Master Thesis

DANUBE DELTA SETTLEMENTS

CONSERVATION POTENTIAL AND REVITALIZATION SCENARIOS

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Danube Delta Settlements - Conservation potential and Revitalization scenarios - Dinu Alina Gabriela

DANUBE DELTA SETTLEMENTS. CONSERVATION POTENTIAL & REVITALIZATION SCENARIOS.

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Figure 1. On one of the branches, on the way to the remote villages of the Danube Delta.

ABSTRACT.

Building upon the preliminary study, the next phase of research will continue to investigate the origins, culture, and authenticity of traditional communities in Romania, concentrating specifically on the abandoned villages of the Danube Delta. The purpose of this study is to emphasize the significance of people's self-sufficiency by caring for the environment, which contributes to an improved quality of life. This entails delving deeper into the research topics that have been identified as calling for our immediate attention. The following five topics of needs are addressed and serve as the basis for this work: resources and energy, space and mobility, food and health, demography and integration, and values and ethics.

The following research questions have emerged thus far in my research: How can the holistic cultural landscape entice its citizens to return? What role does architecture play in promoting sustainable development and enhancing the quality of life in underdeveloped villages, while maintaining a balance between conservation and development objectives? How does this impact the environment and the community at large? What impact does the human being hold? The intersectionality between all proposed research areas will be examined more closely, as a network rather than as separate entities. I find this to be a potentially crucial strategy for designing a sustainable society.

Using the method of analysis that was developed for assessing the needs and wishes of communities from remote villages, a case study from the larger region, specifically that of Sulina, Tulcea, was chosen for inquiry. As a direct result of the investigation, specific strategies were developed to address individual cases. It emerged that there should be a network of interventions. The various propositions are not considered to be separate entities but rather as entities that are connected to one another and depend on one another. This form of intervention could be equivalent to architectural acupuncture, as it is intended to have a cumulative influence on the improvement of the quality of life in these communities.

This thesis serves as a guide for enhancing and preserving the values of the past while addressing the needs of the present. It strives to identify architectural intervention possibilities and strategies as a direct response to the identified needs and desires of the local community. Every effort was made to position the proposal as an outcome of the findings rather than as an outsider. It transcends a solely academic work endeavor by aiming to contribute directly to the improvement of these communities and building upon a sustainable society. The vision is for them to be implemented as all-encompassing principles, as a future belief that is comprehensive.

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VISION.

The vision underlying this thesis is to create a human environment that is in harmony with nature. Not one from which we benefit until its demise. A vision that casts doubt on our current course, after centuries of human egotism.

In a globalized environment of specialization, it is about attaining global equilibrium. It is about simultaneously reconnecting humans with each other and with environment. The investigation examines what we could learn from the past, from these communities that have not yet been harmed by modernity and still practice the traditional sustainable method, as well as what we could offer them. It seeks to demonstrate what could be and how we can benefit from reciprocal learning while living in harmony with the environment.

In addition to the revitalization, another essential aspect would be the preservation of the area. The objective is to raise awareness of vanishing customs and traditions, which must be transmitted and learned from one another within a community or perish. Tradition represents accumulated knowledge, which ultimately contributes to an individual's and a community's identity. It is debatable, however, whether a person can completely assume an external identity. What must change and what must remain the same in the Danube Delta for a contemporary individual to want to live and belong there? To be an insider as opposed to a restless outsider attempting to settle down.

In a world dominated by human egoism, it is important to raise awareness of the fact that in order to sustain ourselves, we must first sustain the encircling nature and environment. Before we are forced to confront an end of time caused by humans, we must comprehend the interconnectedness of the entire universe.

Figure 2. Aerial view of a deck in the study area symbolizing the reconnection to nature.

1

INTRODUCTION.

Figure 3. Fishermen paddling peacefully on one of the Delta's branches exemplify the enchantment of the location.

INTRODUCTION.

1.1. Reasoning, the holistic view

This thesis emulates a holistic approach, motivated by the vision of reconnecting humans with nature and thereby enhancing quality of life. It needs to spread awareness of the fact that we exist in a symbiotic relationship with nature rather than at the apex of a pyramid. This is termed the symbiotic worldview *(Westbroek, 2012)*.

Moreover, by incorporating sustainable development principles, the thesis attempts to address the urgent need for a shift in our worldview and values, emphasizing that the adoption of renewable energy technologies would enable equitable access to pure energy and empower local communities with the resources they already possess. This is consistent with the principles of decoupling economic development and environmental degradation *(Jackson, 2009)*. This change in worldview requires a new holistic view on the spatial implications of these thoughts.

> "My true educator was the village and its traditions and surroundings of nature…"
>
> Iosif Băcilă

1.2. What

Sulina's Gate, the gateway to the Danube Delta as well as the eastern-most point of Romania, where the land meets the vast sea, is simultaneously the entryway to Romania. It is a visionary plan to reclaim the former CED neighborhood and transform it into a flourishing community centered around a self-sustaining campus.

The proposal envisions the establishment of a university that goes beyond traditional academic disciplines and focuses on teaching the ideas and principles required for creating a self-sustaining society. Through its comprehensive approach to education and community development, the Gate seeks to motivate and train individuals to become agents of change, thereby contributing to a more sustainable and equitable future.

1.3. Where

The location of the Danube Delta, specifically Sulina, was chosen for the thesis's development for the following reasons:

- A settlement provides clearly defined working parameters.
- The settlement has a significant historical relevance.
- Its location, strategically placed at the end of the Danube River, where it joins the sea.
- Its unique setting, which provides abundant resources, fauna, and flora.
- The settlement's closeness to nature, customs, and traditions, being an ideal place to learn from and to reconnect.

1.4. Research question

The following research questions have emerged so far in my research, as beforehand mentioned: How can the holistic cultural landscape entice its citizens to return? How should we address the issue of declining villages and underdeveloped communities? What role does architecture play in promoting sustainable development and enhancing the quality of life in underdeveloped villages, while maintaining a balance between conservation and development objectives? What impact does the human being holds?

The intersectionality between all proposed research questions will be examined more closely, as a network rather than as separate entities, entwined with the principles of the 5 megatrends named above, and on which the research finds its basis. I find this to be a potentially crucial strategy for designing a sustainable society.

1.5. New perspective.

The 5 topics of need.

In search of answers to the present inquiry, a closer look was taken at the aspects of the five need-based topics analyzed during my preliminary study last semester. The research acknowledges the significance of five mega trends and how they affect the enhancement of life quality. To identify the most prevalent problems and develop holistic solutions, it is essential to comprehend and monitor the intersections of all these trends, as it follows:

- Resources and energy;
- Space and mobility;
- Demography and integration;
- Food and health;
- Values and ethics

Figure 4. Image displaying the annual occurrence of alluvium layers and diverse habitats in the Danube Delta.

Figure 5. Danube Delta's biosphere reserve.

A comprehensive investigation was conducted during the preliminary study, and continued this semseter at different scales, and more in-depth, outlining the five fundamental needs and the role they play in enhancing both the individual and societal quality of life. The vision resulting from the intersection of all five megatrends should allow us to see the big picture and strike a balance, transcending a merely academic exercis

Resources and energy

There is no necessity of in-depth information before one arrives at the conclusion that the region selected for the case study, namely the Danube Delta, as a protected area is a place in which biodiversity is flourishing. It preserves some of the few natural forests and wetland areas in Europe that have not been touched just yet. This place is an oasis that can never be replaced, and it must be protected at all costs.

Moreover, the adoption of renewable energy technologies would allow for equitable access to green energy and empower local communities to utilize their existing resources. The proposal seeks to create a sustainable society only by maximizing what already exists and merging the knowledge of today with the traditions of the past (See more in 4.5 Masterplan proposal, for agriculture on water). This would be in alignment with the principles of decoupling economic progress and adverse environmental effects *(Jackson, 2009)*.

Space and mobility

The development of water infrastructure in the Danube Delta has been a primary focus of the research to date, which has been motivated by the desire to create a sustainable and efficient transportation system. A significant mobility deficit was identified in the region, isolating residents for days leaving them with a sense of resignation.

A proposal was developed based on an analysis of the vaporetto system in Venice, using maps and insights from "Turning Traffic Around: An Analysis of Boat Traffic in Venice and Its Environmental Impacts." In addition to adapting its principles to the remote region of the Danube Delta. The proposal calls for the implementation of Candela water transport's technology, which uses 80 percent less energy than conventional ships and operates exclusively on pure electricity, thus eliminating all local emissions *(Candela Technology AB, 2023)*. The proposed transportation strategy demonstrates the potential for a more effective and sustainable waterborne public transportation system by enhancing space utilization and mobility (See more in 3.2 Infrastructure proposal).

Demography and integration

The extensive study conducted during the previous semester revealed the pressing issues facing the Danube Delta's villages. In accordance with the globally identified problem, they are experiencing an unprecedented level of migration and depopulation in their rural areas. A simplistic footprint calculator demonstrates that there is insufficient space for our current way of living. According to the medium fertility forecast *(Roser & Ortiz- Ospina, 2019)*, the world's population will increase to 11,2 billion by the end of this century. By 2050, global trends indicate that 68% of the world's population will be settled in urban areas. With the exponential development of the global population, the disparity between available resources and population requirements is widening.

All possible efforts were made in order to have a proposal that comes as a response to the desires and needs of the community. This is because having such a proposal will eventually determine whether or not one will remain in the village of origin and cease looking for chances elsewhere. Its goal is to make this remote region more accessible to opportunities and possibilities. (For the schedule of events and functions for each room, see 5.1 The campus). The purpose of this research is to investigate the numerous dimensions of this worldwide issue and to look for ways to halt the migration to cities and perhaps even reverse it.

Food and Health

In terms of food, agriculture, and fishing, the area's communities have relied solely on local resources for centuries and millennia, as evidenced by previous research. Here, the proposal makes use of the locals' knowledge and combines the data with modern solutions in order to maximize the yields. The query arose, "How can we increase food production by employing permaculture principles?" In the event of repopulation, how can everyone be fed? The proposal is researching the implementation of permaculture in such an environment, and an agriculture on water beds is proposed as a solution to flooding scenarios (See more in 4.5 Masterplan proposal).

Concerns were raised regarding the development of self-sufficient hospitals with scientific naturopathy and straightforward conventional medicine as health centers. Considering the region's traditional characteristics, its proximity to nature, and the prevalence of natural remedies, previous research has identified the potential for such a holistic hospital in the region (See Hospital Plan in Settlement). Important to note is that no such facility exists in the study area, including no hospitals, pharmacies, or medical centers. As architects and urban planners, this requires our immediate attention.

Values and Ethics

These communities are exceptional with regard to the preservation of traditional ethics and values. When it comes to architecture, it was crucial to fully understand the traditional vernacular building style and incorporate its guiding principles into the proposals in order to maintain the core of the place (See 6. Material Scale). In most cases, all the used materials are local, and the techniques are vernacular. The conducted research revealed the significance of ethics to these communities and how their enduring values have guided them throughout history and the present.

Figure 6.
Layers of the different habitats of the area showing its richness in natural resources

1.6. Relevance

The significance of this thesis lies in its comprehensive defense of a new worldview. The significance of the design is the implementation of these concepts into a spatial proposal. In addition, it is about enhancing the quality of life for the communities of the entire Danube Delta region with minimal effort and a significant impact on the lives of many people through strategically selected interventions.

Figure 7. The picturesque household in the Danube Delta meant to show the atmosphere of the villages in the study area.

1.7. Method

In order to arrive at the proposed design, first the main philosophy is clarified. It is important to write the thesis from both the philosophical as well as the materialistic angle at the same time, because otherwise it would be too one-sided. After clarifying the philosophy, the spatial need for the basic needs of the inhabitants is analyzed to support the materialistic viewpoint.

Any endeavor may be approached from a variety of perspectives, including philosophical (why), materialistic/resources (what), and process-based (how). Considerations regarding this work's relevance are:

• Why – From a philosophical standpoint, certain aspects of the project can be defended both for and against. In this protected area, it is optimal to bring people back to their roots, the natural world. The counter argument could be allowing nature to flourish and allowing the few remaining communities in the area to vanish. In this manner, nature reclaims the land. Therefore, it is ideal for thesis writing.

• What - In the field of materials and resources. The proposal could serve as a pillar to reactivate, repopulate, and provide local communities with long-desired opportunities. In order to accomplish this, there are numerous scientific papers and calculation programs that could serve as a real-world foundation. This data can be used to argue for or against options. Therefore, it is ideal for thesis writing.

• How - The interpersonal or living aspects of a project are typically highly specific and contingent on the identity of the individuals involved. Through multiple site visits, interviews, surveys, and numerous conversations with local authorities, every effort was made to establish a rapport with the users and the community. Therefore, it is suitable for thesis writing.

Figure 8. The picturesque household in the Danube Delta meant to show the way people are living and the aging population.

1.8. Structure

Based on the five megatrends that arose over the course of the last year, I conducted a macro-to-micro scale investigation that culminated with the proposal presented in this thesis.

In order to investigate the cultural landscape, not only are a variety of viewpoints and dimensions required, but also careful consideration of each. Following the organization of the landscape, the thesis is organized from region to settlement, to household, and finally to materials.

Beginning with the masterplan proposals for the entire Danube Delta region, the Sulina case study, the settlement scale, and the building scale, and concluding with a material toolbox proposal. All while continuing to analyze through the five need-related topics: resource and energy, space and mobility, food and health, demographics and integration, and values and ethics.

2

PROPOSAL.

Figure 9 - The iconic derelict lighthouse in Sulina.

PROPOSAL.

Context.

2.1. Underlying philosophy

The philosophy underlying the study of the Danube Delta is, to say the least, multifaceted. Its primary objective is to create a sustainable society, and it also seeks to improve the quality of living for the local community.

This study is predicated on the belief that humans are an integral part of nature and that our well-being is intricately linked to the health and equilibrium of the natural world. We must adopt a symbiotic worldview between humans and the natural world *(Westbroek, 2012)*. In order to achieve a shift in the way our society functions, we must first recognize

"My village is the center of my inner world" Costel Zăgan

that by caring for nature, we are also caring for ourselves.
Second, the study acknowledges the limitations of a growth-driven economic model and seeks to investigate alternative routes to prosperity that prioritize social well-being, environmental stewardship, and the gratification of human needs *(Jackson, 2009)*. By promoting this philosophy, the study seeks to add to the discourse on sustainable development and offer insights into fostering a more resilient and prosperous society.

2.2. What

In the context of a civilization that already existed on the land that comprises the Danube Delta, the material and spiritual requirements of the communities that lived there were immediately transferred into form. *(Brătuleanu& Zahariade, 2004, p. 53)*. Because it was formed in a unified manner by the climatic, geographical, and hydrographic circumstances, as well as because it made use of local materials for the most part, the architecture took on the form of more than just an object but rather of a crucial framework for existence.

As an outcome, the amphibious architecture, on stilts, with walls of interlaced timber filled with clay and straw, was the architecture of the region, that of the fishermen's huts (see figure 10). These sturdy platforms are designed to withstand the fluctuating water levels and provide fishermen with a functional workspace. Typically, they constitute of a simple elevated platform with storage areas for fishing gear, nets, and other supplies. The architecture of these shacks prioritizes utility and practicability, allowing the fishermen to carry out their daily tasks efficiently. The climate changes of the 20th century and the plan of invasive systematization of the territory in the '70s and '80s were the factors that led to the replacement of floods with extreme drought *(Dinca, 2018, p. 258)*.

On land, human life occurs. Every evening, all the fishermen return to their homes and families, the traditional family core is still very strong in this area. Traditional on-land vernacular architecture in the Danube Delta region consists predominantly of dwellings made from locally available materials, such as clay and straw, with reed or straw thatched roofs (see figure 11). These dwellings exhibit a profound connection to their natural surroundings and an in-depth comprehension of the local climate.

The aesthetics of traditional architecture in the region of the Danube Delta are characterized by simplicity and harmony with the surrounding natural environment. Therefore, we have a dual perspective when discussing the traditional and vernacular aspects of the region. We are simultaneously discussing land and water (see figure 12). The hues of the earthen walls complement the surrounding landscape, while the thatched roofs create a distinct silhouette against the sky. These vernacular dwellings demonstrate the ingenuity of the local communities by employing readily available materials and traditional building techniques that have been handed down from generation to generation until the present day.

2.3. The old village

Long regarded as the "soul of the country," these types of settlements are a cultural symbol, not only representing a way of life, values, and traditions that have changed or passed, but also bringing an architectural language that has been refined and explored over centuries, demonstrating a genuine link and relationship with nature. What was the village outside its traditional values? What did it entail for the inhabitants to organize their lives there? How did the community operate?

Important to the village was and still is the spirituality that lays at its core. The life in the village was uncomplicated and characterized by modesty. In the old community, however, unwritten laws and belief ran deep. From the arrangement of the dwellings to the centre of the village, to the embracing of new residents and rituals that would bind the village together, every aspect of the community was considered. This was considered when proposing the design, and this method of organization was given careful consideration.

Figure 10. On site showing the vernacular architecture on water chosen from the dual perspective.

Figure 11. On site showing the vernacular architecture on land chosen from the dual perspective.

