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GENERAL SUGGESTIONS AND RECOMMENDATIONS ON THE ADAPTIVE REUSE OF INDUSTRIAL ARCHITECTURE FOR NEW SUSTAINABLE SOCIAL FUNCTIONS

The article deals with the important problem of industrial cities in Europe – adaptive reuse of industrial architecture for new sustainable social functions. It is noted, that today is relevant to make scientific research in this field. General suggestions and recommendations on the adaptive reuse of industrial architecture for new sustainable social functions have been developed including the logical model of the basic methods and stages. General conclusions have been developed.

industrial architecture, industrial heritage, adaptive reuse, social functions

PROBLEM STATEMENT

According to present conditions of urbanized cities' industrial heritage, it is possible to assert that industrial infrastructure demands a new experimental level, for example, adaptive reuse of industrial heritage architecture for new sustainable social functions: cultural, administrative, entertaining, residential, recreational etc. Moreover, today it is important to make scientific research in context of adaptive reuse of industrial heritage architecture. It is reasonable to emphasize that relevancy of the present problem is defined by aggravating environmental situation in industrial areas, that has negative influence on health improvement, psychic and emotional state of people, demographic indices etc. [1, 2].

OVERVIEW OF THE LAST RESEARCHES AND PUBLICATIONS

The problem of protection and adaptive reuse of industrial buildings as well as industrial heritage is so relevant nowadays. There are many organizations and institutions which are connected with this problem: scientific and research centers in the leading educational and scientific institutions, committees, specialized organizations with competent professionals, social groups etc. For example, International Committee for the Conservation of the Industrial Heritage (United Kingdom) [3], Research Centre for Industrial Heritage (CTU in Prague, the Czech Republic) [4], International Visegrad Fund (the Slovak Republic) [4, 5] etc.

Research in field of the industrial heritage architecture protection, conservation and adaptive reuse today is carrying out by prof. Ing. arch. T. Senberger, PhDr. B. Fragner, prof. Ing. arch. P. Urlich, CSc. and Mgr. L. Beran (CTU in Prague, the Czech Republic) [3, 4], Prof. Ing. arch. H. Zemankova, CSc. (BUT, the Czech Republic) [3], Prof. H. Benai, DrSc., Prof. N. Sholukh, CSc., Doc. I. Lobov, Doc. I. Gaivoronskyi etc. (DonNACEA, Ukraine) [5], Sir N. Cossons («English heritage», United Kingdom), Prof. Dr. M. Mende (BUA, Germany), Prof. M. Bevz, DrSc. (LPNU, Ukraine), Prof. M. Dyomin, DrSc. (KNUCEA, Ukraine) [5] etc.

The **purpose** of present work: to develop general suggestions and recommendations on the adaptive reuse of industrial architecture for new sustainable social functions.

The **object** of work: non-operating and operating ineffective industrial buildings.

BASIC MATERIAL

According the present conditions of big and largest cities' industrial infrastructure, it is possible to assert that the problem of new effective use of non-operating and operating ineffective industrial objects (including

industrial heritage) demands a new experimental level, that means adaptive reuse for new sustainable social functions.

The present research work is connected with this problem. Relevancy of research is defined by aggravating environmental and social situation in industrial cities that has negative influence on many factors: health, psychic and emotional state of people, cultural and social level of population, demographic indices, environment condition etc. The present stage of research assumes developing of the scientific and practical suggestions and methodological recommendations on adaptive reuse of industrial architecture for new sustainable social functions.

The system of scientific and practical suggestions on adaptive reuse of industrial architecture for new sustainable social functions has been developed and consists of five general stages:

1. Analysis of original data.
2. Substantiation of the selection of new function.
3. Development of new project concept.
4. Controlling and coordination of the project concept.
5. Realization and monitoring after the realization.

First stage «Analysis of original data» assumes following theoretical and analytical work, problematic analysis etc.:

- analysis of environmental microclimate of the region;
- analysis of most relevant health problems of the population in the region of industrial object for adaptive reuse in a context of present research work;
- analysis of modern statement of the social infrastructure of the city or region connected with the industrial object for adaptive reuse;
- estimation of the accessibility of existing social infrastructure for population;
- analysis of industrial object for future adaptive reuse: analysis of the historical data and facts, documenting the current state of the object and all infrastructure before the planned conversion (it is important to emphasize, that this step is very relevant for industrial objects in the status «industrial heritage»).

