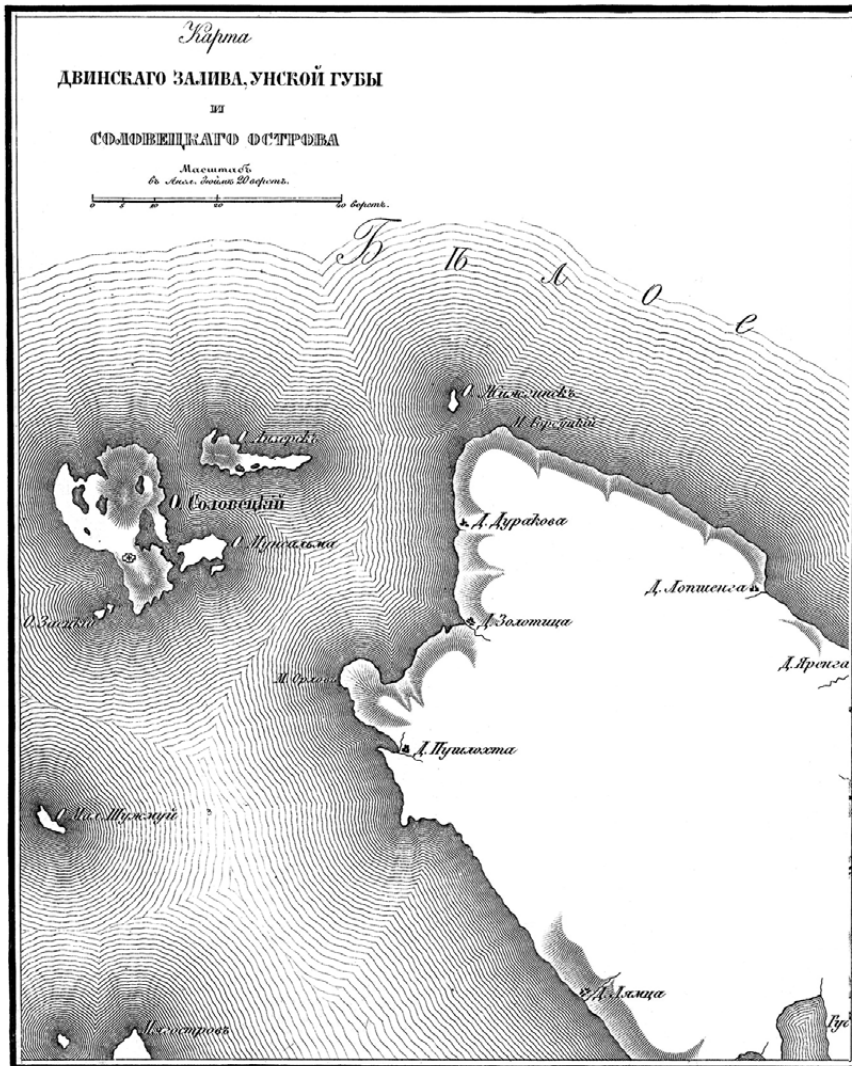
2. – 1. Millennium BC

The beginning of the story of the ancient development of the Solovetsky islands goes in the late Mesolithic period from the middle of the second to the middle of the first millennium BC. Settlers from the mainland travelled to the island for short periods of time. Judging by the insignificant number of permanent settlements, it is believed that they travelled to the archipelago rather rarely. The main purpose to cross the White Sea to the islands was to engage in hunting, fishing, gathering shellfish and seaweed and collecting wood.

The evidence of ancient tribes visiting the islands is kept alive and updated at archaeological sites. These include the campsites, labyrinths, and piles of rock, stone ridge and other curious arrangement of stones at different locations all over the archipelago.

11. – 15. Century

The first Slavic colonies arrived at Solovki between the XI and the XIII century. Since the XV century the Solovetsky archipelago became a place of spiritual retreat and the first preparations for the development of a new sacred territory began. In 1429, the first monks Savvatii and Reverend Herman arrived on the Big Solovetsky Island. They settled in the northern part of the island near the Sosnovaya Bay on the coast of a freshwater lake and at the foot of the Sekirnaya Mountain. However, they soon relocated their settlement. After the death of monk Savvatii in 1436 Reverend Hermann returned to the islands the following year bringing monk Zosima with him. Together they started to develop the new settlement which they determined to place on the isthmus between the freshwater Lake Saint in the east and Prosperity Bay on the left. This is the location where the Solovetsky monastery was founded.



Шкар. карт. Петра В. т. II.

The first structures of the monastery were erected in 1450. The main building material for the monastery was wood. The first structures erected were the church in the honour of the Transfiguration. Additionally the Chapel of St Nicholas, the Refectory and to the north the stone belfry bells were erected. All parts of this complex was surrounded with a fence. This was the beginning of a gradual development of the Solovetsky monastery which started to function as the central structure of the archipelago. All the sea routes and the roads on the island's distant sketes and deserts led to the monastery.

16. Century

In 1548 Reverend Philip was elected as the abbot of the monastery. Under his reign, the monastery began to build in stone. Between the years of 1552 and 1557 were built the Refectory of Uspenskaya and its chambers for the monks. To the south of the Assumption Church the Saviour Transfiguration Cathedral was erected. Also on the shore of Lake Saint, small huts were built for accommodating purposes.

Reverend Philip decided to clear the outside of the walls from forest and to start laying the stone roads. Under his command 72 lakes were connected through channels that were dug by the local monks to increase the size of Lake Saint while equipping it with purified water. To the east of the monastery, Ilyusava desert was built where Reverend Philip went for prayer sessions.

On the Bolshoy Zayatsky Island a boulder harbour was built, which was Russia's first of its kind. On Bolshaya Muksalma, due to its arable land, a livestock skete was established. For protective reasons during the Levonskoy War in 1578, around the monastery first fortifications of wooden fort with towers was built. Between 1582 and 1594 powerful boulder walls and towers were erected for extra protection from possible invasion. The construction of the walls and towers marks the final addition to the Solovetsky monastery's unique architectural and artistic appearance. Additionally the silhouette of the cathedrals, dominating fortification of the boulder stones, the complex's majestic appearance above the waters of the Prosperity Bay are not only the symbol of the Solovetsky archipelago, but also a symbol of the amazing power of the spirit of the Russian people.

17. Century

In the XVII century, the development of remote areas became more intense. New establishments were erected in different parts of the archipelago. On the Big Solovetsky Island a new skete was established – Isakovo skete.

The first settlements on the Anzer established the first desert Trinity monastery and in the eastern part of the island they erected the Golgotha-Crucifixion monastery with a wooden church on Mount Golgotha. In 1702, Peter I visited the Solovetsky islands and decided to build a new group of buildings not far from the original boulder harbour on the Bolshoy Zayatsky Island. These include the wooden St. Andrew church, wooden hotel and boulder stone barn.

18. Century

In the XVIII century a new series of buildings were erected at the Savvatevo skete. A wooden chapel was rebuilt on new boulder stone foundation with abbot's cell. Also a habitable house with a kitchen, stove, stable and hay storage area. On the western seafront of the Big Solovetsky Island was located a tonya - a place for fishing, marine trade, storage of monastery stocks. These include Rebolda, Berezovaya, Ovsyanka, Cape Belugy Cape tonyas. Normally, these territories were placed near the seaside fishing huts and chapels with a kitchen for food service.

19. Century

In the XIX century the improvement and expansion of remote sketes continued. New large stone complexes were founded. In 1822, Makarevskoy desert was founded, with two small huts for the monks and a small chapel. In 1854, on the highest point of the archipelago was established a wooden chapel with a big bow cross in the honour of Alexander Nevsky. Later instead of the former huts were built a two-storey wooden house. In the early 1860's a wax-plant was founded with a house for workers and a boulder barn. In the surrounding the Botanic Garden with greenhouses was established. In the beginning of the XIX century at the Isakovo skete a chapel was founded with a two-storey private wooden housing with services,

boulder sauna by the lake and a storage shed. In the Savvatevo skete a new harbour with a new hut and a stable were built. Also, in the second half of the XIX century, a stone church of the Smolensk Mother of God was built with a new two-storey brick building for the monks. After a short abandonment of the Golgotha-Crucifixion monastery on the island of Anzer, life was reintroduced. In 1828, in an attempt to develop the infrastructural accessibility, new roads were established. In 1833, at the top of the mountain, a new stone church was erected in the honour of the Crucifixion of Christ with a refectory and a bell tower. The wooden church was removed to the foot of the mountain. In the 1830's the skete was actively building economic and residential buildings. For instance, on the western side of the church they established a building for the monks, on the hillside they built a stone hotel, a refectory with a kitchen and a wooden barn with a stable. In the middle of the XIX century development started on the Sekiraya Mountain on the Bolshoy Solovetsky Island. On top of the mountain the three-tiered temple with a lighthouse on top was constructed in 1862. Besides the temple building, two-storey wooden residential building was constructed adjacent to the backside of the temple.

XIX century was successful for the monastery, the construction development both at the monastery and the remote sketes was faster than ever before. Economic quality of the territory improved and renovation was at full pace. In this century they also constructed the new dam, which connected the the Bolshoy Solovetsky Island with the Muksalma Island.

Another infrastructural achievement was the construction of the navigable lake-channel system, which allows to travel on water from the central part to the northern part of the main island. To the south of the Solovetsky monastery new road was laid to the Petchak Cape. In 1856, in the memory of the negotiations with the British squadron, a negotiation stone was established.

20. Century

The change of power during the October Revolution struck a devastating blow to the Church and religious culture throughout the Orthodox way of Russian life. In 1923, the Solovetsky monastery was closed and forcefully converted into prison camps which was de-

signed to imprison political opposition of artists who dared to express their disbelief in the Soviet Regime.

SLON - death camp. In 1920 the Soviet government abolished the Solovetsky monastery. The most significant material and artistic treasures were taken to the capital; some of them were materials and art from foreign countries. In 1923, the monastery was turned into Solovki prison camp - one of the world's first concentration camps designed to re-educate people



1. Magazin "SLON / Solovetsky Islands", 1924-1930 (20 issues)
Monthly political and social, literary and educational magazine.
Managing Authority is Solovki prison camp.

whose past or political views were not compatible with the aspirations of the new government. Significant proportion of prisoners of the camp were those who took the feat of confession for the Lord Jesus Christ and the Orthodox faith. Among the prisoners were 8 metropolitans, 46 archbishops, 49 bishops, thousands of Orthodox worker of the of the Church.

In the 1940s, after the abolition of the concentration camps, stone monastery churches in the name of St. Sergius of Radonezh and Onuphrius the Great were demolished. In addition, Soviet regime destroyed 22 chapels, chipped wood iconostasis, icons, murals, and the ancient monastery cemetery. They cut down centuries-old pine forests, meadows and left all the shipping channels derelict.

After closing the prison camp from 1940 to 1957, Solovki hosted a new militaristic function - Training Detachment of the Northern Fleet. During the period of the Northern Fleet Training Detachment took place huge mass destruction and desecration of the Solovetsky Monastery - churches, iconostasis, the cemetery. These periods have been the most destructive to the Solovetsky Island.

Since 1990, after the collapse of the Soviet Union, the monastery and remote monasteries began to revive monastic life and returned to religious activities. During the destructive Soviet period, the territory of the village lost important structures – the Church of St. Onufriya Chudoprosfornaya and chapel, the saw-mill on the shore of Lake Saint and several out-buildings of stable yard in the eastern part of the village. The other historical complexes in the Solovetsky archipelago went under construction development in the end of the century.

Current time

Current development of the village after Soviet and post-Soviet period has not changed the fundamentals of the planning structure formed in the XVI-XIX centuries. Trail roads are running from remote sketes which still is the main element of the composition of not only the city, but the entire archipelago. Further from the center of the village, the planning becomes visible to the whole complex of the Holy Transfiguration Monastery in the fullness and greatness because of its wide water surface located on the west and east of the monastery walls.

Historical heritage of the Solovetsky Islands - a collection different times archaeological monuments, ensembles and complexes of religious, residential, commercial, defence, engineering, hydro technical and other constructions of the Solovetsky Monastery. The network of roads and irrigation systems of the Middle Age and the modern times.

1.



1. Bookplate of Dosifey - author of first Solovetsky historic library

SKETES HISTORICAL ROLES



Sketes

Economic activity on the island and the monastery led to the construction of dedicated areas with specific functions on the territories, which were best suited for the production of various goods. This helped the monastery to manage different aspects of production to have a more effective trade system on the island.

Sketes, deserts and fishery settlements were built in the period from mid XVI century until the second half of the XIX century. These sketes are located on the five largest islands of the archipelago: Bolshoy Solovetsky Island (Filippovskaya and Makarevskaya desert, Isakovskiy,

Savvatiy and Holy Ascention sketes, settlements New Sosnovka and Rebolda), Anzersky Island (Holy Trinity and Golgotha-Crucifixion sketes) Zayatsky Big Island (St. Andrew's skete), Big Island Muksalma (St. Sergiev monastery) and Small Muksalma Island (fishing village). Sketes and deserts are independent complexes with monuments and buildings related to the different times, indispensable presence of church, residential housing and wooden or stone barns. Historically, every desert and skete had its own unique architectural appearance and functional purpose (memorial, commercial, agricultural, Zayatsky deserts - shelter for ships, Makarevskaya - the botanical garden, the Holy Ascention Skete - lighthouse, etc.). All of them are closely related to the monastery and to each other.

TIMELINE AND HISTORICAL ANALYSIS

• ANCIENT CULTURES •

• FIRST SLAVIC SETTLEMENTS •

• MONASTERY FOUNDATION •

II - I MILLENNIUM BC.

XII – XIII AD

XV

XVI

XVII

FIRST TRACES OF THE HUMAN ON BIG ZAYATSKII AND ANZER ISLANDS

FISHERMEN, HUNTERS, REPRESENTATIVES OF KOMSA ARCHEOLOGICAL CULTURE

PAGAN SHRINES AND MEGALITHIC STRUCTURES BY SAMI TRIBES, “SEIDA” – SACRED DOLMEN ON THE ZAYATSKII ISLAND
NEARLY 500 SAMI LABYRINTHS WERE FOUND AROUND SCANDINAVIA AND WHITE SEA

FIRST SLAVIC SETTLERS ON THE ISLAND

FOUNDATION OF THE MONASTIC SETTLEMENT

1429-1436

1460

ST. SAVVATII, ST. HERMAN AND ZOSIMA – FOUNDERS OF THE MONASTERY

FIRST WOODEN CHURCHES AND REFECTORY

BY DIRECTION OF ABBOT PHILLIP (FEDOR KOLICHEV) STONE CONSTRUCTION DEVELOPMENT TOOK OF. CONSTRUCTION OF ROADS, CANALS, HARBORS AND NUMEROUS ECONOMIC INSTITUTIONS ON THE ISLANDS

BEGINNING OF THE CONSTRUCTION OF THE BIG STONE WALL ON BIG SOLOVETSKY ISLAND

SOLOVETSKY MONASTERY PARTICIPATED IN THE MILITARY OPERATIONS, ALSO WAS USED AS A PLACE OF EXILE FOR PRISONERS, MAINLY FOR POLITICAL REASONS

TIMELINE AND HISTORICAL ANALYSIS

• PARTIAL SECULARAZATION •

• DEVELOPMENT AND REFORMS •

1635

1637

1668-1676

XVIII

XIX

1861

1898

1899

XX

HIGH RISING OF THE SEA LEVEL, MONASTERY FLOODING

BY ORDER OF TSAR MICHAEL MONASTERY TOOK DUTIES OF THE MILITARY PORT OF WESTERN WHITE SEA

“SOLOVETSKY MONASTERY UPRISING”

AN ARMED MONK MONASTERY RESISTANCE AGAINST CHURCH REFORMS OF PATRIARCH NIKON. BECAUSE OF THE MONASTERY’S REFUSAL TO ADOPT INNOVATIONS, IN 1667 GOVERNMENT TOOK SEVERE MEASURES AND ORDERED TO CONFISCATE ALL PROPERTY AND PATRIMONY OF THE MONASTERY. A YEAR LATER THE REGIMENT OF TSAR CAME TO SOLOVKI AND LAID SIEGE TO THE MONASTERY

PETR I REPEATEDLY VISITED MONASTERY CONCERNING OF DEVELOPMENT AND NEW MEASURES OF SECULARIZATION

DISARMAMENT ON SOLOVKI. THE SOLOVKI FORTRESS IS REMOVED FROM THE LIST OF RUSSIAN MILITARY FORTRESSES

1854 - MONASTERY WAS ATTACKED AND BOMBARDED BY TWO ENGLISH SHIPS “BRISK” AND “MIRANDA”

1861

FROM ARKHANGELSK TO SOLOVKI ESTABLISHED REGULAR STEAMSHIP SERVICE

1898

BIOSTATION WAS OPENED

1899

EDITION OF «HISTORY OF SOLOVKI MONASTERY» - THE MOST FULL WORK ON A HISTORY OF A MONASTERY

ARCHIMANDRITE VENIAMIN KONONOV BECOMES ABBOT OF THE MONASTERY

1918 - FIRST RED ARMY DETACHMENT CAME TO SOLOVETSKY ISLAND, CONFISCATION OF THE MONASTERY INVENTORY

TIMELINE AND HISTORICAL ANALYSIS

• SOVIET UNION •

1920

LIQUIDATION OF THE SOLOVKI MONASTERY, ORGANISATION OF THE SOCIAL FARM AND CAMP OF HARD FORCED LABOUR ON THE ISLAND

1923

ORGANIZING OF THE "SOLOVKI CAMPS OF SPECIAL DESTINATION" (SLON)

1936

REORGANIZATION OF THE CAMPS INTO PRISONS

1939

PRISONS WERE REMOVED AND ARCHIPELAGO TRANSFERRED INTO NORTHERN FLEET

1942-1945

NAVY SCHOOL IN THE STRUCTURE OF THE TRAINING UNIT OF THE NORTHERN NAVY

1967

ORGANIZING OF THE DEPARTMENT OF "ARKHANGELSK REGIONAL MUSEUM" OF LOCAL TRADITIONS

1987 - SOLOVETSKY REGION WAS ESTABLISHED AS A PART OF THE ARKHANGELSK PROVINCE. THE SETTLEMENT IS NOW KNOWN BY THE OFFICIAL NAME «SOLOVETSKY»

• REJUVENATION OF THE ISLAND •

1990

RELIGIOUS ACTIVITY WAS RESUMED ON THE SOLOVETSKY ISLANDS

1992

SOLOVETSKY HISTORICAL AND CULTURAL COMPLEX IS INCLUDED IN THE "THE LIST OF THE WORLD HERITAGE" OF UNESCO

RECONSTRUCTION OF THE MONASTERY

REVITALISATION OF THE SKETES AND DESRTS OF THE ARCHIPELAGO, BUILDING MEMORY CROSSES

2006

SOLOVETSKY ARCHIPELAGO BECAME PART OF THE ARKHANGELSK MUNICIPAL REGION

2007

MARINE PUBLIC MUSEUM WAS OPENED IN THE OLD BOAT BARN

GEOGRAPHICAL ANALYSIS/STATISTICS

RELIEF

The relief of the islands is generally irregular with playful and hilly landscapes. The southern parts of the Big Solovetsky Island and the Big Muksalma Island on the east have a hilly yet relatively swampy landscape of general height up to 30 metres above sea level. In the northern part of the Big Solovetsky Island and on the Anzer Island the landscape is much rougher filled with hills and ridges ranging from 30 to 60 metres on average. These mountains are formed by glacial deposits of ice movement.

The highest peak of the whole archipelago is situated on the Anzer Island, which is called the Verbokol'skaya Mountain and it is 88.2 metres high. The highest point of the Big Solovetsky Island is the Podnebesnaya Mountain with a height of 80.7 metres above sea level.

On the Big Solovetsky Island, there are three relief-specific areas: the central part of the island with a sloping sublime landscape and extensive network of lakes; the southern part representing the basin ringed by hills and filled with mires and lakes; and the coastal region.

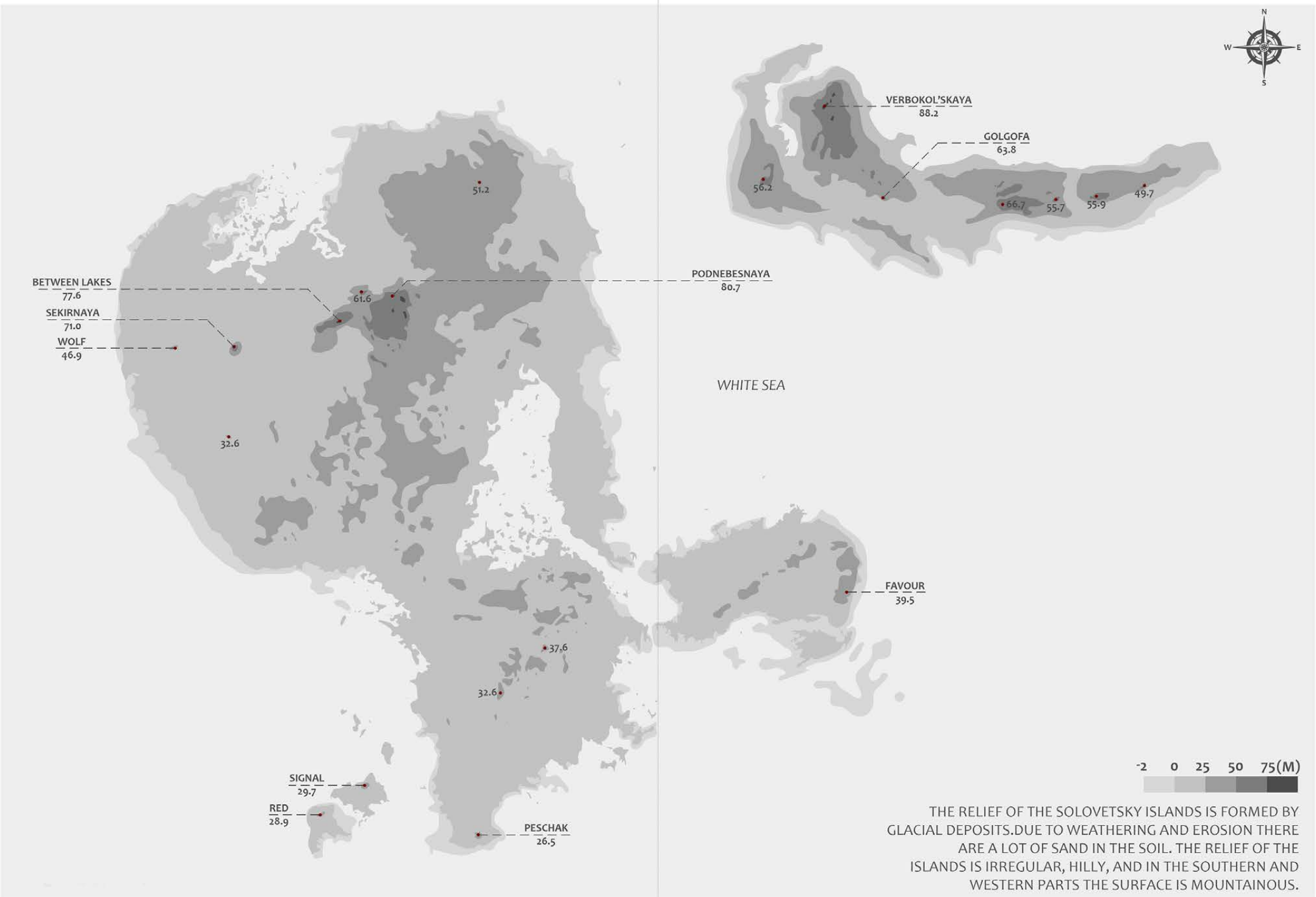
Solovetsky archipelago is characterized by elevated topography with a large difference in absolute heights. Glacier movement played a decisive role in shaping the current image of the Solovetsky archipelago. Coastline of the islands is deeply indented, formed by the alternation of rocky headlands and ridges, bays and coves, which cut deeply into the land. It is currently estimated that the islands grow in height at an average of 17 centimetres per century. Coastal depth around the perimeter of the islands do not exceed 2-5 meters.

Direction of all the hills and lake basins of the island exactly coincide with the direction of movement of the glacier. The glacier moved from the north and north-west to south and south-east, leaving behind the longitudinal ridges of boulders, boulder gravel and deposits going in the same direction of the long axes of most of the lakes of the northern part of the islands. Later, the glacier has changed its direction of movement, which in the central part of the island is almost coinciding with the meridian. As the melting of the ice cover occurred and it reduced its areal impact and also after the disappearance of the glacier, the raising of the island occurred, which had intermittent nature and it formed a ladder of marine plains in height from 1-3 to 20 meters or more.

A hilly and moraine lake-glacial plain formed in the central part of the Big Solovetsky Island and in the western half of the Anzer island with an absolute height of 30-50 meters. The maximum heights reach around 70-90 meters. The southern and south-western parts of the Big Solovetsky Island and the south-eastern part of the Big Muksalma Island are wetland lowland basins, with occasional hills (altitudes of 2-18 meters), wild lakes and quagmires. In the coastal zones formed the flat marine plains with a widths that ranges from 0.5 to 1.5 kilometres.

Coastal marine landforms are presented by different types of shores. Among them - the sherry coast (relicts of Ice Age), abrasion, accumulative shores and lagoons. Additionally beach barriers and ridges composed of rounded gravel with boulders are formed on the eastern shore of the island Anzer. Some of the beach ridges reaches 250-300 meters in length. This is a unique form of sea coast that is being preserved at the ancient relic coastal cliffs on the south shore of the Anzer Island.

Twice a day the sea water come on the shore of the island that in some places reaches the forest line. Tidal movements deposit on the shores continuous strips of seaweed. Twice a day the tide exposes thousands of orange-red boulders lying in the sea at shallow depth. The duration of each tide and ebb is 6 hours 12 minutes. The daily cycle consists of two high tides and low tides that total up to 24 hours and 47 minutes. The period of the ebb is usually close to noon and midnight. Area which is flooded at high tide and drained at low tide is called the intertidal or littoral zone of the beach.



BETWEEN LAKES
77.6
SEKIRNAYA
71.0
WOLF
46.9

PODNEBESNAYA
80.7

VERBOKOL'SKAYA
88.2

GOLGOFA
63.8

FAVOUR
39.5

SIGNAL
29.7
RED
28.9

PESCHAK
26.5

-2 0 25 50 75(M)

THE RELIEF OF THE SOLOVETSKY ISLANDS IS FORMED BY GLACIAL DEPOSITS. DUE TO WEATHERING AND EROSION THERE ARE A LOT OF SAND IN THE SOIL. THE RELIEF OF THE ISLANDS IS IRREGULAR, HILLY, AND IN THE SOUTHERN AND WESTERN PARTS THE SURFACE IS MOUNTAINOUS.

GEOGRAPHICAL ANALYSIS/STATISTICS

FLORA OF THE ISLAND

The territory of Solovetsky archipelago is covered by different types of forest and vegetation up to 87% of the total area of the archipelago. The forests are the key components among the natural environment of the island. They perform a significant protective function and determine the environmental conditions in the archipelago. The forests are composed of trees and shrubs that are of natural origin and wide in diversity, including more than 500 species. All forests of the archipelago are related to the implementation of water protection, safety, sanitation, health, and other natural functions.

Most of the Solovetsky archipelago is covered by coniferous and deciduous forests, but some areas are tundra and forest-tundra. The main tree species are spruce (*Picea obovata*), pine (*Pinus sylvestris*), birch (*Betula pubescens*) and aspen (*Populus tremula*).

