

Topicality of intelligent reuse for seaside industrial environment in Odessa

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This article deals with the strategic importance, characteristics of seaside space, signs and qualities of this complicated system. As a result of retrospective survey we revealed the town forming role of the Peresyp district port complex in the making of South Palmira. The author's message, the idea of town environment designing as that of the "phenomenon Odessa" consisted in the foreground development of culture.

Maximal burden on the environment, and space resources reduction, overcrowding, pollution, degenerative territories are characteristic features for current state of the former industrial city environment.

Dynamic seaside industrial environment of Odessa needs intelligent reuse on the basis of social, cultural and environmental orientation principles, successive development in adapting and establishing the information-technological system.

Coastal areas are the space where the marine potential of the coastal states becomes evident and where the complex environmental and economic aspects are the most pronounced. Currently about 60% of the world's population lives less than 50 km away from the coastline, and according to the UNESCO forecast for the next 20 years, this rate will increase to 70-75%. Status of coastal areas depends on their maritime potential, taking into account the socio-economic, political, natural and environmental factors. The core of the territorial structure is the coastline, which is "overlapped" by zones of economic influence both aquatic and territorial. The nearshore zone of the sea, not only has a high economic and demographic appeal, but also serves as a kind of "environmental filter". This is a unique urban-environmental sub-system of the largest city, the contact area of urban and natural sites. Coastal natural and economic contact zone has various names: port-border complex, coastal economic zone, the coastal-marine system, an integrated economic region (Topchiev, 2002).

Odessa region is located in the geopolitical center of Eurasia. The most priceless wealth of the Northern Black Sea coast being created by nature and man for centuries is the communication functioning of space.

Seaside within the Odessa region extends for a length of over 300 km. The region has a well-developed transportation network and a relatively well-developed social infrastructure, intensive agriculture. In 1990, the cargo turnover of Odessa port was 38 million tons. Independent Ukraine has inherited the third part of the Soviet Union mariculture, including seaports, merchant marine and fishing fleets, shipbuilding and

resort and leisure facilities. Seaside area of the Odessa region is a peculiar territorial resource, with a unique natural resource potential – biospheric, recreational, agricultural, climatic; unique economic and geographic position. Natural and resource potential of the region is complemented by the unique natural complexes and biotic communities (marshes, estuaries, lakes, barrier-beaches, sand splits), valuable fishing and hunting grounds, numerous and various objects of educational and sports tourism. Odessa region can serve up to 8-10 million of holidaymakers annually, and in the long term – twice as many.



Figure 1. Communications capacity in the Northern Black Sea

"The city plan of Hadzhibey" had been designed by the military engineer Franz De Wollant in 1794. It was a master plan for development of the unique city-state culture, a holistic form of world order in architectural images, "noospheric space" of a particular era. The city designed was of enormous size of the time - more than 1000 hectares. Construction work for the building of the Odessa sea-port of Odessa with the creation of three harbors began on August 22, 1794. The base of a small (238m) and large (90m) pierhead, and 3 yards for the construction and repair of ships, two burtons for ship mooring; leveling piers along the harbor with terraces for warehouses, housing for the military order, warehouses, quarantine zone, Customs, 200 private homes were constructed just within a period of 1795 (Timofeenko,1984). When the first stilts were driven in the port the first 7 ships appeared, in 1795 there were 39 of them and in 1796 - 86. Berthing facilities and all the surrounding territory and port warehouses are located in a small bay.