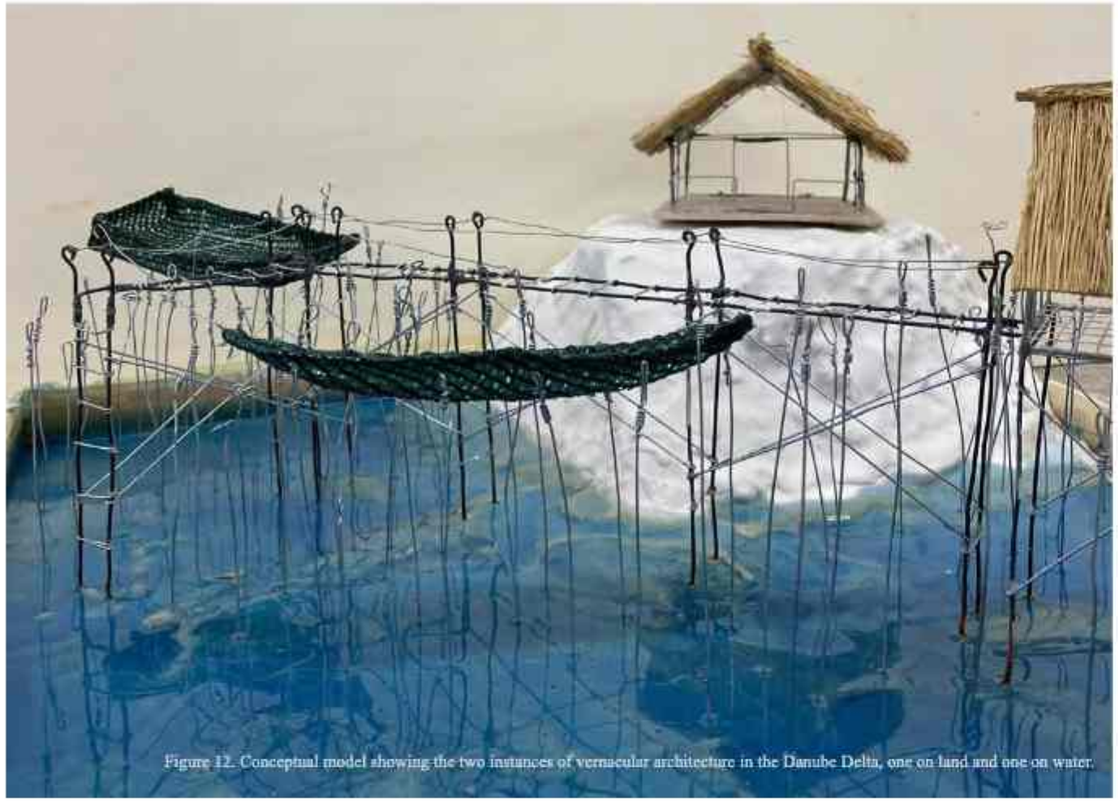


Figure 12. Conceptual model showing the two instances of vernacular architecture in the Danube Delta, one on land and one on water.

Life cycles.

Most of it was researched and showcased in the previous study semester, now all learn will be implemented in the proposal as an outcome (See 5 Household scale, and appendix A). The life of the settlement developed in distinct cycles that continued to repeat themselves year after year, with only a few small deviations caused by the changes in the weather. Routines and activities changed from region to region according to the many occupational opportunities present.

Sulina was an affluent community that was able to afford most activities, which led to a fulfilling existence there. In the spring and the fall, as activities began to build up in anticipation of the upcoming seasons, there would be an increased awareness of the work that needed to be done. While the summer would be characterized more by upkeep activities, the winter would be characterized more by stillness, like a hibernation for human and nature to regenerate for the upcoming year *(wocomotravel, 2016).*

Craft works.

In addition to more conventional activities like as fishing, farming, and caring for animals, the community also places a significant emphasis on its arts and crafts. Traditional forms of craftsmanship struggle for their continued existence sharing a portion of the fate of the abandoned villages.

Crafts peculiar to the region include the gathering and refining of reeds and the construction of vessels *(Caspers, 1967, p 56)*. Due to the region's natural terrain and the fact that all of the locals travel on the water in their boats, it was logically necessary to have both types of vessels. Woodcarving is another craft of the region, used to create traditional decorative objects, furniture, architectural elements, and sculptures. A very specific one is the craft of creating nets. In the region of the Danube Delta, fishermen weave intricate nets for fishing and other aquatic activities. Other well-known regional crafts include embroidery with floral motifs, pottery, and so on *(Titov & Chiselev, 2015)*. The variety of traditional crafts is further evidence of the area's wealthy heritage.

Figure 13. Conceptual model showing the two instances of vernacular architecture in the Danube Delta, one on land and one on water.

3

REGIONAL SCALE.

Figure 14. Aerial view of the region, illustrating the branches of the wetland and the landscape

REGIONAL SCALE.

3.1. Opportunities on the master-plan scale

At the level of maritime transport, the route is defined by navigable sequences between two significant locations. At the level of the Delta, these sequences are delimited by the settlements at the extremities of the Danube: Sfantu Gheorghe, Chilia, and Sulina, as well as Tulcea, the branching point of the arms.

Most of the transportation happens on water in the study area. Tulcea and Murighiol are the last villages on the regional link road system. In order to ensure that the settlements in the Heart of the Danube Delta are somehow accessible, all transportation from these settlements requires taking place on the river, it requires a well implemented water transport system.

Nonetheless, as a result of numerous site visits and research conducted during the previous semester, it was determined that public passenger traffic routes have a low frequency, one to two round-trip journeys per day and only two trips per week *(Navrom Delta, n.d.)*. In addition, the route requires a lengthy travel time, on average, the Tulcea-Sulina route takes approximately 4-5 hours, necessitating that commuters must set aside one or even two days for this procedure *(See Table A)*. Furthermore, it does not reach all of the region's settlements, leaving some of them dependent on the private sector or their own vessels.

The approximately 10,000 people who call the Delta home *(Rezultate, 2011)* face the challenge of balancing two very different ways of life: one that is completely isolated and is primarily related to the immediate neighborhood (at the scale of the household, at the scale of the village, or at best at the scale of the surroundings); and another that is a commuter life, in which it is necessary to travel to the nearest settlements in land areas in order to meet one's fundamental requirements. As can be seen in tables presented from above under Table A, the existing state of affairs renders the region nearly inaccessible and makes it exceptionally challenging for residents to commute to and from their homes. The issue of mobility is pleading with us to pay it the utmost attention right now.

> "A good portion of the people who live in the Danube Delta feel isolated and forgotten, but somehow resigned... "
>
> Alexandru Bejan, resident

The inquiry began during the previous semester. Using the exhaustive research as a foundation, the study continued, driven by the desire to build a sustainable and efficient transportation system that would improve the lives of the locals. Based on an analysis of the vaporetto system in Venice, maps and insights from the publication "Turning Traffic Around: An Analysis of Boat Traffic in Venice and Its Environmental Impacts" *(Balboa et al., 2007)* were used to develop a comprehensive proposal for the entire region. Attempting to answer the question of where it would make sense to have such a halt, such a station for our new boat infrastructure, the following villages with a pink circle were drawn on the map based on the particulars of the area.

Route from Tulcea

Day	Ship type	Hour
Monday	Classic	13:30
Wednesday	Classic	13:30
Thursday	Semi-rapid	13:30
Friday	Classic	13:30

Route from Sulina

Day	Ship type	Hour
Monday	Semi-rapid	07:00
Sunday	Classic	07:00
Thursday	Classic	07:00
Friday	Semi-rapid	07:00

Route from Tulcea

Day	Ship type	Hour
Monday	Semi-rapid	13:30
Wednesday	Semi-rapid	13:30
Friday	Classic	13:30

Route from Periprava

Day	Ship type	Hour
Tuesday	Semi-rapid	06:00
Thursday	Semi-rapid	06:00
Sunday	Classic	06:00

Route from Tulcea

Day	Ship type	Hour
Monday	Classic	13:30
Wednesday	Classic	13:30
Friday	Semi-rapid	13:30

Route from Sfantul Gheorghe

Day	Ship type	Hour
Tuesday	Classic	07:00
Thursday	Classic	07:00
Sunday	Semi-rapid	07:00

Table A. List of current timetables of the transportation.

Figure 15. Current transportation situation.

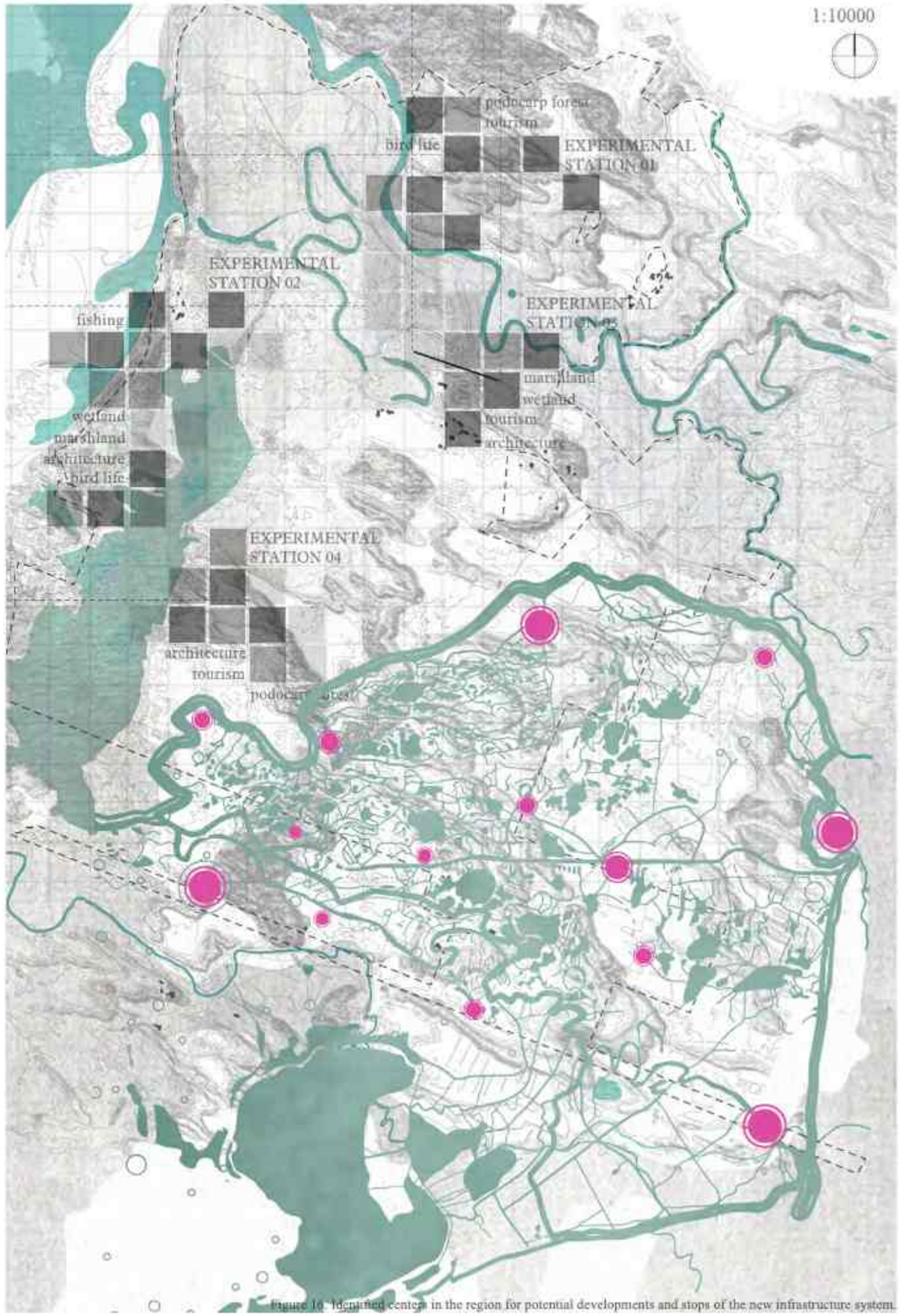


Figure 16. Identified centers in the region for potential developments and stops of the new infrastructure system.

The next step for the proposal was to examine the operation of this system in greater detail. The research query in this area would be: how can the new system be self-sufficient? How will this affect the natural environment? The result demonstrates that the proposal requires the implementation of Candela P-12 water transport. The P-12 is distinguished by its superior energy efficiency, which transcends that of any other fast vessel *(P-12 - the Fastest Electric Ferry, n.d.)*. In addition, these vessels consume 80% less energy than conventional ships and operate exclusively on electricity, eliminating all local emissions *(Candela , 2023)*. The Candela P-12 technology, its combination of hydro foiling technology, energy efficiency, and zero-emission operation *(Technology C-12, n.d.)* is in line with the goal of creating a more environmentally friendly and sustainable society in the region, while also providing options for transportation that are both efficient and comfortable for the local community.

Taking the research findings into account, a new strategy for the transportation of boats is currently being formulated. The map demonstrates that the project includes two distinct categories of roadways: the regional route and the express route.

On the EXPRESS route, we discover the CANDELA p12 boat, which travels at a speed of 50 kilometers per hour, or 27 nautical miles per hour when converted to kilometers. The first one designated with a continuous pink line on the map is EXPRESS ROUTE I. It requires 1 hour and 21 minutes to travel from one side to the other. The second Express route is denoted by a continuous green line on the map and is labeled EXPRESS ROUTE II. It requires 4 hours and 47 minutes to travel from one side to the other (See the map for the precise route and number of stops).

Regarding the REGIONAL route, a slower boat model from the same manufacturer, but at a reduced price, was selected. It will also make more sense for the local boat to travel at a slower speed and closer to the shore, given that it will make many more landings. Driving closer to the shore means driving closer to the reed beds, which is an additional reason to choose a boat with a slowing speed. A high-speed boat will cause disturbances and surges, as well as disrupt the natural habitat. Four regional routes are depicted on the map, with travel times ranging from 46 minutes for the shortest route to three and a half hours for the Saint George branch.

The proposed transportation strategy for the Danube Delta illustrates the potential for a more versatile and sustainable waterborne public transportation system. This strategy provides the region with efficient and environmentally favorable transportation options by enhancing mobility and space utilization.

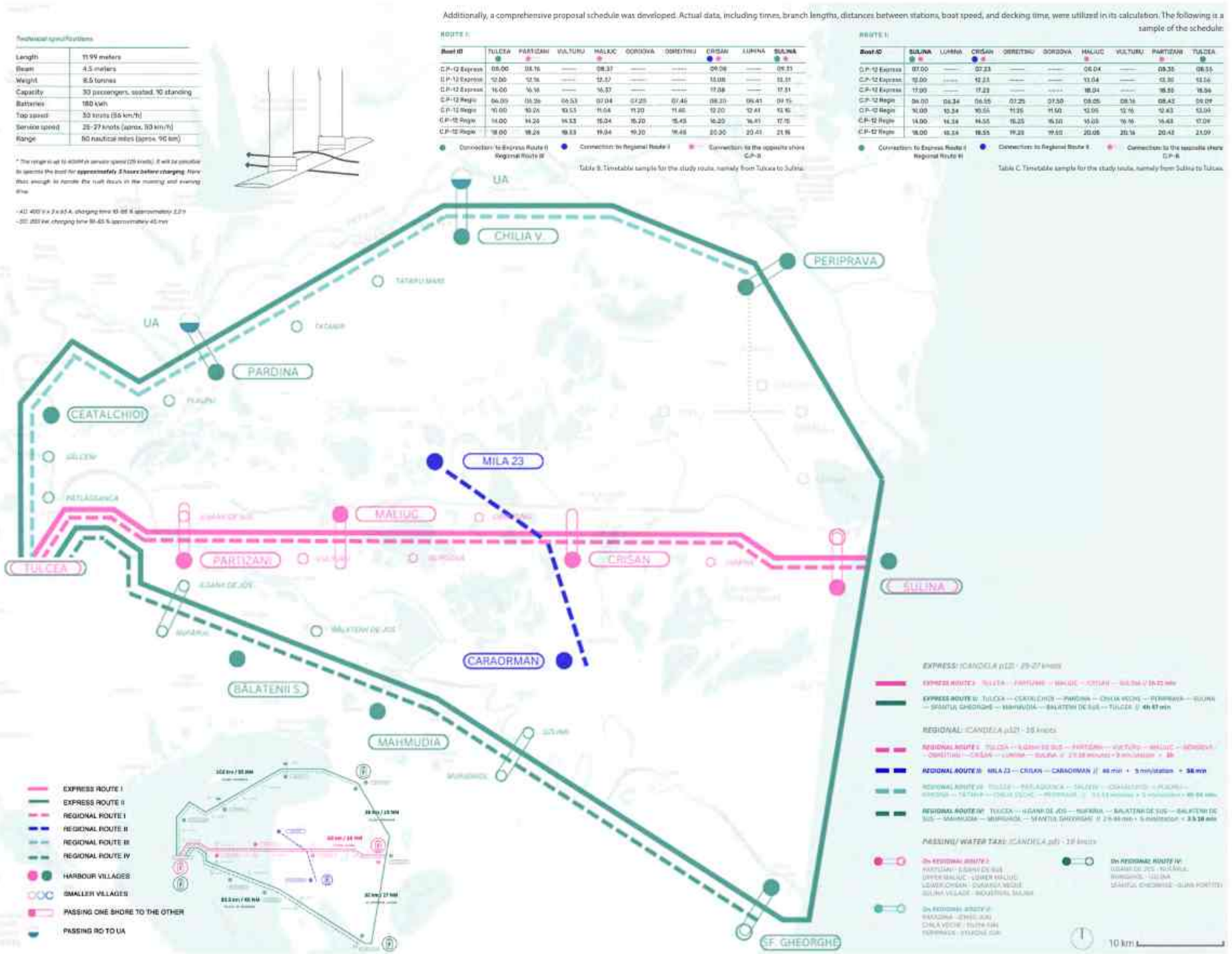


Figure 17. Proposal for the infrastructure system, routes, charging station and a sample of a possible timetable on the study route, namely Sulina branch.

4

SETTLEMENT SCALE.

Case study. Sulina.

Figure 18. Sulina at sunset.

SETTLEMENT SCALE.

Sulina was chosen as a case study because of its location, historical significance, and applicability, as will be described in the subsequent analysis.

4.1. Historical relevance. CED.

Due to the difficulties posed by the international navigation regime on the Danube and the difficult-to-access area of the wetland, the Paris Peace Treaty of 1856 established the European Commission of the Danube, whose primary purpose was to regulate navigation and systematize hydrotechnical works in this region *(Stanciu& Duta, 2009, p 20)*. In order to establish an international river route, it was necessary to investigate the condition of the two major arms, Sulina and Sfantu Gheorghe, at that time.

The Chilia branch was disregarded for political reasons, representing the unstable border with Russia and the decrease in its participation in Danube traffic *(Petrescu, 2016, p 132)*. The high costs of the works and the long navigation length on the Sfantu Gheorghe arm caused its systematization to be abandoned *(Krehbiel, 1918, p 44)* in favor of the Sulina arm. The location of the headquarters of the European Commission of the Danube in Sulina served no purpose other than to place the modest developing village on the map of Europe in the context of international navigation *(Petrescu, 2016, p 317)*.

The political decisions taken by the European Commission of the Danube during the nineteenth century contributed to the irregular development of the settlements in relation to the three arms. The communities that were developing were, of course, those that were located along the path that was systematized, with a particular emphasis on Sulina. The branch was traversed by 5853 vessels between 1906 and 1910 *(Petrescu, 2016, p 130)*. The situation was radically different in the case of the two other branches. In the case of the two other branches, things were drastically different. When compared to the Chilia branch, where only 66 ships were registered *(Băisan, n.d.)*, it is easy to comprehend the impact and opportunities that an infrastructure can provide to these branches.

