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HEALTH QUALITY OF THE HOUSING ENVIRONMENT. SOCIAL SPACE IN PRE-WAR SILESIAN HOUSING SETTLEMENTS

FNVIRONMENT

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Abstract

The scope of the paper is the health qualities of pre-war housing settlements in Silesian cities and towns. The main focus is on the analysis of the architectural and urban features to define psycho-social health factors. Results of surveys conducted in some selected pre-war Silesian housing settlements are also discussed to present the inhabitants' opinion on their places to live.

Streszczenie

W artykule zawarto rozważania nad zdrowotnymi walorami przedwojennej zabudowy mieszkaniowej śląskich miast. Rozważania dotyczą głównie analizy cech architektonicznych i urbanistycznych pozwalających na określenie psychospołecznych czynników zdrowotnych. Artykuł zawiera również wyniki badań ankietowych prowadzonych w wybranych śląskich zespołach przedwojennej zabudowy mieszkaniowej, określające opinie mieszkańców o miejscu zamieszkania.

Keywords: Health; Housing environment; Safety; Immediate neighbourhood.

1. INTRODUCTION

The objective of reconstruction and expansion of a commercial facility located within the city has usually been to enrich it in the spatial and programme sense, in order to turn it into an efficient "machine", competitive to modern shop.

Nowadays health is a criterion that is commonly assumed to assess the quality of housing environment and to shape good quality of life. Such approach is still valid and has recently been propagated by numerous research institutes (for example: European Network for Housing Research in Sweden), including World Health Organization (WHO) within the framework of Healthy Cities programme [7]. The programme gives priority to housing conditions as a factor influencing the quality of life and health. WHO has also indicated health-supporting determinants: the physical, social and economic environment.

For years WHO has been making attempts at devising a universal method of analysing the quality of the built environment on global scale, nevertheless, results of various analyses mostly substantiate the thesis that it is necessary to conduct studies on local scale to provide in-depth investigation of in-situ problems [6].

In consideration of the Upper Silesian spatial status, the postulate of shaping healthy living and housing conditions is a challenging requirement, conditioned by many changes that have occurred in the natural environment. As far as housing settlements are concerned, health promoting solutions should be found for the existing housing resources, especially for those that are in critical need of modernization - numerous pre-war housing complexes. In the majority of cases, such complexes have been ravaged by underinvestment, as well as by technical and social degradation, yet, paradoxically, they reveal a number of the qualities relevant to the discussion on healthy housing environment. The surveys conducted in selected Upper Silesian cities and towns in pre-war housing settlements were focused on indicating the most urgent measures that should be undertaken to improve the quality of life and health status in terms of the physical and social environment. In view of the results, the relations in the field of psycho-social conditions in the studied housing environments are of special interest.

2. HEALTH AS A CRITERION DETER-MINING MODERN HOUSING ENVI-RONMENTS

As health conditions have a multiple background, negative factors of housing environment are generally regarded as potential risks. Such approach is consistent with the method of forecasting health status, leading to conclusions on possible health consequences on the bases of the negative factors prevailing in housing environment. According to the generally accepted definition of health, which is a state of complete physical, psychological and social wellbeing [1], [2], [6], two groups of criteria were assumed for the assessment of the studied housing environment: physical and social factors. The first group comprised the issues connected with direct impacts from building materials and technologies, concerning, first and foremost, proper physical, chemical and biological conditions of the micro-environment of the interior space. A dynamic advancement of new building technologies and the use of state-of-the art construction materials enforce the requirements aimed at reducing negative health impacts. In view of measurable negative impacts, increased environmental and health awareness of the inhabitants and possibilities of implementing recommended standard solutions, the regulation and reduction of harmful factors is relatively easy and feasible. However, it is much more difficult to pinpoint effective methods of optimizing the housing environment in terms of psychological and social needs of its inhabitants. The concept of creating optimal conditions in the housing environment is inestimable enough to lose grounds, when set against low spatial and aesthetic awareness, not to mention economic pressure. Thus, the role of the architectural environment in promoting good spatial and functional solutions is very important.