Spruce forests occupy Solovki to 42% of the territory. Pine forests occupy 34.4%. More than ¼ of the forested areas are occupied by "native" species. In places which were transformed by human, as a result of economic activity coniferous forests are replaced by aspen. 23.4% of the territory is occupied by deciduous species, including birch forests - 18.4%, and aspen forests - 5%. In the southern part of the Big Solovetsky Islands, northern and eastern parts of the island Anzer, the eastern part of the Big Muksalma Island the predominant type of forest vegetation is crooked birch forests that occupy 13% of the territory.

Pine forests are mainly located on the sand dunes along the sea coast. Pine forests are consisting of trees of different age, which are either of individual old (sometimes more than 400-year-old trees) pines or small groups of them, interspersed with younger ones. One of such characteristic and extremely picturesque site is in the southern part of the Big Solovetsky Islands near the areas of the Petchak Cape and the Berezovy Cape. The forest floor of these forests are dominantly covered by lichens in combination with green forest moss and patches of crowberries. Usually there are also presented arcos Alpine (*Arctous alpina*), bearberry (*Arctostaphylos uva-ursi*) and common heather (*Calluna vulgaris*), lingonberry (*Vaccinium vitis-idaea*), blueberry (*Vaccinium myrtillus*), and cloudberry (*Rubus chamaemorus*).

Spruce forests cover all the stone ridge on loams and clays. In well-drained areas they rep-

resent a resistant climax communities, where in the tree stand is almost always presented downy birch and sorbus (*Sorbus aucuparia*), that can reach in old plantations considerable size. The grass cover is dominated by blueberries and lingonberries, and with greater or less abundance there are found ferns. None of these species predominate in the lining and the general degree of coverage does not exceed 40-50%.

A lot of forests on the island were destroyed during the period of the Soviet Union, which led to the significant changes in the archipelago's eco-system. Now all the forests of the island are under the protection as natural reserve.

"Некогда весь Соловецкий остров был сплошь покрыт лесами. Монахи всемерно сохраняли лес, что видно хотя бы из того, что печи в монастырях и в скитах топилась исключительно бревнами, прибываемыми к берегу морем. С водворением в Кремле "управления северными лагерями особого назначения" началась хищническая вырубка леса, бессистемное использование его для местных нужд и для вывоза. Соловецкие берега теперь совершенно оголены; ветры разрушают остальное...". (А.Клингер. Соловецкая каторга. Записки бежавшего. Кн. "Архив русских революций". Изд-во Г.В.Гессена. XIX. Берлин. 1928.)

'Once all of the Solovetsky Islands were completely covered with forests. Monks maintained these forests in every possible way, this is proven by the fact that the furnaces in the monasteries and the hermitages were heated solely on the logs that were washed ashore of the sea. With the relocation of 'Prison Camps' in the Kremlin began the damaging logging to provide for local use and export. The Solovetsky Islands' shores are completely bare now; the winds destroy the rest...'

(A.Klinger. Solovetskaia hard labor. Notes to flee. Bk. "Archives of the Russian Revolution". Publ G.V.Gessena. XIX. Berlin. 1928.)

GEOGRAPHICAL ANALYSIS/STATISTICS

FLORA OF THE ISLAND

Wetlands

Marshes of Solovki represent lakes that are in the late stage of being overgrown by land. Marshes occupy a considerable part of the area on the Anzer Island and the Big Muksalma Island where almost the entire eastern part of the island is waterlogged. On the Zayatsky Island marshes are not represented. On the Big Solovetsky Island marshes are in the southern (Pechakskoe and Berezovo - Topskoe), northeastern (Filimonov and Gorodoksky) and eastern parts of the island. In the central and western parts of the island lies the Kulikovo swamp and a few smaller ones near lakes that are fed by precipitation. The zones of mires are located in the eastern and southern parts of the Bolshoy Solovetsky Island. This area is rich in peat with an evaluated amount of more than 80 million tons.

Forestless

As everywhere in the European north, the meadow areas on the islands were formed as a result of human activities. They were used as hayfields and pasture areas, established in the forest by logging or stubbing. In order to create grassland on the Solovetsky Islands special reseeding techniques were used to create forage grasses, mainly cereals. From this activity new flora communities were created that consist of native species and newly introduced species. Most major areas of this kind are concentrated on the Big Solovetsky Islands, the Anzer Island, and the Big Muksalma Island. The naturally forestless areas are typical not meadows but heathland. These low-grass communities are catalysers for the development of moss or lichen carpet. They are characteristic to the coastal areas, often mixed with sandy beaches to a greater or lesser extent.

Algae

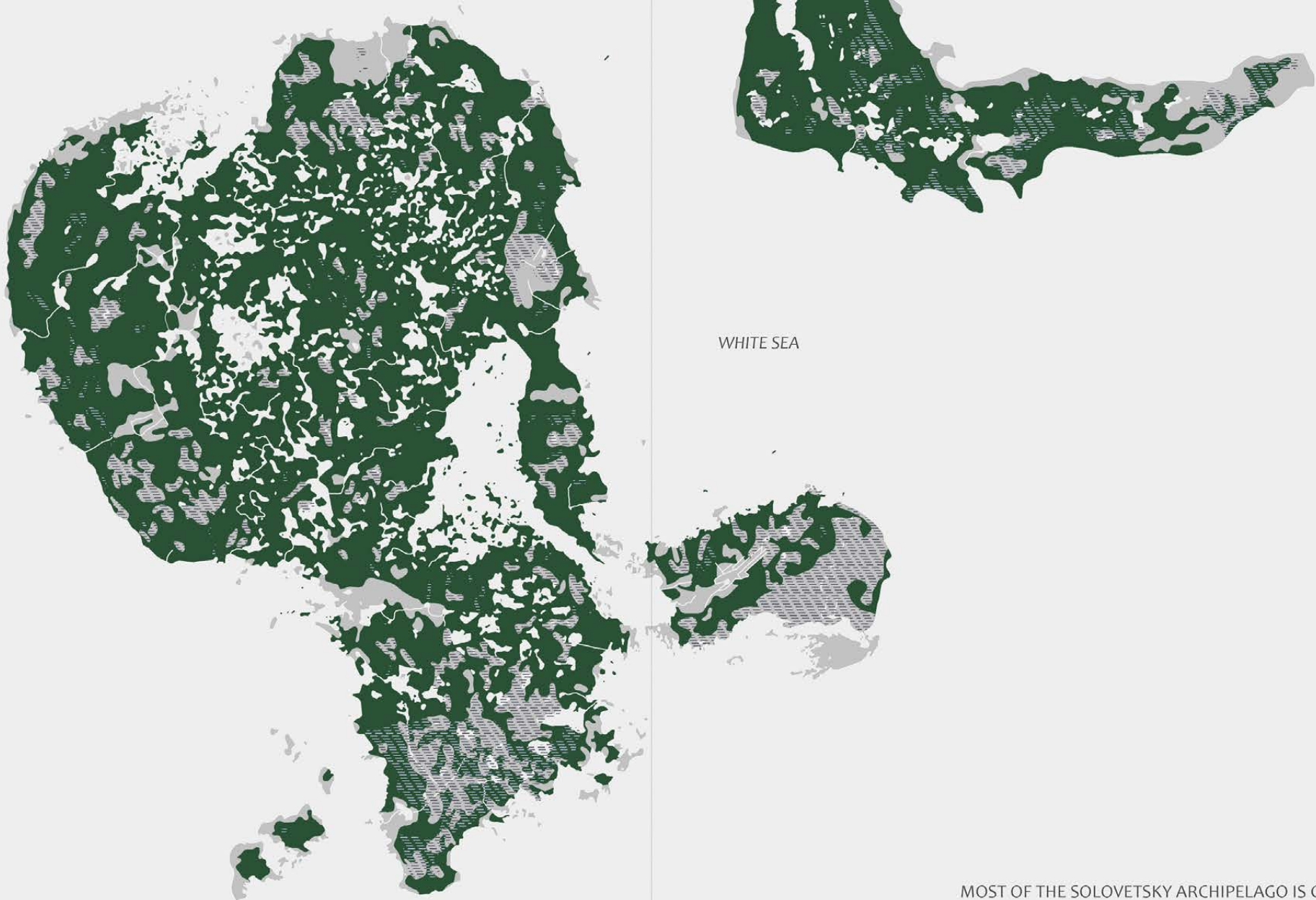
The waterfront area of Solovetsky archipelago is one of the richest regions on the algal flora of the White Sea. There are several contribution factors for the well-developing of the plant associations: irregularity of coastline, plenty of bays, coves, bathing in the littoral zone, extensive shallow water, rocky soils, transparency and adequate summer warm water, intense tidal currents, proximity to the open sea and the absence of significant disturbance. In

the coastal zone there are rich plantations of algae, including kelp, fucus, ahnfeltia that additionally also carry commercial value.

Since the 40s of the last century researchers have begun to regularly examine the algae for their further industrial use. Since 1980 SevPINRO has been accounting the commercial stocks of Solovki's algae every 3-4 years. Currently, the control of the algae collection at the Solovetsky archipelago is owned by AOVK 'Arkhangelsk experienced seaweed production'. The total stock of laminaria algae of the White Sea is estimated at 600-750 tonnes at raw. Experts have estimated that the reserves of laminaria in the waters of Solovetsky archipelago are around 240 thousand tonnes, fucoids 32.7 thousand tonnes and Ahnfeltia 0.6 thousand tonnes. Biomass of laminaria, is typically 5 kg/m² but in favourable locations where there is no fishing it is 20 kg/m². The current capacity of production of Laminaria according to AOVK is at around 1.2-1.7 thousand tonnes per year, however the feasible volume could total to an amount of 30 thousand tonnes per year.



1. Production of algae, village REbalda



MOST OF THE SOLOVETSKY ARCHIPELAGO IS COVERED BY CONIFEROUS AND DECIDUOUS FORESTS, BUT SOME AREAS ARE OCCUPIED BY EITHER TUNDRA OR FOREST-TUNDRA.

GEOGRAPHICAL ANALYSIS/STATISTICS

INSIDE WATER

Lakes

The archipelago contains 562 lakes, of which the majority is located on the Big Solovetsky Island, in fact there are 503 Lakes on the islands that is so much that some of them are unnamed. But even those that have received names, they have changed many times. For instance, Lake 'Drinking' was formerly called Lake Danilov and after that Lake 'Rafting'. It is not quite simple to understand and locate all the lakes and their names, which are mentioned in the Solovetsky historical Archimandrite by Dosifej in 1834. On the island until the mid-twentieth century, there was no permanent population, hence no toponymic tradition existed. People changed, time passed and names were forgotten.

After the revolution in 1920 a lot of the names of the lakes were changed to something that would resemble the Soviet Union. For example, Lake White was renamed as Lake Red, Lake Crossed was now Lake Komsomol, Lake Abbot was changed to Lake Biogarden, Lake Miraculous became Lake Prigubnoe and most significant Lake Saint was converted to Lake Kremlin. But there are some lakes on Solovki that have a sonorous or poetic name derived from subtly their features: Light Beam Lake, Sad Lake, Swan Lake, Birch tree Lake, Celestial Lake, Silver Lake.

The lakes of Solovki are primarily, apart from a few relict lakes which represent the former marine lagoon, of glacial origin. Most lakes have steep and wooded shores and the lakes are fed with water by groundwater and, to a lesser extent, by atmospheric conditions.

The total area of lakes in the archipelago is 34.5 km² that accounts for 10% of the area of the archipelago. The Solovetsky lakes are a group of small reservoirs that have an area starting from just 0.01 km² to 2.3 km². Out of all the lakes 70 have an area greater than 1 km². The total length of the coastlines of lakes is estimated at 641 km. Biological features of the lakes are in close connection with a number of abiotic factors. The common depth of the lakes is around 5 to 27 meters (the deepest lake - Gremyachiy is 33.5 meters deep). Undulating islands in the lakes and the swirly coastline prevent winds mixing the water. For deep lakes with small areas, this leads to the formation of a stable thermal stratification, for instance, warm deep water layers.

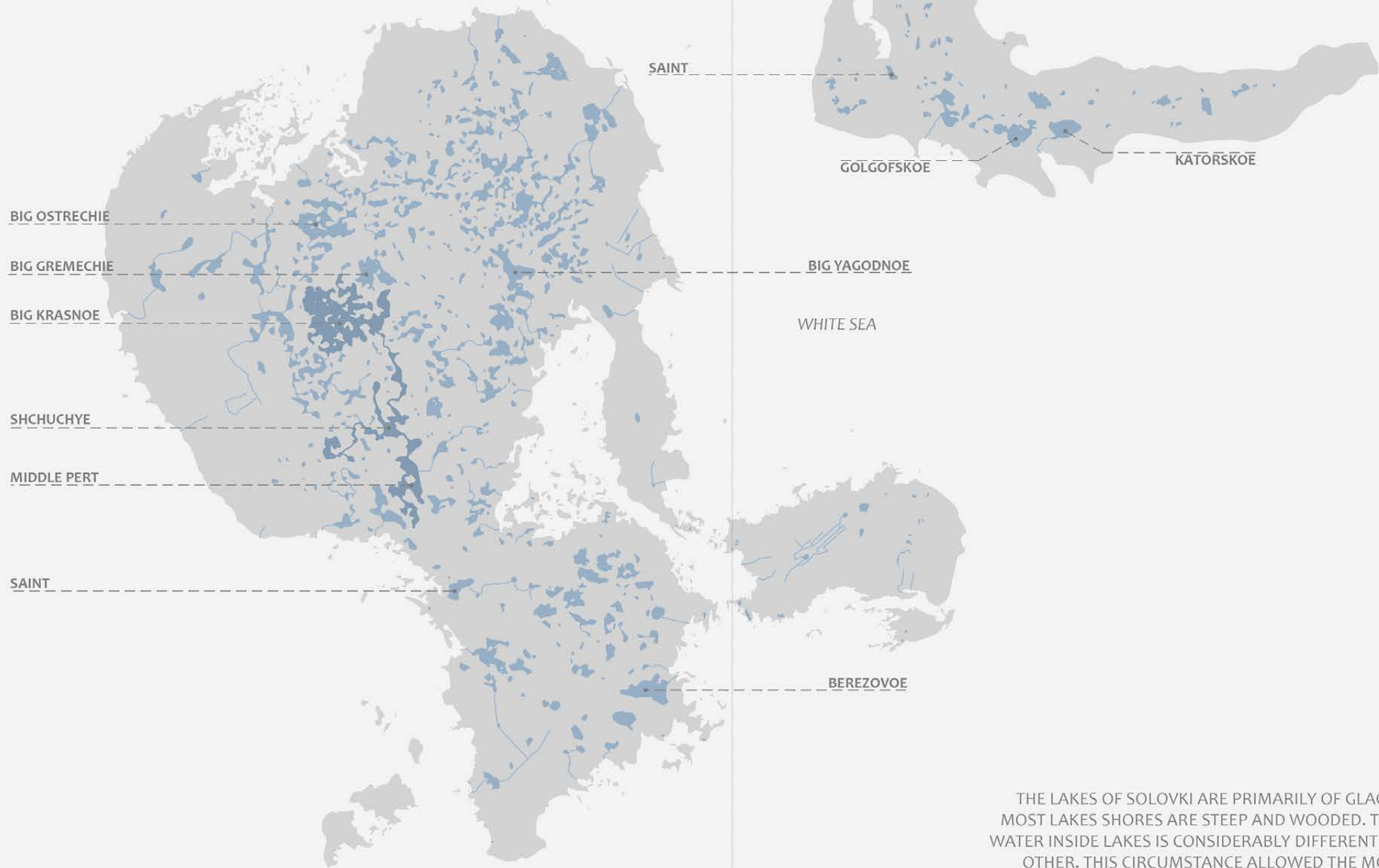
Drinkable system

The level of water inside the lakes is considerably different from each other. For instance, difference between Krasnoe Lake and Gremechie Lake is 13 meters, although distance between them is only 85 meters. Construction of the Solovetsky monastery and caused this, a significant increase in the number of the villagers demanded more and more drinking water. Lack of rivers prompted settlers to connect the lakes with artificial channels. This channel system was created 4 centuries ago under the leadership of Abbot Philip. 78 lakes were connected into a single 'drinking system' that fed Lake Saint. The monks noticed the difference between the levels of water in the lakes which enabled them to come up with a channel-system that would bring fresh water to their Saint Lake by gravity. This is still the main source of water for the Solovetsky village. Since the XIX century, the water of the same channel supplies the power plant, and sawmill equipment with hydrological power. Nowadays the channels are littered and partially destroyed and the channel-system is not working as well as it used to. This shows that the monks were much more economic than the current government and the former Soviet power.

1.



1. Lake structure of Solovki, photo from the olane, 2012



THE LAKES OF SOLOVKI ARE PRIMARILY OF GLACIAL ORIGIN. MOST LAKES SHORES ARE STEEP AND WOODED. THE LEVEL OF WATER INSIDE LAKES IS CONSIDERABLY DIFFERENT FROM EACH OTHER. THIS CIRCUMSTANCE ALLOWED THE MONKS IN THE 16 CENTURY TO CREATE A SYSTEM OF CHANNELS TO NATURALLY COLLECT DRINKABLE WATER. THE DEPTH OF SOME LAKES IS 25 M

GEOGRAPHICAL ANALYSIS/STATISTICS

INSIDE WATER

Waterways inside island

In addition to this 'drinking system' in the late XIX and the early XX centuries, another lake-channel system was constructed for shipping purposes. With the creation of this system several new gateways were established that allowed quite large vessels to pass through the channels.

This innovative system allowed the monks to use the channels for transporting stones and bricks, hay and firewood, timber and more. Nowadays the tourists are using two main routes on this channel-system for exploring the lakes of the Solovetsky archipelago – the small circle and the great circle. Additionally, hydraulic structures are as diverse and also multi-functional: waterproof dike and dam-bridge, dams, locks, hydroelectric power, bridges, mills and others.

Boating trip in a small circle on Lake Solovetskaya lake-channel system lasts about six hours. During this time, visitors can learn about hydraulic engineering monuments and buildings of the Big Solovetsky Island. They pass through the main man-made channels that are connecting the 5 lakes. The price for the tour is 270 roubles or less than 5 euros. Rowing boats and paddles are rented to the tourists who want to explore the lakes by themselves. Route begins from the boat station that is located approximately 1.5 kilometres north of the Kremlin.

The tour along the great circle requires much more thorough physical preparation because it lasts about 10 hours. During the tour, visitors will learn about hydraulic engineering monuments and buildings of the Big Solovetsky Island. They also pass through the man-made channels that in this tour connects 6 lakes. Typically, the distance of this this tour is about 18 kilometres and is combined with a walking-trip to the Sekirnaya Mountain, close to the farthest point of the route.



1.

1. Boat station near the Solovetsky village



BIG ZELENOE LAKE
32 MASL



NIKOL'SKOE LAKE
14 MASL



ISAKOVSKOE LAKE
4 MASL
4 m max depth



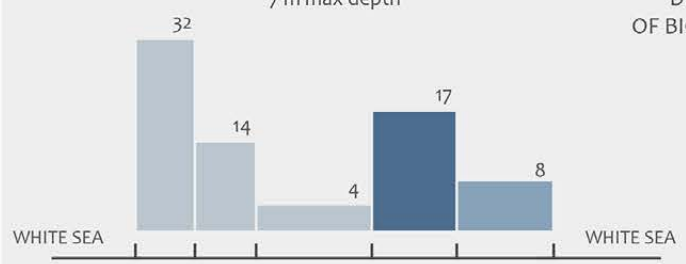
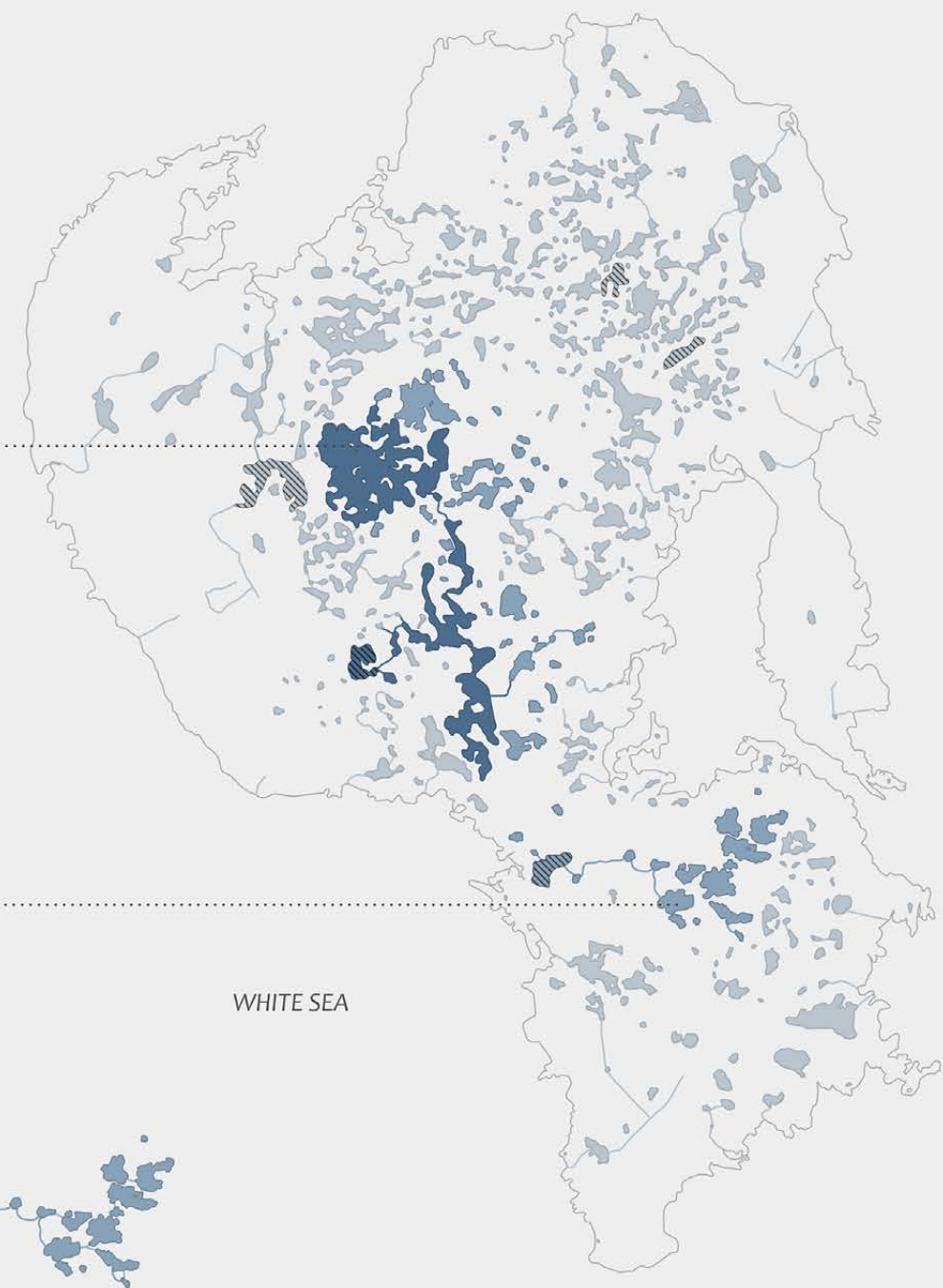
BIG KORZINO LAKE
17 MASL
7 m max depth



SAINT LAKE
8 MASL
7 m max depth

BOAT SYSTEM
OF BIG SOLOVETSKY ISLAND

DRINKABLE SYSTEM
OF BIG SOLOVETSKY ISLAND



GEOGRAPHICAL ANALYSIS/STATISTICS

INFRASTRUCTURE

"From the walls of the Solovetsky monastery to a little more than 6.4 kilometres away, that is the same road that we were going up on towards the Mount Sekirnaya, is situated the most ancient road on the Solovetsky islands. Pass through the village, pass by the weather station on the seashore, branching reserve the right path leading to the boat station and continue the path in the woods." (Boguslavskiy Gustav. Solovetsky Islands: Essays. / 3rd izd. Arhangelsk; Northwestern. Proc. Publ, 1978. - 173 p. : ill.)

In the past, the roads on the archipelago linked the monastery to all the sketes, piers and fishing grounds. Originally, roads were traced based on the use of inhabitants, but currently they are maintained according to the road cargo and passenger transportation. Over the years, part of the monastery roads lost its importance and became hiking trails.

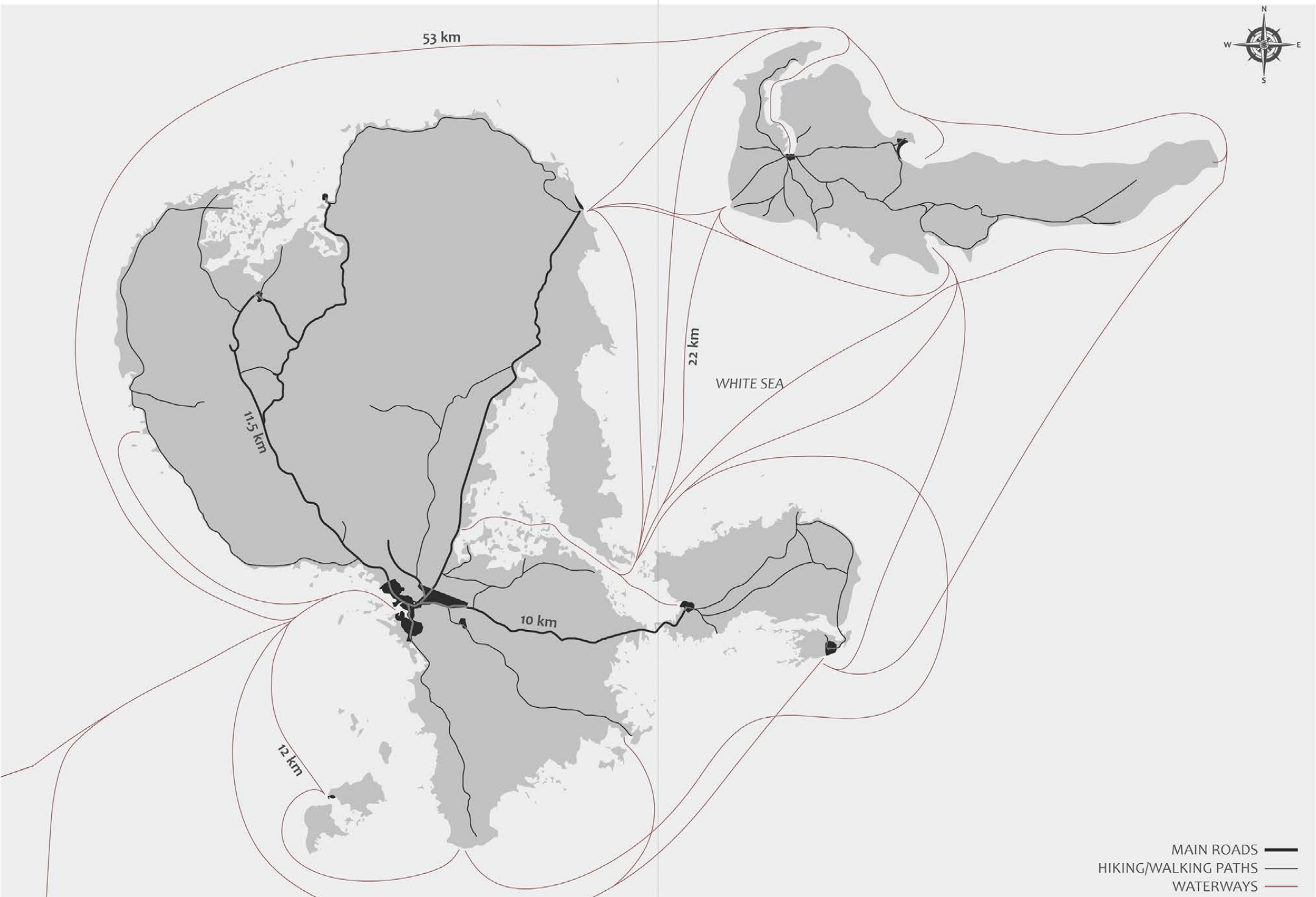
Despite the significant decay and abandonment of historic roads, hydraulic engineering elements, waterworks and irrigation networks, taken over from the forestland and hayfields through manual labour of the monks, it is a compelling representation of the large-scale work on the improvement of the archipelago and its ambience, that has occurred consistently and systematically over the past several centuries. Among the many hydraulic engineering monuments is also the exceptional establishment of the dam of the Big Solovetsky Island, characterised by a special expression of boulder masonry, rare use of manual labour and its organic connection with its surrounding natural landscape. This dam is a rare example of road construction and hydraulic engineering in modern times.