At the level of the settlement, the influence of C.E.D. can be distinguished by different intensities and can be categorized as follows: the case of Sulina – as a comprehensive and complex modernization system *(Petrescu, 2016, p 101)*; the settlements on the side of the canals – as a specific reason for the establishment of river stations *(A.N.D.J.G., 1939, p 101)*; and the interventions along the navigable routes – by building signalling systems *(A.N.D.J.G., 1939, p 63)*.

4.2. The settlement. Sulina.

As anticipated, the position of the settlements in relation to the navigable route and the history of port activities on their territory over the past two centuries affected their degree of development. According to the administrative status of the ports, the only fluvial-maritime port on the territory of the Danube Delta is Sulina. It is aligned with other ports of comparable importance in the country: Brăila, Isaccea, Galați, and Tulcea *(Marina, n.d.)*, which is placed on the trade map and international shipping.

As the physical context of the region is the primary factor that shaped the settlements, the varieties of territorial development depend on the geometry of the main channels and the composition of the shorelines. Depending on the permissiveness of the foundation land, they acquired various expansions and, consequently, various densities. When discussing Sulina in terms of the type of territorial development of the village, we recognize that it is a dense one compared to the context.

Regarding the texture of the settlements, two general typologies can be distinguished *(Duvagi, 2016, p 6)*: linear, either along the canal or peninsular and regular through a rectangular street grid, either parallel to or perpendicular to the canal.

Sulina is the village with the most remarkable development, combining the linear and rectangular typologies through a series of long streets parallel to the Danube and secondary perpendicular connection streets. In this instance, it is crucial to observe the strong connection between the settlement and the water, which is mediated by the escarpment, Strada I, a promenade street where all public functions are located. Thus, the centre of the community becomes a continuous line extending in locations towards Second Street. It is essential to note that C.E.D.'s urban planning interventions led to the development of the rectangular street structure with the establishment of C.E.D.

" The village is a place where you can find peace, unity, strength, inspiration and most importantly a natural and beautiful life. "

Minahil Urfan

Figure 19. The special case of Sulina - between 1824 and 1853.

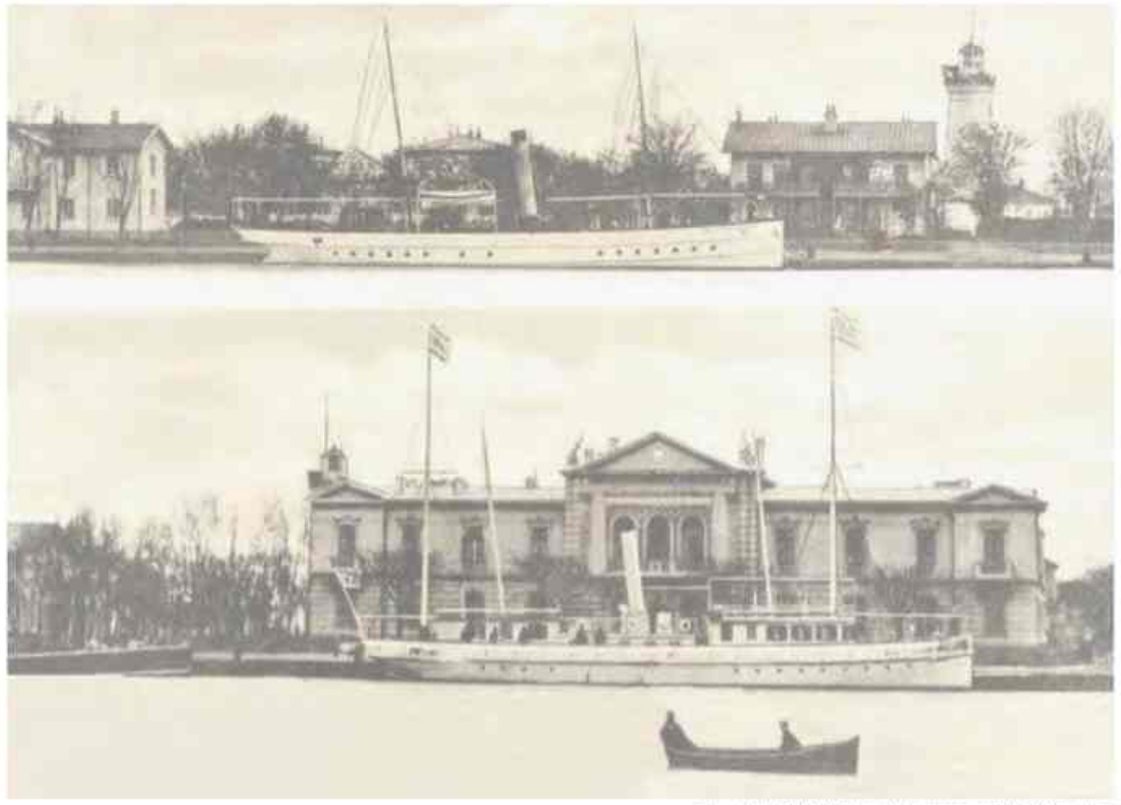


Figure 20. C.E.D. Palace - the beginning of the 20th century

The intervention of the Commission at the level of the settlment Sulina brought about significant changes, transforming the settlement (See figure 21) from a village with a reed-and-plaster vernacular architecture into a city with over 9000 inhabitants in 1910 *(Lahovari, 2010, p 497)*. The impending influx of international personnel, for whom a living environment consistent with Western living standards had to be provided, was the impetus for the development. An interesting aspect is that contrary to one's expectations, the village has not lost its traditions, specific and particularitiesg

In order to systematize the village, a series of construction projects were undertaken, including the rehabilitation of flooded areas and the elevation of the land, the development of the seafront as a port and street that houses administrative institutions and commercial spaces (See figure 22), water and electricity supply systems, a series of social constructions -cultural: religious, hospital, educational, the complex of administrative buildings, the multi-denominational institutions as well as the multi-confessional cemetery *(A.N.D.J.G., 1939, p 129)*.

The nucleus of administrative buildings on the southern bank of the Danube, as also understood from map A, resembles a well-defined district. These buildings include the Administrative Palace (see figure 20), the Technical Service, staff housing, the Central Hospital, and the Lighthouse *(C.E.D., 1931, p 251)*. On the level of the village, this nucleus of administrative buildings is the most impressive structure. A well-defined style is used to identify the classicizing effect of Western architecture. This style is distinguished using stylistic registers, symmetrical composition as a rule, U-shaped planimetry, a constant full-void ratio, gables, bossage, and an overall imposing look.

On the northern bank of the Danube, a complex of repair shops, the shipyard, customs offices, and the residences of customs officials grew *(C.E.D., 1931, p 252)*. This core was designed solely from a utilitarian perspective, resulting in a repetition of buildings with a purely utilitarian function.

The establishment of C.E.D. led to the establishment of many foreign consuls in Sulina, resulting in the appearance of Italian, English, Greek, and Muslim architectural influences. Thus, the community obtained a cosmopolitan aura and became more international than many of Romania's major cities *(Petrescu, 2016, p 317)*. The site is therefore of national interest (See figure 23) and in ruins at the moment, this represents one of the reasons why it was chosen for a further development.

Similarly, the signalling system is comprised of a small number of interventions: There are 21 beacons along the Brăila-Sulina route *(Petrescu, 2016, p 167)*. Referring to the study area, other than the three lighthouses from Sulina (of which only one is in direct relation to the settlement and the

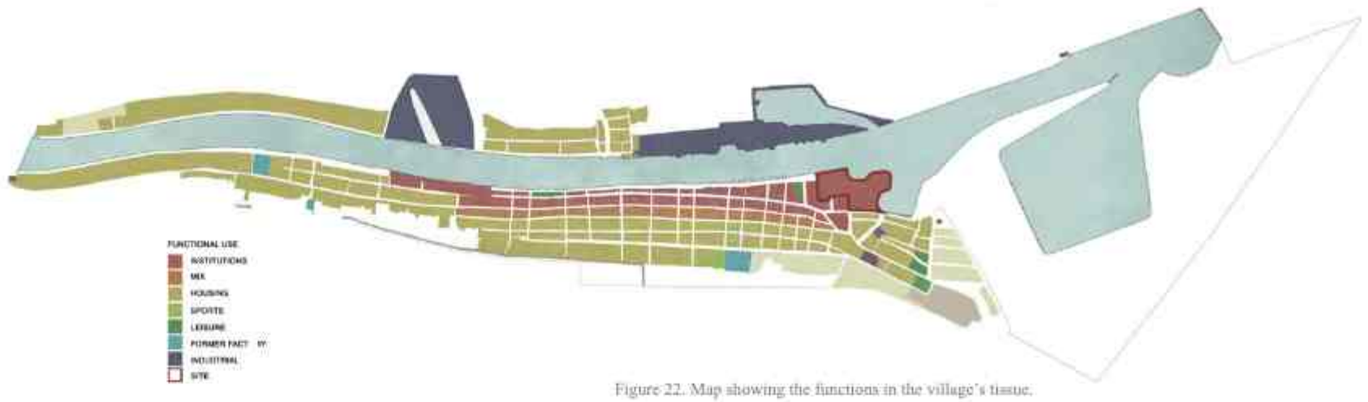


Figure 22. Map showing the functions in the village's tissue.

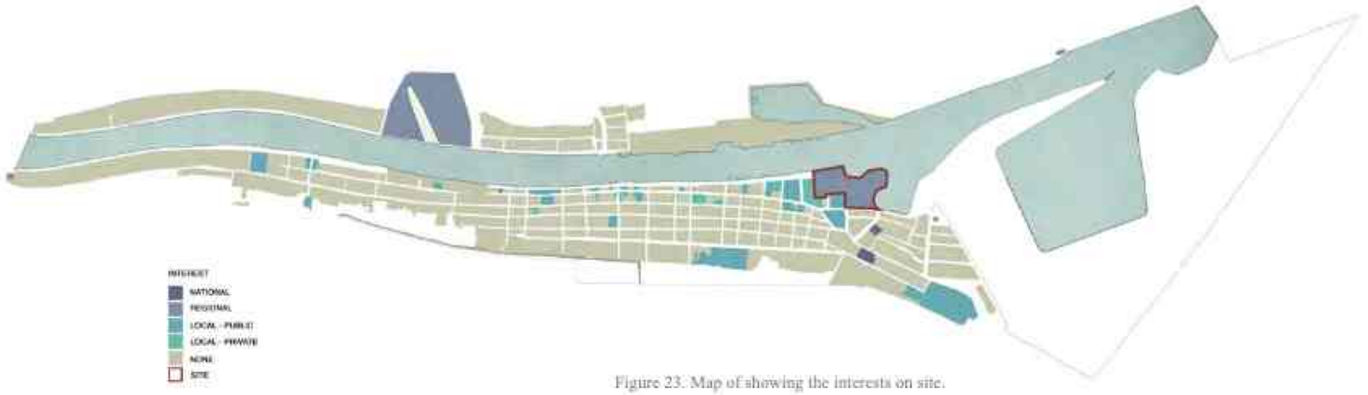


Figure 23. Map of showing the interests on site.

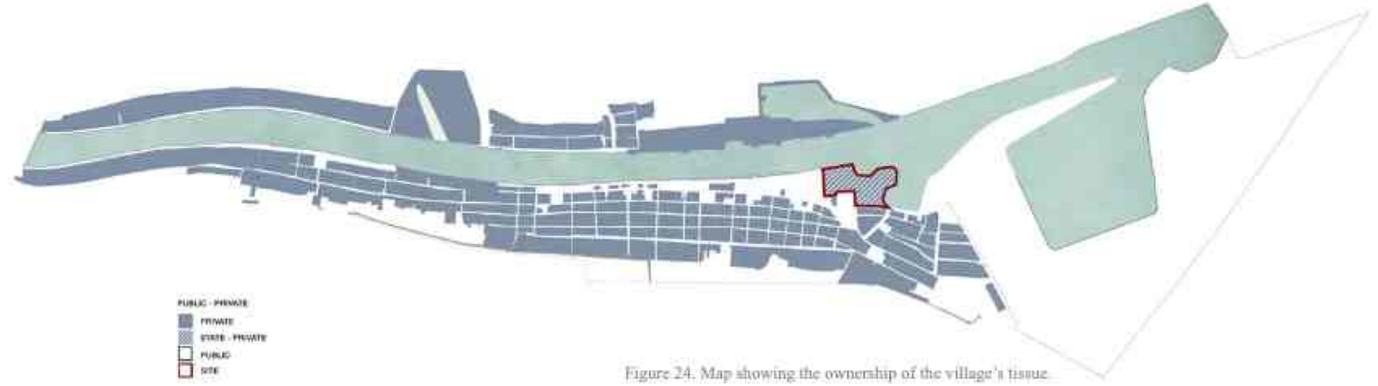


Figure 24. Map showing the ownership of the village's tissue.

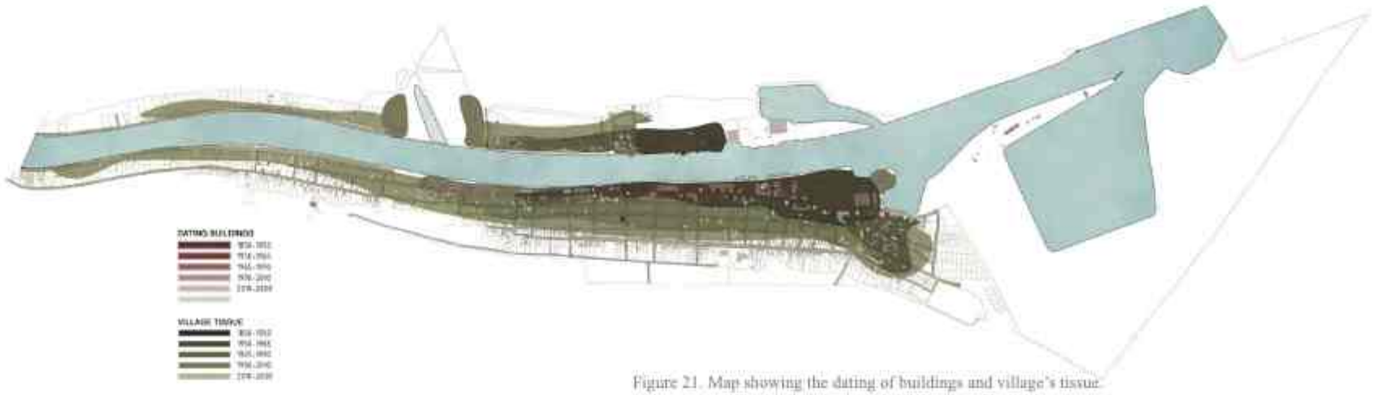


Figure 21. Map showing the dating of buildings and village's tissue.

other two are outside of it), the other constructed lighthouses are located along the navigable route, but do not influence the Delta's settlements: the wooden lighthouse from Sfantu Gheorghe, Serpilor Island, and the others along the Tulcea-Sulina route.

An axonometric representation of the context has been presented below for the purpose of providing a better comprehension of the volumes and the positioning of the function. One further thing that was crucial to the plan was how the functions are working together, how they communicate with one another, and what a typical day's agenda may look like in such a scenario. The axonometric image demonstrates, once more, that there used to be key services in Sulina, most of which were made possible thanks to the C.E.D. commission. These functions include the school, the church, and the hospital, which are all considered to be the centers of the village. Unfortunately, the hospital closed in 2011 (medicalmanager.ro, 2011), however the structure that was previously there could possibly serve as a future propsal.

Figure 25. Plan view of the proposal at the masterplan level for the chosen village, Sulina.

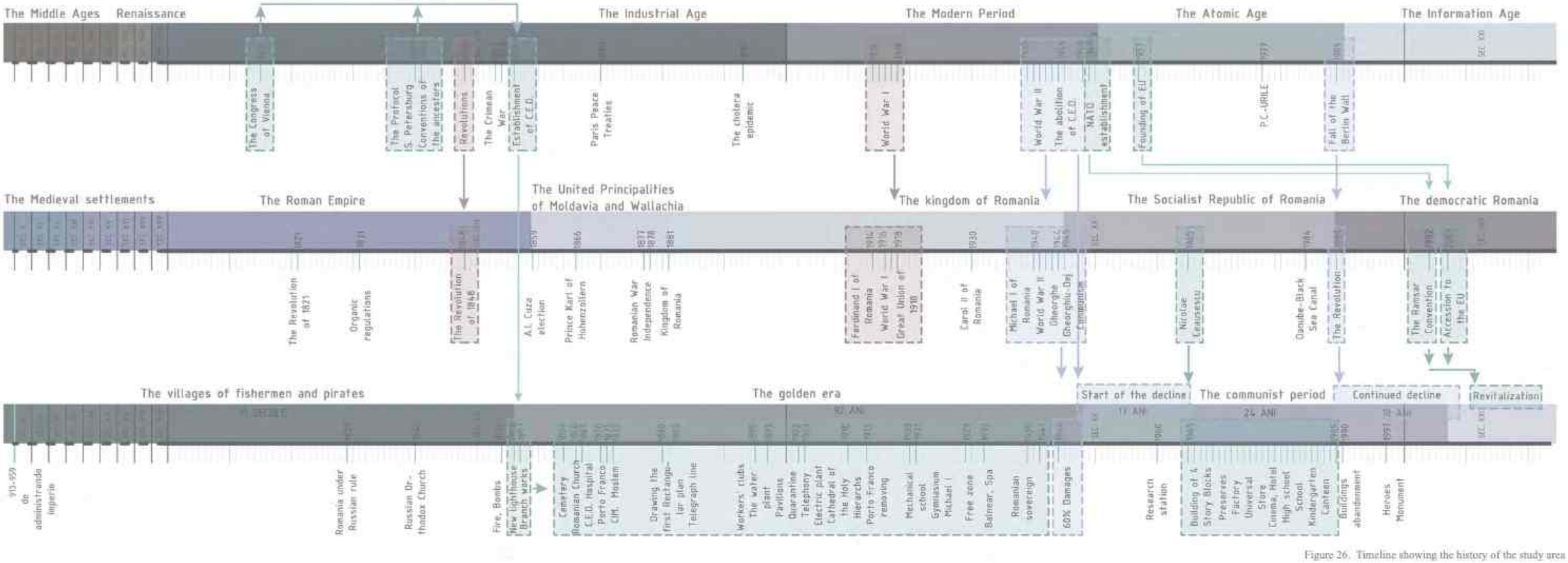


Figure 26. Timeline showing the history of the study area

4.3. Stagnation: the communist decades

After the dissolution of the European Commission of the Danube *(Convention on the navigation regime on the Danube, 1948)*, and concurrently with the change in political regime *(The coup d'état of December 30, 1947)*, the Danube Delta experienced a period of economic stagnation because of its departure from international navigational control and Western influences.