In the next sections of the paper the housing environment is considered, first of all, as: "a place to live". This stems from a profound conviction about the key role of place- the space full of meaning and local cultural values, the space of social interactionsespecially in the process of taking over the management of shared space by local owners' association or communities, which presents good opportunities for the creation of healthy housing structures – in meaning of structures creating the adequate physical and psychosocial conditions for health, comfort and privacy [6]. On the other hand, many currently constructed housing complexes spoil the concept of shaping good housing conditions. This is most explicitly manifested in the complexes that put the main emphasis on satisfying the need of safety. Gated housing estates are enclaves cut out of the surrounding landscape and their underlying intention is contempt and fear of social groups that are not as economically efficient as their inhabitants [3].

According to Schneider-Skalska (Shaping a healthy housing environment), the creation of social spacesspecific social interiors – significantly contributes to the sense of territorial and social identity [7]. Surely, as far as social bonds are concerned, the most important factor is an individual's feeling of identification with the norms of their social group, but the shape of space can have a positive effect on the level of such identification. Schneider-Skalska also emphasises that the smallest structural part of housing environments is a separate courtyard/backyard/internal space – which is a cultural zone, where the relations of identification with space really occur.

3. THE CHARACTERISTICS OF THE HOUSING ENVIRONMENT OF PRE-WAR HOUSING SETTLEMENTS

Table 1. presents basic data characterising living standards in pre-war housing settlements in Upper Silesian towns. These buildings in Silesian cities constitute about 23% of all housing resources – it corresponds with data for the whole country. Because of no modernization schemes, the inhabitants' expectations include the most basic needs, such as: lack of water supply and sewage disposal systems or separate bathrooms and toilets in flats. The most signifying problems are the obsolete ventilation systems and replacement of obsolete or malfunctioning heating systems, in respect of half of all pre-war housing.

The reasons for such underinvestment and the resulting problems may, among others, be attributed to the development tendencies prevailing in the 20th century architecture, when newly constructed settlements, in compliance with new urban planning rules as to their structure, form and functions, took the load of all the prominence and importance of urban activity. In the post-war period, the problem of tenement houses was marginalised for ideological reasons. The process of the degradation of their technical quality culminated when they were taken over by municipalities and tenants of low economic capacity moved in. Conversely,

	Percentage of all housing buildings in Poland, [%]	Percentage of all flats in Poland, [%]	Percentage of flats in Silesian Voivodeship, [%]
Before 1918	8,7	10,2	11,4
1918 – 1944	17,3	13,0	11,4
Total	26,0	23,2	22,8
Buildings without water supply and sewage disposal systems			
before 1918	10,1	4,4	14,1
1918 – 1944	12,8	7,8	14,3
Buildings without central heating			
before 1918	60,0	76,5	64,0
1918 – 1944	49,9	58,5	40,2
		Poland [m ²]	Silesian Voivodeship [m²]
Average floor area of a flat			
before 1918		59,5	56,7
1918 – 1944		65,0	67,4
Average floor area of a flat per	1 person		
before 1918		20,7	22,9
1918 – 1944		21,5	24,5
Average number of people in a	flat		
before 1918		3,48	2,5
1918 – 1944		3,01	2,8

Table 1.

Data on the old housing resources derived from the 2002 Polish National Census - compiled by the author [9]

the workers' estates epitomise the social problems and investment shortages resulting from the social and economic transformations after 1989, when due to critical financial conditions of industrial enterprises no means were allotted for the maintenance of their housing resources inhabited by an increasing number of people who had been made redundant. The process of de-capitalization of housing resources entails social consequences manifested in their occupation by people with lower social and economic status and determines their social exclusion.

The Silesian workers' estates are dealing with similar problems as in the neighbouring countries, but in relation to chances for revitalisation these are in special location because of ownership structure. Part of them belong to industrial plants, on the other hand overtaking the workers' estates to the municipality doesn't guarantee the chances for quick revitalization. Here comes the question about the most urgent activities improving the living conditions. Lack of housing subsidies and employment reduction give rise to disinterest of taking over the flats by the inhabitants [4]. Privatization and modernization of workers' estates is more simple in case of two-families housing (e.g. modernization of settlements in Ruda Śl., Żyrardów or foreign examples from the Ruhr [8]). The studies on pre-war housing resources were carried out for two typical and best represented types of old Silesian developments: buildings in urban quarters (tenement houses in Katowice, Bytom and Tarnowskie Góry) and workers' estates (example of Agnes's estate in Katowice Dąb, "Borsig" estate in Zabrze-Biskupice and buildings in the urban quarter of Katowice-Załęże), (see Table 2).

