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ODESSA - ENERGY EFFICIENCY AND PROBLEMS OF URBAN AREAS HUMANIZATION

This article describes the development of building in Odessa, analyzes methods of improving residential environment in modern energy efficiency conditions.

Keywords: energy efficiency, compaction of site development, functional zoning, modernization of infrastructure, areas around buildings, engineering networks, energy-efficient use of territories

INTRODUCTION

Every epoch creates and solves its problems as well as faces its challenges. The process of foundation, formation and development of our cities is undoubtedly long and highly individual. Each city has its unique history and very own features.

It has become obvious that it is impossible for the territories of our cities to expand forever. Quantitative characteristics are simply losing their relevance, as the Earth and energy products appear to be not unlimited resources. Extensive development principles have exhausted themselves and a long-awaited transition to the quality still remains to be seen. General attitude towards the planet's reserves as well as the dominant principle beyond our economic can be easily defined as pure spendthrift. As a result of the pernicious and ineradicable habit of consuming and living inertially alongside with a massive disbelief in possibility of actually making a difference, people lightheartedly refuse to take any responsibilities for the present state of things.

1. THE PROBLEMS OF MODERN DAY CITIES

The requirements of more energy-efficient use of urban areas are, first and foremost, nothing but signs of the improving city environment. Compacting of site development, thorough analysis of the functional zoning, modernization of infrastructure, enhancing engineering and transport networks - this is only a partial list of all the requirements. As a consequence of the problem, the need of protecting us from the urban environment arises. The price for comfort is exceedingly high. Our mental and physical health is constantly threatened by such violations of sanitary

and hygienic standards as unstoppable bustle of metropolis, noise and air pollution, infringement of aeration and insolation norms. Our need for security and personal space within our own dwellings (which also do not correspond to our dreams of eco-friendly housing) as well as in the areas around them are brutally destroyed by modern concepts of setting-out of the buildings and their purposes. The car broke into our life and literally continues to subjugate all around. Lawns, gardens, playgrounds, unhurried bench conversations of elderly people - all this gradually passes into history under the pressure of the unstoppable intruder.

2. THE ENERGY-EFFICIENT DEVELOPMENT OF ODESSA IN THE EIGHTEENTH AND NINETEENTH CENTURY

It is well known a lot used to be completely different. Construction of Khadzhibey (as Odessa was called until 1795) began in 1794 according to the project of the engineer Franz de Volan [1]. Two rectangular grids of streets (blocks about 160x160 m), relatively offset at an angle of 45 degrees comprised the street plan of the city [1], thus emphasizing its beauty and improving aeration and insolation of the quarters by exposing them to the sea breeze.

The period of time from the end of the eighteenth century to the 70s of the nineteenth century was marked by appearance and crystallization of common features typical of residential architecture of the city. What we name now traditional Odessa housing, was formed under a strong influence of Russian classicism, architectural traditions of the Balkans and Southern Europe, as well as was preconditioned by climatic and socio-economic factors of the nineteenth century. Structurally, the housing system consisted of three parts: a house, a yard, and a residential cell. The system ensured the use of adjoining areas to their full potential, taking into consideration such vital aspects as household needs, recreation, and garden maintenance, which caused an effect of a smooth transition from the exterior to the interior of the dwelling, significantly improving its atmosphere. Closed yards limited chances of unwanted strangers to approach buildings unnoticed, rendering the adjoined territories even more habitable. So, the yard became the heart and soul of the building, whose residents comprised a unique social environment. The direct connection between flats and houses was implemented through a network of so-called summer premises which functioned as a connecting link between the interior and exterior space. Galleries, terraces and loggias reduced the risk of overheating, integrated the in-house space with the interior of flats, serving as conservatories, recreational spots and a meeting point for members of a friendly community of neighbors.