In the period from 1965 to 1989, the program for the development and complete exploitation of the Danube Delta was established *(Decree no. 92, 1983)*, and guidelines for the exploitation of the area's resources were adopted *(Ionescu, 2009)*. In order to facilitate navigation, fish farms, and harbours, which are now defunct and abandoned, multiple interventions and man-made channels were cut into the harmonious landscape.

For the political system's ideal of consumption and exploitation, prejudice was brought into nature. If this change in direction meant a lengthy period of decline for Sulina, it was an artificial development for many settlements. In most of the major settlements in the Delta, apartment complexes were constructed on a regular basis: Sulina, Sfantu Gheorghe, Chilia Veche, and Caraorman *(Amihulesei, 2007)*.

In Sulina, a significant portion of the fund constructed on the cliff consists of a cladding of collective blocks, the tallest in the Delta (4 floors with a commercial ground floor, situated above the level of the promenade), a neighbourhood that extends and extends behind the curtain with reduced dimensions. The communist era abandoned enterprises, such as the Sulina cannery, which are now defunct.

4.4. Interventions in the contemporary era

The status of the Danube Delta was changed in 1990, immediately following the fall of communism, to counterbalance the negative effects, the prejudices of the intrusive drying of the lands in the area. In addition, the Administration of the Danube Delta Biosphere Reserve (A.R.B.D.D.) was to be created to restore and protect the physical-geographical units.

As a whole movement, it was carried out to counterbalance the effects of the intrusive drying of the lands in the area and the cut in of the channels *(Official Gazette no. 283, 1993)*. Initially controlling attributions and not solutions *(Dinca, 2018, p 258)* for the coherence of the region's development, the turning point that would govern the speed of building in the area took place in 2008 when it was determined that the area would be developed in a coordinated manner with the help of regulations, rules and guidebooks.

The Urban Planning Regulation for the Danube Delta Biosphere Reserve *(Official Gazette no. 838, 2008)* drew out the standards for the position on the plot, the proportion of occupation, territorial planning, and architectural norms for dwellings. These regulations were put in place to ensure that the Danube Delta is preserved as a biosphere reserve. A new perspective of the old is taken into consideration while formulating the regulation, which regulates the scope of interventions *(Vaidianu, 2010, p 10)*, in order to avoid the phenomena that the end product turns to be an incoherent mishmash of architecture with some questionable elements.

4.5. Masterplan proposal

The following suggestion was provided on a masterplan level for reactivating the once thriving C.E.D. neighborhood as a result of an in-depth research of the village tissue, repeated site visits, consulting of documents, and conversations with local officials. On the size of the settlements, the demands that resulted were the construction of a more self-sustainable community, and the difficulties that were recognized were the fools and the absence of potable water, good quality water. On the other hand, the identified problems were the lack of fools.

The technologies from biomatrix were proposed here (Bringing Water to Life - Biomatrix, 2023), which promise to bring the shoreline to life by increasing the biodiversity, purifying the water, and generating food in an efficient manner in an effort to tackle the crisis of floods.

A connection between the primary part of the campus and the secondary part of it is something that has been suggested as a pathway. This road would be one of reflection and would be modeled after a journey. Along the route, there will be places to rest that will urge travelers to pause for a while and appreciate the natural beauty around them, to reflect on the link that exists between man and his environment, and to stimulate moments of contemplation within those who visit them.

The bird observation tower that is located at the end of the walkway is supposed to serve as a connector between the various fishing platforms, the platforms that are located within the biomatrix, and the platforms that are located at the end of the pathway. The final one provides a perspective of the end to someone who is coming from the campus, but it is also seen from a dual perspective, representing also the symbol, reinterpreting the traditional lighthouse, and indicating to someone who is coming from the sea that there is a community there and that life is taking place on land.

Figure 27. Plan view of the proposal at the masterplan level for the chosen village, Sulina.

4.6. Field trips. Photo documentation

Figure 28. Photo documentation from the site visit of the chosen village, Sulina.


1 CAMP


2 HOSPITAL


3 LIGHTHOUSE


4 C.E.D. PALACE


5 SHOP


6 KINDERGARTEN


7 HIGH SCHOOL


8 MIDDLE SCHOOL


HOTEL IN RUINS


HALL


TWIN DWELLINGS of C.E.D. ABANDONED


HALL


OFFICE BUILDING ABANDONED


C.E.D. BUILDING

5

HOUSEHOLD SCALE.

Figure 29. Render of the proposal.

HOUSEHOLD SCALE.

Sulina was chosen as a case study because of its location, historical significance, and applicability, as will be described in the subsequent analysis, even more so the choosen site, the old CED neighbourhood.

5.1. Analysis

Multiple considerations were taken into consideration in the process of presenting the functions and deciding where to position them, as well as determining what to maintain and what to demolish, as shown in the illustration on the right side of the page.

On the location, it was planned to preserve all of the historical monuments and keep the memory of the previous CED alive and well. The buildings that are preserved will be appreciated and valued as a result of revitalization efforts that aim to breathe new life into what is currently a lifeless structure. The historic hotel that is located on the left side of the land may be demolished if the proposal moves through. Hotel that was constructed during the time of the Communist administration, together with the halls that are located adjacent to it.

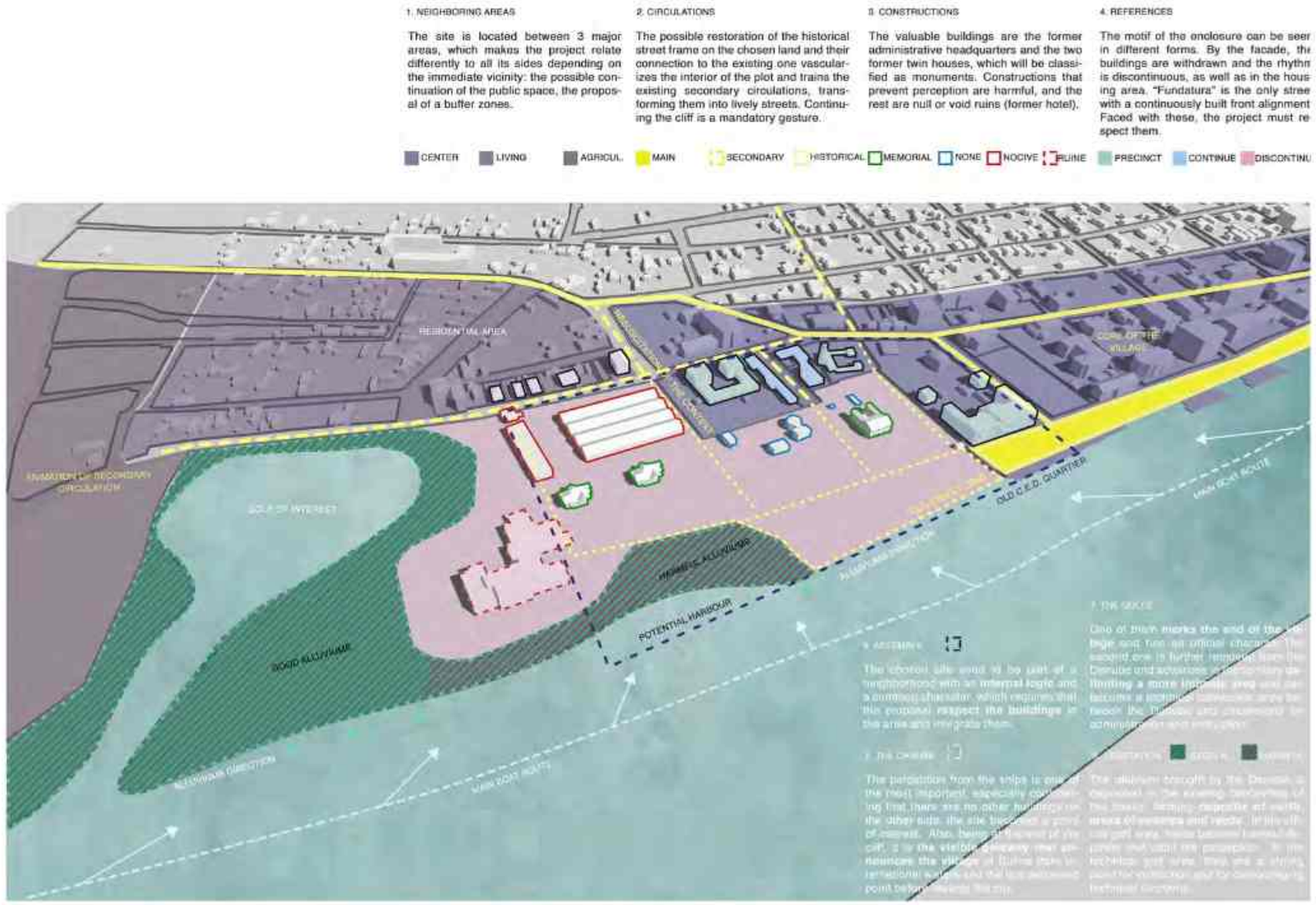


Figure 30. Axonometric analysis

5.2. The campus

The campus educational programs provides students with a comprehensive and all-encompassing educational experience that integrates a wide range of academic disciplines and creates a profound connection with the natural world. The concept behind it is founded on the idea of mutual education, which means that the primary focus is on gaining knowledge from one another. In this specific case, it discusses the ways in which a typical person from the city might learn while at the same time providing a benefit to people who reside in remote villages.

It serves as both a marker and a symbol of Romania's easternmost point, since it is located at the point where the Danube Delta's marine and continental halves are separated by a narrow channel. To use a metaphor, we might think of the location as the entranceway or the gate. The gateway to the land, the gateway to Romania, the one who enters the land while also entering and connecting with the people at the same time. One of the reasons why the site was selected was because of its location as well as its significance.

On the other hand, when viewed from land, as if from the point of view of a local, we might perceive the site to be a vigorous resuscitation of what was originally termed "Europolis," the old CED neighborhood that now lays in ruins, day by day deteriorating a bit more *(Bonev, 2009)*. The location of the research requires our undivided attention right now. From this perspective, the location will function as a thriving center for inhabitants of all ages and demographics, providing them with the opportunity to investigate and go further into the topics that most interest them. On the size of the masterplan, numerous such hubs were examined, and based on a real world study of the conditions, it was recommended that multiple such hubs grow.

It is vital to state that the campus room program was built on the basis of the preliminary research and the three pressing major concerns discovered, namely: HEALTH, MOBILITY, and EDUCATION. This is represented and discussed in the diagram that can be found on the right page. In addition, it is essential to mention that the diagram can be found on the right page. In the above manner, all of the suggested functions and room programs are intended to be related to one another, to complete one another, and to serve as a network of interventions intended to improve the overall quality of life for the locals.

> " The villager is the beginning and the end…" Rebreanu L.

The many room programs that are available around the campus are intended to bolster and improve the quality of the educational experience that students have access to. Every room, from the boat workshop to the theater, has been thoughtfully designed, laid out, and outfitted to meet the requirements of the many departments and their associated activities. Additionally, the availability of communal places like as the cafeteria, the library, and outdoor areas stimulates cooperation, interaction, and the sharing of ideas among students who are studying different fields of study.

The daily routines and schedules are reflective of a well-balanced schedule that makes room for both mandatory and elective components of the curriculum. Students have the option to select coursework from a variety of modules, allowing them to personalize their educational experience and focus on topics that are relevant to them. Because of the focus placed on hands-on activities and practical learning, students are certain to acquire real-world skills and experiences that will help them get a head start on their future employment.

In addition, the curriculum benefits from a one-of-a-kind cultural and environmental facet because to the campus' incorporation of ancient Romanian rituals and communion with the surrounding natural environment. The park, which features a number of pavilions, was designed to honor Romania's varied historical traditions while also functioning as a transitional zone between the campus and the natural environment that lies just outside it. Students have a more profound awareness for the significance of conserving the natural world as well as a more profound grasp of the significance of local traditions as a result of this integration.

The on-campus program encourages students to get a well-rounded education by combining academic knowledge with practical skills, cultural immersion, and an awareness of the environment. The overarching objective is for students to acquire a comprehensive understanding of ecological principles, sustainable practices, and cultural heritage by combining theoretical knowledge with practical application. This will allow them to steer society in the direction of a more sustainable model by suggesting not only more sustainable buildings and materials in the toolbox (see chapter 6 for technical details), but also a more sustainable way of life.

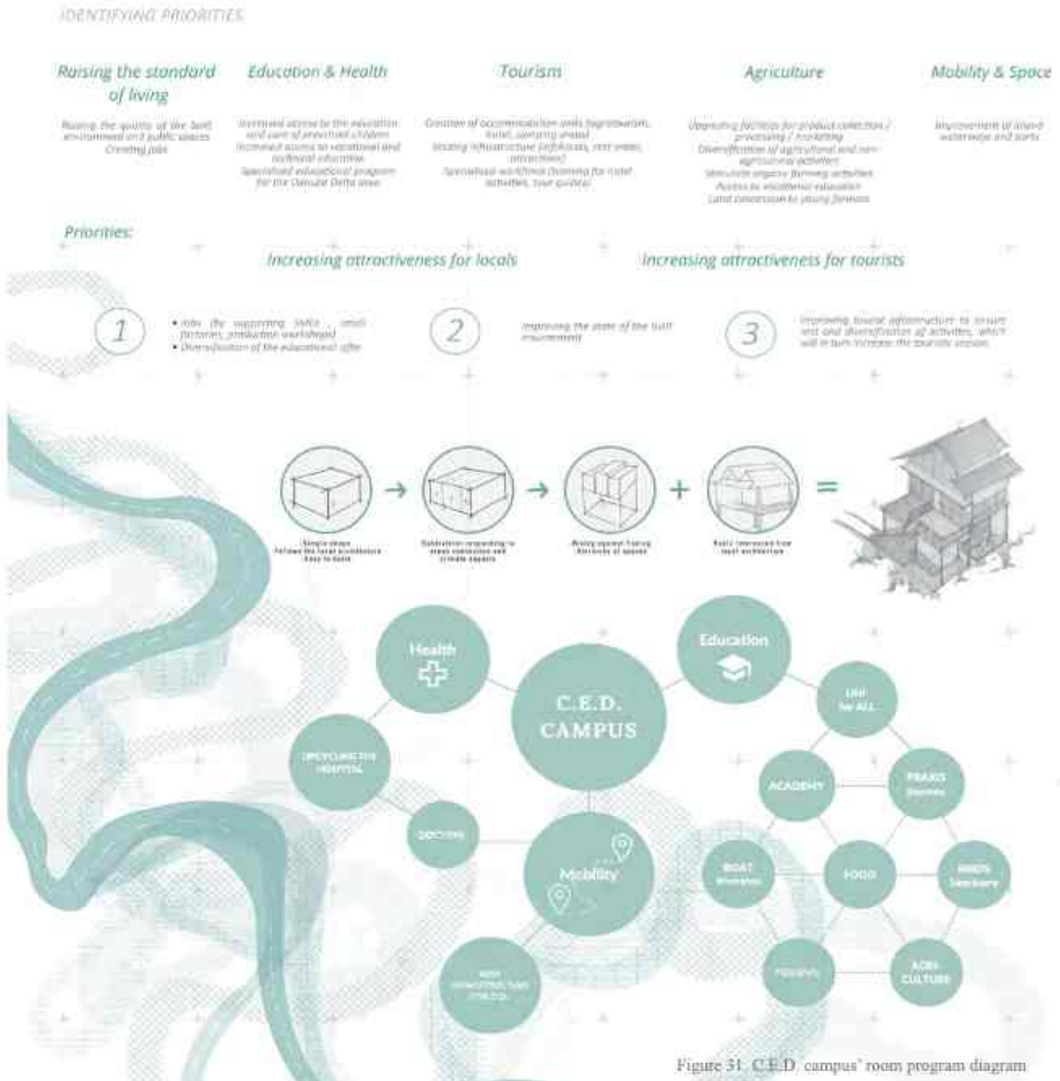


Figure 31. C.E.D. campus' room program diagram

Figure 32. Close up to the site highlighting the historical monuments

Proposal

Figure 33. Site plan
1 : 300

The hospital

Within the scope of this discussion, the hospital can be located on the general plan of the site at location number 9. It is vital to point out that this hospital was the one and only medical facility available to people in the entirety of the Danube Delta region at the time in question. Sadly, the decision to close it down was made by the government in 2011 owing to a shortage of employees as well as the newly necessary standards and norms for a hospital to function (medicalmanager.ro, 2011).

The idea of reopening the hospital as a medical center rather than a full-fledged hospital is put up in the form of a proposal that is now being considered *(see Appendix)*. This would be a significant departure from the previous iteration of the plan to reopen the hospital. The program that is planned for the upcycling of this edifice is that of alternative medicine, with just a few medical cabinets available for use in the event of an emergency; for the remainder of the interventions, it will be necessary to go to Tulcea on the continent. The selection of alternative medicine was based on an analysis, which was followed by the realization that the people who live in this area are the ones who are the most connected to nature and to the natural cures, and that this connection must be kept or else it would perish. This will not be an obstacle in the future since a new plan for the infrastructure has been proposed that would cut down on the amount of time needed for transit, making the distances between locations appear to be shorter.