In studies on the estates method of health status indicator was used, characterising the housing environment. On the basis of physical environment (i.e. studies in situ, photo documentation and environmental inquiry) for analysing the housing quality the following criteria were used:

- on the level of the flat functional characteristics, surface of life standards, separate bathrooms and toilets in flats, some determinants of indoor environment (moulds growth and quality of malfunctioning heating systems, insulation quality of external walls),
- on the level of the building and immediate environment – internal spaces of the buildings, the quality of shared space, spatial and social phenomena pertaining to safety, quality of immediate environment determining the opportunities for the functioning of neighbours' groups.

Table 2.

Basic characteristics of surveyed pre-war housing settlements. Compiled with the reference to [9]



To supplement the studies, the inhabitants were surveyed to assess their attitude to their place of occupancy – including the sense of safety and any activities undertaken to improve it. Questionnaire was prepared in cooperation with sociologist and it was divided in three parts:

- characteristics of flat: surface of the flat, equipment, noticed negative phenomena and evaluation of flat,
- characteristics of the building and its immediate environment, expectations about the living place,
- question about surveyed inhabitants: age, sex, education.

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Figure 1.

Tenement house in Katowice, Sienkiewicza Str., view on the façade. Photo taken by the author



Figure 2.

Agnes's estate in Katowice-Dąb: view from the courtyard side. Photo taken by the author



Figure 3. Borsig estate in Zabrze Biskupice – typical view

To elaborate the research results the descriptive statistics tools were used to order its in tabular description in which tables of issues summarize the data. The sample of the survey is a group of inhabitants, more than 20 years old. One inhabitant represents one



Figure 4.

Quarter of workers' buildings in the urban quarter of Katowice Załęże



Figure 5. Katowice Załęże – elements of small architecture implemented by the inhabitants' undertakings. Photo taken by the author

household, in all localities the sample composes about 30 percent of all flats. The age structure in tenement houses is heterogenic. Education structure indicates to high level of inhabitants with middle and high education. In workers' estates area there exist more inhabitants with elementary or secondary education. The most numerous group in the age structure was the group in age of 40-60 years old inhabitants, living in the estate for 20 years and more.

The studies on the immediate neighbourhood of the buildings, apart from obvious underinvestment situation, revealed the lack of the inhabitants' reaction or care, or their helplessness, confirmed by numerous



Figure 6.

Bytom: Dworcowa and Moniuszki Street. The layout of the investigated urban quarter, the emerging oppressive spaces in the vicinity of the garages

graffiti and traces of vandalism. The absence of any reaction to damages points out to the decay of the social structure. Only in few instances, signs of "familiarising" the surroundings were detected (flower beds, elements of small architecture – see Fig. 5).

The courtyards of urban quarters, if devoid of elements that fulfil certain social functions, become socially dead spaces, used mainly for ad-hoc purposes, for example; parking lots. The only exception are the quarters managed by the owners' associations. In such cases, the immediate neighbourhood contains some retail and services outlets, often within the courtyards; however, due to uncontrolled access of the third parties, they reduce the level of safety, which, in consequence, often results in the transfer of shared/public space to higher floors, or to its total disappearance. In addition, the spatial layout of the quarters (see Fig. 6) generates so called: "oppressive space", lowering the quality of housing environment.

On the other hand, the immediate neighbourhood of the workers' estates exposes the problem of underinvestment. The spaces surrounding the buildings are jointly used by the inhabitants, yet there are no functional divisions. Apart from the benches situated in the entrance zone to the buildings or in their direct



Figure 7. Meeting place for the inhabitants of the workers' estate: the bench located at the entrance to the building, Borsig estate. Photo taken by the author

vicinity, other elements of space management are scarce. Ancillary structures, predominantly coal sheds, give a particular quality to the courtyards. Due to the cultural aspect the junctions of the social space in the workers' estates are concentrated around the entrance zones, mainly located within the courtyards. They serve the function of spontaneous meeting places, without demarcated boundaries (see Fig. 7). Accordingly, no one shows certain care about other

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specific places, as they are not the subject of supervision. Therefore, they do not contribute to the sense of identity with the place of living.