The Solovki Museum-Reserve built two ecological trails on the Bolshoy Zayatsky Island, where tourists can move on wooden trails. According to the Russian-Finnish project they also established an ecological trail to Cape Beluga. There is no asphalt coverage on the archipelago and the main transportation system is run with buses that belong to the Solovetsky Museum-Reserve, Solovetsky Monastery, the municipality and private parties.

Locals and tourists are actively using bikes, quad bikes and mopeds to get about on the islands. Bicycling has proved to be the most accurate vehicle on Solovki. Obviously it is the most sustainable solution that the local environment can appreciate and it is sometimes even faster than taking the bus. Almost all locations on the Big Solovetsky Island are accessible by

bicycle, and it is even possible to bicycle to the Muksalma Island. However, there are also a few disadvantages to this mean of transport. For one, the archipelago's roads are completely unpaved, including forest roads and trails. It is definitely suggested to have certain skills or experience with riding a bike on an off-road conditions before taking the challenge at Solovki. Nowadays more and more people are organizing bike tours around Solovki, which is a completely unique opportunity to see all the island in a nature-friendly manner.

Located 2.5 kilometres away from the Solovetsky village is situated the boat station on the shore of Lake middle Perth. Boats are being rented out here to visitors and at the boathouse there is also a small store to purchase mementos.



GEOGRAPHICAL ANALYSIS/STATISTICS

INFRASTRUCTURE

Problems

The development of tourism places an urgent requirement on the development of roads. More than 75 kilometres of roads, that link the monastery with other localities, are in critical shape and need immediate attention. The development plan initiated by the municipality of Arkhangelsk has specific guidelines to handle this problem of roads.

Develop tourism urgently requires a decision on the road construction. Require repair or reconstruction of more than 75 km of roads linking the village Solovetsky with other localities: Savvatevo, Isakov Rebolda to St. St Sergius monastery on the island Big Muksalma and others. The concept of of Solovki until 2029, and other program documents developed by the administration Arkhangelsk region, provide a solution to these problems.

The roads inside the Solovetsky village, as well as beyond the border, require a thorough development which has to link all the functional areas specified in the new master plan of the area. Inclusively the infrastructural development has to control the restoration work on the settlement roads that carry historic and cultural value.

It is important to ensure the extension of transportation and an ordered structure of streets of the Solovetsky village. To organise the movement and diversion of trucks around the residential areas of the village it is essential to establish a bypass road, which would decrease the impact of traffic in the heart of the village. This improvement can enhance the transportation link between settlements, recreational area, sightseeing and tourist facilities. Additionally, repairing of roads can create more possibilities for the biking paths. Existing roads do not meet the technical requirements for the transport of passengers.



TERRITORY OF THE SOLOVETSKY ARHIPELAGO

347 KM²



INTERNAL WATER SYSTEM

34.5 KM²



TERRITORY OF FOREST

299.8 KM²



ROAD COVERAGE

8.5 KM²



TERRITORY OF SETTLEMENTS

4.2 KM²



TOPOGRAPHY, HIGHEST POINT

88.2 M

SECTIONS OF THE ISLAND SECTION 3-3

HOLY ASCENSION SKETE

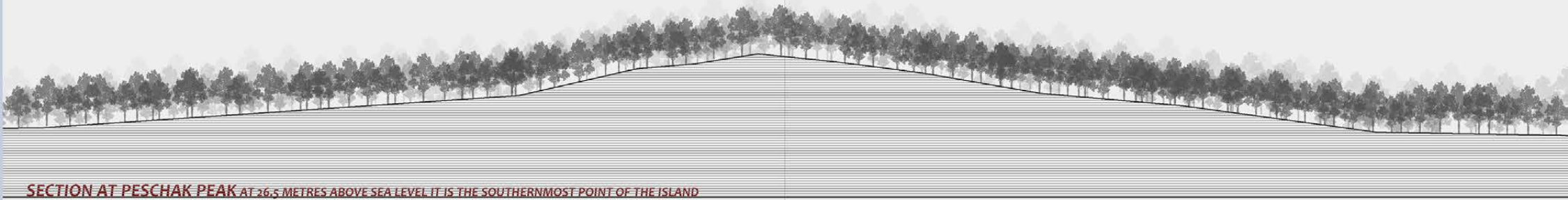
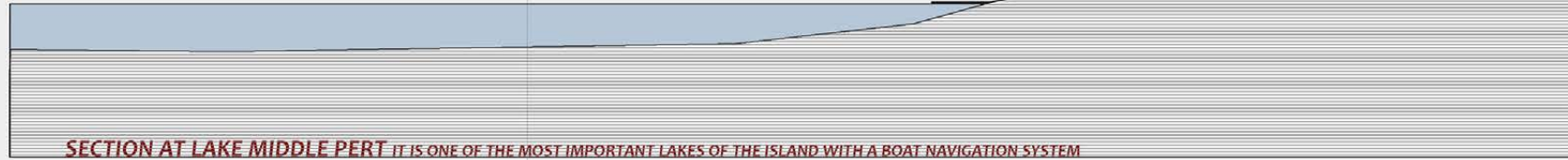
LAKE BIG KRASNOE

MAKARY SKETE

MIDDLE PERT

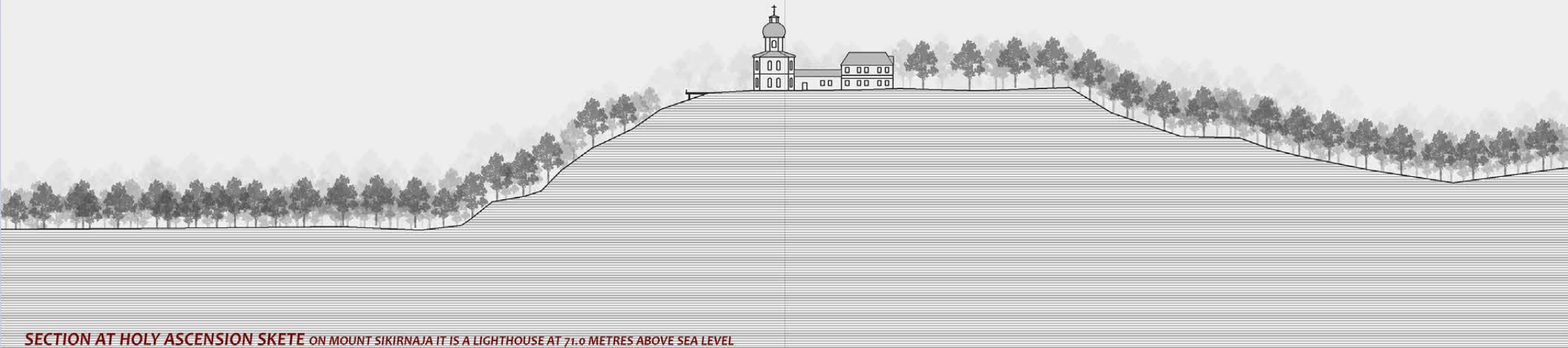
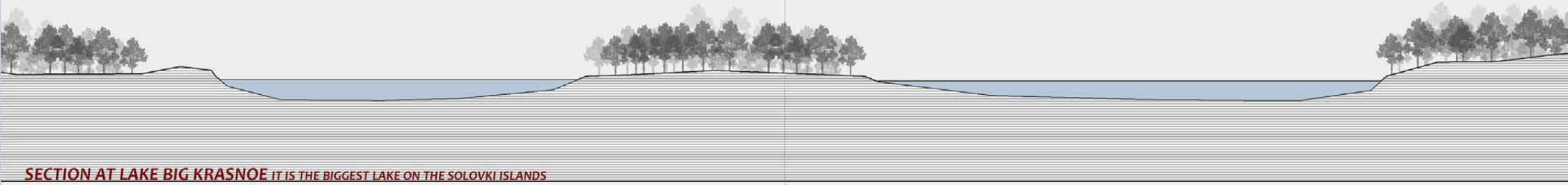
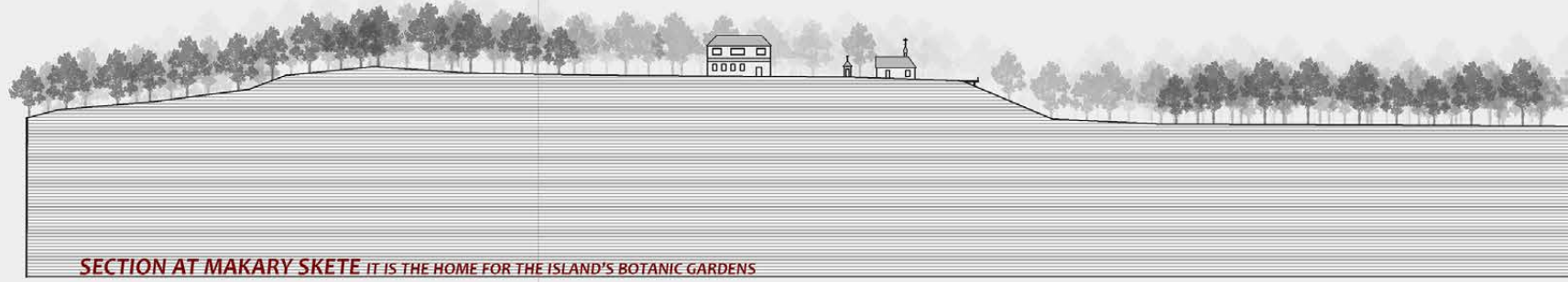
SOLOVETSKY MONASTERY

PESCHAK PEAK

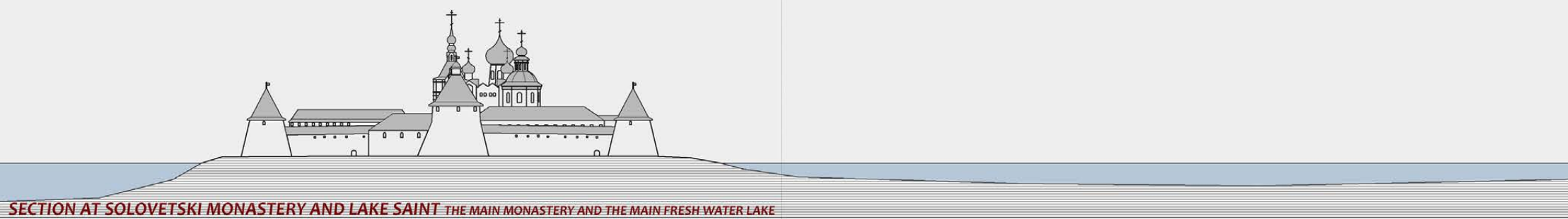
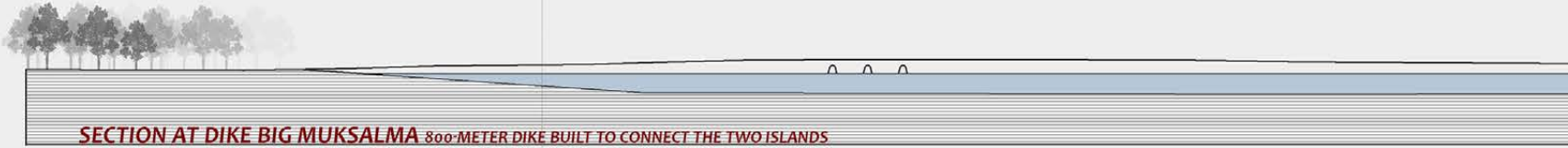
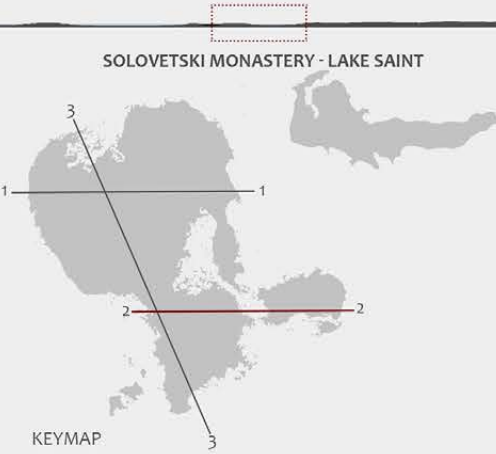


SECTIONS OF THE ISLAND SECTION 3-3

HOLY ASCENSION SKETE LAKE BIG KRASNOE MAKARY SKETE MIDDLE PERT SOLOVETSKY MONASTERY PESCHAK PEAK



SECTIONS OF THE ISLAND SECTION 2-2

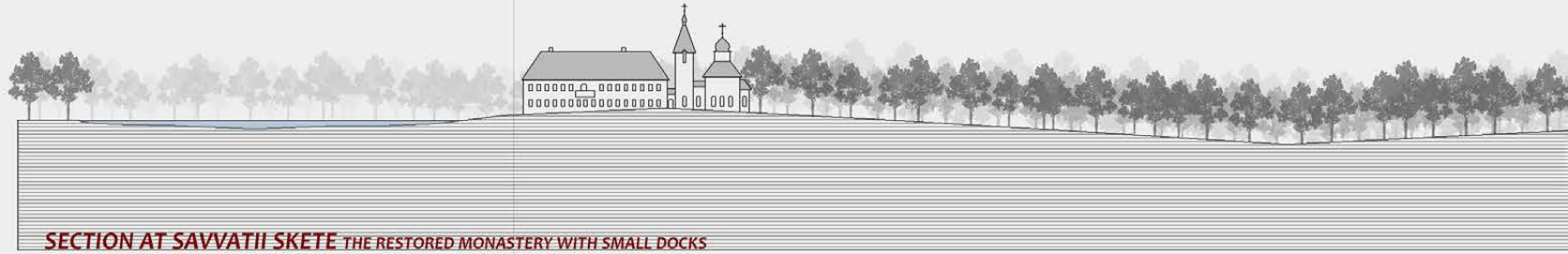
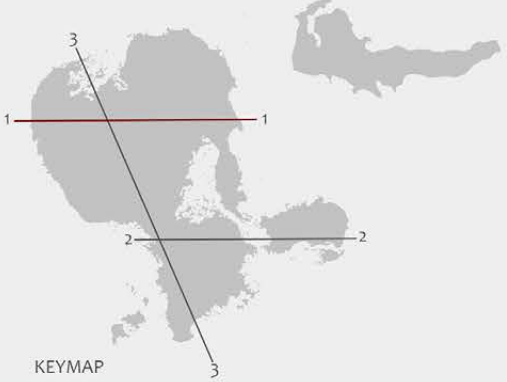


SECTIONS OF THE ISLAND SECTION 1-1

SAVVATII SKETE

LAKE BIG OSTRECHIE

PODNEBESNAYA PEAK



CLASSIFICATION OF RESOURCES

POPULATION

Due to its remote and rural location, the Solovetsky islands are rather scarcely populated. They are home to less than 1000 inhabitants. As of January 1, 2013 the population of the islands increased to a total of 917 people. The population has been increasing since 2008 by 101 people (+12.4 %) bringing it back over the 900-mark after 9-years' time. Additionally, an increase of migration is expected in the following years due to the support for development from the local and Arkhangelsk municipalities.

The demographic situation in 2012 was characterized by a decrease in fertility and mortality. In 2012, 12 people were born on the island, hence the birth rate value was 13.4 per 1,000 people. (a decrease of 11.2 percent compared to the same period in 2011). Birth and death rates of the Solovetsky Archipelago tend to be larger than those of the Arkhangelsk region and the Russian Federation. Keeping the trend of the last three years, the natural increase of the population in the archipelago in 2012 was negative at -1.1 per 1000 population.

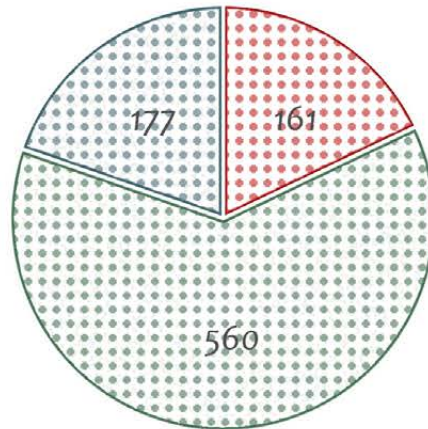


446



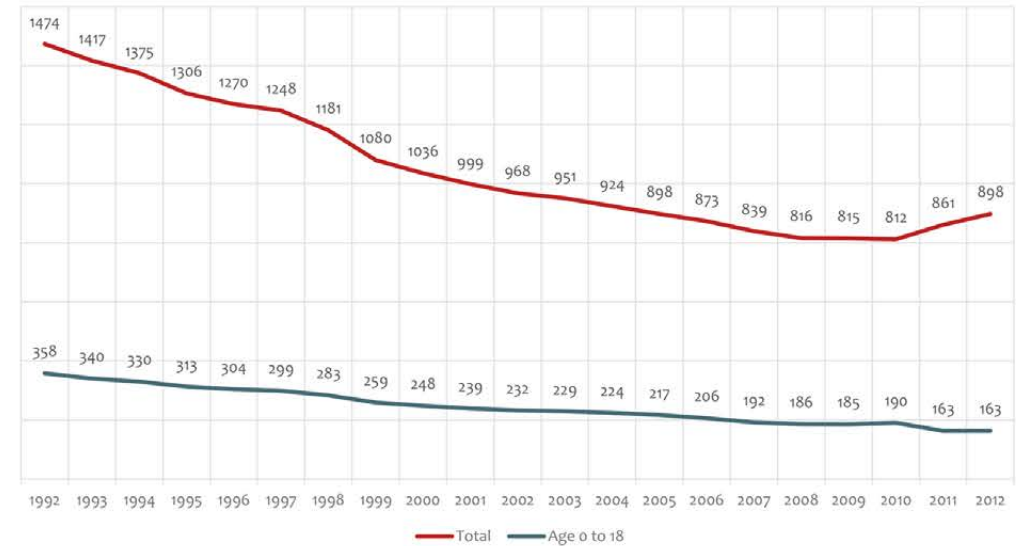
452

DEMOGRAPHY 2012

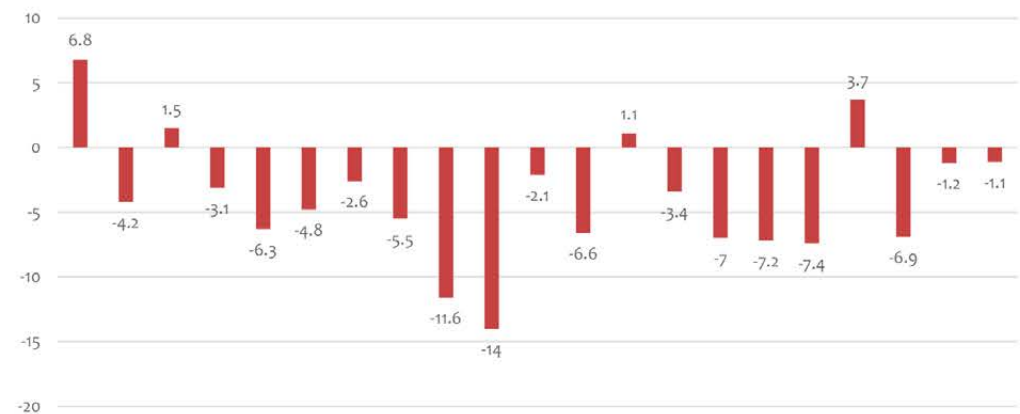


■ Age 0 to 15 ■ Age 16 to 55 ■ Age 56+

POPULATION CHANGE



POPULATION CHANGE PER 1000 INHABITANTS

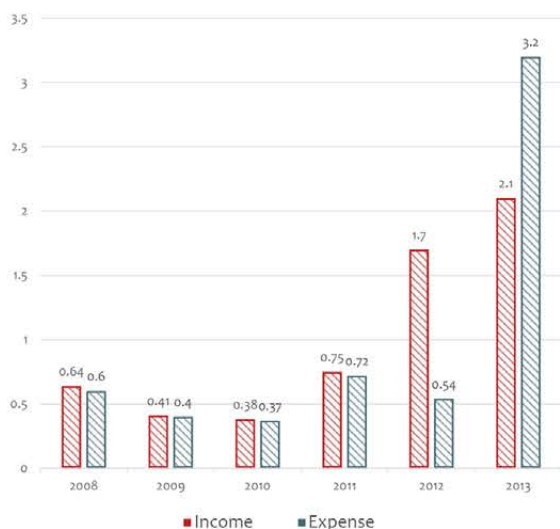


CLASSIFICATION OF RESOURCES

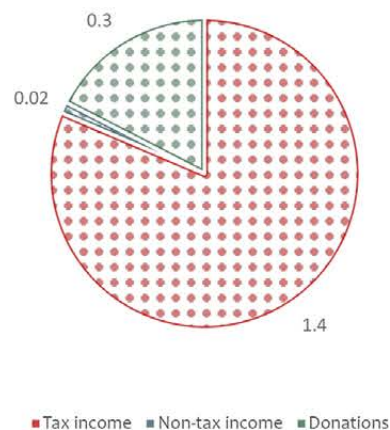
ECONOMY

The key factor to describe the financial sphere of the archipelago is that the budget of the Rural Settlement of Solovki is not in compliance with the socio-economic needs of development of the region. In order to increase the budget the local municipality has agreed to invest into production capacity and more jobs. In the recent years the Region of Arkhangelsk has been investing funds to the region.

TOTAL BUDGET IN MLN EUROS



INCOME DISTRIBUTION IN 2012 IN MLN EUROS



One of the main problems involving the local people in the labor market is the majority of low-skilled workers in different fields of industry. Due to the lack of educational facilities, it is difficult to develop the community's capabilities to handle specific fields of development by themselves. Restoration works, maintenance of modern equipment and the introduction of new technologies require highly skilled specialists who have to be invited to the island for short-term work. This kind of expensive import of experts could be avoided if proper equipment and skills were available on the archipelago all year round.

TYPE OF INDUSTRY/SERVICE

QUANTITY

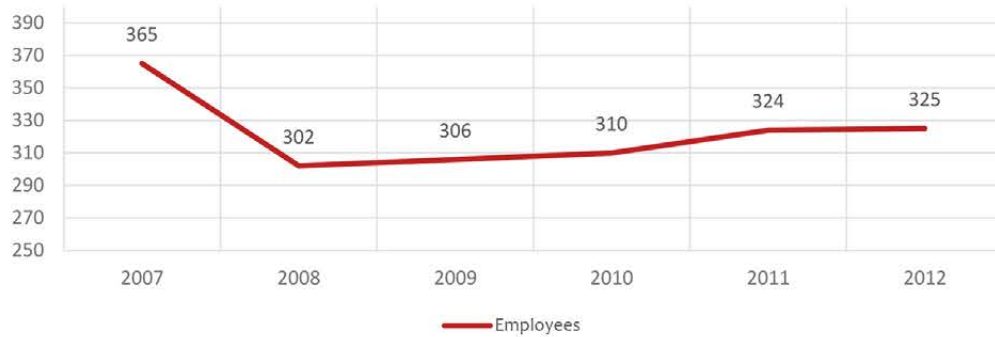
TYPE OF INDUSTRY/SERVICE	QUANTITY
AGRICULTURE, HUNTING AND FORESTRY	5
FISHING AND FISH FARMING	1
MANUFACTURING	1
PRODUCTION AND DISTRIBUTION OF ELECTRICITY, GAS AND WATER	3
BUILDING CONSTRUCTION	2
WHOLESALE AND RETAIL; VEHICLE REPAIR SHOPS, HOUSEHOLD GOODS	5
HOTELS AND RESTAURANTS	6
TRANSPORT AND COMMUNICATION	6
FINANCIAL ACTIVITIES	1
REAL ESTATE, RENT AND BUSINESS	3
PUBLIC AND SOCIAL SERVICES	3
EDUCATION	2
OTHER SERVICES	8

CLASSIFICATION OF RESOURCES

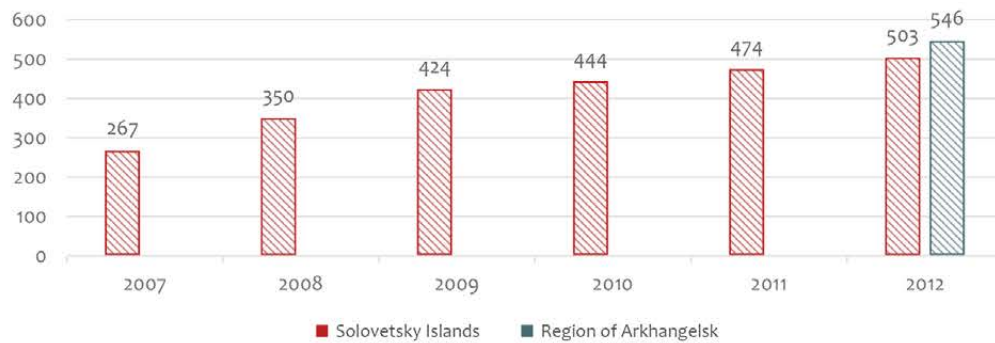
ECONOMY

One of the biggest influences to the employment rate on the Solovetsky Archipelago, is the seasonal nature of the work. During the summer, most of the local people are involved in the service of tourist flows, whereas in the winter the working opportunities decrease and workers migrate to mainland towns to make a living. In order to provide a stable employment in the tourist sector, it is essential to make the island more attractive in the winter season too, while not exceeding the limit of human impact on the natural environment of the Solovetsky Archipelago which is currently set to 30 000 visitors per year.