Moreover, it is important to analyse and define the potential parts and zones of the industrial object in case the full conversion is impossible.

Second stage «Substantiation of the selection of new function» assumes the development of new rational and competent concept, searching and substantiation of the optimal concept with sustainable social function or group of functions taking into account conclusions of the analysis of original data from the First stage. It is reasonable to note, that the present stage is more important for future changes at all levels because the correctly chosen future sustainable social function can give a significant and positive effect. The present stage assumes following steps:

- scientifically and practical analysis on different levels and generalization the results of the work carried out at the First stage;
- technologic forecasting and review of the possible level of efforts;
- definition of the reasonable concept for the future conversion on microlevel, macrolevel or using the combined concept;
- definition of the most relevant system of sustainable social functions (group of functions as well as a single) in the frame of the optimal microlevel and macrolevel methods for the industrial object adaptive reuse;
- coordination of the developed concepts with the relevant institutions.

Third stage «Development of new project concept» assumes designing of project and developing important documentation for conversion of industrial architecture into new object with sustainable social functions. Collaboration of the competent organizations with the experience in this field on development of this concept project is reasonable.

Fourth stage «Controlling and coordination of the project concept» assumes:

- coordination of all stages of adaptive reuse project concept with the heads of departments in designing and construction companies;
- controlling the all finished stages of adaptive reuse project concept by the heads of departments in designing and construction companies;
- reviewing of adaptive reuse project concept by the independent organizations and competent professionals, estimation and commentation;
- project concept coordination with all important institutions of responsible government, with the department of urban development, department of the city architecture, with the department for protection

and reservation of the architectural heritage (including industrial heritage) and with the other related institutions and experts (service of fire safety, environment protection department etc.).

Fifth stage «Realization and monitoring after the realization» assumes:

- a selection of competent designing and construction companies, contractors and other staff for the realization of adaptive reuse project concept;
- construction work at all stages;
- controlling and objective evaluation of the construction work quality at all stages;
- monitoring of the object after the first operation day;
- to carry out the statistical work and research the converted object with all operating features (new sustainable social functions).

In addition to the system of scientific and practical suggestions on adaptive reuse of industrial architecture for new sustainable social functions a number of **general recommendations and proposals** have been formulated:

1. General arrangements:
 - to develop the new documentation of standards concerning the designing of conversion projects in a context of adaptive reuse of industrial architecture for new sustainable social functions;
 - to organize improvement of professional skill of the existing competent designing and construction organizations;
 - to develop the general recommendations for the potential industrial object's area analysis;
 - to open the departments in different institutions connected with the problems of development of different modern methods and principles for adaptive reuse of industrial architecture;
 - to develop the algorithm for most applicable methods selection for adaptive reuse in the future;
 - to provide a special supervising institutions;
 - to integrate the present suggestions and recommendations in educational process for higher educational institutions with building specialties etc.
2. At the stage of conceptual solutions searching:
 - to organize different competitions on designing concept projects in a context of adaptive reuse of industrial architecture for new sustainable social functions;
 - to define a new tendencies in a context of adaptive reuse of industrial architecture for new sustainable social functions in the frame of conferences, workshops etc.
3. At the project designing and construction stages:
 - to organize improvement of professional skills by trainings and practice fore the stuff in the existing competent designing and construction organizations;
 - to collaborate with foreign specialists in field of adaptive reuse of industrial architecture for new sustainable social functions;
 - to provide a special supervising institutions for monitoring and control of the developed adaptive reuse concept projects;
 - to collaborate with a scientists in the field of adaptive reuse of industrial architecture for new sustainable social functions etc.

According to developed system of scientific and practical suggestions the logical model of the basic methods and stages of adaptive reuse of industrial architecture for new sustainable social functions has been developed (fig.).

SUMMARY

1. The relevancy of the adaptive reuse of industrial heritage architecture has been formulated.
2. General suggestions and recommendations on the adaptive reuse of industrial architecture for new sustainable social functions have been developed (five general stages).
3. Additional recommendations and proposals have been formulated (three groups): general arrangements, at the stage of conceptual solutions searching and at the project designing and construction stages.
4. Logical model of the basic methods and stages of adaptive reuse of industrial architecture for new sustainable social functions has been developed.