Nevertheless, the studied pre-war housing architecture exhibits a number of basic values that substantiate its maintenance and revitalization to create a good quality of housing environment, such as [9]:

- a) Architectural and cultural value the buildings located in urban quarters constitute a historic tissue of the city centre, their facades have become a token of urban space. Likewise, many pre-war workers' estates, because of their historic and cultural context, may provide bases for the creation of the sense of identity of space and the preservation of the local atmosphere (Fig. 8, 9)
- b) The scale and layout of the developments enable the separation of the zones used by small and specific groups of inhabitants, both in the case of tenement houses and industrial workers' estates. As far as tenement houses are concerned, commonly used spaces are clearly noticeable within the quarters. On the other hand, typical spatial arrangement of the worker's estates entails: blocks of flats on one or both sides of the street, separated by the external layout or located within the boundaries of the street limited by the streets (Fig. 10). An indisputable quality of such developments is the height, limited to 2-3 storeys, yet, there are also elements restricting the surrounding space, for example: coal sheds which provide opportunities for creating open interior spaces to promote territorial identification. In revitalisation of 19th century urban quarter in Berlin-Schöneberg, block 89 the interior was designed as generally accessible recreation areas, however in consequence of social consultations the distinct green courtyards was separated (Fig. 11).

Also, there are examples of already accomplished modernisation schemes of the buildings located in urban quarters that provide semi-private zones, even when the courtyards function as service outlets. Good example of this kind of approach is the modernization of Old Haymarket – 19^{th} urban quarter in Liverpool. The lowest two floors have commercial and service functions. The level of the courtyard has been risen to the height of the first floor to secure a feeling of privacy for the inhabitants, and, at the same time, to improve the lighting conditions for the flats located on the side of the courtyard (the depth of the courtyard has been reduced – see Fig. 12).



Figure 8.

A decorative detail in the facade of the house shared by several families in Borsig estate, Zabrze-Biskupice, Kępki Street. Photo taken by the author





Agnes's estate in Katowice-Dąb: view on the façade. Photo taken by the author

- c) The brick as a traditional structural material traditional structures are predisposed for changes and adaptation schemes, giving opportunities for functional and technical modernization. Another decisive advantage is the health quality of the structural material, as it improves the micro-climate of the rooms by regulating the humidity level in flats.
- d) The existing neighbourhood bonds are an unquestionable quality of the developments. Among the inhabitants of the studied pre-war estates, people aged 40-60 are widely represented and have lived there for years. Good, long-lasting relationships with the neighbours provide favourable grounds for "feeling at home". The neighbourhood bonds, the sense of common interests in the most important matters related to



Figure 10.

Typical layouts of workers' estates – example of housing complexes selected for the research: Borsig estate in Zabrze Biskupice located at both sides of the street and one of the houses of the workers' estate in Katowice Załęże. Compiled by the author



Figure 11.

Examples of the layouts of 19th century developments posing good opportunities for creating the space surrounding the building, example of space management of the internal space of Berlin-Schoneberg quarter, block of flats No 89 in the follow-up design after the architectural competition (on the left) and in the implemented design (on the right) after open consultations with the inhabitants – with a legible division of the courtyards and commonly used green zones. Compiled by the author with reference to [11]

shared occupancy and the same profession – satisfy, to a large extent, the human need of contact, of the sense of belonging and safety. Thus, the value of the existing neighbourhood structures is indisputable and should be utilized in open dialogues on revitalization, securing the social acceptance of the undertaken schemes in the future.



Old Haymarket- a view at the street-crossing



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A view of the courtyard



A-A cross section



Plane view of the ground floor

Figure 12.

Old Haymarket, Liverpool – an example of a modernization scheme of 19th century urban quarter. According to [12]

4. THE SOCIAL ENVIRONMENT – PRE-WAR HOUSING ESTATES AS PER-CEIVED BY THEIR INHABITANTS

"(...) the inhabitants of ghettos are submissive, waiting, suspended in vacuum. Incapable of making any step forward. They come to realize, with surprise and disbelieve, that the erstwhile Promised Land has already become Paradise Lost" – these words, expressed by M.S. Szczepański and W. Ślęzak-Tazbir [3] refer to the inhabitants of some of the Silesian workers' estates. Surveys conducted at these locations confirm that the estates, as well as substandard urban housing resources, are areas of specific codes of behaviour and systems of values, and, first and foremost – of handicapped perception of the role of a single human being in society as far as the assumed norms and standards are concerned.