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
Reception/Waiting Area	Area for greeting and registering patients, as well as providing a comfortable waiting space.	80 sqm
Consultation Rooms	Private rooms for healthcare professionals to meet with patients and discuss treatment options.	10-15 sqm
Treatment Rooms	Dedicated rooms for alternative medicine treatments, such as acupuncture, herbal medicine, or Reiki.	10-20 sqm
Examination Rooms	Rooms equipped for medical examinations, including physical assessments and diagnostic procedures.	28 sqm
Therapy Rooms	Spaces for conducting therapy sessions, such as physical therapy, occupational therapy, or massage.	47 sqm
Procedure Room 1 & 2	Rooms for minor medical procedures, such as wound care, injections, or small surgical interventions.	32 sqm
Imaging Department	Area for imaging studies, such as X-rays or ultrasounds.	32 sqm
Blood cultures	Space for collecting analysing samples to take to the laboratory	47 sqm
Laboratory	Space for conducting medical tests and analysing samples.	80 sqm
Pharmacy	Area for dispensing medications and providing pharmaceutical services.	30 sqm
Pharmacy storage	Area for dispensing medications for the whole area. Bigger storage needed since there is no pharmacy in the area.	80 sqm
Staff Lounge	Break room or lounge area for healthcare professionals to rest and recharge.	40 sqm
Administrative Office	Office space for administrative tasks, medical records, and billing.	30 sqm
Restrooms	Facilities with toilets, sinks, and handwashing areas for patients and staff.	32 sqm
Storage Rooms	Space for storing medical supplies, equipment, and patient records.	36 sqm
	TOTAL	**790 sqm**

Table D. Room program alternative medicine hospital.

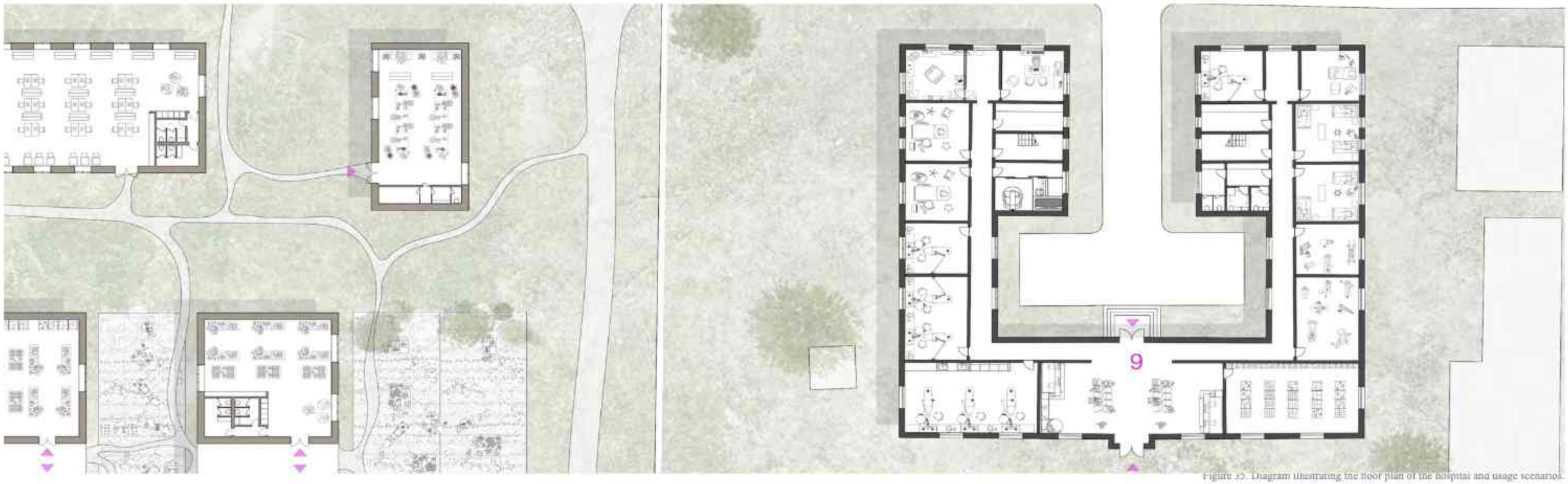


Figure 35. Diagram illustrating the floor plan of the hospital and usage scenarios.

The twin residences

We refer to the two entrance pillars on the property while talking about the two historical landmarks that are located on the property, which are the twin homes. On a symbolic level, the houses mark the entry to the site because of the significance they hold and the fact that they have survived the test of time. When visitors arrive at the location, they will notice that there is a broad pedestrian pathway that extends from the pier to the actual campus. This pathway passes between the two houses, giving the impression that they are pillars at the entryway.

Historically, they were used as temporary lodgings for diplomats who were visiting the CED palace, which was located close to the site. At this time, the plan accomplishes a function that is equivalent to others. It has been suggested that the twin houses be used as apartments for lecturers and researchers who will be visiting the site for an extended period of time (at least one semester). On the floor plan, there are separate rooms in addition to common lining spaces, kitchen, and restrooms. There are also communal lining areas *(see Appendix)*.

EDUCATORS' / RESEARCHERS' ACCOMMODATION ROOM PROGRAM **x2**

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
6 Bedrooms	Individual bedrooms for professors to stay during their temporary residence.	20-25 sqm
Shared Living Space	Common area for professors to socialize and relax, equipped with seating and amenities.	30 sqm
Kitchen/Dining Area	Shared kitchen space for cooking and dining together.	75 sqm
Co-Workspace	Dedicated area for professors to work and conduct research.	55 sqm
Bathroom Facilities	Facilities with shared toilets, sinks, and showers for professors to use.	20 sqm
Storage Rooms	Space for storing personal belongings, luggage, and equipment.	15 sqm
Laundry Facilities	Rooms with washing machines and dryers for professors' laundry needs.	15 sqm
Common Garden/Balcony Area	Outdoor spaces for relaxation and recreation.	12-17 sqm
	TOTAL	**~300 sqm**

Table E. Room program for the twin residences, now accomodation.

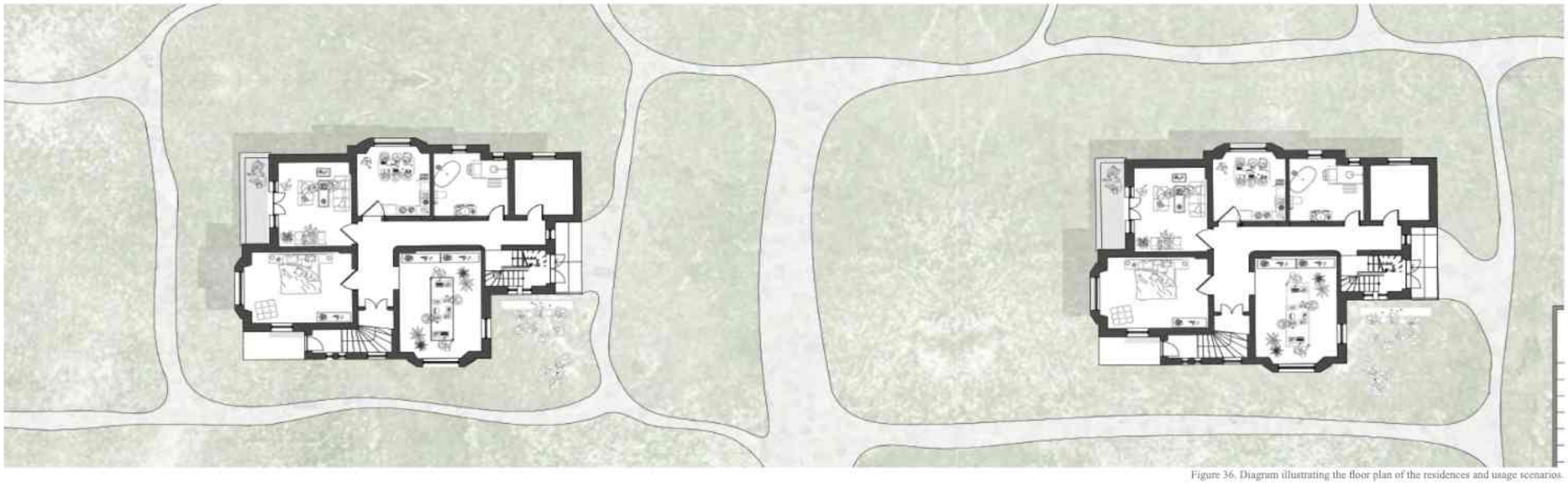


Figure 36. Diagram illustrating the floor plan of the residences and usage scenarios.

The pier

A hub that serves as a representation of the platform line that passengers are accessing, featuring a café with numerous lounges and waiting places, an information desk, restroom facilities, and storage space. The decking and the waiting space are both essential features of this location. In addition, this location accommodates electric boats by providing a charging station close to the decking area *(see Appendix)*.

The cafeteria

Added as an extension to the pier, this structure provides patrons with the option to wait inside a lounge if inclement weather strikes. In addition to this, it provides the opportunity to order a quick snack or a cup of coffee while one waits for the subsequent boat to arrive *(see Appendix)*.

The auditorium

The auditorium features both an indoor and an outdoor facility, both of which help make up for the dearth of music halls, meeting rooms, and other event halls throughout the surrounding academic region. In addition to this, it provides an outside space that has been deftly integrated into the surrounding environment so as not to cause any disruption. The space on the interior is designed to be utilized throughout the year, in contrast to the outdoor area, which serves as a temporary theater during the summer.

*For the detailed square meters see Appendix

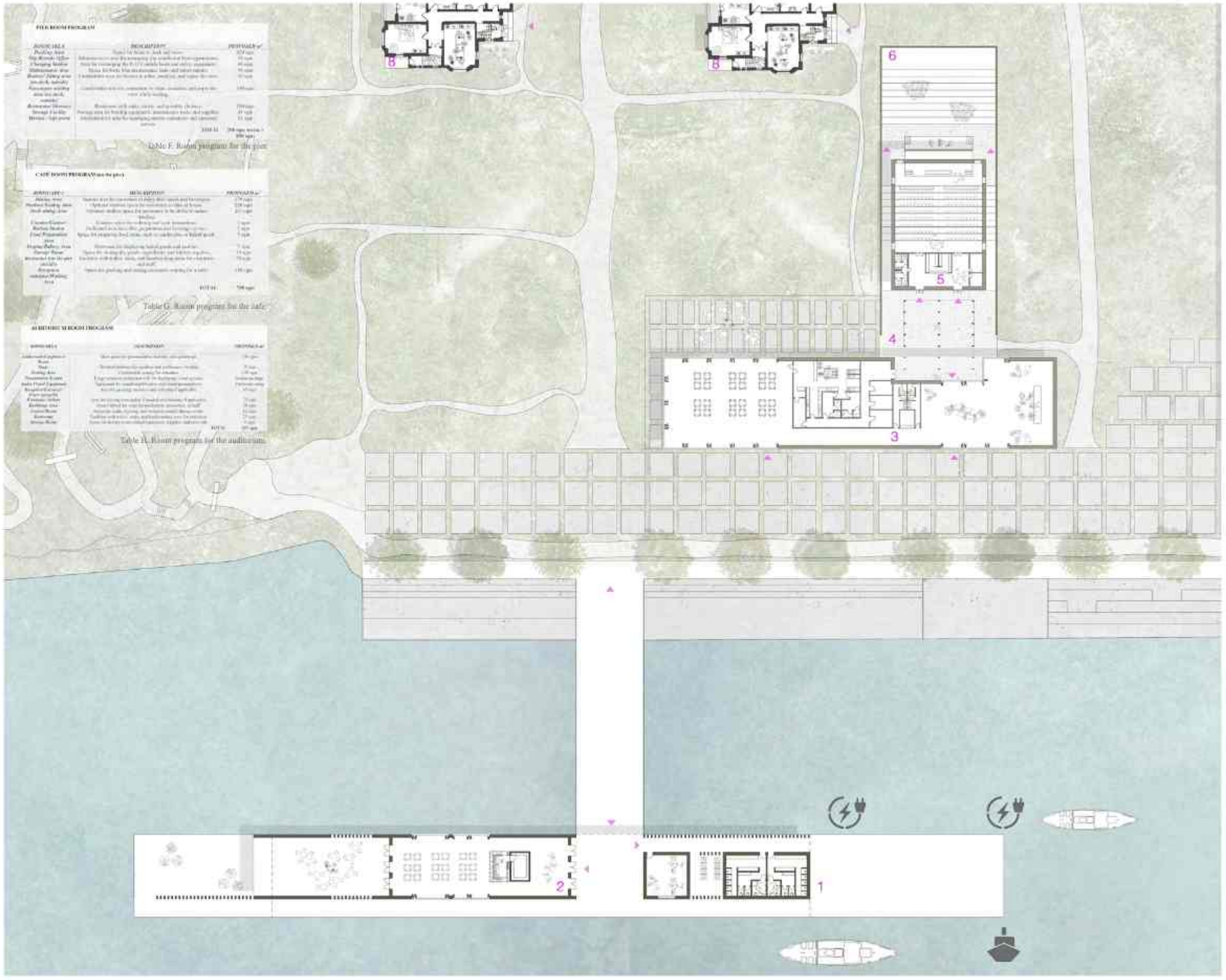


Figure 37. Diagram illustrating the zoom in on the floor plan for the pier and auditorium.

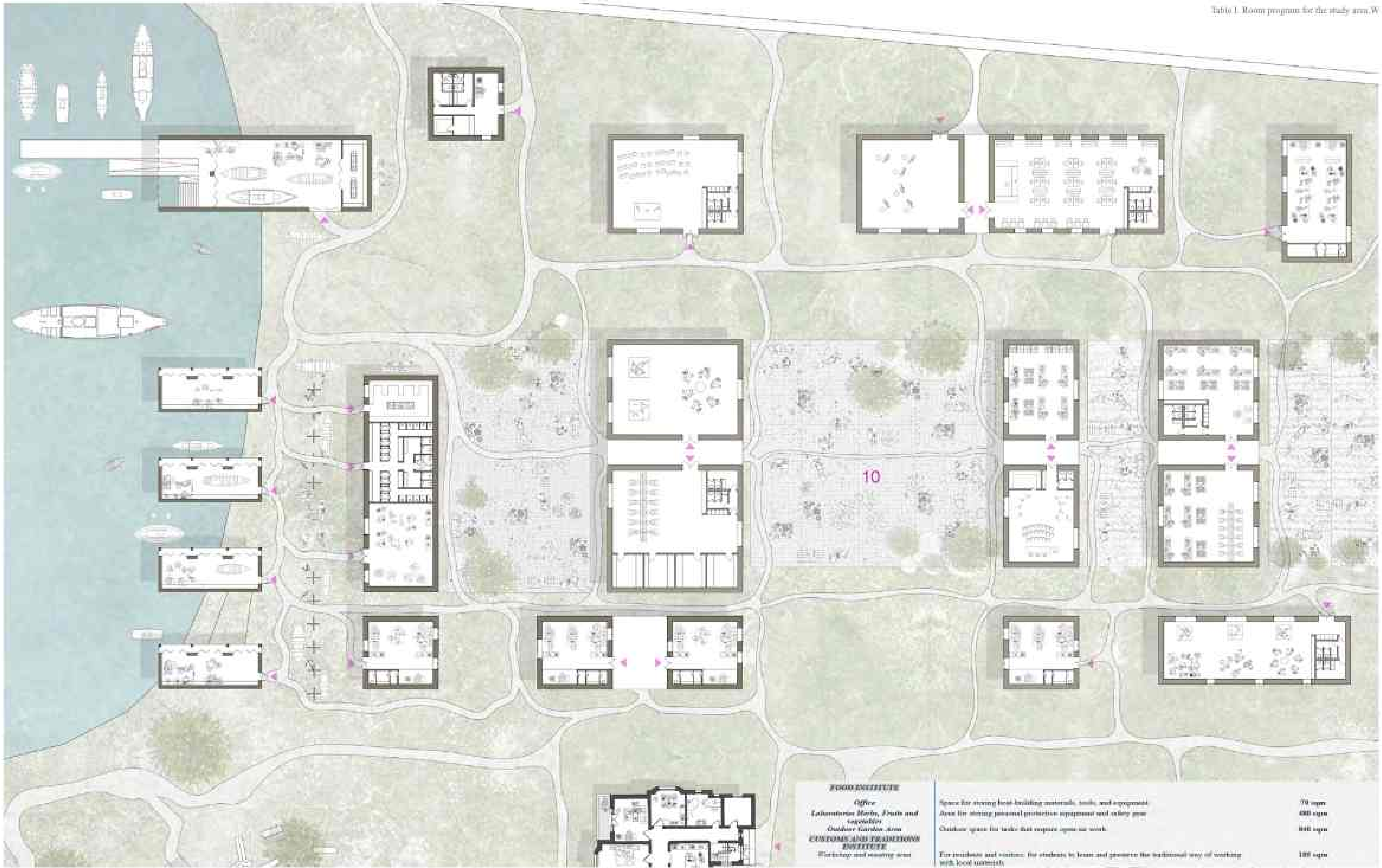
The study area

The study area is the location on the premises where learning by doing takes place; the emphasis here is on praxis, or learning by hands-on and reciprocal activities. It was offered to come up with schedules alongside a number of alternative daily routines that might take place at the location. It is a campus that uses a specific curriculum that is meant to invite everyone to participate, and it comes as a help to the local communities by educating them with new inputs and building upon on the knowledge that already exists there. Moreover, it is a campus that uses a special curriculum that is meant to invite all to participate.