EMPLOYMENT IN THE INDUSTRIES

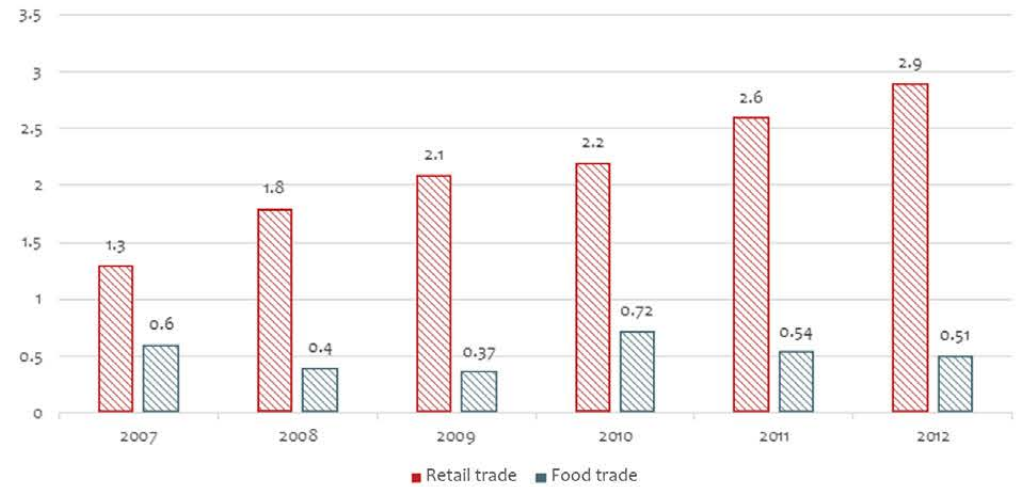


AVERAGE MONTHLY SALARY IN EUROS



Capacity

LOCAL MARKET TURNOVER IN MLN EUROS

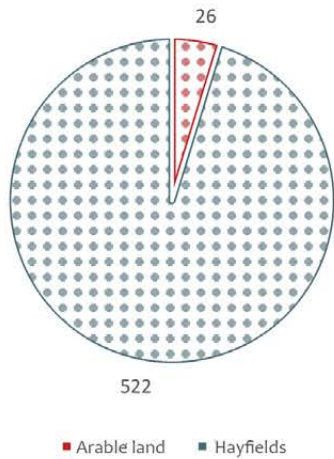


CLASSIFICATION OF RESOURCES

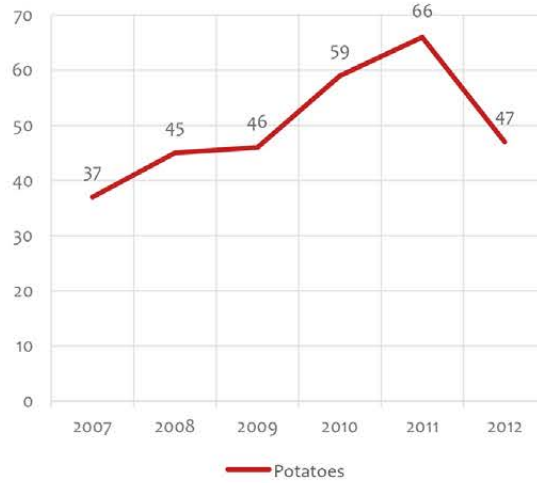
ECONOMY

The agricultural land on the island totals to 5.5 square kilometres. The capacity of the development of the level of agriculture is low and it is not being advanced. There is weak involvement of local people in the agricultural industry. Additionally, the recurring floods are salinating the soil crippling the fertility of arable land. New technologies have not been applied and agricultural infrastructure is insufficient.

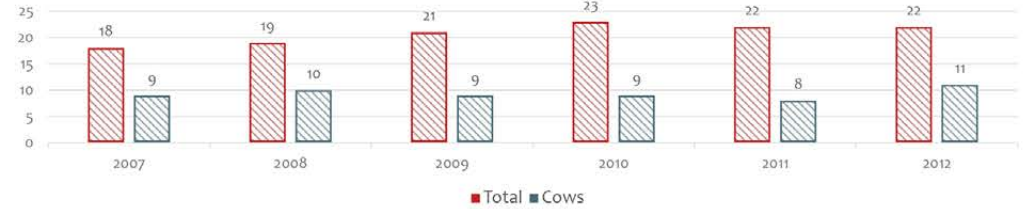
AREA OF AGRICULTURAL LAND IN HECTARES



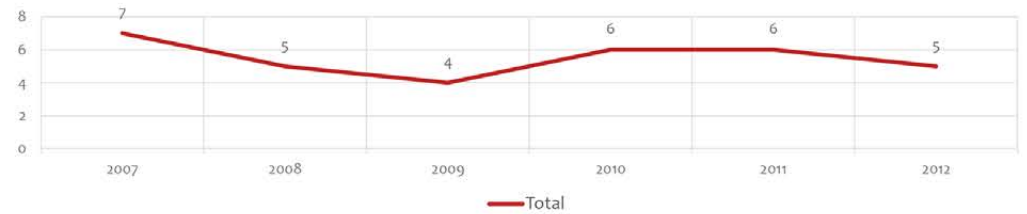
PRODUCTION OF AGRICULTURAL GOODS IN TONNES



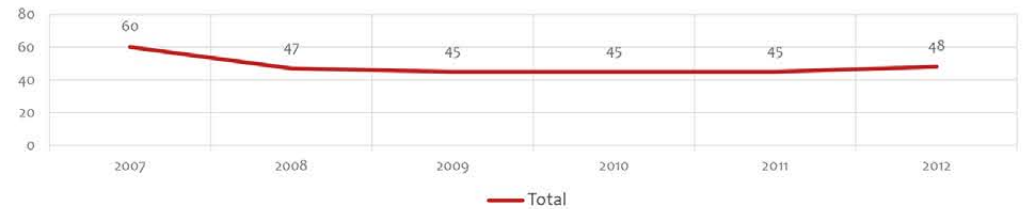
AMOUNT OF LIVESTOCK



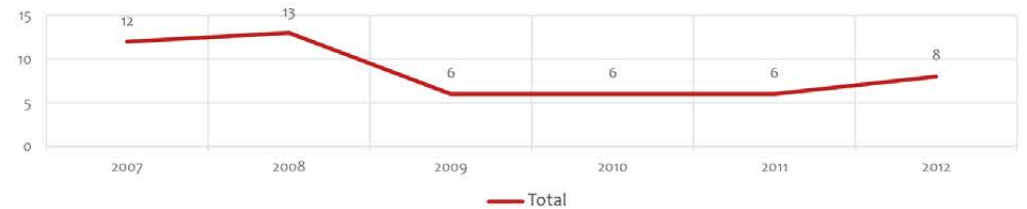
PRODUCTION OF LIVESTOCK GOODS IN TONNES



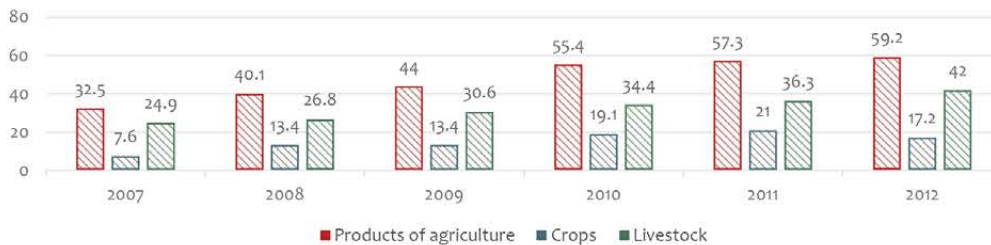
PRODUCTION OF MILK IN TONNES



PRODUCTION OF EGGS IN THOUSAND



AGRICULTURAL PRODUCTION IN THOUSANDS EUROS

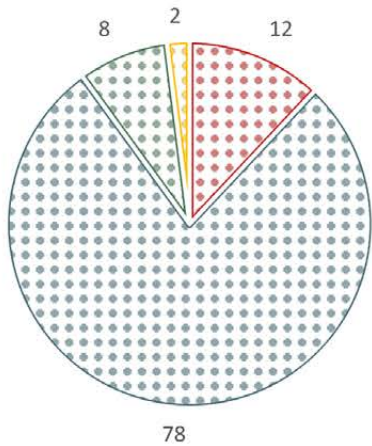


CLASSIFICATION OF RESOURCES

TOURISM

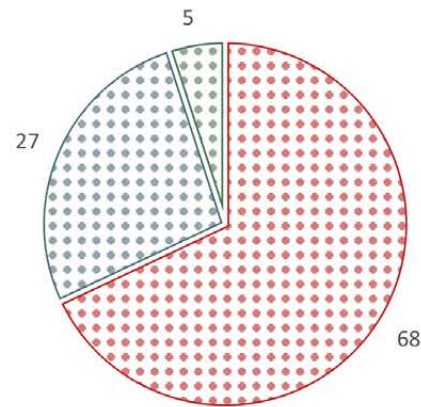
The official tourist season on the Solovetsky archipelago ranges from the end of May to the beginning of September. This accounts for roughly 150 days of a year. The capacity of the tourism industry on the island is estimated at around 30 000 tourists per year. The main period of tourism is in summer when most of the local inhabitants welcome tourists as tour guides, retailers and other services oriented specifically for the visitors. In winter the tourist industry is shut down due to insufficient number of visitors. Not only by the weather but also it is caused by the absence of conditions for reception of tourists in winter.

SEASON FOR VISIT IN %



■ Spring ■ Summer ■ Autumn ■ Winter

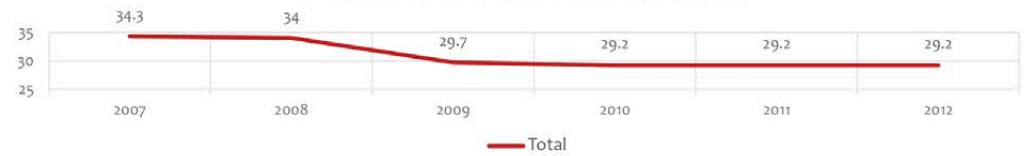
REASON FOR VISIT IN %



■ Culture ■ Religion ■ Family/Business

However, even with comfortable weather and accommodation conditions for travel, the island is nevertheless well under-prepared to host any larger number of tourists. At the current condition in all 6 operating hostel/hotel services the total amount of beds is a mere 480. It is clear that in order to expand the capacity to host a larger number of tourists the municipality has to allocate funds to increase the dwelling stock of the island. Over the last few years the stock has decreased due to degrading and demolition of habitable spaces.

DWELLING STOCK IN THOUSAND M²



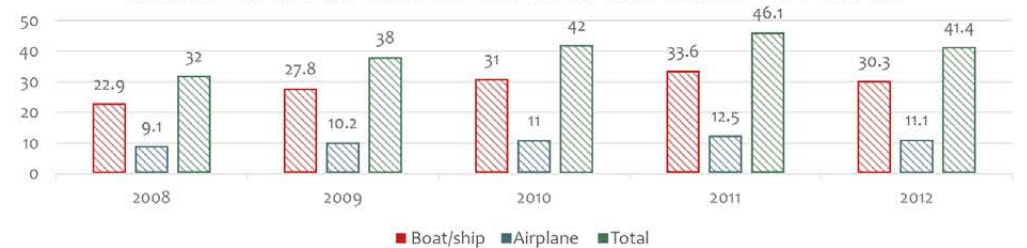
PASSANGER SHIPS



The only methods of arrival to Solovki are by boat or by plane. The majority of tourists use the waterways to reach the island. The boat service is open from two major ports in the area: Kem and Belamorsk. Flights to Solovki can be caught both from Moscow and Arkhangelsk airports. Naturally, the busiest periods of tourist travels are in summer, however in winter the island can only be reached by plane.



MEANS OF ARRIVAL OF TOURISTS IN THOUSAND OF PEOPLE



INHABITANTS OF THE ISLAND

HISTORY IN FACES

Throughout the history of the Solovetsky archipelago has been home to a lot of great people. In the early stages of the history, the islands represented a solitude for hermits, however, later in the prosperous ages before the Revolution, it became a place of education and discovery. During the Soviet Union the archipelago changed its meaning to being a place of last hope, comprehension and acceptance. Nowadays, the archipelago is once again attracting people with its mystery and uniqueness, to inspire and create new biography.

Almost all the residents of Solovki, are not descendants of local inhabitants. Most of the people came to the archipelago as visitors, but after feeling the attraction of this place, they decided to stay here permanently. For example, a Polish writer Mariusz Wilk came here 10 years ago as a tourist for two days to find out that he wanted to stay here forever. He married a Russian and they established a friendly European garden in the courtyard together. Mariusz learned Russian and wrote a book about the Solovetsky islands. Valentina Kuznetsova directs the boat station on the Solovetsky lakes. She came here 19 years ago and settled for 40 years. During the summer season she lives in a forest hut by the lake without electricity and water. On the shore of the Prosperity Bay near the memory cross, which is placed right in the water, you can see the two-storey house with carved wooden decorations. Here is the home to the artisan of the crosses George Cojocari. He came to the island 20 years ago from Moldova. 'We then went with my wife to travel to the north of Russia, studying architecture. And wherever we came, we were told: 'You should see Solovki!' Well, we got here. And we stayed.' George became the chief architect of the museum. Exploring the ancient inscriptions on the cross, he began to carve crosses himself. Today he heads the monastery workshop of wooden memory crosses.

A number of various Solovetsky archipelago themed exhibitions have been organised. The island is a perfect ground for various artists, such as photographers, painters, craftsmen and more. Younger visitors are engaged into creative and educative activities in the summer school of Solovki. Here they have lots of seminars, meetings, lectures and art projects every year. Since 2005, an annual summer festival of arts and songs takes place in the village, called 'On the Solovetsky islands'. Every year the festival brings together tens of participants, including bards and performers from different cities of Russia. The organizers are St. Petersburg bards club 'East', the Solovetsky Museum Reserve and the Rural Settlement of Solovki.





REFLECTION
SOLOVETSKY ARCHIPELAGO



SOLOVETSKY COMPONENTS

IDENTIFICATION

Our research set out to define the characteristics that the Solovetsky archipelago withholds. Among the diverse features that the research unveils there are three outstanding traits that are best describing the essence of this remote scenery – religion, memory and nature. These three layers are the prominent heritage of the archipelago entwined in one another forming the islands' identity.

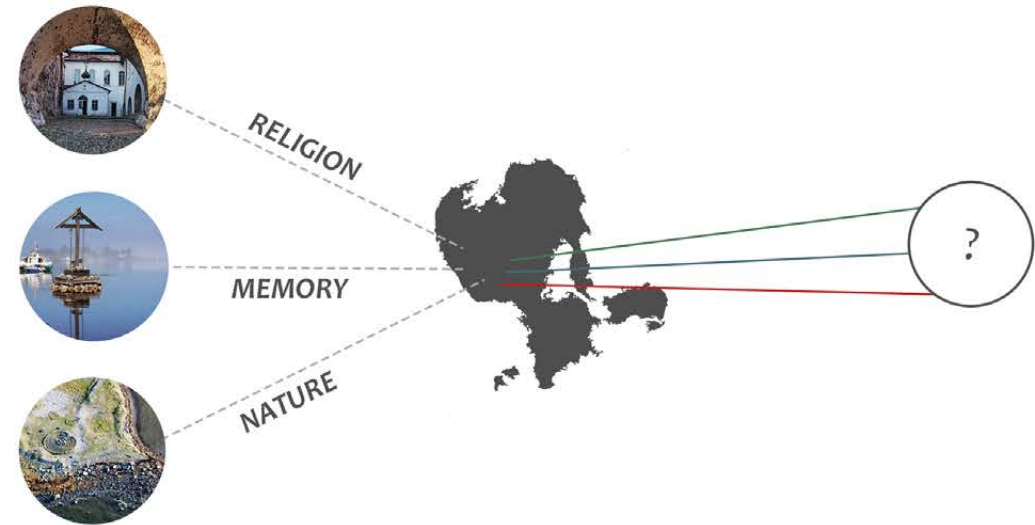
Currently it is planned to develop the islands in a way that will improve the quality of life of the inhabitants as well as the quality of experience for the visitors. However, we believe that any intervention on the archipelago should be related to its identity. Only in this manner, the essence of the traits that have shaped the island can be preserved. Integrating the three layers of heritage in the interventions will improve the qualities of the islands as well as protecting its defining characteristics.

There are a number of reasons for protecting the identity of the archipelago. It is evident that these three traits are the incentive for people to visit the Solovetsky archipelago. Perhaps even more importantly the features of the islands define the types of people that visit the island. As people are interested in different qualities the island can benefit from preserving its traits of heritage and making them available to wider audiences.

Even today there are discussions about the archipelago which suggest that it should carry a singular function and emphasise only on a single trait of heritage. Based on our research, we think that the islands would lose its integrity from having just one quality to offer. The archipelago is rich in secret elements of religion, memory and nature that invite people to discover them in hidden parts all over the Solovetsky landscape. These elements are all connected to the roots of the archipelago's identity.

We want to reflect on the three main traits of heritage – religion, memory and nature, and map down all the elements of each quality on the islands. This will reveal the spread and density of each trait clarifying the saturation of its elements across the archipelago. The abacus of the sifted elements can point to more densely saturated locations on the islands which will hint us to the possible locations of our interventions.

TRAITS



.....●..... Research>..... Reflection>..... Reaction



"The Solovetsky Monastery gives an unforgettable impression from the sea ... it rises suddenly from the bosom of the cold light blue waters of the White Sea with a whimsical silhouette of the fairytale "city on the sea-ocean" with the ancient gray stone walls, towers, bell towers, multi-colored domes of white churches ... "

Anna Hippus



RELIGION ELEMENTS

ACTIVE AND EXTINCT

The Solovetsky archipelago has been throughout the history a religious location. The identity of the island has been shaped by the pilgrims that settled in on the shores of the island in search for a place of solitude. Religion is a special part of the daily activities on the island which defines the archipelago as a spiritual destination.

Solovki became the visible embodiment of the idea of Holy Russia and it is of particular importance for the Russian Orthodox citizens. To them the Solovetsky Monastery is the object of worship and religious values. Due to the strategic planning of socio-economic development of the archipelago favourable conditions should be created for the monks of the monastery. Therefore, any intervention on the archipelago should not create social discomfort for inhabitants that are professing Orthodox values and for the visitors and inhabitants a special set of regulations, in connection with the reserved land status, should be implemented. For instance, the monks want to have a complete isolation for religious rituals and therefore the completely reserved island of Anzer will not be a part of the intervention agenda.

The Solovetsky monastery. This is the main element of the religion trait on the archipelago. This complex is a heritage from as early as the XV century and it is the monument of the Solovetsky islands. This structure consists of several museums and churches and the main church is the Transfiguration Cathedral. The monastery is active all year round and it serves as the home for all monks and priests and as a temporary accommodation for visiting pilgrims. The structure is constantly renovated to maintain its appearance.

The Holy Ascension Skete. This church is located on the Sekirnaya Mountain, one of the highest on the archipelago. Therefore, this church also has a special function as a lighthouse because it is visible from afar. It is an important node that opens a picturesque viewpoint over the island. In the Soviet time this church had a cell to carry out excruciating torture and executions of prisoners.

Other elements of religion are spread around the archipelago. For instance, The Savvatii Skete which had the first two-storey brick building for accommodating the monks and priests. Another element is The Golgotha Skete which is the most reserved church on Solovki. It is located on the highest mountain of the islands and is only accessible for pilgrims.

NAME	FOUNDATION TIME				ACCESS	CONDITION
	XV	XVI-XVII	XVIII	XIX		
Saint Andrey skete			●		●	dock for the boats new wooden pathes restored fisher house
Saint Philip chapel				○		
Saint Sergius of Radonezh chapel				○		
Transfiguration of Jesus chapel (mountain Favor)				○		
Chapel of the Navity				●	●	bad condition no religion service
Solovetsky Monastery	●				●	main monastery docks, village, stores
Chapel of the reverend Zosima		○				
Chapel of the reverend German		○				
Saint Varvara chapel				○		
Alexander Nevski chapel			●		●	botanic garden necessary facilities
Pechorskaya chapel			○			
Chapel of Isaakii Dalmatskii				○		
Holy Ascension Skete				●	●	church, chapel, storage house, sauna house panorama view
Saint Savatii Skete		●			●	docks, men monastery vegetable gardens house for the monks
Chapel of Korsun Virgin Mary			○			
Chapel of John the Baptist				○		
Saint Nikolas chapel, Rebalda				○		
Saint Philimon chapel			○			
Chapel of Saint Trinity				○		
Saint Trinity Skete		●			●	docks, wellspring men monastery necessary facilities
Chapel of Virgin Mary, Ken'ga				○		
Chapel of Saint Kirill Novoezerskii				●	●	restored chapel small fisher house used for guards
Golgotha-Crucifixion Skete			●		●	men monastery house for the monks
Eleazarova chapel				●	●	wellspring wooden pavilion

PRESERVED CHURCHES ● PRESERVED CHAPELS ● DESTROYED CHURCHES ○

ACCESSIBILITY AND FREQUENCY OF VISITS ● ● ●

ST SAVVATII SKETE



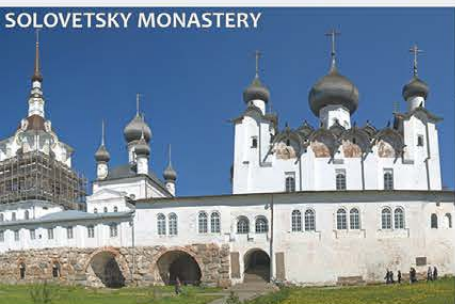
HOLY ASCENSION SKETE



ALEXANDER NEVSKI CHAPEL



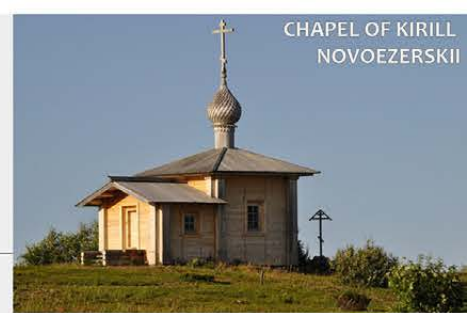
SOLOVETSKY MONASTERY



ST ANDREY SKETE



CHAPEL OF KIRILL NOVOEZERSKII



ST TRINITY SKETE



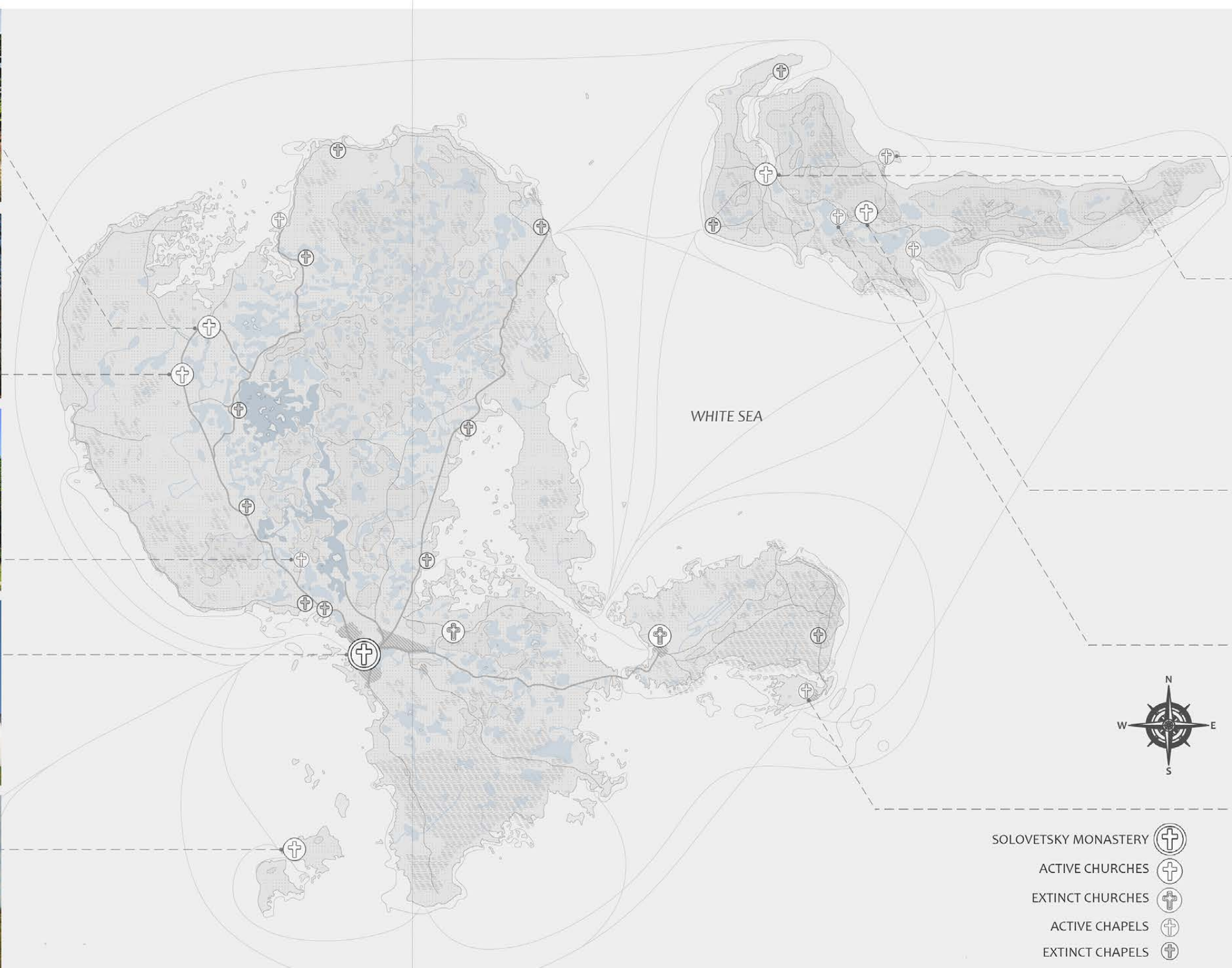
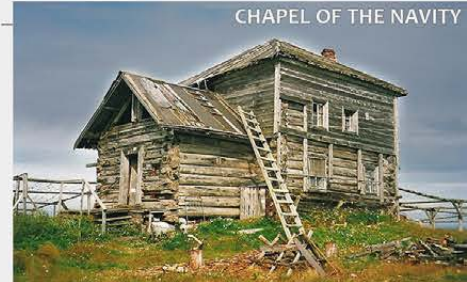
ELEAZAROVA CHAPEL



GOLGOTHA-CRUCIFIXION SKETE



CHAPEL OF THE NAVITY





"Everything passes, and everything remains. This is my most cherished feeling that nothing goes by completely, nothing is lost, but somewhere and somehow kept. The value remains, even though we stop to perceive it. And facts, even though they all are forgotten, they somehow stay and give offsprings. Though we are sorry for the past, there is a lively sense of eternity."

from a letter Pavel Florensky to mother, Solovki, 1935 .:



MEMORY ELEMENTS

BEFORE REVOLUTION, SOVIET UNION

The trait of memory is of great importance to the island and its inhabitants. Throughout the history the memory of the island has been filled with various significant events from the tragic to the prosperous ones. In the contemporary Solovki, for the inhabitants it is paramount to remember the history and recognize its traces on the modern surface. Tragic event that occurred on the archipelago cannot be erased but it is essential to remember the significant events and the martyr people. The elements of memory need to be preserved and kept free of irrelevant intervention.

Until the monastery was closed in 1920, the Solovetsky Islands had a wide variety of crosses. These 3000 crosses included votive, memorial and worship crosses. The worship cross, which is the most wide-spread among them, is meant for the prayer and bowing before it. However, the memorial cross is no less important: it is erected in the honour of a great person or a significant event with a memorable purpose.

In the northern part of Russian a great number of worship and memorial crosses were erected including the Solovetsky crosses. Each cross is a unique historical monument of peasant literature, architecture and worship. However, nowadays these monuments of culture are on the verge of extinction.