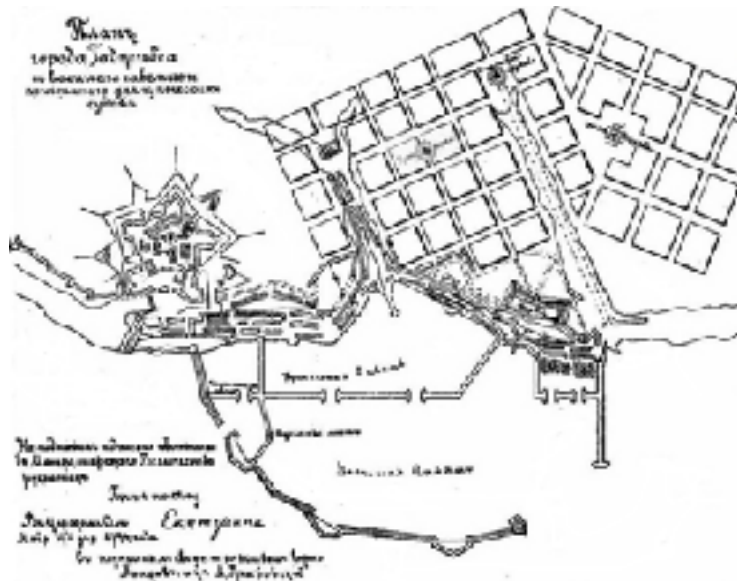


Figure 2. The city plan of Hadzhibey, military harbor and commercial vessels

Odessa, due to its unique geographic and economic location, quickly becomes one of the major hubs of Russia's foreign trade relations with European countries and the Middle East. Introduction of the porto-franco regime – the regime of a free and duty-free import and storage of imported goods - paved the way for the rapid growth of cargo turnover from 1819 till 1859. During the first phase (1794-1820) – birth-phase of Odessa – the city genetic code was loaded. City's main destination was reached - to become the lifeblood of civilization and the source of society development.

The area of the future Odessa had a precipitous rocky terrain, rugged with draws and natural drains. The slopes problem is as old as the city. According to geological data the front-end classic landslides do not let a balance to be formed, and the processes of abrasion never fade. Given the topography, climatic conditions, F. de Wollant has created an expressive composition of the planning structure. Residential areas of the city with a rectangular network of streets, with the segregated major highways and 8 squares were decided to be located on an elevated plateau, the port facilities - on the low-lying coastal strip. Draws, communication ravines provided the connection between the elevated part of the city and the port. Landscaped slopes of the plateaus with terraces and retaining walls, with a groundwater extraction system, founded upon alluvial port area form the first grand in scale shore protection complex. Conscious formation of Odessa man-made landscape helped create a future-based model for sustainable socio-natural development in the first half of the XIX century (Yeksareva, Yeksarev, 2008).



Figure 3. Landscaped slopes of the plateaus with terraces and retaining walls

The port city is gradually transformed from a market town into the industrial and commercial city with the port. Since the second half of the XIX century the role of industry in the life of Odessa rises. By the end of the XIX century Odessa became the third city of the Russian Empire in size and the second – in product export. 500 industrial enterprises and a hundred and six types of industries were operating in the city. The production sub-system was one of the most important for the city structure, determining the intensity and direction of labor relations, the development of the whole planning structure. Gradually the seashore was built on, it was partially converted into a new port harbors - bread and oil terminal, forming a single long strip with the port harbors. Low-lying areas of Peresyp in the XIX - early XX century became peripheral industrial zones of the city with a significant number of factories, warehouses, elevators. Artistic port space of South Palmyra has determined the formation not only of the economic context of the city, but also an optimal environment for cultural content, artistic self-realization and personal development of citizens. At all stages of the pre-industrial, industrial and post-industrial society, the key factors in the evolution of the integrated area of the Odessa sea port were adaptability, flexibility and ingenuity. The main idea, "essential" core, the scenario in the process of the urban environment development, the phenomenon of Odessa, was constituted by a priority of culture development. Odessa - one of the most picturesque cities in the country, which has been famous for a high level of cultural life since its foundation. Cultural policy was the basis for the development of urban society, human development. The city has held a variety of events to create and maintain a "living", "bubbling" environment, designed for all national groups of residents and covering the whole territory of the city.

High concentration and extensive development of different types of industrial and economic activity on a limited piece of land and water area in a "city-sea" zone has led to the accumulation of a number of environmental, economic and aesthetic problems.