The above-mentioned three-part system with an intermediate element of open summer spaces was a characteristic feature of architecture and artistic heritage of Odessa. The splendor of galleries, outdoor stairways, balconies and yard façades had an unforgettably strong impact on beholders. Wells for rainwater collection, decorative standpipes or small fountains were often arranged in the center of a courtyard. Such compositional elements as front gardens, pavilions and sculptures enjoyed

enormous popularity, too. Courtyard entrances were frequently emphasized by façade balconies, bay windows and decorative sculpture elements. It was not unusual to encounter porches adorned by sculptures and paintings, too [2]. The territories at that time were used according to energy efficiency principles and in compliance with people's needs. The need for building city parks, public gardens and boulevards was strongly emphasised during the pre-revolutionary period. Shevchenko Park, formerly known as Alexander Park (built in 1875), Dyukovsky Garden, City Garden, Cathedral Square, public garden in Starobazarnaya Square, Primorsky Boulevard (former Nikolaevsky) with its adjacent territories, the Palais Royal played a major part in urban development at that time. Many temples, theaters, gymnasiums, schools, shelters, charity canteens, common lodging houses and hospitals were built during this period [3]. The city was a real home to its residents - cozy, comfortable and dear to their hearts.

3. ODESSA OF THE TWENTY-FIRST CENTURY

The present day reality of Odessa is harsh and grim. Open spaces and plants are becoming rarer and rarer. Densely built-up areas in the central part of the city, an extreme exhaustion of housing resources, a highly inefficient exploitation of buildings and engineering networks alongside with shortcomings of transport system have become typical local problems to be reckoned with on a regular basis.

On the other hand, modernization of Odessa is as important as preserving its historical centre. On no account can current problems be solved at the expense of our cozy nineteenth-century yards to which Odessa owes a great deal of its uniqueness. It is worth mentioning that the city could gain more in the long run by satisfying people's desperate need in additional park zones and parking spaces instead of trying to maintain dilapidated buildings of very little artistic value or focusing exceptionally on profitable trade and real-estate objects, which investors find so alluring. It is also crucial that we updated our roads using professional technologies that have been applied world-wide to a good effect.

It is vital not to be carried away by dreaming about unaffordable projects and stop increasing our debts. Why count on the means we do not have at our disposition? It is by far more rational and effective to manage the situation using our existing budget, regardless of how meager it is, which have time and time again been proved by our neighbors' experience. Dubious lustre of high-cost and would-be profitable projects is not timeless, while Odessa is under a tangible threat. Dark windows of completed, yet empty buildings should be nothing short of a warning sign to each and every person. A dream of future economic growth and more energy efficient use of territories will always remain a dream without our serious consideration, routine work and collaborative efforts, which are indispensable in solving our city problems. It is us and our choice that define the future of our offspring and the whole city.

CONCLUSION

1. It is high time we stopped “stretching” our city, as it inevitably leads towards a dramatic increase in costs of social and engineering infrastructure. Compacting of existing buildings will result in reduction of energy costs, intensification of social life and greater safety of the residents [4]. Dealing with degraded and former industrial areas is also ahead of us.
2. Improvement of public transport should be our highest priority, as it can be particularly beneficial to fossil fuel resources, urban areas, and the environment in general.
3. Enhancing public spaces (e.g., parks, pedestrian zones, entertainment centres) will ensure higher quality of life in the city.
4. All possible causes and consequences, as well as pros and cons of refusing from a huge size microdistrict structure in favor of a more humane quarter system should be taken into consideration. Quarters can be perceived as more humane, as they brilliantly strike a balance between public (i.e. streets, shops and cafes) and private space. The simplicity and charm of cozy courtyards will provide us with an opportunity to fulfill our basic needs for rest (both quiet and active), housekeeping, human contact, and belonging to the “community” of neighbors.
5. Sensible construction of multi-functional buildings throughout the city will unload its center and considerably reduce urban migration, thus saving our time and decreasing passenger traffic.

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ODESSA - EFEKTYWNOŚĆ ENERGETYCZNA I PROBLEMY HUMANIZACJI OBSZARÓW MIEJSKICH

Artykuł opisuje rozwój budownictwa w Odessie, analizuje przekształcenia środowiska mieszkaniowego w nowoczesnych warunkach efektywności energetycznej.

Słowa kluczowe: efektywność energetyczna, zagęszczenie budownictwa, strefowanie funkcjonalne, modernizacja infrastruktury, tereny wokół budowli, efektywne wykorzystanie obszarów