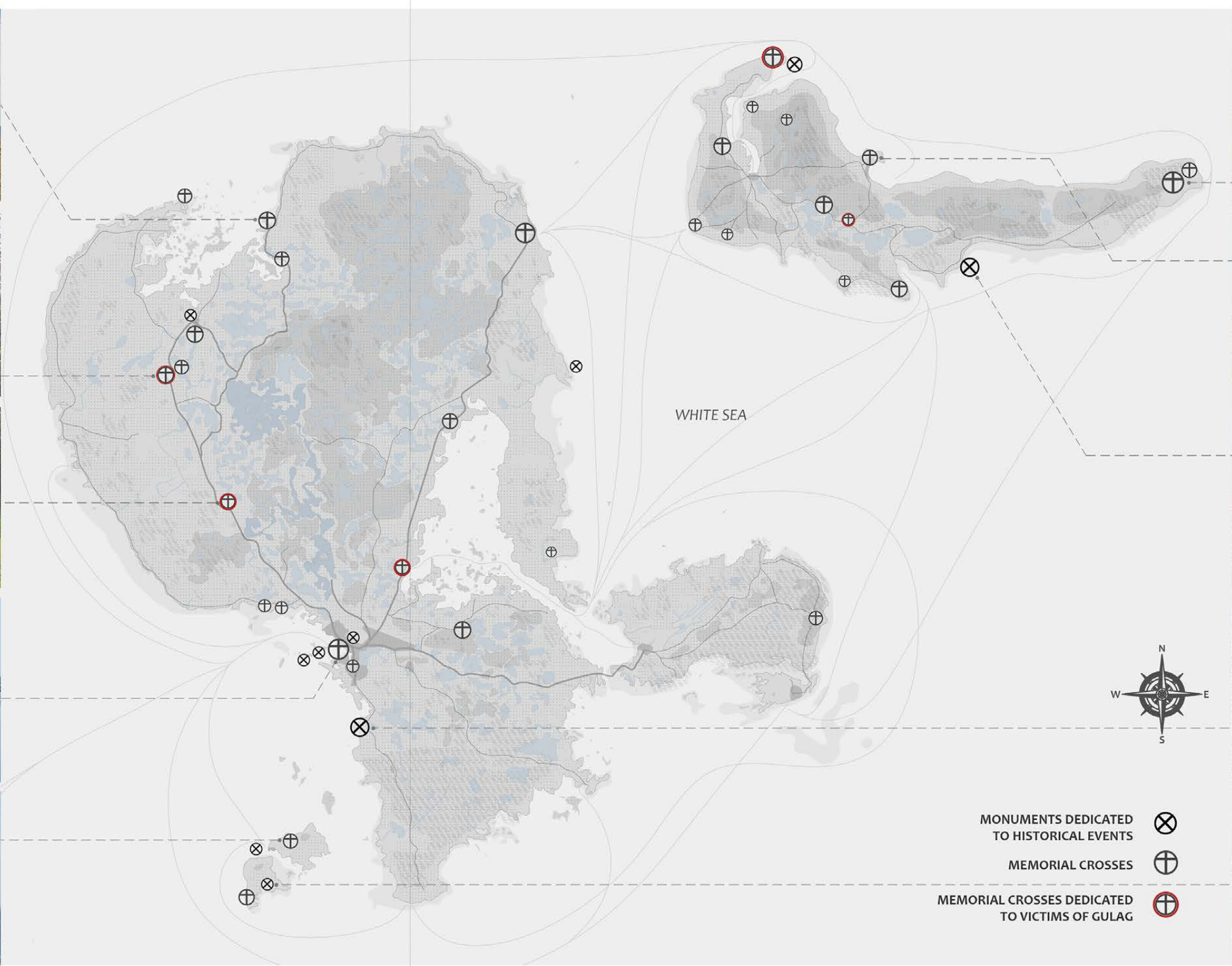
In 1920-1929 during the time of Soviet prison camps at the archipelago (SLON), thousands of crosses were destroyed on the Solovki. According to eyewitnesses in the autumn of 1922 a special event was held on the incineration of ancient crosses. The tradition of erecting tall worship crosses on Solovki was revived in 1990 after restoration of the Solovetsky Monastery's Transfiguration Cathedral.

Already for 11 year there is a workshop, founded by the architect Kogokar dedicated for people that are studying, analysing, restoring and building crosses on the places of the memory throughout the Solovetsky Islands. The first cross that was made in the workshop and dedicated to the Neomartyrs was installed at the foot of the mountain Sekirnaya in 1992 in the presence and blessing of the Patriarch Alexy II. It is this cross that initiated a serious work on the study and understanding of crosses.

NAME		XVI-XVII	XVIII	XIX XIX	ACCESS		
Negotiation stone	HISTORICAL EVENTS			●	●	Crimean war 1854 connection to the main village	
Goreloe cape			●			gorodok as a small mountain hill	
Cape Troisky				●	●		
Cape Kaporsky			●		●	gorodok as a small mountain hill	
Island Igumensky				●	●		
Bugouts of yung school				●	●		
Pechorskay chapel cross					●	●	on the place of the extinct chapel near the boat station
Holy ascension skete cross			●		●	at the foot of the sekimaya mountain the largest cross, rest stop	
Sekirnaya mountain top cross				●	●	in memoery for victims of GULAG most violent place	
St Savvatii skete cross		●			●	on the place of the extinct chapel monastery active skete	
Philipovsky sadki cross				●	●	extinct spring	
Florenskogo street cross				●	●	inside Solovki village	
Prosperity bay cross			●		●	7 meter high sea orientation next to the monastery	
Varvarina chapel cross	CROSSES			●	●	on the place of the extinct chapel boat station	
Makary skete cross				●	●	inside botanic garden	
Philipov skete cross				●	●		
St Andrey cross		●				●	harbour, historical signal sign
Rebalda cross				●		●	harbour, historical signal sign
Cape Ken'ga cross				●		●	harbour, historical signal sign
Sosnovaya cross			●			●	abandoned harbour sand beach
Cape Tonky cross			●			●	
Anzer spring cross					●	●	next to the spring restpoint with paviloin
Troytsky cape cross				●		●	dedicated to Bagenov painter, prisoner of GULAG
Kolguev cape crosses		●				●	preserved 6 crosses different purposes navigation, religion

ACCESSIBILITY AND FREQUENCY OF VISITS





- MONUMENTS DEDICATED TO HISTORICAL EVENTS ⊗
- MEMORIAL CROSSES ⊕
- MEMORIAL CROSSES DEDICATED TO VICTIMS OF GULAG ⊕ (with red border)



"In this unique atmosphere it seems as if there has never been any sin ... This nature as it has not yet learnt about the sin, in its original not touched state"

Mihail Prishvin, from the book "By sea to the Solovetsky Islands", 1953



NATURE ELEMENTS

ANTHROPOGENIC, NATUROGENIC




































The natural environment of the Solovetsky archipelago is a unique heritage. It is protected for its diverse flora and fauna both represented in the sea and on the land. Anthropogenic landscapes of the archipelago are combined with the unique beauty of the wild nature of the north. Spiritual and cultural values on the Solovetsky archipelago were originally created in harmonious unity with nature. Monastic brothers of the Solovetsky Monastery created the monastery ecosystem while ensuring the preservation of the natural heritage of Solovki.

Labyrinths of Solovki, Zayatsky Big Island. On the Solovetsky archipelago there are 35 mazes of the Neolithic period dating back to around 3,000 years BC. The labyrinths are made of cobblestones arranged in a specific manner on the ground. The smallest maze is of about 6 meters in diameter, whereas the largest are up to 25.4 meters wide. The mazes are in the midst of hard island vegetation yet their shapes are clearly standing out on the ground. They are very well preserved but the debate about their functions is yet to find its conclusion.

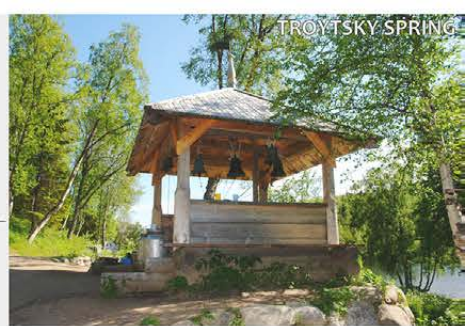
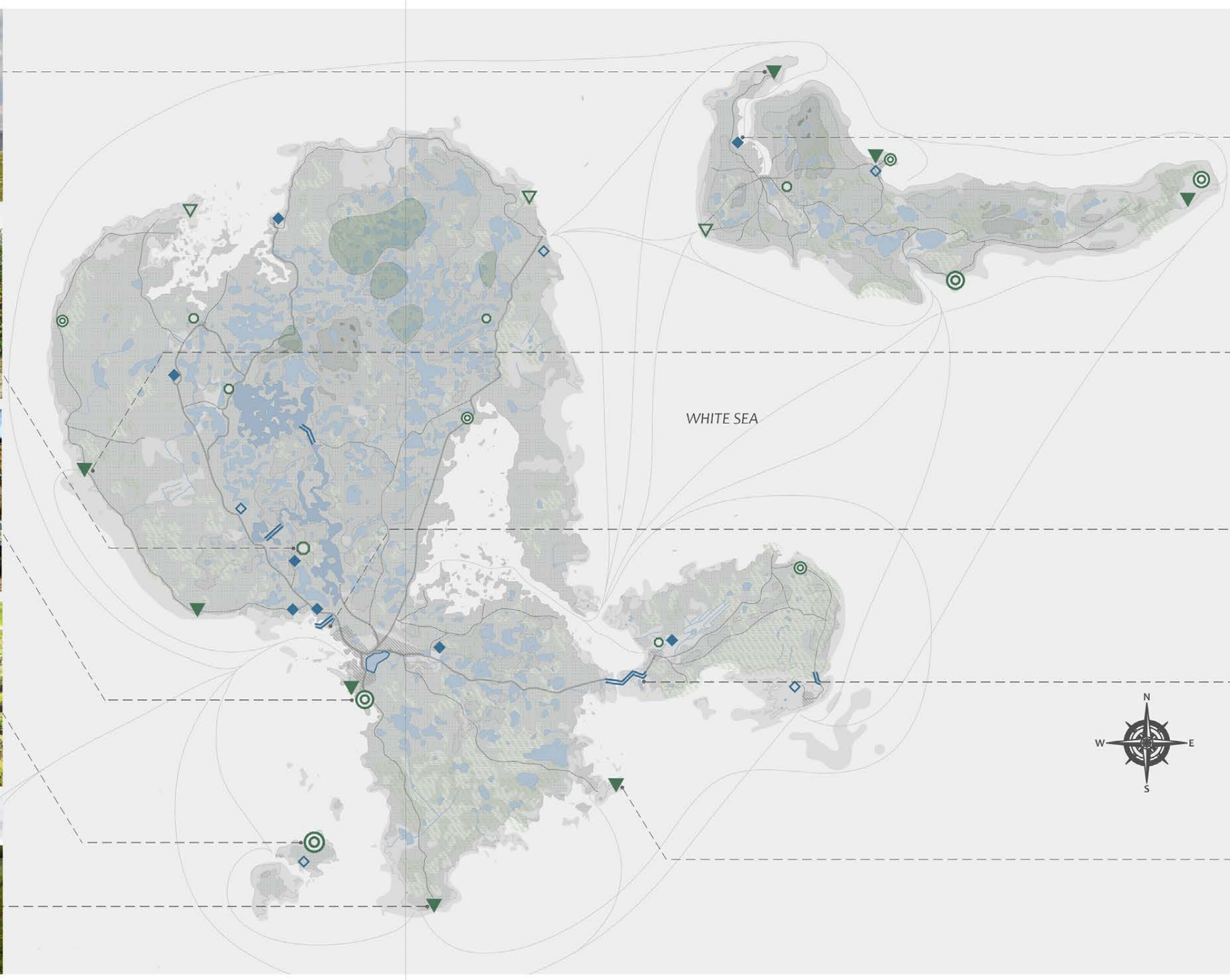
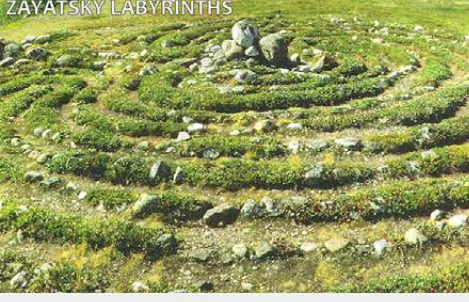
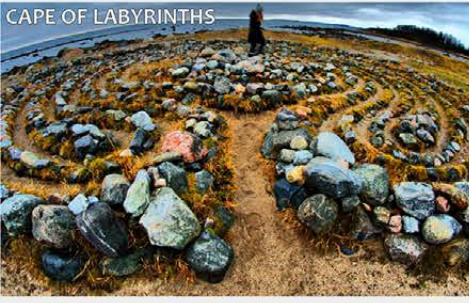
Cape Belugy. This cape is home to the White Sea 'beluga' - the white whale. It is the smallest type of white whale in Russia with body length from an average of 312 centimetres to 6 meters. This is a rare species, which in addition to the White Sea can only be found in the Barents Sea. There are around 80 white whales inhabiting the coast of the Solovetsky Islands. Since 1996 a regular research expedition is carried out by the Institute of Oceanology. They have an observation tower a few meters from the shore for easy lookout.

Botanical Garden. Located only four kilometres from the village of Solovki it is one of the most popular excursion sites on the archipelago. Botanical Garden is the result of extensive and hard work of the monks and peasants of the monastery. Over the lifetime of the monastery they attempted to acclimatise various plants to the conditions of the Solovetsky Islands. Today in the garden grows more than thirty species of woody plants, about 500 species and varieties of ornamental, medicinal, food and fodder plants.

Muksalma dike. It was built in the XIX century across the Strait of Southern Iron Gate. The construction of the dam was directed by the peasant Kholmogorsky. In the 1890s the large dam was improved allowing the passage of sailboats to the sea. The height of the dam is on average of about four meters high, making it safe even in case of strong sea waves.

NAME	ACCESS		NAME	ACCESS	
LABYRINTHS 					
Zaytsky labyrinths		II-I millennium BC largest maze in white sea only tours accessibility	Cape of labyrinths		restored stone sanctuaries open for everybody close to the main village
Labyrinths of Muksolma			Kolguev labyrinth		several stone constructions sand beach
Kaporsky labirinth			Kirillov labyrinth		
CAPES 					
Pechak cape		northen tundra trees sand beach volan stone placer	Kirillovky cape		
Tolstik cape		place for watching sunset	Kolguev cape		eastern point old abandoned lighthouse access through the beach
Belugy cape		feeding ecological path home for white whale observation tower	Tonky cape		
Berezovy cape		no transport road summer workers - seaweed collectors	Rebalda cape		used mre in summer seaweed collectors village utility houses
Troitky cape		rescue station a lot of logs on the beach	Ken'ga cape		boat harbour connection with big Solovetskii
SPRINGS 					
Philipovsky spring		saint spring on place of destriyed church	Chapel Zosima spring		
Sekirnaya mountain spring			Troitky spring		log cabin with a pergola restpoint on the way to Troitsky skit
Makary wellspring		botanic garden build up in 1824	St S. Radonezh spring		
VEGETABLE, FRUIT, BOTANIC GARDENS 					
Solovetsky botanic garden		5 hectore area. 1822 200 types of plants unique atmosphere	Isakovo plantations		harbour and boat parking final point for tours
St sergius radonezh gardens			St Trinity gardens		
Vegetable garden for monastery					
SEA AND LAKE DYKES 					
Muksalomskaya dyke		big boulder dyke without assembly, monument hydraulic engineering of XIX cen hight of 4 meters			
Philippovsky sadki		2 dykes created in XVI c for fish farming and salt plantations	White-red lakes dykes		boat trips for turists harbours and parkings

ACCESSIBILITY AND FREQUENCY OF VISITS 



SYNTHESIS OF ALL ELEMENTS

LOCATION DESIGNATION

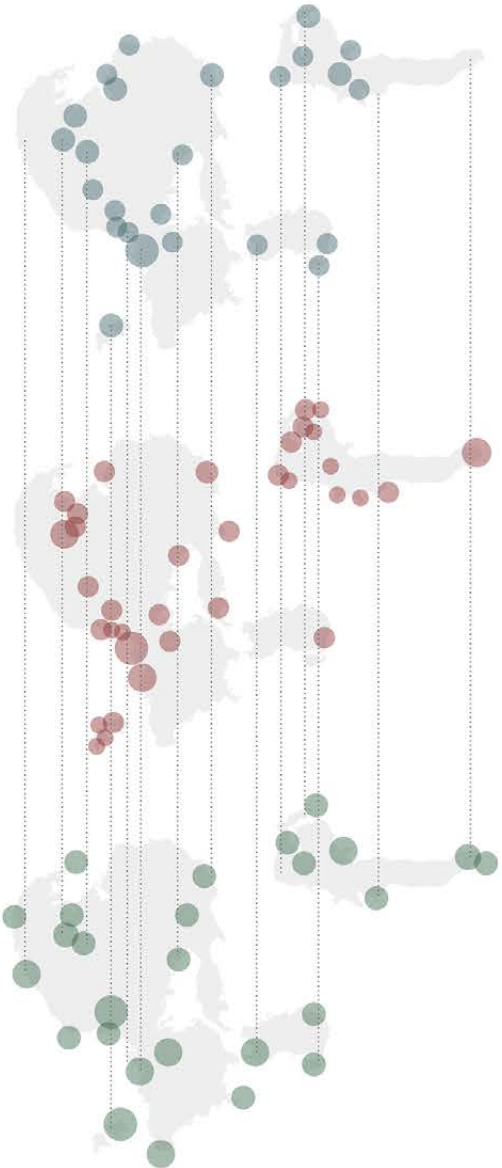
By thoroughly analysing the three traits of the Solovetsky archipelago's identity we are able to sieve out significant elements from each of the traits. Also this gives us an opportunity to track down all elements of religion, memory and nature and to visualise their spread across the islands. This abacus is the reflection of heritage elements that can be experienced on the archipelago.

In order to find out locations on the island where the traits are overlapping we want to superimpose these three layers of elements. It provides an overview of the main points of the islands. Various sites have different conditions depending on the quality of ambience and the perception of people. Over time some nodes further from human activity have decayed due to lack of development or inhabitancy.

In our approach we study the accessibility and connections between these points. We found out that some of the infrastructural elements are in poor condition and barely used, whereas connections between stronger nodes are more developed. This suggests that the island still has areas which could be attractive to various people but the access to them is hindered. To rediscover these locations it is important to establish a connection between active and passive nodes.

We discovered that the nodes that consist of the elements of the traits have four significant attributes that can characterise each of the points. These include the strong nodes, the degrading active villages, the abandoned settlements and the landscape sightseeing places. Categorising the areas demonstrates their potential that each of them carries and has to offer to visitors. Our intent is to carry out interventions in a careful manner which will be able to enhance and coexist with the current scene – to not interrupt the visual perception and heritage. We want to specify each location's intervention through these categories. Each location is subject to certain interventions derived from the category it belongs to. Focus will be placed on special nodes that have their own system and have the potential to stimulate other nodes. This is the methodology that we formulated to indicate the specific development areas.

SYNTHESIS OF ALL ELEMENTS



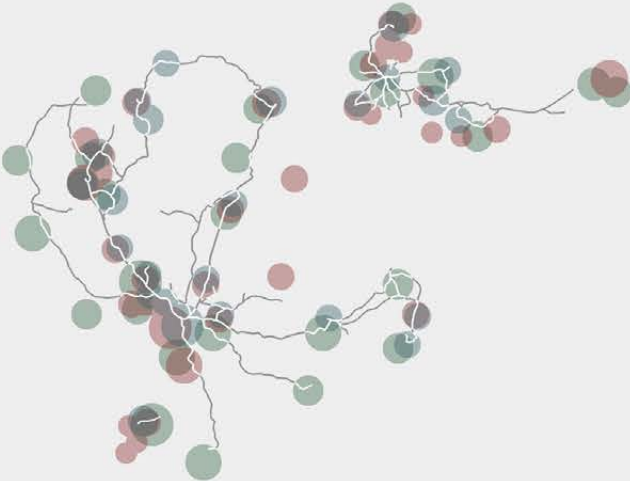
RELIGION ELEMENTS

+

MEMORY ELEMENTS

+

NATURE ELEMENTS



NODES AND CONNECTIONS

SELECTED AREAS FOR FURTHER INTERVENTION



STRONG NODES



- 1 - Solovetsky settlement (harbour part)
- 2 - Sekirnaya mountain (Holy Ascension skete)
- 3 - Isakovo skete (harbour)



DEGRADING ACTIVE VILLAGES



- 1 - Rebalda village
- 2 - Small Muksalma village



ABANDONED SETTLEMENTS



- 1 - New Sosnovaya village
- 2 - Berezovaya tonya (settlement)



LANDSCAPE SIGHTSEEING



- 1 - White whale cape
- 2 - Pechak cape



SETTLEMENTS



HARBOURS AND DOCKS



CAPES



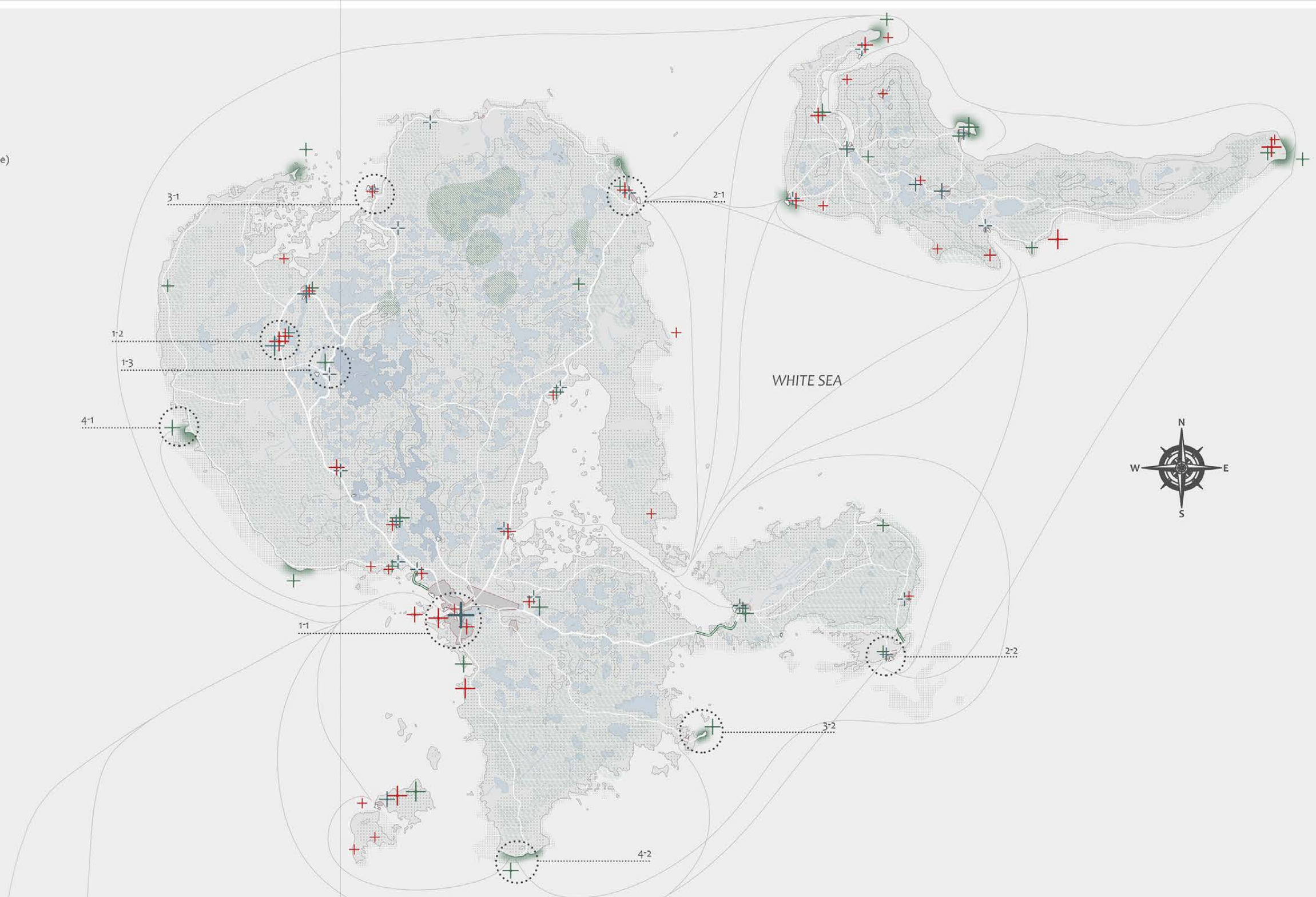
RELIGION ELEMENTS



MEMORY ELEMENTS



NATURE ELEMENTS



DETAIL VIEW OF THE SELECTED AREA 1-3



STRONG NODES

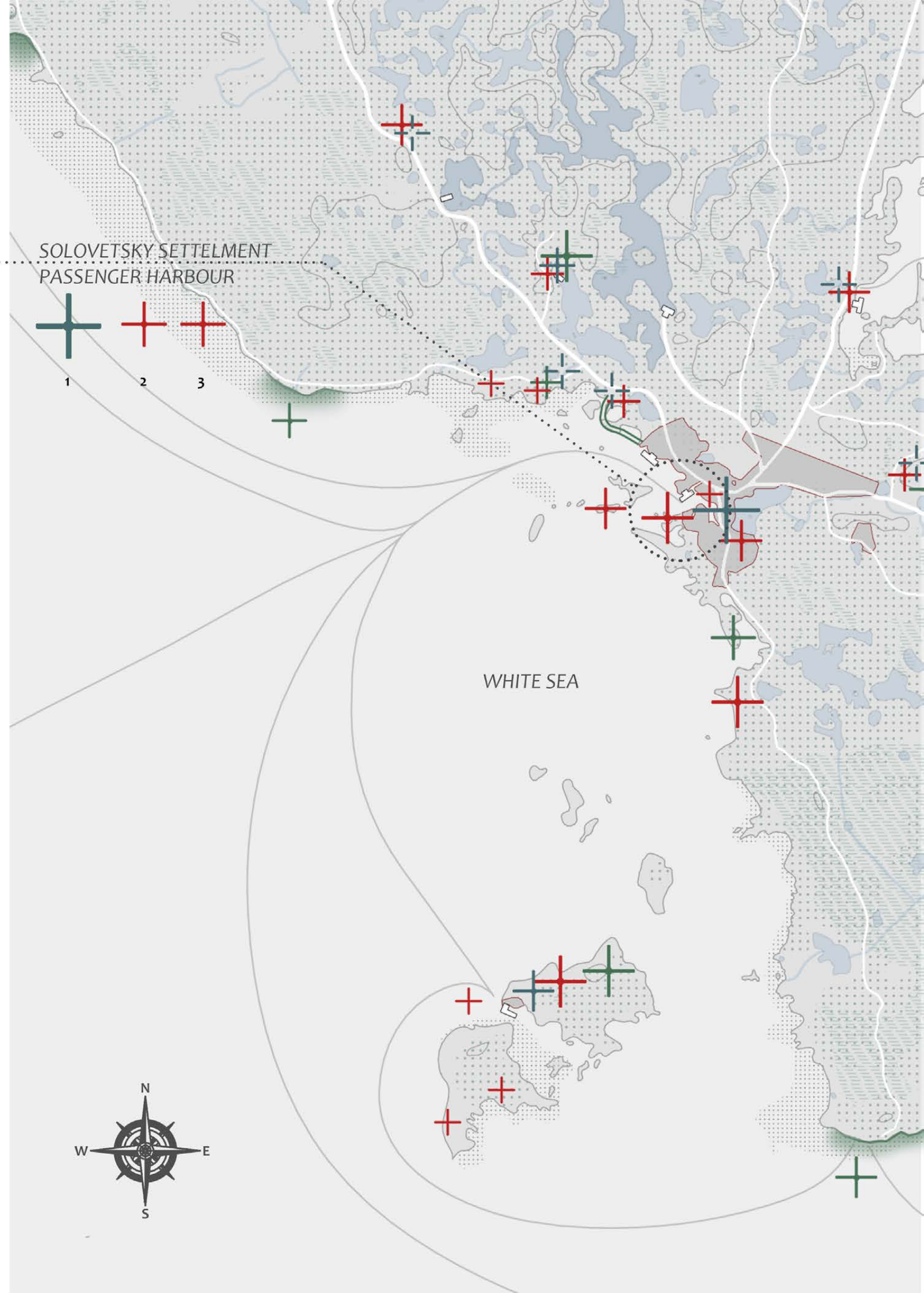
DESCRIPTION

- AREAS WITH EXISTING IMPORTANT RELATED TO THE MONASTERY BUILDINGS
- REQUIRES RECONSTRUCTION OF THE PARTS, EASY ACCESS FOR THE TOURISTS