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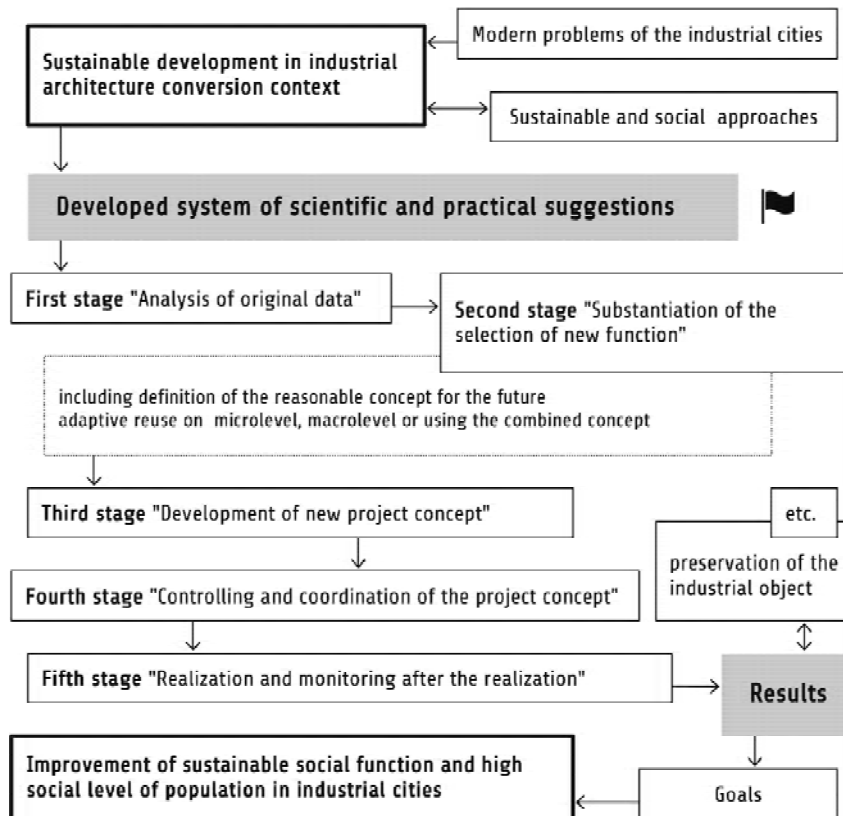


Figure – Logical model of the basic methods and stages of adaptive reuse of industrial architecture for new sustainable social functions.

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ОЛЕГ ФЕТИСОВ ЗАГАЛЬНІ ПРОПОЗИЦІЇ ТА РЕКОМЕНДАЦІЇ ЩОДО РЕНОВАЦІЇ ПРОМИСЛОВОЇ АРХІТЕКТУРИ ДО НОВИХ СТАЛИХ СОЦІАЛЬНИХ ФУНКЦІЙ

Чеський технічний університет в Празі

Стаття присвячена важливій проблемі промислових міст європейських країн – реновації промислової архітектури до нових сталих соціальних функцій. Відзначено, що даний науковий напрям сьогодні є вельми популярний. Розроблено загальні пропозиції та рекомендації щодо реновації промислової архітектури до нових сталих соціальних функцій, включно логічної моделі загальних методів та етапів. Сформульовано узагальнюючі висновки.

промислова архітектура, індустриальна спадщина, реновація, соціальні функції

**ОЛЕГ ФЕТИСОВ
ОБЩИЕ ПРОПОЗИЦИИ И РЕКОМЕНДАЦИИ ОТНОСИТЕЛЬНО
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Чешский технический университет в Праге

Статья посвящена важной проблеме промышленных городов европейских стран – реновации промышленной архитектуры под новые устойчивые социальные функции. Отмечено, что данное научное направление является сегодня достаточно популярным. Разработаны общие пропозиции и рекомендации относительно реновации промышленной архитектуры под новые устойчивые социальные функции, включая логическую модель основных методов и этапов. Сформулированы обобщающие выводы.

промышленная архитектура, индустриальное наследие, реновация, социальные функции

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