The following are some of the institutes that are located on the campus: a boat workshop, an eco-fishing institute, a bird conservation institute, a food production institute, and a customs and tradition preservation institute. *(see Appendix).*

ROOM/AREA	DESCRIPTION	PROPOSED m²
ENTRANCE POINT	The gate, the info point- welcoming people coming from land to the campus and providing information.	70 sqm
EXPO HISTORY	Exhibition meant to keep the history and the identity of the place alive and dedicated as well to the former CEO neighborhood.	100 sqm
LIBRARY	Library meant to preserve the knowledge and to promote the new developments possible on the site and in the given context.	240 sqm
BOAT WORKSHOP		
Main Workshop Area	Spacious area for boat construction, repair, and maintenance.	200 sqm
Tool Room	Room for storing and organizing hand tools and specialized equipment.	30 sqm
Secondary Workshop Area	Less spacious area for smaller, personal boat construction, repair, and maintenance.	50 sqm
Assembly Area	Designated area for assembling boat components and fittings.	50 sqm
Finishing Room	Enclosed area for applying finishes and coatings to boats.	50 sqm
Materials Testing Area	Area for conducting tests and inspections on boat materials and structures.	50 sqm
Office and Planning Area	Administrative space for boat design, project planning, and documentation.	80 sqm
Break/ meeting Room	Rest and relaxation area for staff and boat builders.	45 sqm
Washroom Facilities	Restrooms with sinks, toilets and showers.	70 sqm
Storage Area	Space for storing boat-building materials, tools, and equipment.	40 sqm
Safety Equipment Storage	Area for storing personal protective equipment and safety gear.	10 sqm
Outdoor Work Area	Outdoor space for tasks that require open-air work.	840 sqm
BIODIVERSITY INSTITUTE		
Office Eco fishing	Administrative space for research and meeting of the members.	70 sqm
Fishing platforms	Room for fishing, collecting samples, organizing hand tools and specialized equipment.	- var. sqm
Laboratories	Various laboratories shared for testing the samples.	250 sqm
Classrooms	Designated area for meeting and studying together in between specializations.	100 sqm
Meeting room	Designated area for meeting and studying together in between specializations.	100 sqm
Office birds' sanctuary	Administrative space for research and meeting of the members.	70 sqm
Observation tower	Rest and relaxation for visitors and observation of birds with no damage	45 sqm

Table 1. Room program for the study area.W



ROOM/AREA	DESCRIPTION	PROPOSED m²
FOOD INSTITUTE		
Office	Space for storing boat-building materials, tools, and equipment.	70 sqm
Laboratories Herbs, Fruits and vegetables	Area for storing personal protective equipment and safety gear.	400 sqm
Outdoor Garden Area	Outdoor space for tasks that require open-air work.	840 sqm
CUSTOMS AND TRADITIONS INSTITUTE		
Workshop and meeting area	For residents and visitors: for students to learn and preserve the traditional way of working with local materials.	100 sqm

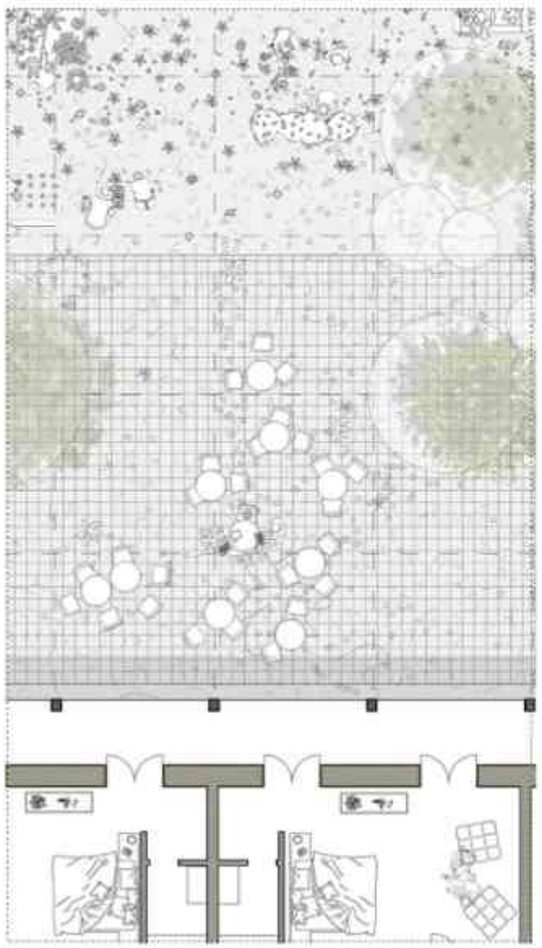
Figure 38. Diagram illustrating the zoom in on the floor plan for the campus.

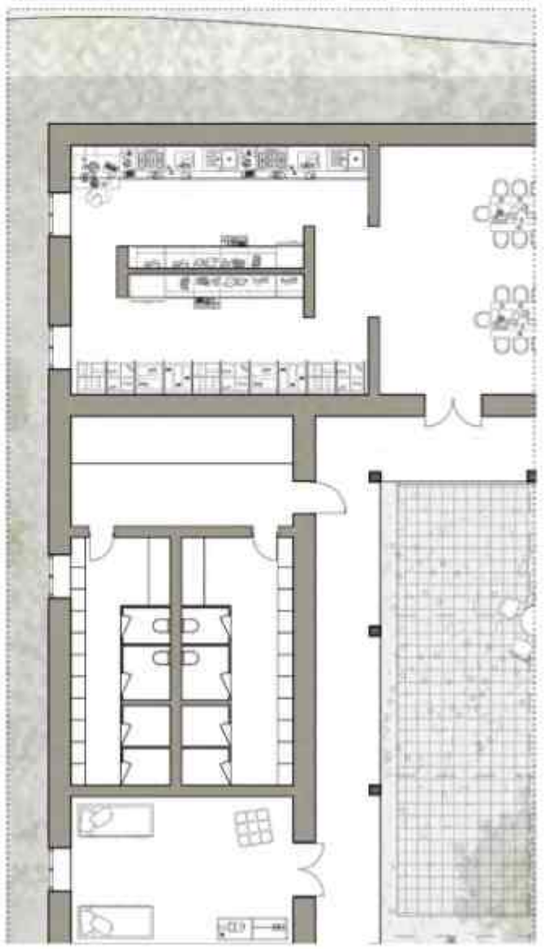
The student dormitory

The student dormitory fosters a sense of community, and its purpose here in Sulina is to develop a new hub that will be responsible for revitalizing the entire society. By establishing such a hub and fostering communication and cooperation among its residents through the provision of a welcoming and supportive living environment for individuals who choose to make their home on the campus of the university.

A society and a way of life that are more self-sufficient are among the goals of this attempt, along with the establishment of a community whose members share the same values. Another goal of this endeavor is the creation of a community whose members share the same values. By providing 16 double rooms, two flats, and a multiplicity of common areas with well-designed rooms and facilities, it serves as a home away from home, fostering an atmosphere that is conducive to leisure, study, and social interaction. Additionally, it supports an atmosphere that is conducive to social engagement. I have a total of sixteen double rooms as well as two apartments available for rent.

Figure 39. Zoom in for the dormitory to show on the plan the gardening, living and co-living spaces.





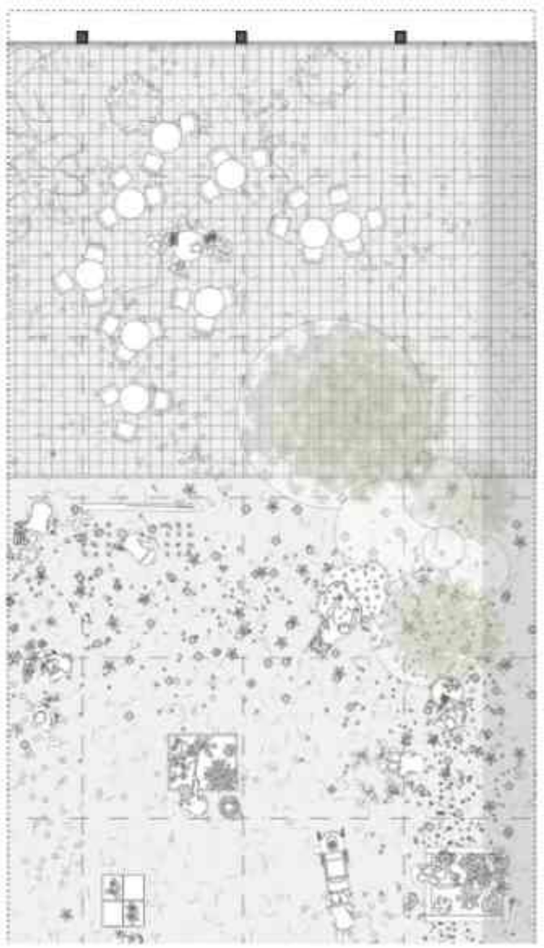


Figure 40. Visualisation on water when approaching the site.

6

MATERIAL SCALE.

Figure 41. Collage illustrating vernacular architecture and local materials with a modern touch.

MATERIAL SCALE.

6.1. The contemporary era.

The factors that hybridized vernacular architecture were the modernization of society, the emergence comfort requirements, and access to information *(Dinca, 2018, p 261)*. Recent constructions or alterations to existing structures indicate a lack of appreciation for the significance of the local cultural heritage, as they represent an uninspired or detrimental reproduction of details, volumes, or structures *(Serbescu, 2017, p 12)*.

In a few regrettable instances, timber carpentry was replaced with PVC, adobe or brick was replaced with BCA, and wooden cladding was replaced with OSB. In this scenario, in which the natural landscape and vernacular architecture gradually began to be altered by modernization, a pamphlet was compiled just before the situation became irreversible. In December 2016, the guide was published with the support of the Romanian Order of Architects and with funding from the "Stamp of Architecture" Fund. This served as a legal basis for architects and local authorities to support and preserve the area's unique character.

Wooden elements, adobe, and plaster *(Duvagi, 2016, p 26)* are all examples of traditional building materials that have been sourced from the surrounding area to create the area's distinctive architectural style. The wooden components are painted in colors that are created by utilizing natural pigments from the blue-green spectrum in order to produce a contrast with the white tone of the lime. This helps to create an overall more vibrant appearance. Reeds being used both as a covering and as a type of fence is a recurrent theme in the region; as a result, the use of reeds as a covering has evolved into the architectural element that best represents the Delta region *(OAR, 2016)*. The exploitation of this local material requires a significant amount of human labor and ultimately leads to the rapid depletion of the resource.

6.2. Registers.

To advance our comprehension of the vernacular architecture, I would like to examine the materiality registers that comprise it, as well as their contribution to the overall ensemble, as acquired from the numerous site visits. It was observed that traditional architecture features three primary registers. Its materiality distinctively merging into a lighter and lighter register. It attempts to achieve a balance with the surrounding nature by imitating its cadence and movement.

As beforehand mentioned, (See subchapter "Vernacular architecture dispersed throughout the Danube Delta region") from a first gaze we recognize that when we are talking about vernacular, we have in Danube Delta, from the start a dual perspective. Vernacular architecture on water coexists with vernacular architecture on land, exemplifying the area's uniqueness. Fishermen's huts exemplify the vernacular architecture on water, which can be observed as structures constructed on wooden pillars. The vernacular architecture on land, on the other hand, is comprised of clay and straw structures with thatched roofs *(OAR, 2016)*, creating a distinctive and traditional living environment.

The registers adhere to a simplified design (see figures on the right side of the page); as a foundation, we typically find a bottom-heavy, elevating stone foundation that integrates with the existing landscape and appears to erupt from the ground. This applies to the land-based vernacular. When examining the vernacular on water, the base consists of a series of pillars and stills that enable the structure to walk on water metaphorically.

In the second register, the two methods converge. It consists of a timber frame with a variety of displayed materials serving as insulation and fillings, as well as white-painted clay coverings. In the case of the Danube Delta, the isolation is a result of the local materials, resulting in a vernacular technique in which clay and straw are combined (See technical details). Most of the time, the decision for the second register, clay-straw mixt, is intrinsically linked to the decision for the third register.

The timber structure presented with a mixture of clay and straw will be followed by the third register, thatch, which will barely settle on top of it. The white clay covering will be followed by thinly shaven wood shingles, further emphasizing the middle-ground white and enhancing the frequently described "floating" quality.

Together, these two forms of vernacular architecture, each with its own distinctive registers, demonstrate the cultural heritage and profound connection between the Danube Delta's local community and its natural surroundings.

Figure 42. Texture of reeds, local material as an element part of the proposal.

Figure 43. Texture of wood and lime plastered for the clay-straw mixture, local materials, both as elements part of the proposal.

Figure 44. Texture of rocks, local material as an element part of the proposal.

6.3. Material toolbox.

In the proposal's material toolbox, we can find clay, straw, and wood as the primary building materials for walls, roofs, and floors, as they are resources available in the area and have been used for generations, which proves their practicability.

These natural materials not only contribute to the authentic aesthetic of the architecture, but they also provide thermal insulation and regulate humidity, much like the increasingly popular militarized earth in the Rhine Valley. According to modern living standards, a comfortable environment is created inside and outside by a combination of factors.

The intended material toolbox is based on a vernacular motif. By embracing this material toolkit, the vernacular architecture of the Danube Delta can commemorate local resources, foster cultural continuity, and merge in harmony with the surrounding landscape while building upon a sustainable construction and together with it a sustainable society.

During the preliminary study, a comprehensive investigation was conducted, and it was continued this semester at different scales and in greater depth, with the result being a proposal for a material toolbox to be used in all future interventions in the area that strikes the ideal balance between conserving the old and benefiting from the new. Primarily utilizing only local materials, learning from the traditional method of construction, and with a modern touch, using the knowledge that we have to slightly enhance the old techniques and bring them up to contemporary living standards.

6.4. Details of the proposal.

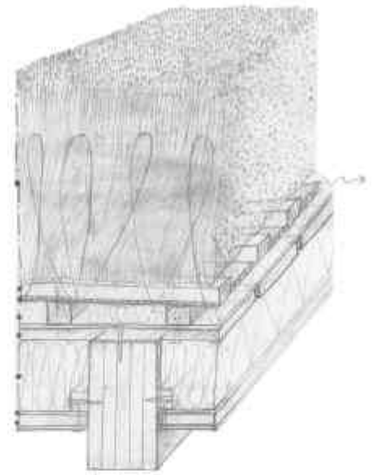


Figure 45. Sketch of the traditional way of building the roof

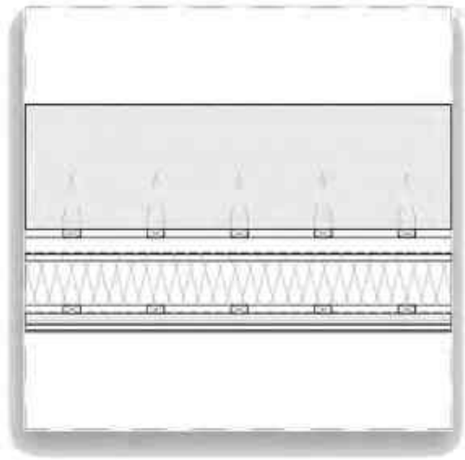


Figure 46. Detail section of the roof

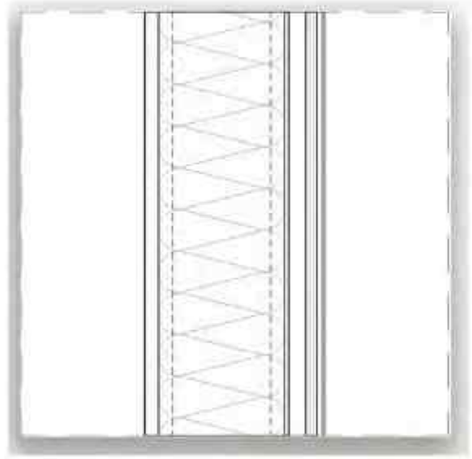


Figure 47. Detail section of the wall on land.

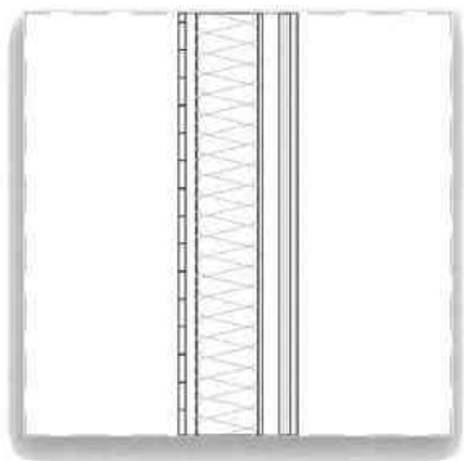


Figure 48. Detail section of the wall on water.

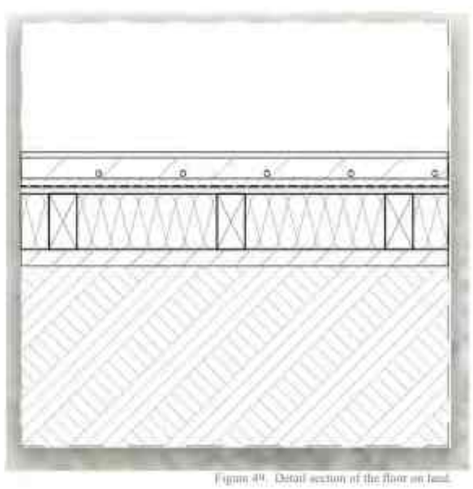


Figure 49. Detail section of the floor on land.

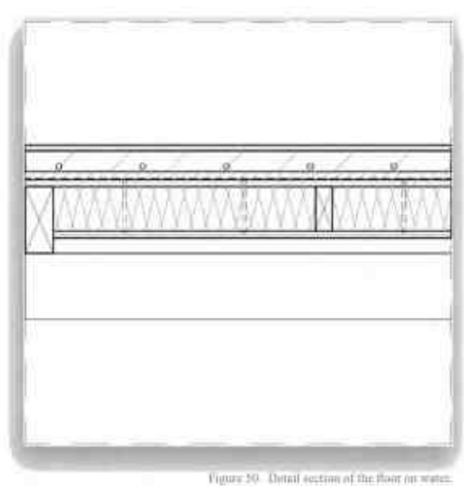


Figure 50. Detail section of the floor on water.

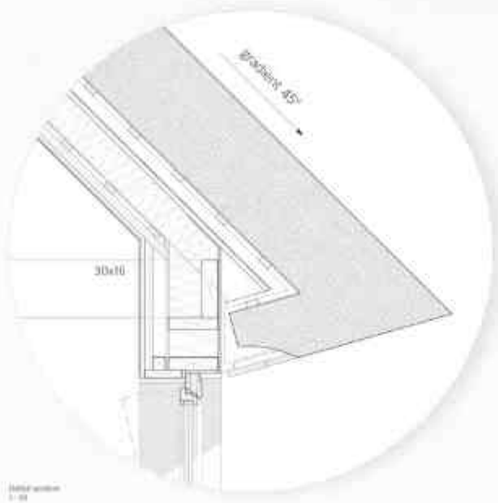


Figure 53 . Detail poster for the approach for the houses on water

Figure 52 . Detail poster for the approach for the houses on land

7

CONCLUSION.

Figure 53. Top view of a fisherman's boat in Danube Delta's waters.

CONCLUSION.

7.1. Thoughts

As a conclusion, the plan is an answer to the three problems of need that were recognized as being under high pressure with the assistance of in-depth study and questions. Mobility, education, and health were specifically mentioned as being the most significant concerns in terms of needs that were indicated.

The intention of the proposal is for it to be perceived as coming from within rather than from without, as an intervention that will eventually change the character of the location. In that regard, every effort possible was taken. It has covered a wide range of subjects, including sustainable development, community revitalization, renewable energy, vernacular design, and the underlying philosophy of developing a sustainable society.

The master's thesis acts as a basic stepping stone for further research, and the primary focus of the thesis is the investigation of new solutions for communities that are underdeveloped.

7.2. Implementing the foregoing study

This thesis can be viewed as a philosophical thought experiment based on a materialistically calculable methodology. These two perspectives provide proposals on how to achieve a sustainable society in Sulina by emphasizing the significance of people's self-sufficiency in caring for the environment, that ultimately results in an improved quality of life.