INTERVENTION AMOUNT

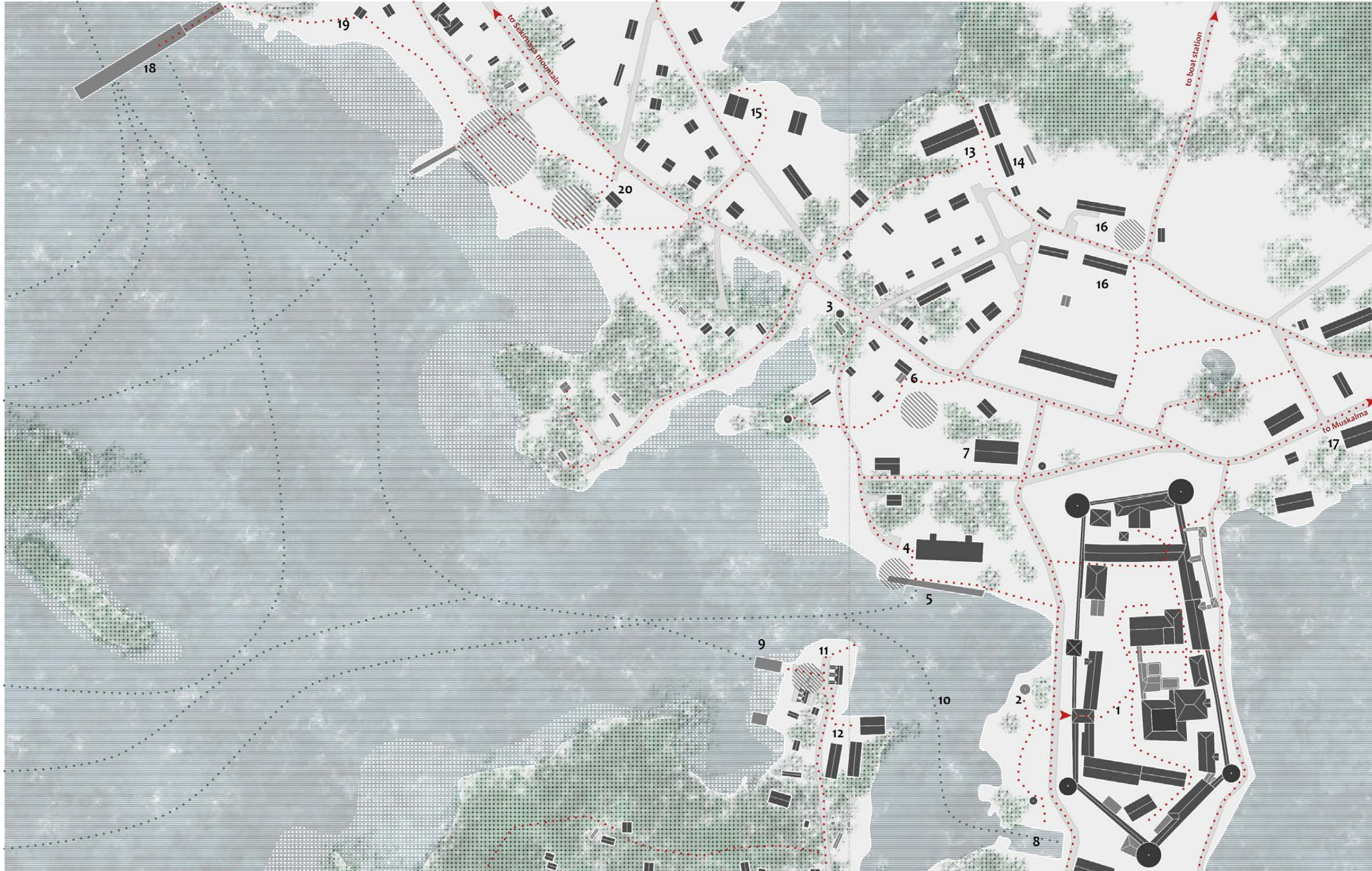








SOLOVETSKY SETTLEMENT
PASSENGER HARBOUR



DETAIL VIEW OF THE SELECTED AREA 1-3

1. Solovetsky monastery of the Holy Transfiguration (administration of museum and reserve)	good	6. Bike rental, souvenir shop	poor	11. Wood workshop (old botanic garden)	good	16. Hotel "Solo" (restaurant)	good
2. Chapel of St. Alexander (1858)	good	7. Hotel Saint Petersburg (1836-38) (tourist center)	good	12. Solovetsky marine museum	good	17. Craftsman school (post office, bank)	average
3. Chapel of St. Phillip (1844)	average	8. Monastery dry dock	average	13. Agar plant, product shop	average	18. Harbour Tamarin	good
4. Preobrazhenskaya hotel (1859-74)	poor	9. Old wooden harbour	poor	14. Fire station, police station	average	19. Hangar for hydroplane (1925) (cafe, art exhibitions)	average
5. Monastery dock	good	10. Worship cross (2004)	good	15. Public sauna (banya)	good	20. Sport center, rental service	good



-  POSSIBLE AREAS FOR INTERVENTION
-  PEOPLE FLOW
-  BOAT WAYS
-  LITTORAL ZONE
-  EXISTING BUILDINGS
-  DESTROYED BUILDINGS

0 25 50 100 200



DETAIL VIEW OF THE SELECTED AREA 1-2



STRONG NODES

SEKIRNAYA MOUNTAIN
HOLY ASCENSION SKETE

DESCRIPTION

- AREAS WITH EXISTING IMPORTANT RELATED TO THE MONASTERY BUILDINGS
- REQUIRES RECONSTRUCTION OF THE PARTS, EASY ACCESS FOR THE

INTERVENTION AMOUNT



1. Holy Ascension church	good	6. Viewpoint	good
2. Residential building (for monks)	good	7. Cross in memory of GULAG	good
3. Barn	average	8. Cross of holy ascension skete	good
4. Boulder sauna	good	9. Stairs to the top	average
5. Chape	average		

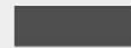
SEKIRNAYA MOUNTAIN
HOLY ASCENSION SKETE



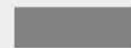
POSSIBLE AREAS FOR INTERVENTION



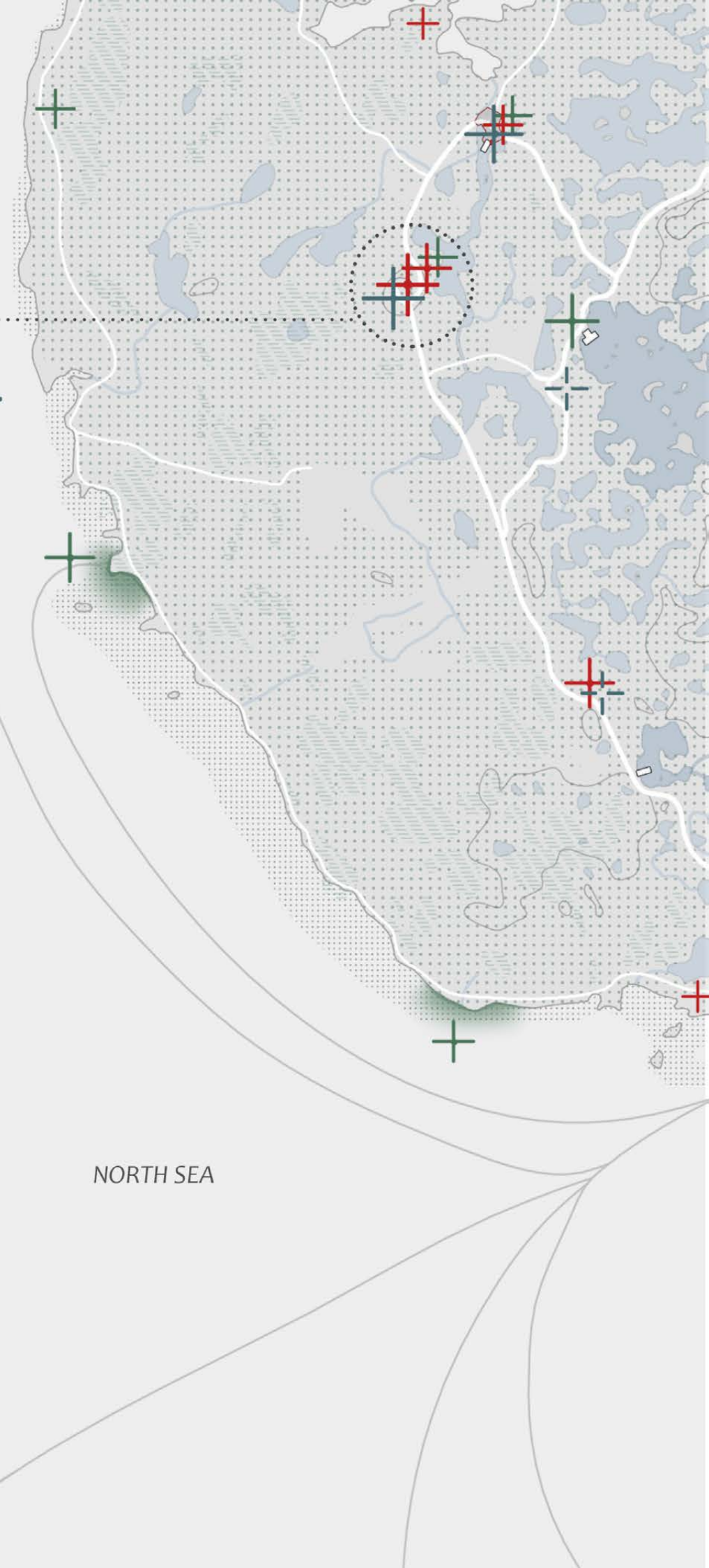
PEOPLE FLOW



EXISTING BUILDINGS



OPEN PUBLIC SPACES



NORTH SEA



DETAIL VIEW OF THE SELECTED AREA 1-3



STRONG NODES

DESCRIPTION

- AREAS WITH EXISTING IMPORTANT RELATED TO THE MONASTERY BUILDINGS
- REQUIRES RECONSTRUCTION OF THE PARTS, EASY ACCESS FOR THE TOURISTS

INTERVENTION AMOUNT



ISAKOVO SETTELMENT
ISAKOVSKY SKETE



1. Stone barn for storage

average

2. Rest house for visitors

poor

3. Barn

good

4. Building for boat storage

good

5. Stone barn for nets

average

6. Chapel of Isaaky Dalmatsky

poor

7. Old harbour

poor

8. Cross in memory of chapel

good

9. Guard house

good

10. Old stall

poor

ISAKOVO SETTELMENT
ISAKOVSKY SKETE



POSSIBLE AREAS FOR INTERVENTION



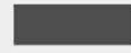
PEOPLE FLOW



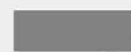
BOAT WAYS



LITTORAL ZONE



EXISTING BUILDINGS



DESTROYED BUILDINGS

NORTH SEA





DETAIL VIEW OF THE SELECTED AREA 2-1



DEGRADING ACTIVE VILLAGES

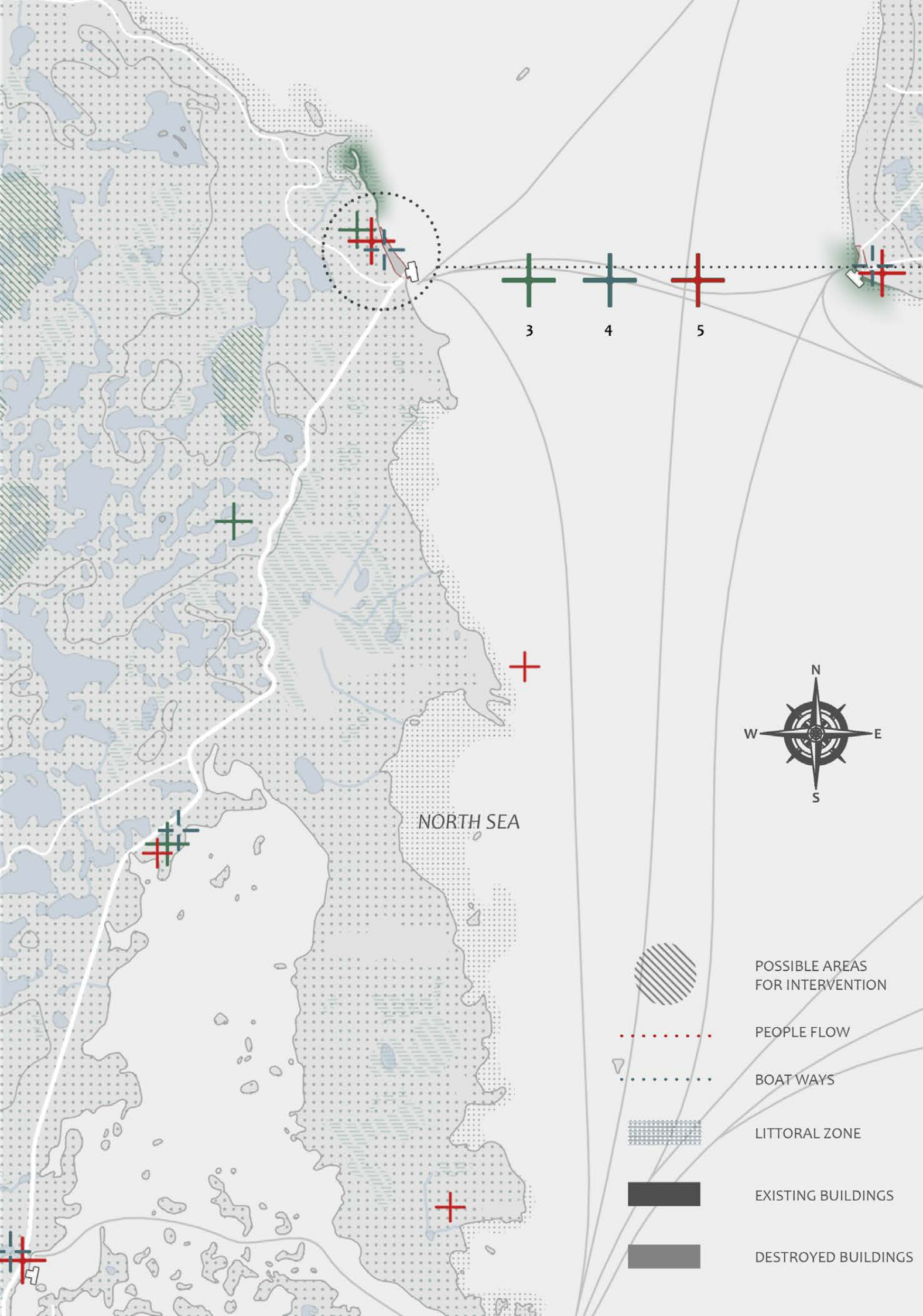
DESCRIPTION

- AREAS WITH HISTORICAL SETTLEMENTS AND STRONG FUNCTION
- PRODUCTION OF SEAWEED
- ABSENCE OF ANY SERVICES

INTERVENTION AMOUNT



REBALDA SETTLEMENT CONNECTION TO ANZER

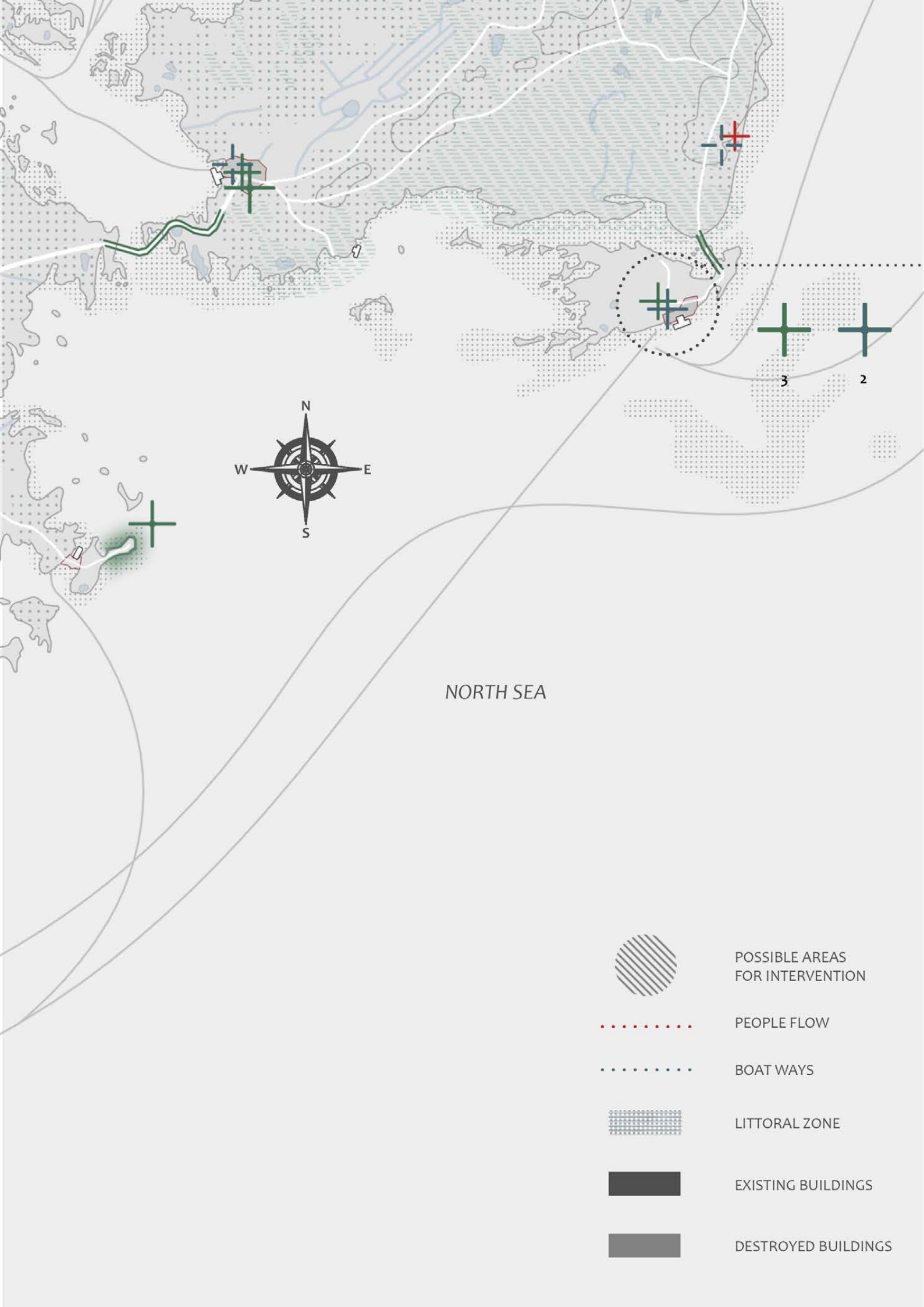


- 1. Main building (Closed shop) average
- 2. Old barn poor

- 3. Harbour and docks average
- 4. Chapel of St Nikolas poor



DETAIL VIEW OF THE SELECTED AREA 2-2



DEGRADING ACTIVE VILLAGES

MUKSALMA SETTELMENT
SMALL MUKSALMA ISLAND

DESCRIPTION

- AREAS WITH HISTORICAL SETTLEMENTS AND STRONG FUNCTION
- PRODUCTION OF SEAWEED
- ABSENCE OF ANY SERVICES

INTERVENTION AMOUNT



1. Main building (Closed shop)	average	3. Harbour and docks	average
2. Chapel of Navity	poor	4. Wooden barn	poor



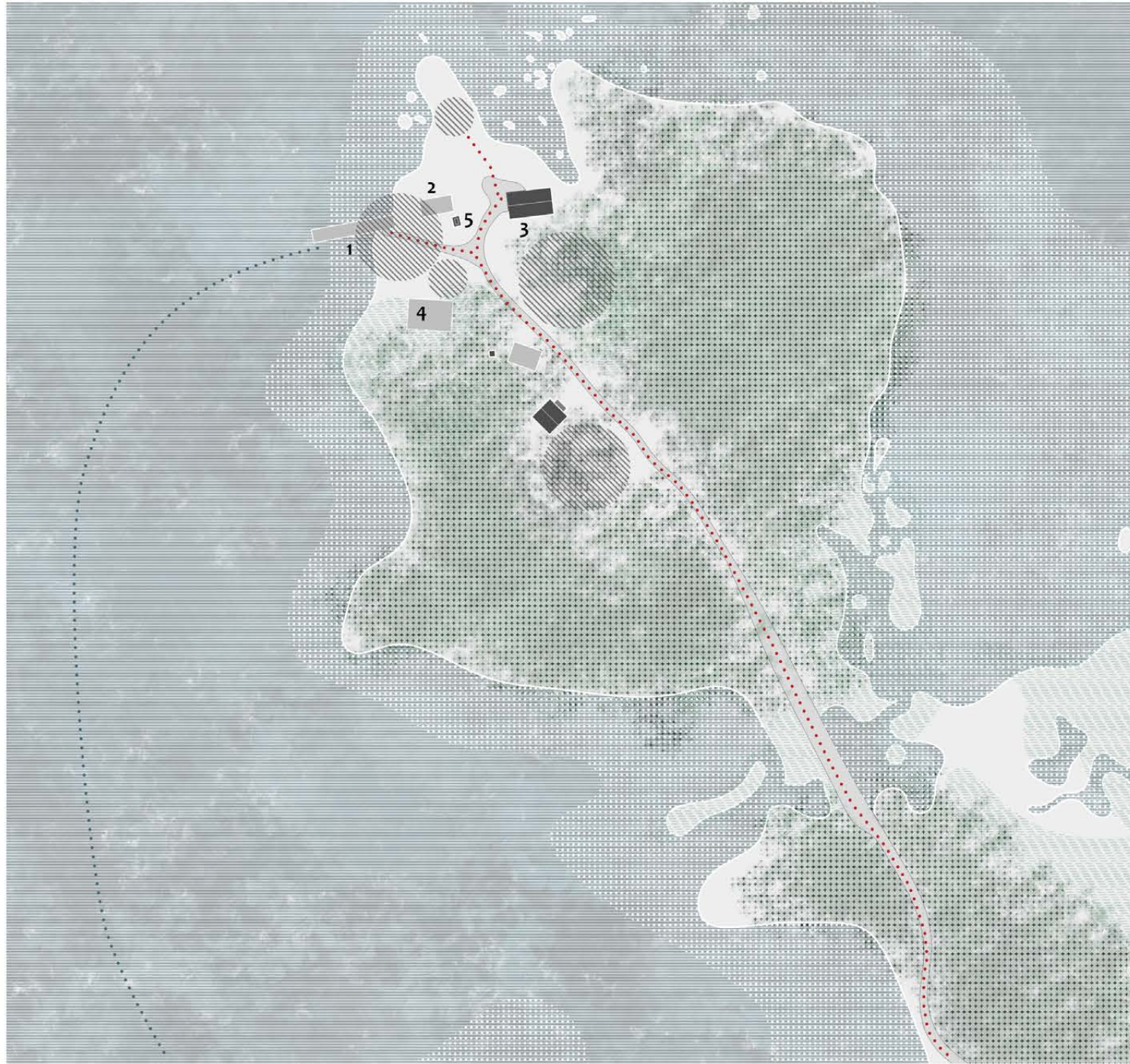
DETAIL VIEW OF THE SELECTED AREA 3-1



ABANDONED SETTLEMENTS

- | DESCRIPTION | INTERVENTION AMOUNT |
|----------------------------------------------------------------|---------------------|
| - AREAS OF ABANDONED VILLAGES | ● ● ● |
| - SPACE SUITABLE FOR ACCOMMODATION OR TEMPORARY LODGING SPACES | |
| - INFRASTRUCTURE HAS TO BE RECONSTRUCTED | |

NEW SOSNOVAYA VILLAGE







- | | | | |
|----------------------------------------|---------|---------------------------|---------|
| 1. Old harbour | average | 3. Wooden barn | average |
| 2. Chapel of Solovetsky thaumaturges | poor | 4. Old stone boulder barn | poor |
| 5. Cross in memory of destroyed chapel | poor | | |



NEW SOSNOVAYA VILLAGE



-  POSSIBLE AREAS FOR INTERVENTION
-  PEOPLE FLOW
-  BOAT WAYS
-  LITTORAL ZONE
-  EXISTING BUILDINGS
-  DESTROYED BUILDINGS

NORTH SEA

PEOPLE FLOW

BOAT WAYS

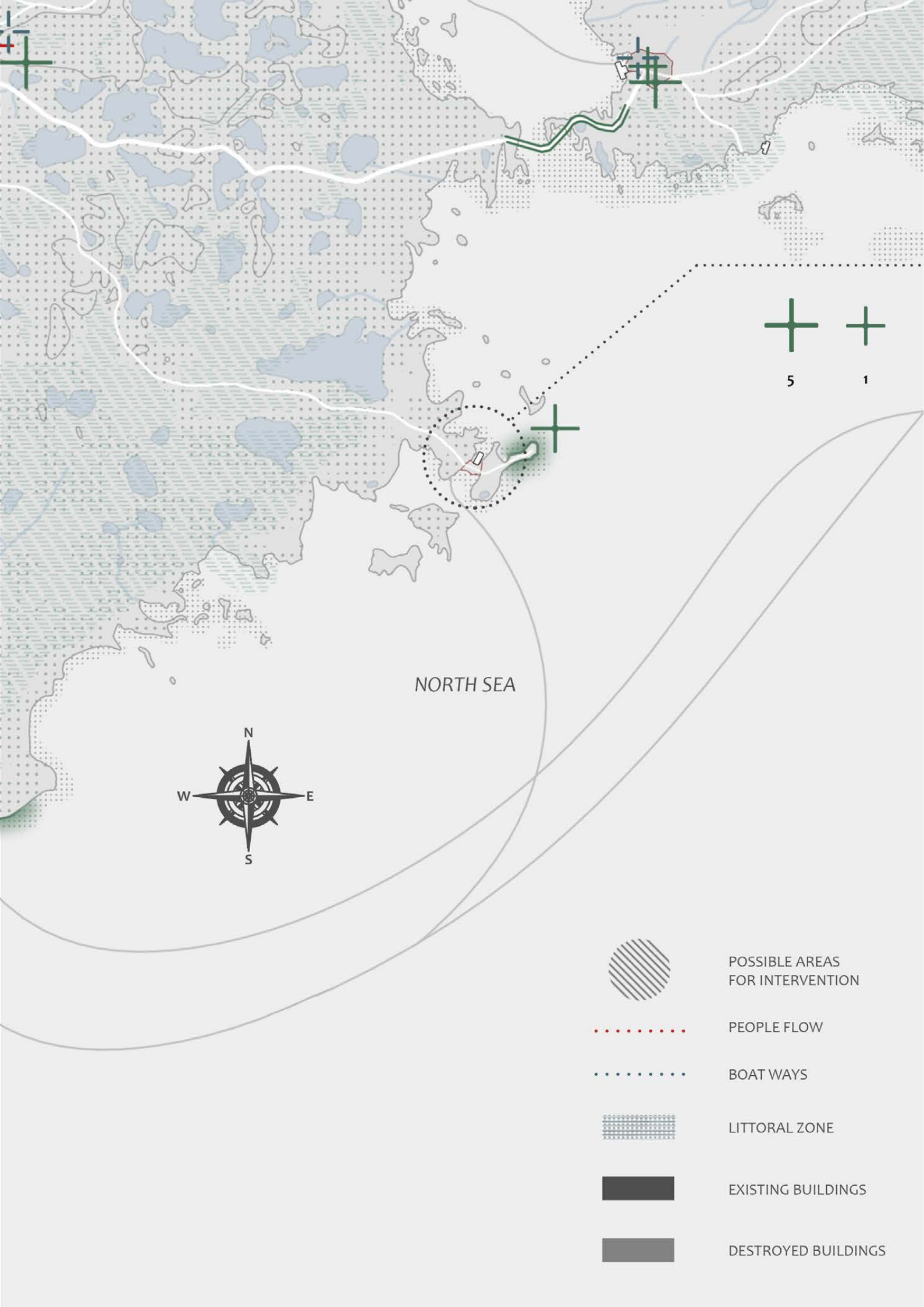
LITTORAL ZONE

EXISTING BUILDINGS

DESTROYED BUILDINGS



DETAIL VIEW OF THE SELECTED AREA 3-2



ABANDONED SETTLEMENTS

BEREZOVAYA VILLAGE
OLD FISHERY

DESCRIPTION

- AREAS OF ABANDONED VILLAGES
- SPACE SUITABLE FOR ACCOMMODATION OR TEMPORARY LODGING SPACES
- INFRASTRUCTURE HAS TO BE RECONSTRUCTED