In the coastal zone of the Black Sea, human pressure on the coast was increasing for a long time, while the share of natural ecosystems was decreasing. The coastline for the most part is landslide dangerous area with high geodynamic activity. Selective coastal build-on, insufficient number of shore protection and counter-landslide measures, the rise of the groundwater level, the violation of technical requirements for the construction and operation of industrial facilities, haulage of sand from the beaches created a threatening situation. The sea and estuaries are still "hanging" over the low-lying Peresyp, more than 20 square km are subject to constant flooding. In modern conditions, holistic architectural image of the Odessa coastline, "marine facade" of the city basically is not formed. Today, the city center and the sea exist separately from each other, although this element has formed traditions, characters, world perspective of its inhabitants.



Figure 4. The city center and the sea divides the area of the port

Despite the considerable capacities of the Odessa port - 45 berths with depths from 6.2 to 13.5 m, the total length of the mooring line more than 8 km, the establishment of a special economic zone with the total area of 32.5 hectares within the alluvial areas Quarantine Pierhead in 2000, there were negative trends of the loss of communication functions, the competitive capabilities of the maricultural complex. Coastal industrial environment is not used appropriately. The northern part of the coast is occupied with berths and harbors of the port, oil terminal. Peresyp District has turned into a depressive area with environmentally hazardous industries, with underdeveloped resource-and energy-demanding technologies. The existing build-on of the Odessa coast is inadequate by its meaning, port and warehouse facilities constitute the most of it. Prolonged neglecting of urban coastal areas in most cases led to the gradual loss of chance to use them for recreational purposes. The need to turn the city to a large water zone with the help of a radical renewal of the coastal zone under the multifunctional purpose remains an urgent task. The grand environmental damage, high requirements for modern ports have caused the trend of historical port decentralization, redevelopment of industrial heritage in the coastal zone.

The arrival of the information age in many developed countries was marked by a radical change in technology and, accordingly, reshaping of industrial areas. Objective reasons for the removal of production facilities and their reasonable placement outside of the city are: the high cost of land in the city central areas, the need for large areas for handling operations, storage in the area with build-on high-density conditions, the load on the transport network of the city. At the end of XX - beginning of XXI century there was a massive rethinking of the requirements for the intensity of development and functional saturation of coastal areas. "Roll up" of industrial area functions for the purpose of environment rehabilitation, both by relocating them, and by redeveloping, constitutes the basis for the formation of the post-industrial landscape. It is reasonable to develop modern worldwide logistics and industrial centers in Odessa metropolitan on the basis of port cities of Illichivsk and Yuzhny based on innovative technologies.



Figure 5. Odessa merchant sea port and the Peresyp's area

History, natural landscape, regional identity, culture laid the foundations to create a unique living space, multifunctional urban areas. The twin-track process - increasing urbanization of the most valuable urban areas and the need to protect and preserve their environmental qualities - requires developing the models of intelligent reuse of the coastal environment.

What qualities of the urban environment make this or that place "successful"? A culture must once again become a priority project for the revival the image of "Southern Palmira" as a southern "cultural capital". The cultural regeneration is the process of valorization - changing the potential of limited resources, the conversion of poor-valued into priceless. And as a consequence, the changing of cultural and physical environment. Odessa should be seen as a city of innovation, especially in the fields of culture, design and environmental design. One of the spatial expressions of the post-industrial cities economy reshaping, is the creation and development of "artistic spaces", "clusters" and "zones" using the resource of the local authenticity, uniqueness and culture. Relevance of Odessa coastal industrial environment "intelligent reuse" for the purpose of investment promotion is predetermined by the complex of socio-economic (aggressive offensive urbanization of the recreational coastline), environmental (huge environmental damage), urban development (restoration of the integrity of the city

planning structure, its connection with the sea); architectural and compositional assumptions (functional saturation, creating an artistic public space).

City of Odessa, which in the course of its establishment has made a breakthrough to the noospheric implementation of future, must rediscover its global projects of social, architectural and cultural development.

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