This research is meant to serve as a guide that raises awareness and imparts practical knowledge on the aforementioned topics. However, it is essential to view this thesis as a thought experiment; it cannot be directly applied to the real world. It must be comprehended as a framework and tailored to the specific needs of each community.

7.3. Limitations

It is essential to recognize the limitations of the research conducted for this study.

First, the study was limited to a selection of undeveloped communities, thus the findings may not be directly relevant to other regions or settings. Each community will need to partially adapt them. Time constraints may have limited some areas of analysis.

Since the documentation is not well-preserved and organized in that area of Romania, most of the data used for research comes from only two or three sources. Given that there was no existing masterplan for the entirety of the area, the author redrew the plans based on a data overlay. Thus, they are simply general guidelines. Designing from philosophical conclusions is always subjective and debatable.

Despite these limitations, this study provides useful insights and a foundation for sustainable development research in poor communities.

7.4. Suggestions for further research

First, authentication of the incorporated data. Continued research will reinforce the philosophy with more reasoning and a more detailed design. Time restrictions halted the procedure. The structure and goals want to expand, and the pursuit continues.

In subsequent stages, the intersectionality of the principles must be examined more closely. Interconnected as a net, the proposal must come as near as feasible to filling the gaps. As a result, the framework should be continuously revised to reflect this.

In addition, it would be necessary to propose additional settlement designs as Sulina is only a case study, future research should expand the toolbox's materials and methodologies and offer additional settlement plans.

However, the main goal of this thesis is to lay the groundwork for future research and demonstrate how holistic principles could be applied in other settlements, regions of Romania, and even other countries, especially those with the same shortcomings that govern this thesis.

"Eternity was born
in the village..." Lucian B.

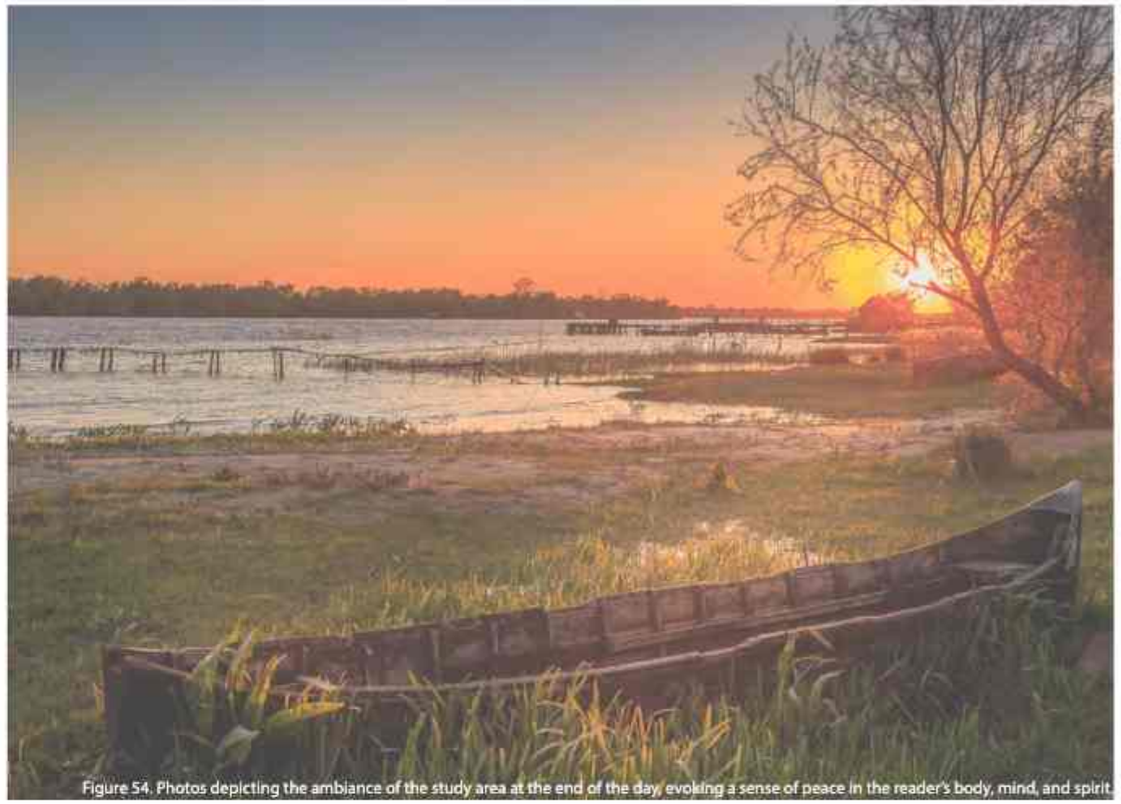


Figure 54. Photos depicting the ambiance of the study area at the end of the day, evoking a sense of peace in the reader's body, mind, and spirit

Figure 55. Photos depicting the ambiance of the study area at the end of the day, evoking a sense of peace in the reader's body, mind, and spirit

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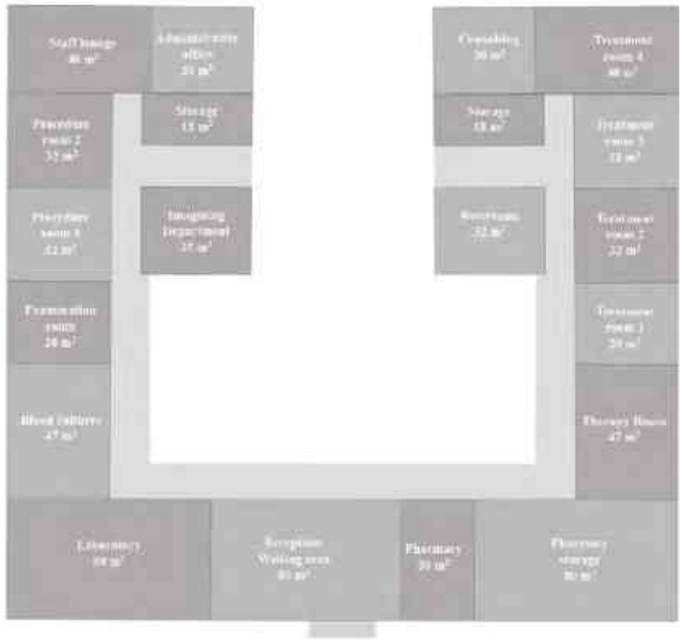
APPENDIX.

Diagrams square meters upcycled.



HOSPITAL

Diagram illustrating the distribution of rooms and square meters.

ONE OF THE TWIN RESIDENCES

Diagram illustrating the distribution of rooms and square meters.

APPENDIX.

Diagrams square meters proposal.

RESTAURANT
PERGOLA
AUDITORIUM
SUMMER THEATRE

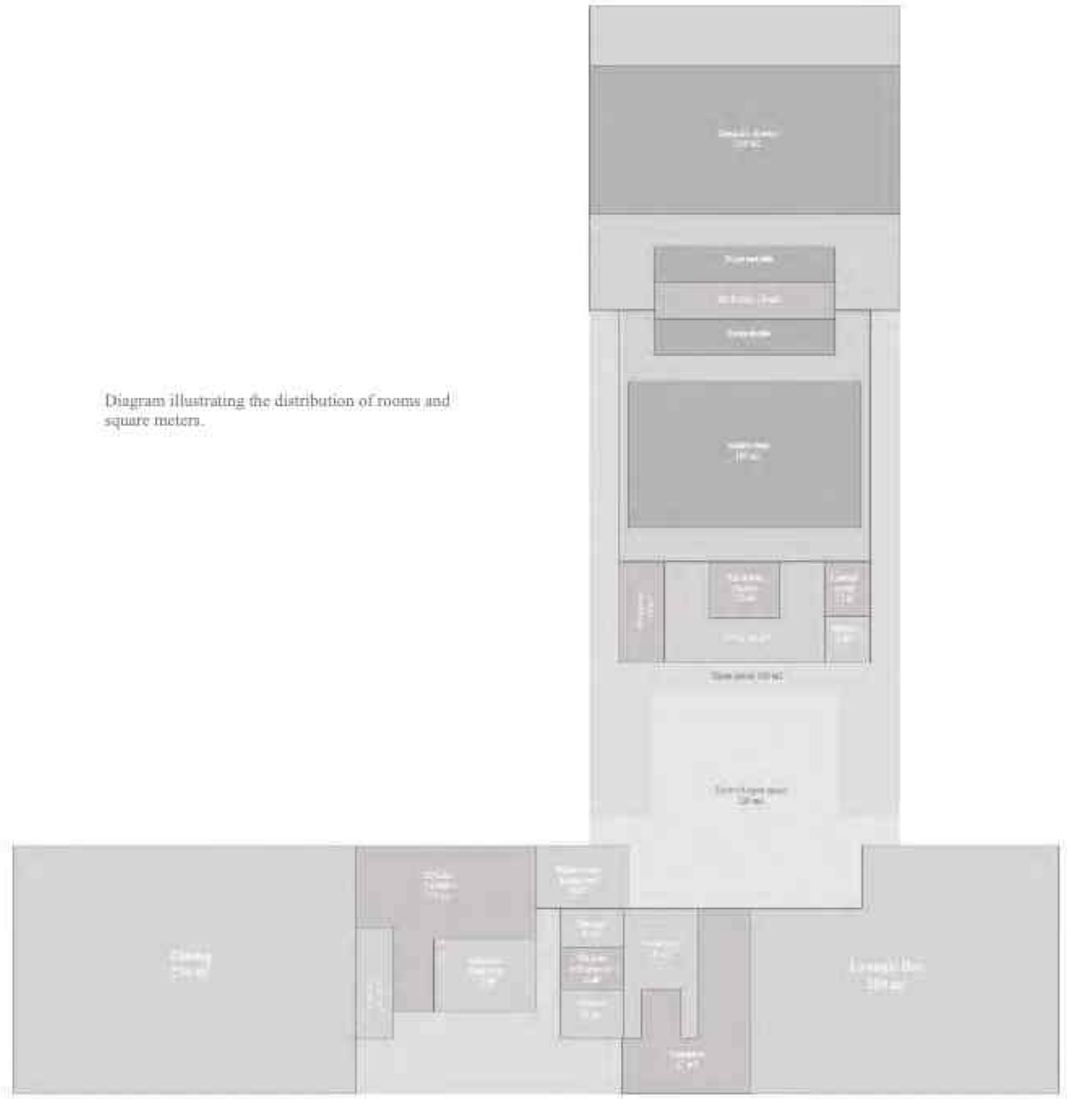
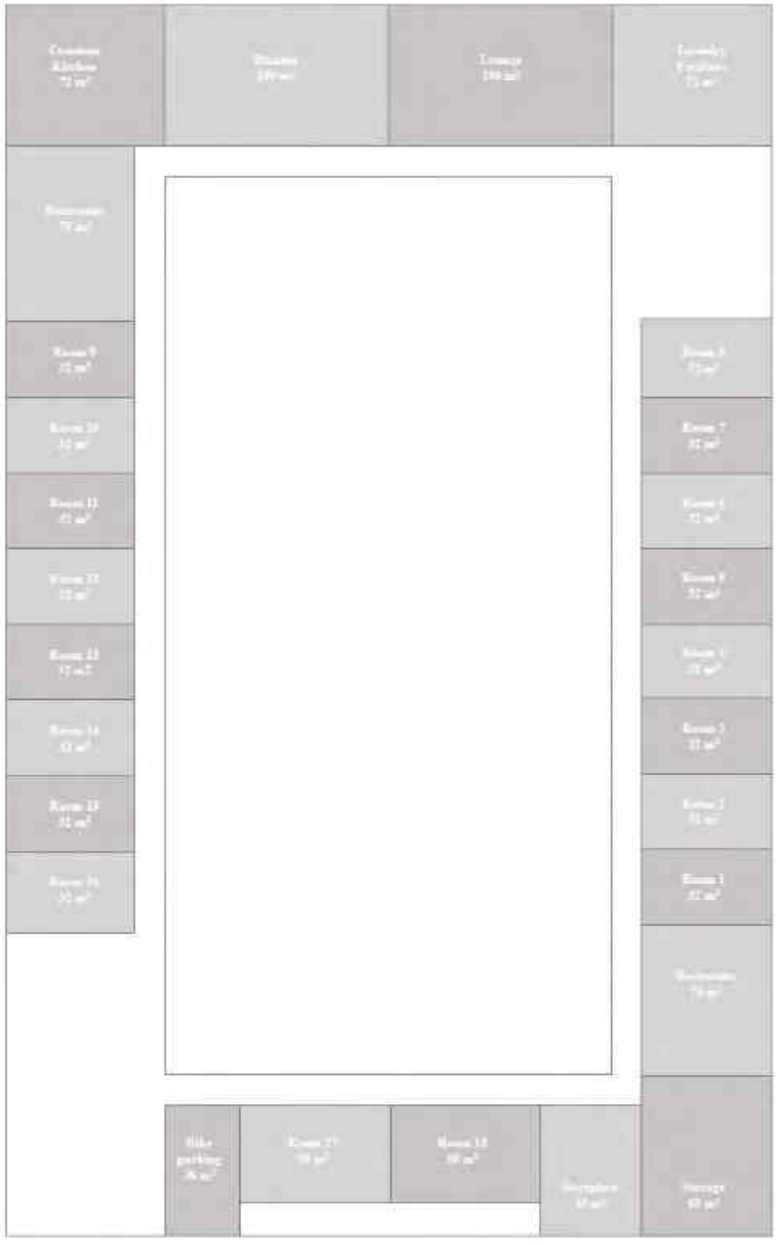


Diagram illustrating the distribution of rooms and square meters.

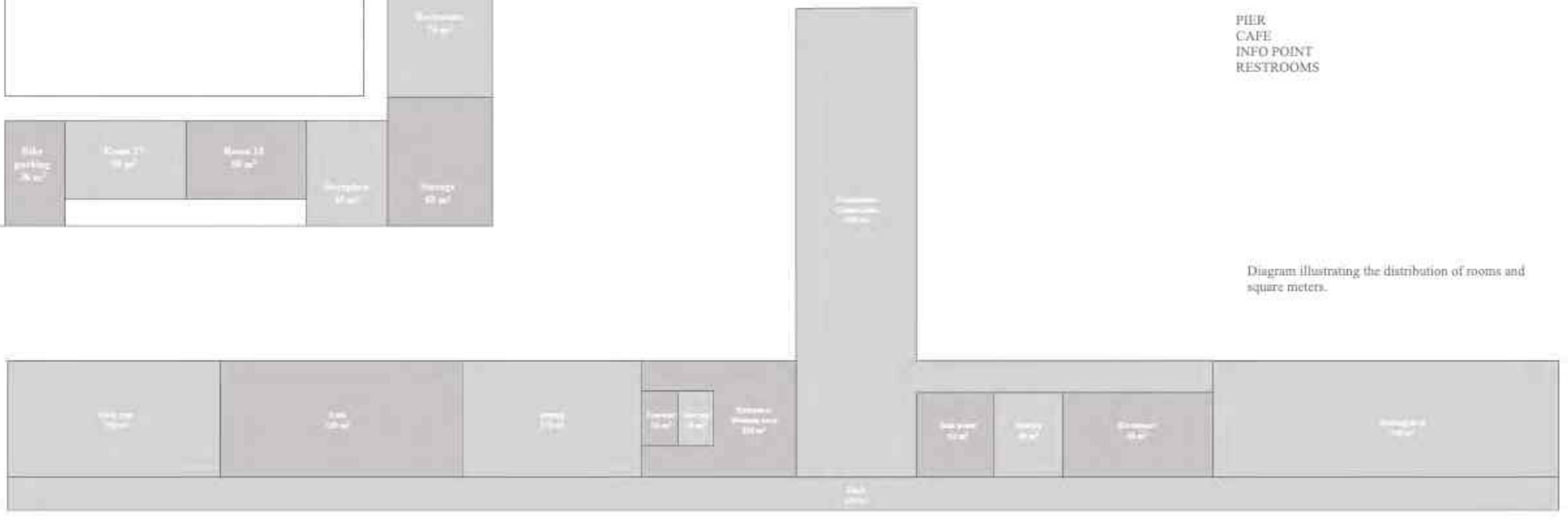
APPENDIX.

Square meters.



STUDENT DORMITORY

Diagram illustrating the distribution of rooms and square meters.

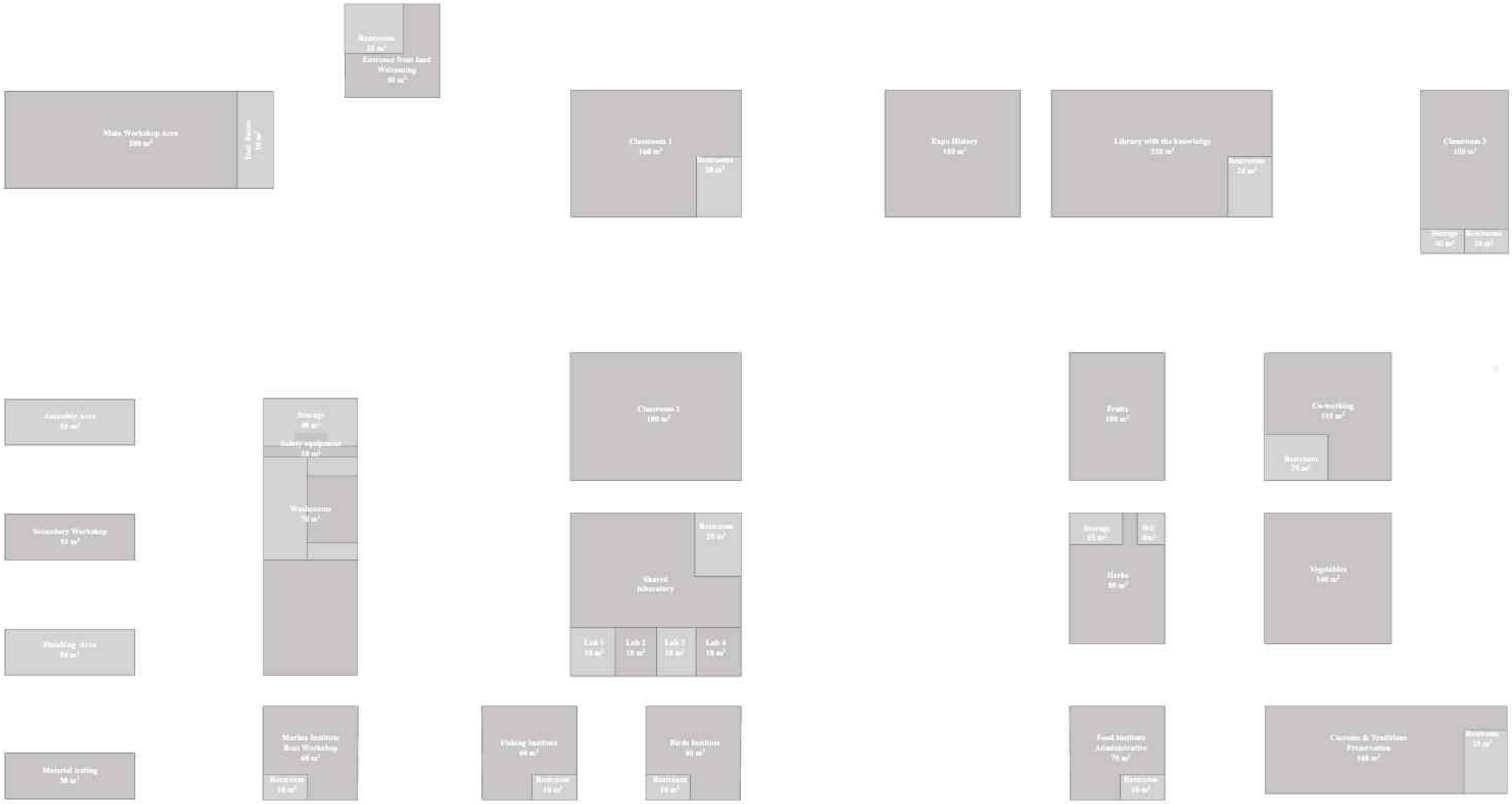


PIER
CAFE
INFO POINT
RESTROOMS

Diagram illustrating the distribution of rooms and square meters.