INTERVENTION AMOUNT



1. Old fishing harbour	average	3. Wooden barn for nets	poor
2. Old stone barn	poor	4. Guard summer house	average



DETAIL VIEW OF THE SELECTED AREA 4-1



LANDSCAPE SIGHTSEEING

BELUGY CAPE
SCIENCE TOWER

DESCRIPTION

- AREAS OF NATURE AND LANDSCAPE SPECIAL PLACES
- OPEN HORIZONT LINE INTERACTING WITH THE SURFACE OF THE SEA
- STRUCTURES ALLOWING FULL VISIBILITY

INTERVENTION AMOUNT



1. Science observation tower

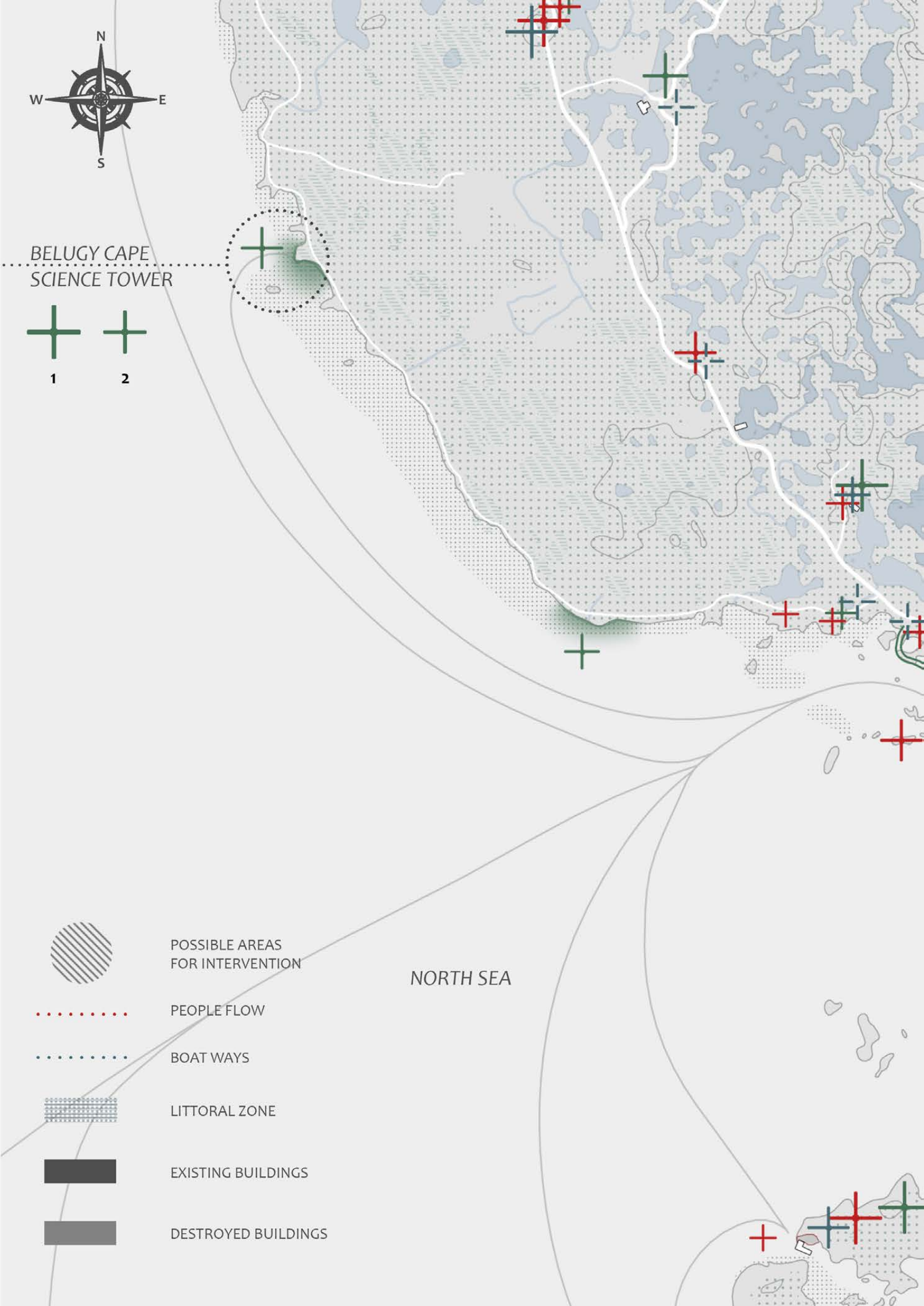
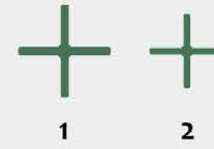
average

2. Seashore path

average



BELUGY CAPE
SCIENCE TOWER



POSSIBLE AREAS FOR INTERVENTION



PEOPLE FLOW



BOAT WAYS



LITTORAL ZONE



EXISTING BUILDINGS



DESTROYED BUILDINGS

NORTH SEA



DETAIL VIEW OF THE SELECTED AREA 4-2



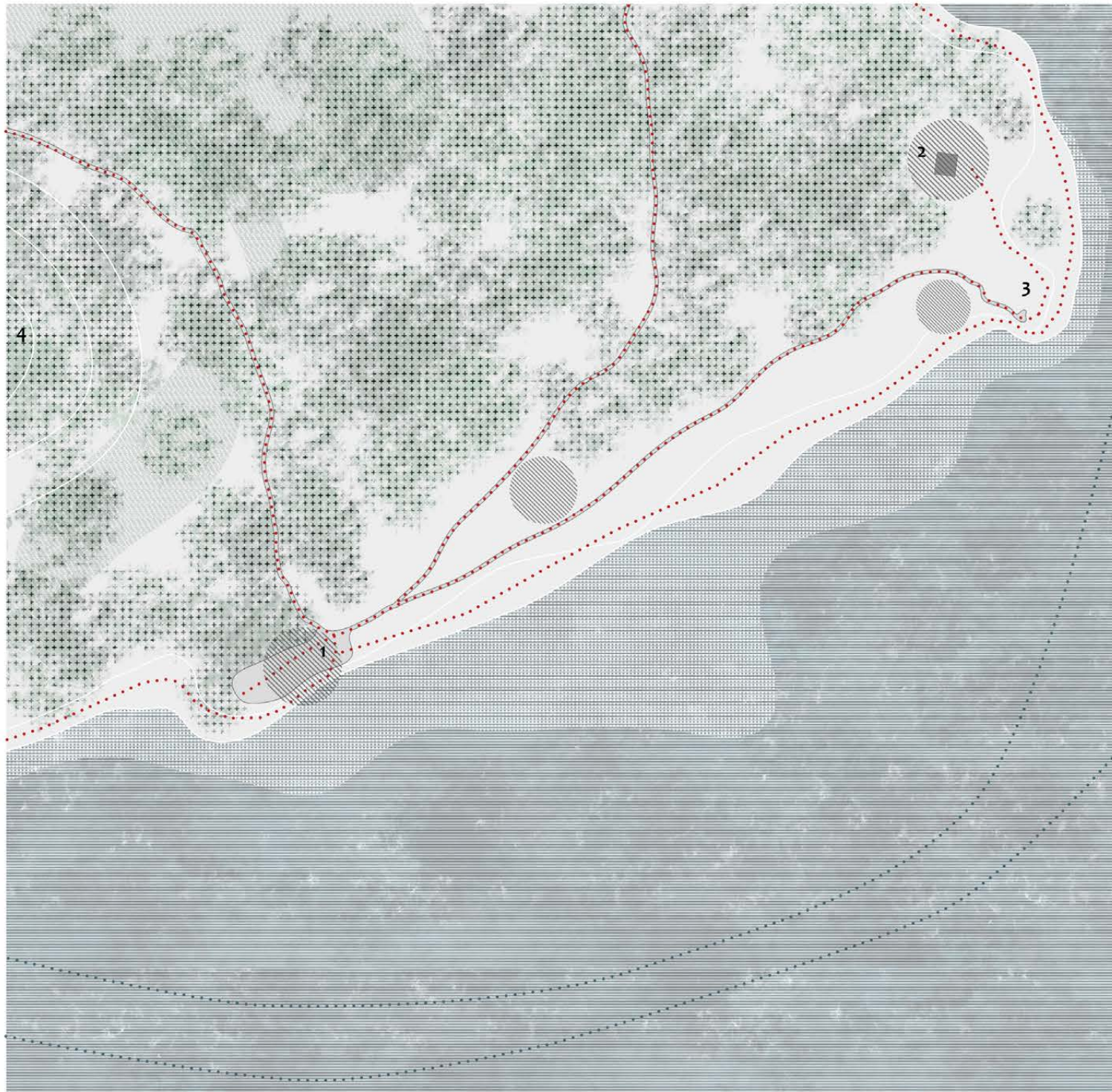
LANDSCAPE SIGHTSEEING

- DESCRIPTION**
- AREAS OF NATURE AND LANDSCAPE SPECIAL PLACES
 - OPEN HORIZONT LINE INTERACTING WITH THE SURFACE OF THE SEA
 - STRUCTURES ALLOWING FULL VISIBILITY

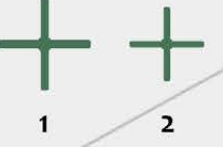
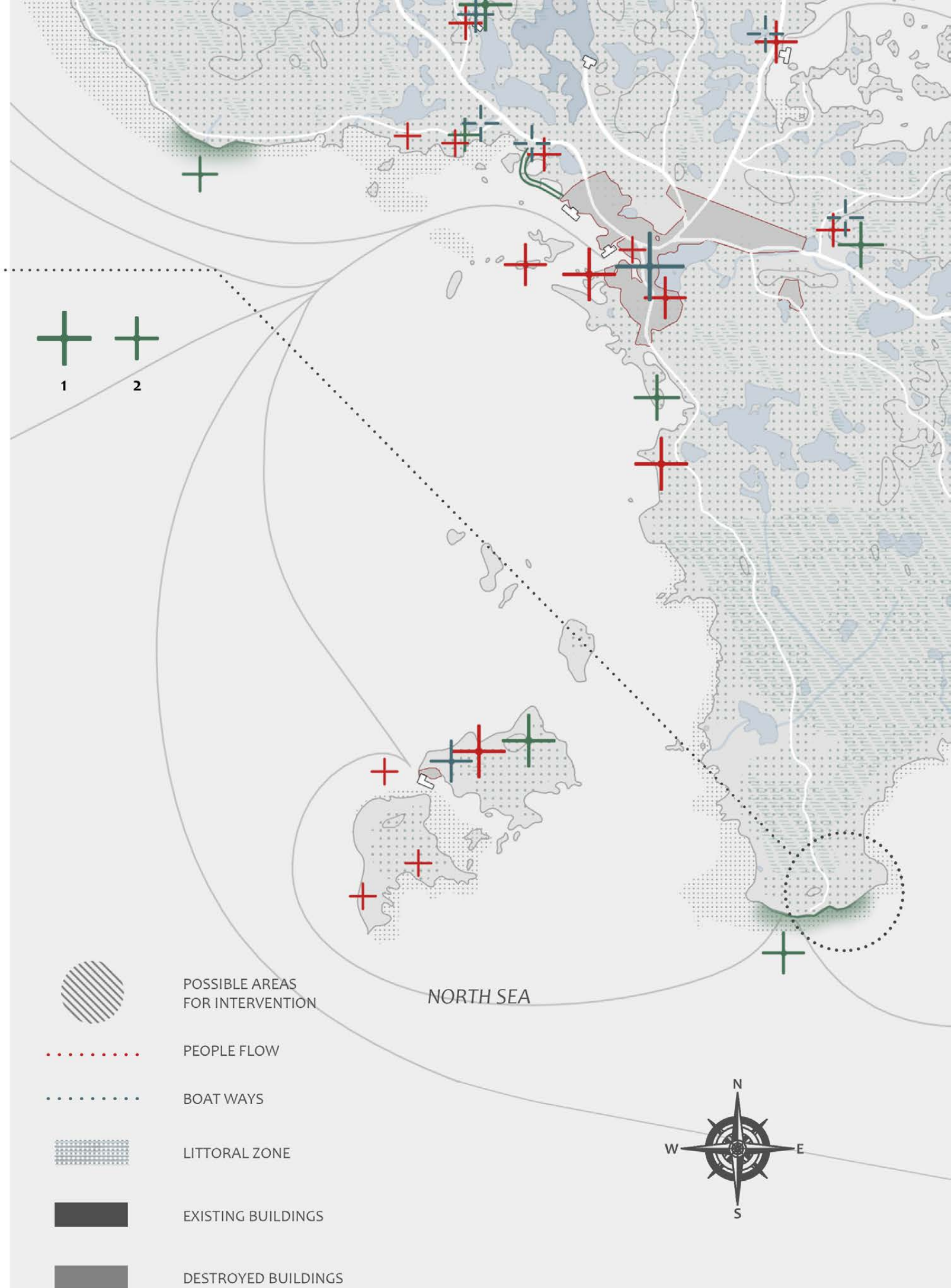
INTERVENTION AMOUNT



PECHAK CAPE
PECHAK MOUNTAIN



- | | | | |
|---------------------|---------|--------------------|------|
| 1. Camping area | average | 2. Old wooden barn | poor |
| 2. West pechak cape | | 4. Pechak mountain | |



- POSSIBLE AREAS FOR INTERVENTION
- PEOPLE FLOW
- BOAT WAYS
- LITTORAL ZONE
- EXISTING BUILDINGS
- DESTROYED BUILDINGS

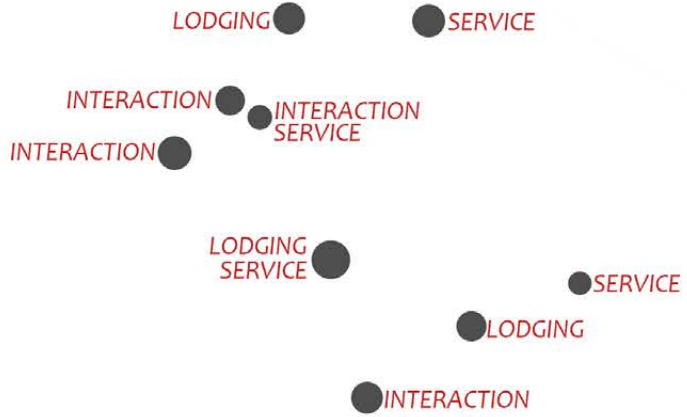




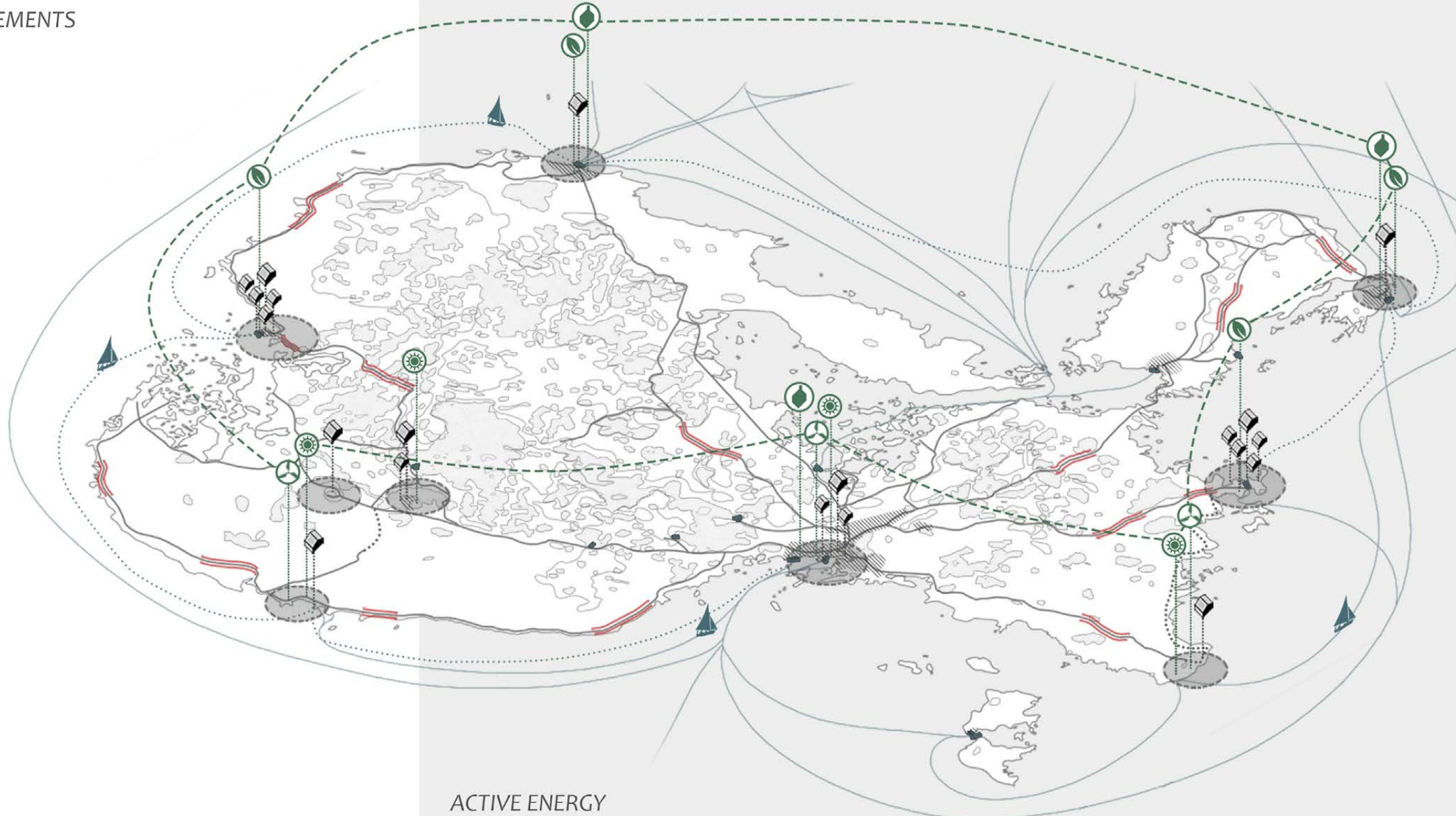
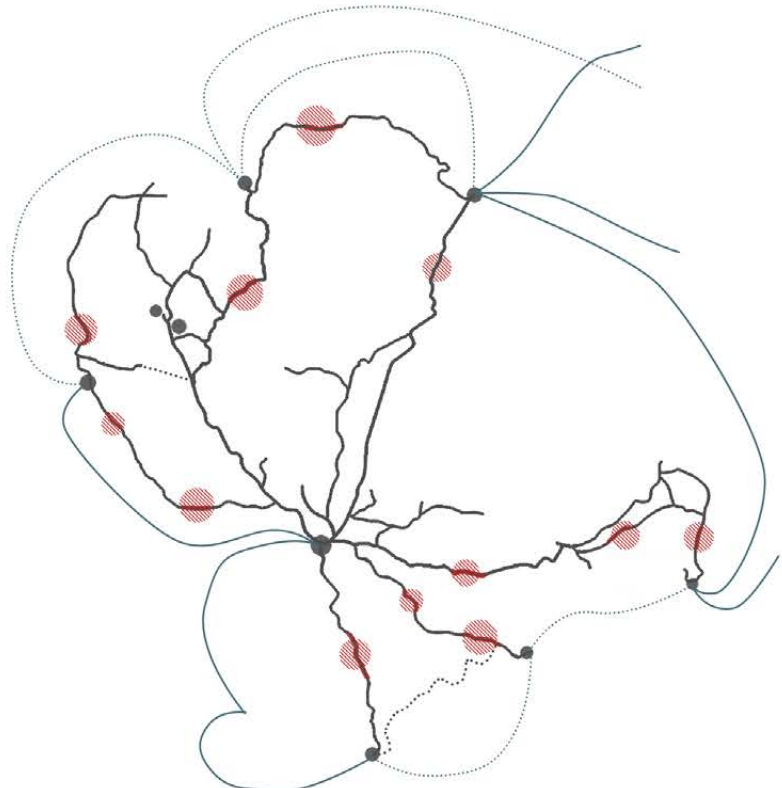
OVERALL CONCEPT REUNIFICATION OF THE ELEMENTS

EACH PLACES THAT HAVE BEEN CHOSEN FOR THE DESIGN INTERVENTION HAS PARTICULAR ROLE IN THE WHOLE SYSTEM. CONNECTIONS BETWEEN THEM SOMETIMES ARE MISSING, SOMETIMES ARE NOT SUFFICIENT, PART OF THE PROJECT IS TO FIX THESE AREAS. ACTIVE ENERGY LAYER COVERING ALL THE ISLAND TO PROVIDE ADDITIONAL RENEABLE ENERGY FOR THR SITIZENS AND TOURISTS.

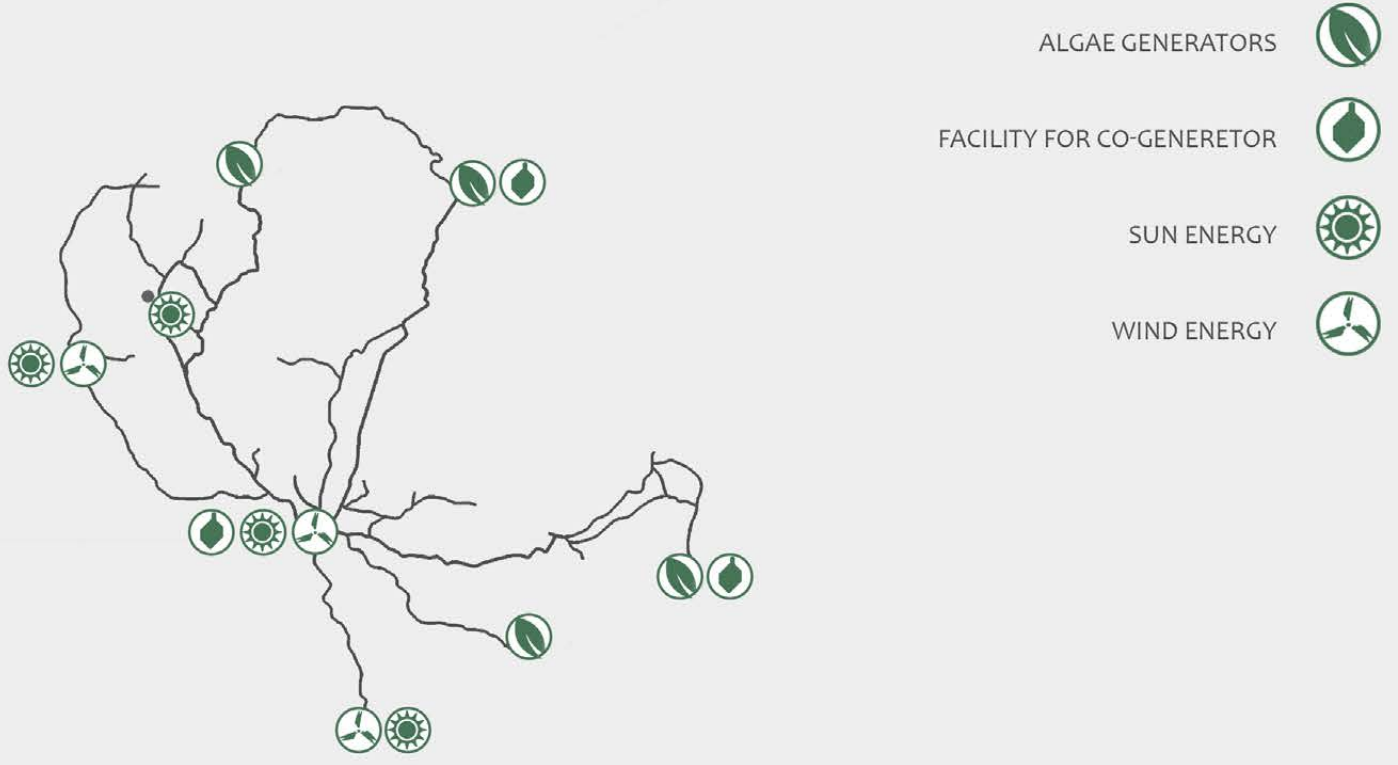
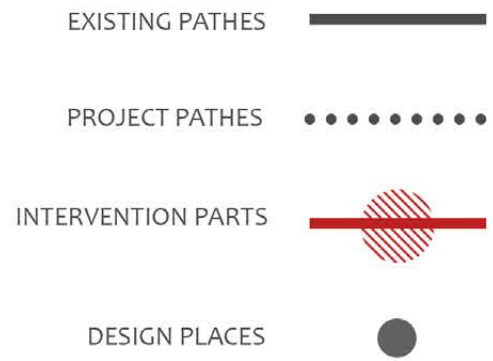
PLACES SELECTED AREAS WITH STRONGER ROLES



CONNECTION PATHES VARIOUS WAYS AROUND THE ISLAND



ACTIVE ENERGY ADDITIONAL ENERGY



PLACE ABANDONED SETTLEMENTS

NEW SOSNOVAYA VILLAGE

DESCRIPTION

- restoration of the harbour
- lodging for the tourists and local people

INTERVENTION ROLE

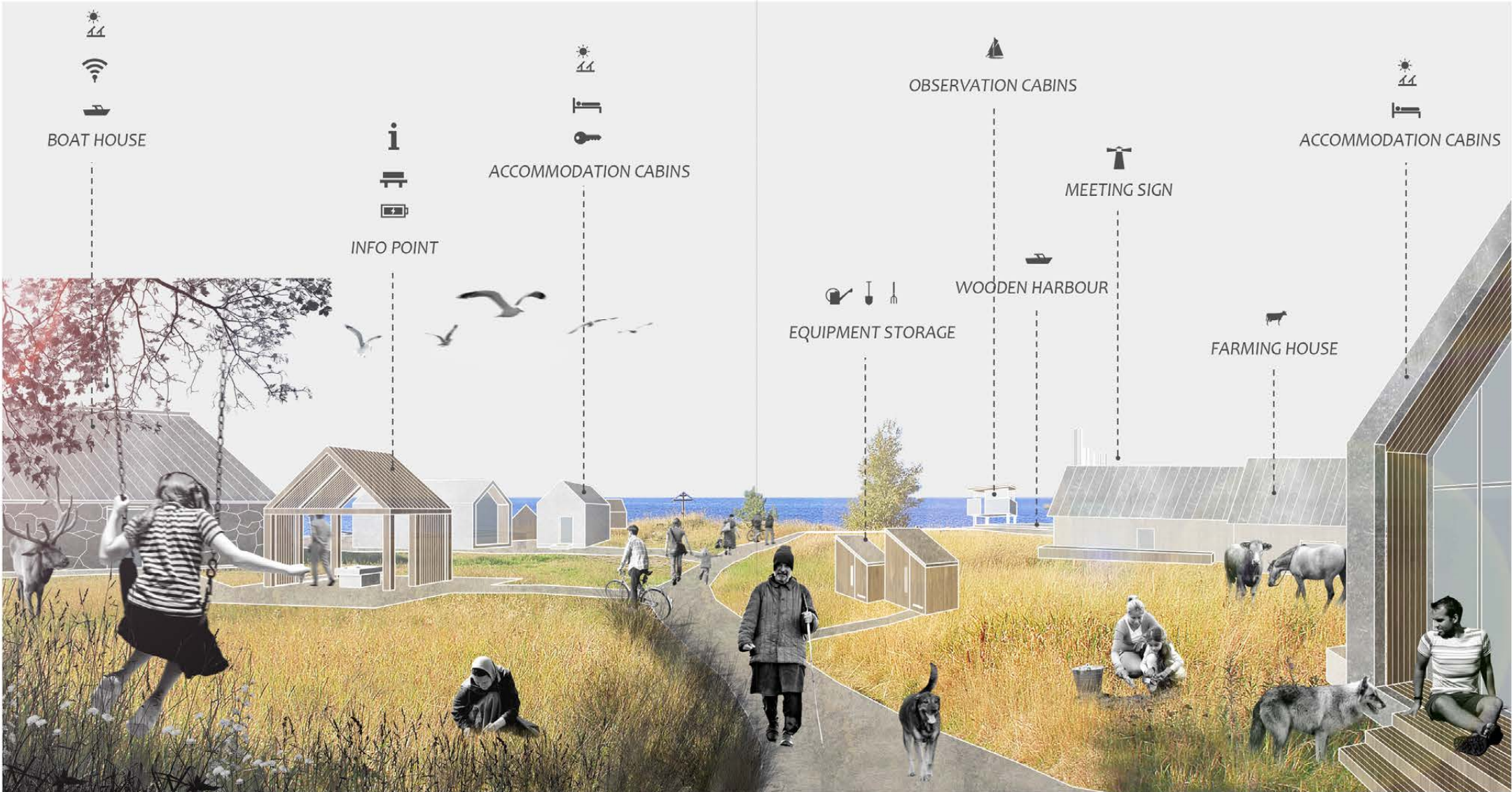
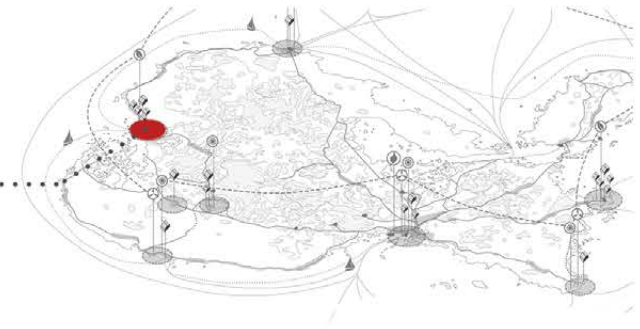
lodging

ENERGY



CONNECTION

by bike, boat



44



BOAT HOUSE



INFO POINT

44



ACCOMMODATION CABINS

OBSERVATION CABINS

MEETING SIGN

44



ACCOMMODATION CABINS

EQUIPMENT STORAGE

WOODEN HARBOUR

FARMING HOUSE

PLACE DEGRADING ACTIVE VILLAGES

REBALDA SETTLEMENT CONNECTION TO ANZER

DESCRIPTION

- restoration of the harbour
- service point for the tourists and local people

INTERVENTION ROLE

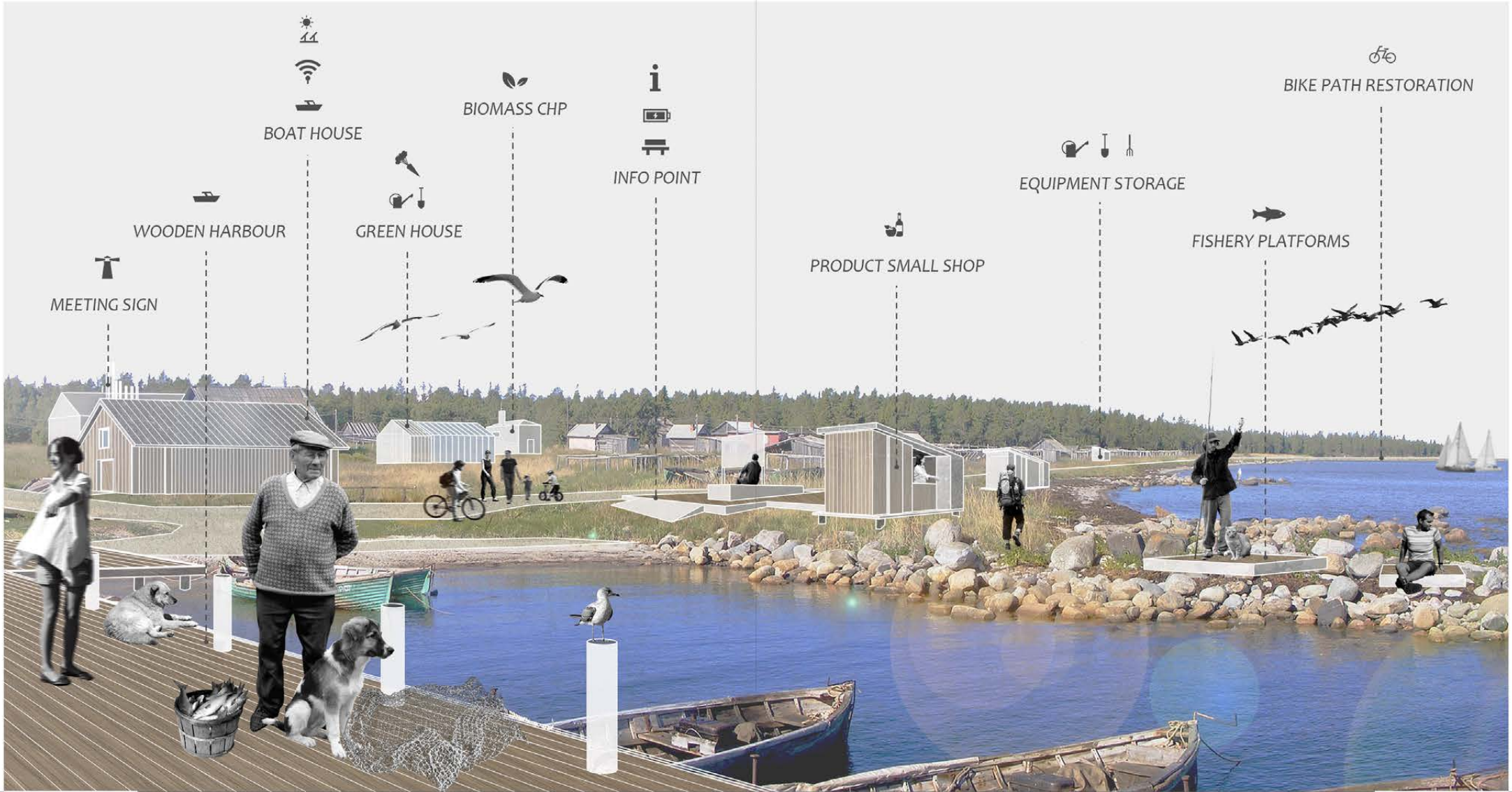
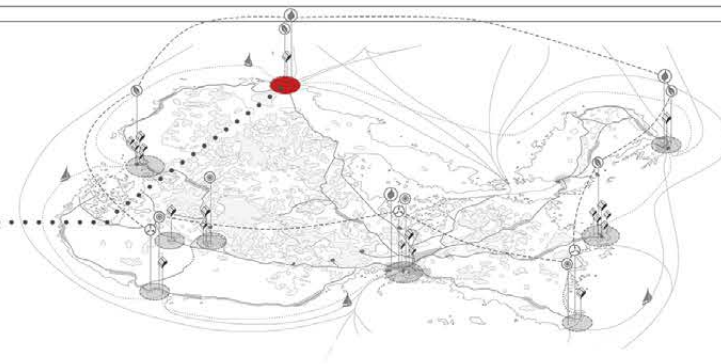
service

ENERGY



CONNECTION

by bike, car



PLACE LANDSCAPE SIGHTSEEING

PECHAK CAPE
PECHAK MOUNTAIN

DESCRIPTION

- restoration of the harbour
- lodging for the tourists and local people

INTERVENTION ROLE

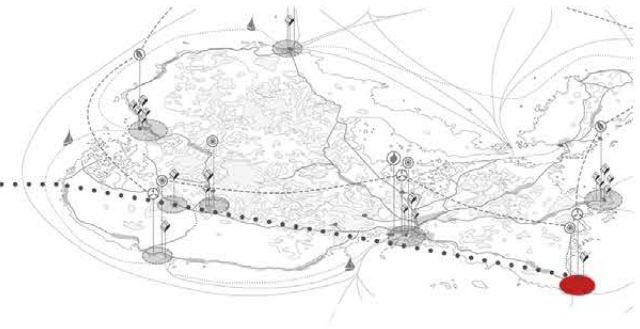
intererction

ENERGY



CONNECTION

by bike, boat



PLACE STRONG NODES

ISAKOVO SETTLEMENT ISAKOVSKY SKETE

DESCRIPTION

- restoration of the harbour
- service point for the Sekirnaya mountain

INTERVENTION ROLE

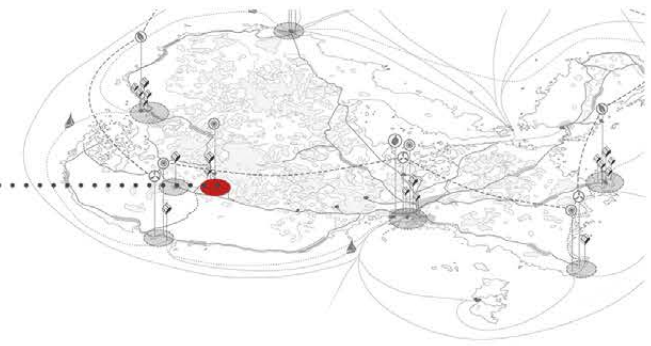
interaction
service

ENERGY



CONNECTION

by bike, car



EQUIPMENT STORAGE

INFO POINT

PICNIC CORNER

MEETING SIGN

BOAT HOUSE
OLD RESTORED BARN

WOODEN HARBOUR

DOCK RESTORATION

PHOTO CABINS

FLOATING CABIN

ARCHITECTURE DESIGN

INTRODUCTION

In our strategy we have set a framework of interventions to be carried out in certain locations across the islands. We demonstrate interventions of different magnitude depending on the location's characteristics. In this chapter we want to meet the theory with specifics. We want to display examples of architecture that work as guidance to the approach we intend to implement. Small scale interventions can be answered with small scale architecture.

The architectural interventions that we project for the Solovetsky archipelago are carefully determined. They are in accordance to the existing conditions of each location and in respect to the archipelago's heritage. Our interventions are kept to the minimal and we intend to equip buildings with solutions that are both eco-friendly and energy efficient. The projects have to be sustainable, economic and accordant to the rural scale. For further elaboration we have selected four intervention objects that are most influential to the visitors of the Solovetsky archipelago. These include the new harbour building and three types of accommodation cabins: forest, coastal and lake cabins. The visitors require a harbour building which will serve as the primary information point when arriving at the islands. The cabins will be at disposal for renting for the duration of their stay on the archipelago.

The Solovetsky Islands are a rural region and therefore rich in natural heritage. Minimising the environmental impact of our architecture is top priority. Today, majority of the natural resources are used to provide heating and electricity for buildings. To decrease the demand we have to design with awareness of our environment. For instance, each building's orientation can change the volume of its energy consumption. Taking advantage of daylight has positive impact on the indoor microclimate, which in return increases the human comfort levels.

Most of the buildings here at Solovki are off-grid and not equipped with services. Only the buildings in the main village are provided with electricity and a decaying sewer system. The electricity on the island is provided via a diesel engine generator. It is highly inefficient and environmentally unfriendly. In our interventions we want to find alternative sources of renewable energy to decrease dependence on the existing grid. We want to equip buildings with photovoltaic panels (PV panels) to compensate for the consumption. In some cases we can combine PV panels with a ground-source heat pump system (GSHP) whereas in some cases micro-combined heating and power system can be more optimal (micro-CHP).



ARCHITECTURE DESIGN

ACCOMODATION CABINS

An important intervention in our strategy revolves around the idea of introducing more visitors to the archipelago. While doing so it is important to provide them with comfortable living conditions. Currently the islands possess insufficient number of accommodation facilities making it difficult to host all of the visitors at the peak of the tourist season. Tourists are welcomed to Solovki because they provide jobs for the majority of people in summer.

Our proposal introduces three types of accommodation cabins. Their function is to serve as holiday cabins for various types of tourists during summers. All buildings are located in smaller villages around the archipelago giving the tourists a possibility to stay in other locations of the islands other than the main village. This is also useful for the monastery giving more freedom for uninterrupted religious activity. The cabins also carry a secondary function. It is to serve as temporary cabins for the inhabitants who can use it during other seasons for various reasons. Normally all of the local people spend their winters in the main village of Solovki. This is because of the absence of electricity in smaller villages which makes it unbearable to spend long and cold winters there.

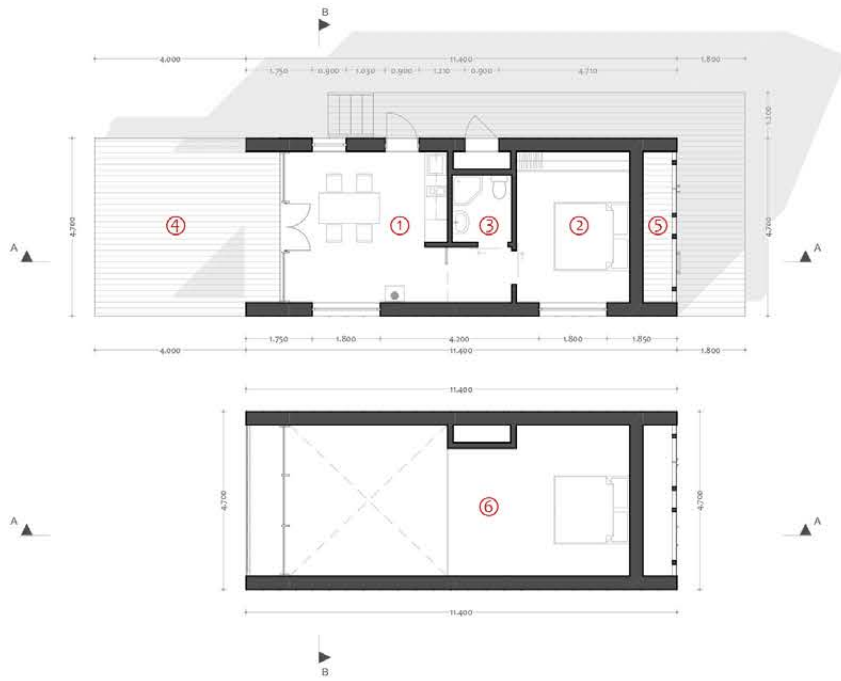
Consequently, all of the accommodation cabins will be off-grid meaning that building services have to be locally provided. We are proposing a micro-CHP system for each cabin that is fuelled with biomass. The archipelago is rich in algae which is a sufficient renewable biomass resource to fuel the CHP units that provide cabins with heat and electricity. Additionally, the CHP systems are working in cohesion with PV panels on each building's roof which further decreases the need for biomass fuel.

There is plenty of fresh water on the archipelago. It is gathered mainly from wells or even lakes. The cabins will be equipped with a water pump and containers for both cold and hot water. The CHP unit will heat up the water for adequate warm water for domestic purposes. Near the cabins containers are buried for collecting rainwater for irrigation or domestic use. For managing the sewage water, septic tanks are built underground.

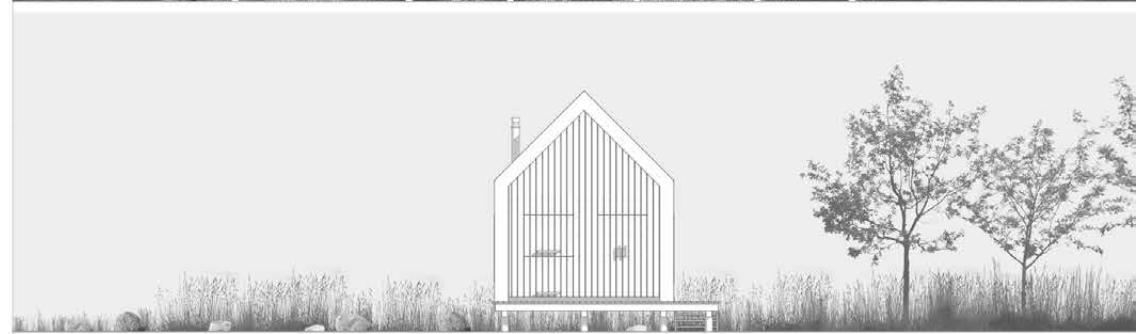
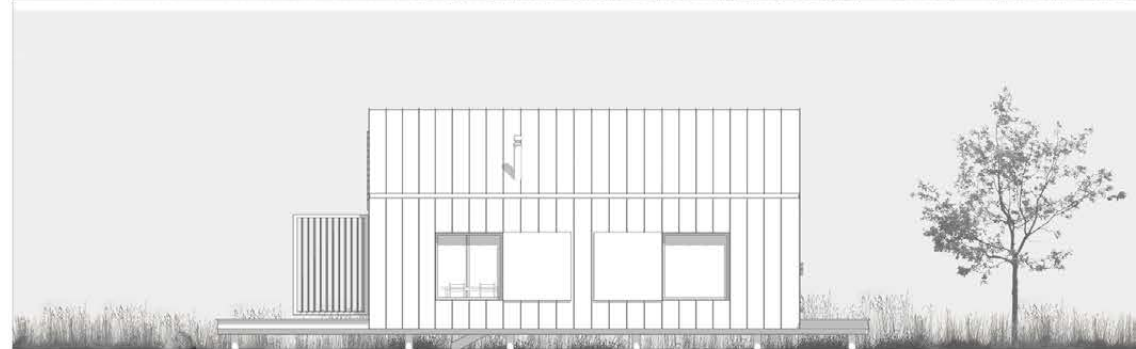
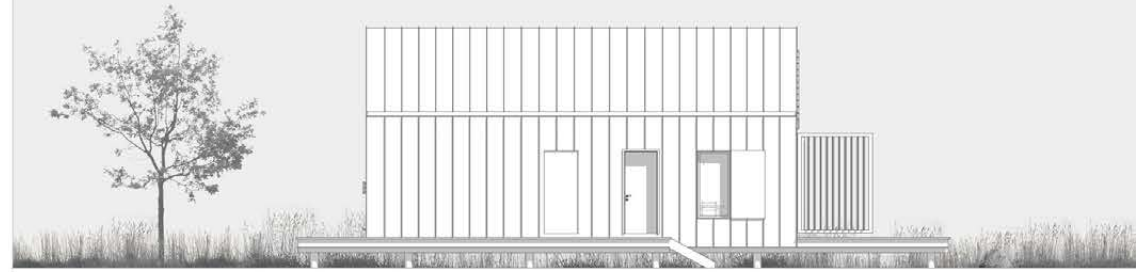
All of the buildings are modular and prefabricated on the mainland and transported to the islands on a boat. Prefabrication of buildings is more economical and easier to control than building on site. Additionally, the cabins can be easily relocated due to the modular structure.

ARCHITECTURE DESIGN

COASTAL CABIN

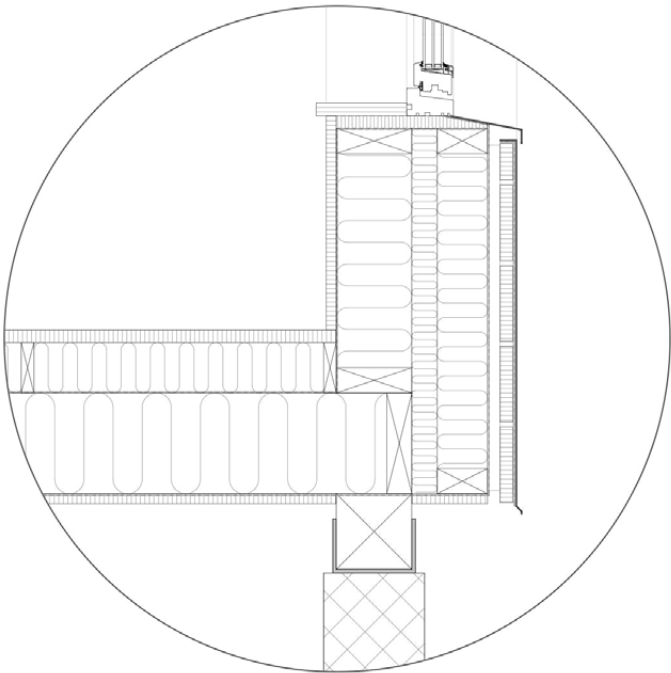
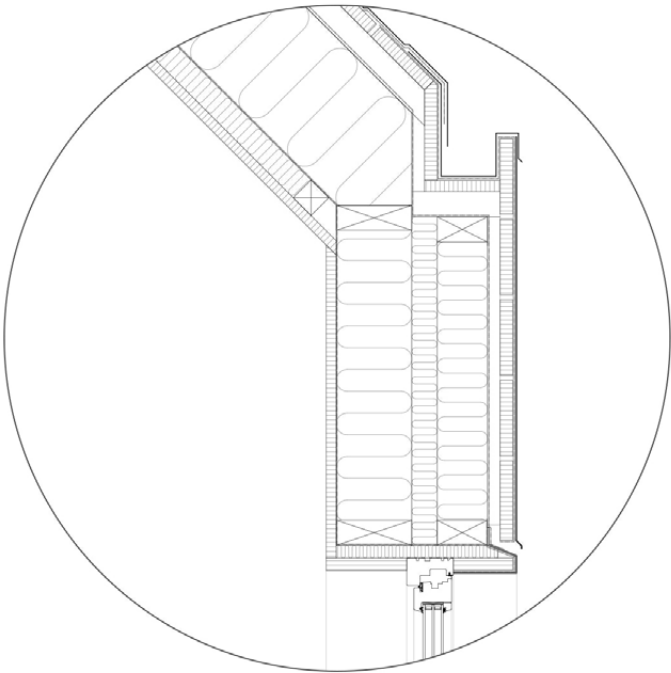
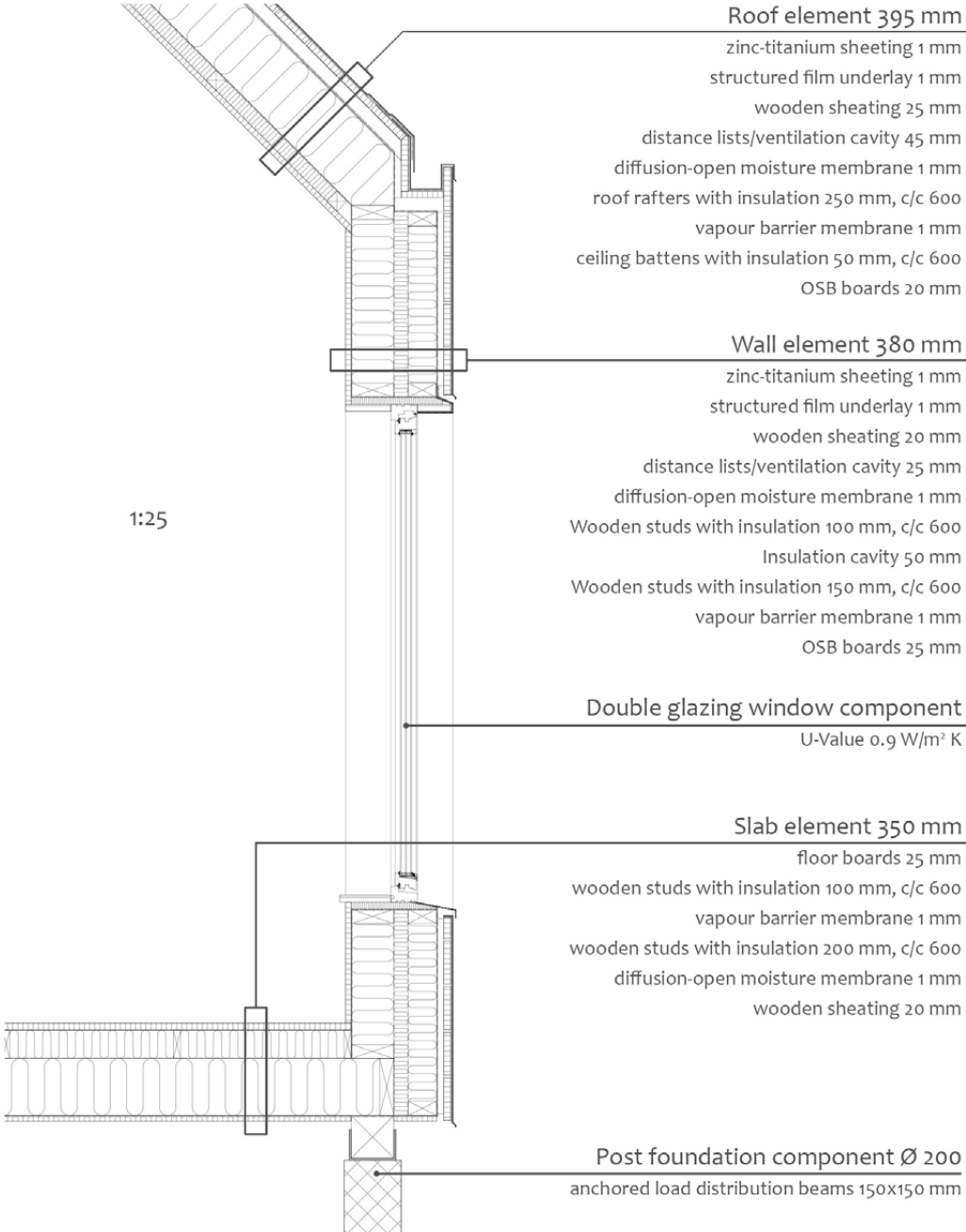


1 Living room/kitchen	19.2 m ²	4 Terraces	42.5 m ²
2 Bedroom	12.0 m ²	5 Storage	3.1 m ²
3 Bathroom	2.8 m ²	6 Multipurpose area	18.2 m ²
Primary rooms	34.0 m ²	Secondary spaces	21.3 m ²



ARCHITECTURE DESIGN

COASTAL CABIN



ARCHITECTURE DESIGN

COASTAL CABIN