CAMPUS ROOM PROGRAM

Diagram illustrating the distribution of rooms and square meters.



Proposed square meters inventory

CAMPUS ROOM PROGRAM

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
ENTRANCE POINT	The gate, the info points welcoming people coming from land to the campus and providing information.	**70 sqm**
EXPO HISTORY	Exhibition meant to keep the history and the identity of the place alive and dedicated as well to the former CED neighbourhood	**150 sqm**
LIBRARY	Library meant to preserve the knowledge and to promote the new developments possible on the site and in the given context.	**240 sqm**
BOAT WORKSHOP		
Main Workshop Area	Spacious area for boat construction, repair, and maintenance.	**200 sqm**
Tool Room	Room for storing and organizing hand tools and specialized equipment.	**30 sqm**
Secondary Workshop Area	Less spacious areas for smaller, personal boat construction, repair, and maintenance.	**50 sqm**
Assembly Area	Designated area for assembling boat components and fittings.	**50 sqm**
Finishing Room	Enclosed area for applying finishes and coatings to boats.	**50 sqm**
Materials Testing Area	Area for conducting tests and inspections on boat materials and structures.	**50 sqm**
Office and Planning Area	Administrative space for boat design, project planning, and documentation.	**80 sqm**
Break/ meeting Room	Rest and relaxation area for staff and boat builders.	**95 sqm**
Washroom Facilities	Restrooms with sinks, toilets, and showers.	**70 sqm**
Storage Area	Space for storing boat-building materials, tools, and equipment.	**40 sqm**
Safety Equipment Storage	Area for storing personal protective equipment and safety gear.	**10 sqm**
Outdoor Work Area	Outdoor space for tasks that require open-air work.	**840 sqm**
BIODIVERSITY INSTITUTE		
Office Eco-fishing	Administrative space for research and meeting of the members.	**70 sqm**
Fishing platforms	Room for fishing, collecting samples, organizing hand tools and specialized equipment.	**~ var. sqm**
Laboratories	Various laboratories shared for testing the samples.	**230 sqm**
Classrooms	Designated area for meeting and studying together in between specialisations.	**180 sqm**
Meeting room	Designated area for meeting and studying together in between specialisations.	**180 sqm**
Office birds' sanctuary	Administrative space for research and meeting of the members.	**70 sqm**
Observation tower	Rest and relaxation for visitors and observation of birds with no damage.	**95 sqm**
FOOD INSTITUTE		
Office	Space for storing boat-building materials, tools, and equipment.	**70 sqm**
Laboratories Herbs, Fruits and vegetables	Area for storing personal protective equipment and safety gear.	**480 sqm**
Outdoor Garden Area	Outdoor space for tasks that require open-air work.	**840 sqm**
CUSTOMS AND TRADITIONS INSTITUTE		
Workshop and meeting area	For residents and visitors, for students to learn and preserve the traditional way of working with local materials	**185 sqm**

HOSPITAL FOR ALTERNATIVE MEDICINE

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
Reception/Waiting Area	Area for greeting and registering patients, as well as providing a comfortable waiting space.	80 sqm
Consultation Rooms	Private rooms for healthcare professionals to meet with patients and discuss treatment options.	10-15 sqm
Treatment Rooms	Dedicated rooms for alternative medicine treatments, such as acupuncture, herbal medicine, or Reiki.	10-20 sqm
Examination Rooms	Rooms equipped for medical examinations, including physical assessments and diagnostic procedures.	28 sqm
Therapy Rooms	Spaces for conducting therapy sessions, such as physical therapy, occupational therapy, or massage.	47 sqm
Procedure Room 1 & 2	Room for minor medical procedures, such as wound care, injections, or small surgical interventions.	32 sqm
Imaging Department	Area for imaging studies, such as X-rays or ultrasounds.	32 sqm
Blood cultures	Space for collecting analysing samples to take to the laboratory.	47 sqm
Laboratory	Space for conducting medical tests and analysing samples.	80 sqm
Pharmacy	Area for dispensing medications and providing pharmaceutical services	30 sqm
Pharmacy storage	Area for dispensing medications for the whole area. Bigger storage needed since there is no pharmacy in the area.	80 sqm
Staff Lounge	Break room or lounge area for healthcare professionals to rest and recharge	40 sqm
Administrative Office	Office space for administrative tasks, medical records, and billing.	30 sqm
Restrooms	Facilities with toilets, sinks, and handwashing areas for patients and staff.	32 sqm
Storage Rooms	Space for storing medical supplies, equipment, and patient records.	26 sqm
	TOTAL	**790 sqm**

PIER ROOM PROGRAM

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
Docking Area	Space for boats to dock and moor.	420 sqm
Slip Rentals Office	Administrative area for managing slip rentals and boat registrations.	30 sqm
Charging Station	Area for recharging the P-12 Candela boats and safety equipment.	60 sqm
Maintenance Area	Space for basic boat maintenance tasks and minor repairs.	40 sqm
Boaters' Sitting area (on dock, outside)	Comfortable area for boaters to relax, socialize, and enjoy the view.	50 sqm
Passengers waiting area (on dock, outside)	Comfortable area for commuters to relax, socialize, and enjoy the view while waiting.	330 sqm
Restrooms/ Showers	Restrooms with sinks, toilets, and possibly showers.	100 sqm
Storage Facility	Storage area for boating equipment, maintenance tools, and supplies.	48 sqm
Marina / Info point	Administrative area for managing marina operations and customer service.	52 sqm

	TOTAL	**200 sqm warm + 850 sqm**

CAFÉ ROOM PROGRAM (on the pier)

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
Dining Area	Seating area for customers to enjoy their meals and beverages.	170 sqm
Outdoor Seating Area	Optional outdoor space for customers to dine al fresco.	220 sqm
Deck sitting Area	Optional outdoor space for customers to be closer to nature standing.	201 sqm
Counter/Cashier	Counter space for ordering and cash transactions.	3 sqm
Barista Station	Dedicated area for coffee preparation and beverage service.	3 sqm
Food Preparation Area	Space for preparing food items, such as sandwiches or baked goods.	5 sqm
Display/Bakery Area	Showcase for displaying baked goods and pastries.	5 sqm
Storage Room	Space for storing dry goods, ingredients, and kitchen supplies.	16 sqm
Restrooms (on the pier outside)	Facilities with toilets, sinks, and handwashing areas for customers and staff.	70 sqm
Reception entrance/Waiting Area	Space for greeting and seating customers waiting for a table.	110 sqm
	TOTAL	**~ 730 sqm**

STUDENT DORMITORY ROOM PROGRAM

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
Room 1-16	Double student rooms (16 in total) with a size of 25 square meters.	32 sqm
Room 17-18	Larger student rooms (2 in total) with a size of 36 square meters.	50 sqm
Common Kitchen	Shared kitchen area for students to prepare meals and socialize.	72 sqm
Dining Area	Space for students to enjoy meals together.	100 sqm
Lounge/Common Room	Shared space for relaxation, socializing, and recreational activities.	100 sqm
Laundry Facilities	Room with washing machines and dryers for students' laundry needs.	72 sqm
Restrooms x2	Facilities with toilets, sinks, and showers for student use.	75 sqm
Storage Room	Space for students to store personal belongings and luggage.	68 sqm
Reception/Office	Area for dormitory staff to handle administrative tasks and inquiries.	40 sqm
Bike parking	Space for students to park their bicycles at the entrance.	36 sqm
Common garden	The main area interconnecting all the spaces, forming community through gardening.	1000 sqm
	TOTAL	**1100 sqm warm**

EDUCATORS' / RESEARCHERS' ACOMMODATION ROOM PROGRAM x2

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
6 Bedrooms	Individual bedrooms for professors to stay during their temporary residence.	20-25 sqm
Shared Living Space	Common area for professors to socialize and relax, equipped with seating and amenities.	30 sqm
Kitchen/Dining Area	Shared kitchen space for cooking and dining together.	25 sqm
Co-Workspace	Dedicated area for professors to work and conduct research.	35 sqm
Bathroom Facilities	Facilities with shared toilets, sinks, and showers for professors to use.	20 sqm
Storage Rooms	Space for storing personal belongings, luggage, and equipment.	15 sqm
Laundry Facilities	Room with washing machines and dryers for professors' laundry needs.	15 sqm
Common Garden/Balcony Area	Outdoor space for relaxation and recreation	12+17 sqm
	TOTAL	**~ 300 sqm**

PERGOLA ROOM PROGRAM

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
Covered open space	Shaded area for seating and socializing.	135 sqm
Open Space	Uncovered area for additional socializing, seating or activities.	70 sqm
Garden/Potted Plants	Greenery and potted plants to enhance the ambiance. (In the open space)	20-30 sqm
Pathways	Walkways for ease of movement within the pergola. (Under the cover space)	10-20 sqm
	TOTAL	**205 sqm**

RESTAURANT ROOM PROGRAM

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
Dining Area	Seating area for customers to enjoy their meals.	250 sqm
Reception/Waiting Area	Area for greeting and seating customers waiting for a table.	47 sqm
Outdoor Seating Area	Optional outdoor space for customers to dine al fresco	Varies (see dining)
Lounge/ Bar	Counter space for serving drinks and interacting with customers.	200 sqm
Kitchen	Food preparation area with cooking equipment and stations.	60 sqm
Restrooms	Facilities with toilets, sinks, and handwashing areas for customers.	20 sqm
Storage Room	Space for storing dry goods, supplies, and non-perishable items.	20 sqm
Walk-in Refrigerator	Refrigerated storage for perishable food items.	10 sqm
Dishwashing Area	Space for washing, rinsing, and sanitizing dishes and kitchenware.	5-10 sqm
Employee Break Room	Area for staff to take breaks and have meals.	20 sqm

Employee restrooms, washrooms	Area for staff to change into the working clothes and to get ready/ showers/ toilets		22 sqm
Circulation	Area for customers and for staff to move from one space to the other		55 sqm
		TOTAL	**~ 700 sqm**

AUDITORIUM ROOM PROGRAM

ROOM/AREA	*DESCRIPTION*		*PROPOSED m²*
Auditorium/Conference Room	Main space for presentations, lectures, and gatherings.		100 sqm
Stage	Elevated platform for speakers and performers. (within)		25 sqm
Seating Area	Comfortable seating for attendees.		100 sqm
Presentation Screen	Large screen or projection wall for displaying visual content.		Screen on stage
Audio-Visual Equipment	Equipment for sound amplification and visual presentations.		Varies per setup
Reception/Entrance/ Foyer (pergola)	Area for greeting attendees and ticketing if applicable.		45 sqm
Wardrobe / tickets	Area for leaving your jacket if needed and ticketing if applicable.		25 sqm
Backstage Area	Space behind the stage for performers, presenters, or staff.		20 sqm
Control Room	Room for audio, lighting, and technical control during events.		12 sqm
Restrooms	Facilities with toilets, sinks, and handwashing areas for attendees.		25 sqm
Storage Room	Space for storing event-related equipment, supplies, and materials.		8 sqm
		TOTAL	**325 sqm**

OUTSIDE AMPHITHEATRE

ROOM/AREA	*DESCRIPTION*		*PROPOSED m²*
Open-Air Theatre Space	Outdoor space for theatrical performances and events.		255 sqm
Stage	Performance area for actors, musicians, and performers.		20 sqm
Seating Area	Seating for audience members to enjoy the performances.		130 sqm
Lighting Equipment	Lighting fixtures and equipment to enhance the stage and performances.		5-7 sqm
Sound System	Audio equipment for amplifying sound during performances.		Varies per setup
Backstage Area (right)	Space behind the stage for performers, crew, and props.		20 sqm
Restrooms (inside)	Facilities with toilets, sinks, and handwashing areas for attendees.		20 sqm
		TOTAL	**275 sqm**

CAMPUS ROOM PROGRAM

ROOM/AREA	*DESCRIPTION*	*PROPOSED m²*
ENTRANCE POINT	The gate, the info points welcoming people coming from land to the campus and providing information	**70 sqm**
EXPO HISTORY	Exhibition meant to keep the history and the identity of the place alive and dedicated as well to the former CED neighbourhood	**150 sqm**
LIBRARY	Library meant to preserve the knowledge and to promote the new developments possible on the site and in the given context	**240 sqm**
BOAT WORKSHOP		
Main Workshop Area	Spacious area for boat construction, repair, and maintenance.	**200 sqm**
Tool Room	Room for storing and organizing hand tools and specialized equipment.	**30 sqm**
Secondary Workshop Area	Less spacious area for smaller, personal boat construction, repair, and maintenance.	**50 sqm**
Assembly Area	Designated area for assembling boat components and fittings.	**50 sqm**
Finishing Room	Enclosed area for applying finishes and coatings to boats.	**50 sqm**
Materials Testing Area	Area for conducting tests and inspections on boat materials and structures.	**50 sqm**
Office and Planning Area	Administrative space for boat design, project planning, and documentation.	**80 sqm**
Break/ meeting Room	Rest and relaxation area for staff and boat builders.	**95 sqm**
Washroom Facilities	Restrooms with sinks, toilets, and showers.	**70 sqm**
Storage Area	Space for storing boat-building materials, tools, and equipment.	**40 sqm**
Safety Equipment Storage	Area for storing personal protective equipment and safety gear.	**10 sqm**
Outdoor Work Area	Outdoor space for tasks that require open-air work.	**840 sqm**
BIODIVERSITY INSTITUTE		
Office Eco-fishing	Administrative space for research and meeting of the members.	**70 sqm**
Fishing platforms	Room for fishing, collecting samples, organizing hand tools and specialized equipment.	**~ var. sqm**
Laboratories	Various laboratories started for testing the samples.	**230 sqm**
Classrooms	Designated area for meeting and studying together in between specialisations.	**180 sqm**
Meeting room	Designated area for meeting and studying together in between specialisations.	**180 sqm**
Office birds' sanctuary	Administrative space for research and meeting of the members.	**70 sqm**
Observation tower	Rest and relaxation for visitors and observation of birds with no damage.	**95 sqm**
FOOD INSTITUTE		
Office	Space for storing boat-building materials, tools, and equipment.	**70 sqm**
Laboratories Herbs, Fruits and vegetables	Area for storing personal protective equipment and safety gear.	**480 sqm**
Outdoor Garden Area	Outdoor space for tasks that require open-air work.	**840 sqm**
CUSTOMS AND TRADITIONS INSTITUTE		
Workshop and meeting area	For residents and visitors, for students to learn and preserve the traditional way of working with local materials	**185 sqm**

THE PARK

PAVILION	*DESCRIPTION*	*PROPOSED m²*
Welcome Pavilion	Entrance point to the park, providing information about the park's theme and guiding visitors to different areas	40 sqm
Exhibition Pavilion	Exhibition space showcasing the rich traditions, customs, and cultural heritage of Romania	80 sqm
Craft Pavilion	Workshop area for local artisans to demonstrate traditional crafts, allowing visitors to observe and learn	60 sqm
Nature Pavilion	Educational space highlighting the diverse flora and fauna of the region, with interactive displays and exhibits	70 sqm
Meditation Pavilion	Tranquil space for relaxation, meditation, and connecting with nature	50 sqm
On water Pavilion	On water pavilion offering a leisure purpose to the platforms on water for agriculture, food production	100 sqm
Bird Tower Pavilion	Small cafe or kiosk providing refreshments and local culinary delights	30 sqm

***Here is a room program for the small pavilions in the park, focusing on showcasing the traditions, customs of Romania, and fostering communion with nature. The pavilions serve as a transition zone between the city, the campus, and the surrounding wild nature. The proposed square meters are for illustrative purposes and can be adjusted based on specific requirements and design considerations.

** In addition to the pavilions, the park should have well-planned pathways to guide visitors through the different areas. These pathways serve as transitions, blending into the natural surroundings while providing easy access and connectivity. The specific layout and design of the pathways can be customized based on the park's topography and landscape features.

* The pavilions and pathways are designed to create a harmonious atmosphere within the park, allowing visitors to immerse themselves in Romania's traditions, customs, and natural beauty.

Affidavit.

DANUBE DELTA SETTLEMENTS.

CONSERVATION POTENTIAL AND REVITALIZATION SCENARIOS.

I hereby declare under penalty of perjury that the present paper has been prepared independently by myself and without unpermitted aid. Anything that has been taken verbatim or paraphrased from other writings has been identified as such. This paper has hitherto been neither submitted to an examining body in the same or similar form, nor published. I herewith confirm that my digitally submitted thesis book is identical to this printed version.

22 June 2023

Vaduz, Liechtenstein

Alina Gabriela Dinu

Signature