The underinvestment conditions of pre-war housing structures have generated social degradation and enhanced the climate of familiarity towards pathological behaviour.

The easiest method of assessing the degree to which pre-war housing resources satisfy their inhabitants' needs is surveying the inhabitants' attitudes towards their place of living and the image of the place of occupancy in their consciousness. The respondents were asked to indicate the criteria of choosing the place of living, by the choice three answers could be marked. The motives for such choice were categorized in accordance with the percentage of the respondents' replies [9]:

- routine (57%),
- no conditions for the change of the place to live (27.8%),
- occupancy for generations (27.8%),
- the flat is offered by the employer (22.6%).

The strongest contributor to the acceptance of the current occupancy is the length of time, connected with getting used to the conditions, the immediate neighbourhood and the fact that the features of the surroundings are permanently embedded in the image of the place of living. Such attitude is explained by the phenomenon of cognitive dissonance, according to which people accept their standard of living and condition of their places of living in the absence of any opportunities for change. Many respondents have lived in the investigated estates for more than 20 years (47.8% for all locations). A considerable number of the respondents in the oldest age group (40-60) declare that they have been living there since birth. Typically, no opportunity for the change of the place of residence becomes a criterion of choice - many respondents point to the insufficiency of finance that could make such change possible. The biggest number of critical responses comes from the inhabitants of tenement houses, which may be explained by higher awareness and higher aspirations (among this group of the respondents the percentage of people with at least secondary education was higher in comparison with the workers' estates where primary vocational education prevailed).

The sense of safety is relatively high - 96.6% of the respondents declare feeling at least "rather safe", including a high percentage of women. The zones that are considered as particularly dangerous are unlighted and unsupervised courtyards; however, a great majority of the respondents does not feel any safety threats. Against the background of numerous acts of vandalism and hooliganism, it is hard to resist the impression that the knowledge of the specific character of the place of living translates into the fact that instances of some incidents have become an element of the occupancy conditions in the inhabitants' awareness, or, that there are some specific social rules governing the places of occupancy (Fig. 13). Surely, the number of incidents in the workers' estates is a reflection of their bad technical condition. becoming an epitome of their technical and social degradation. Accordingly, the inhabitant's expecta-



Figure 13. Katowice Załęże – grafitti on the transformers station building in the vicinity of the playground. Photo taken by the author

tions as to their existential conditions are minimized. Degraded immediate neighbourhood adds to the feeling of "familiarity" with economically underprivileged social groups that are more vulnerable to pathologies [10].

The assessment of the inhabitants' active attitudes towards the place of living leads to the conclusion that the majority of the respondents declare coresponsibility for the condition of their immediate surroundings, naming, at the same time, the bodies or units responsible for the administration of the building. In case of buildings with small social migration or estates and houses taken over by owners' associations, the inhabitants are much more active. Such is the case, for example, of Borsig estate in Zabrze Biskupice and of the tenement houses, the inhabitants of which declared a variety of activities undertaken to improve commonly shared spaces. On the other hand, among the inhabitants of community flats, the attitude of being passive and resigned towards low standard of buildings and flats is very deeply rooted (for example: Agnes's estate in Katowice Dab) [9].

Sociological analyses of the social bonds in old workers' estates quoted in professional publications specify two basis types: generational (family and neighbours' bonds) and vocational (similar nature of current or previous job and similar social status) [5]. Such bonds make up homogeneous communities – the similarity of the social and economic status, of poor housing conditions, and the overlap of other kinds of bonds, all create a tight-knit social group. It is often the case that in such groups there is a special social order and set of norms that constitute the grounds for judging behaviours and assessing what is and what is not a pathological act. The inhabitants do not describe certain behaviours as pathological, even if they seem to be such according to generally accepted moral standards. This may, to a certain degree, have an impact on the feeling of safety in the investigated places of living. However, the indifference, or, rather, the consent to certain actions that go beyond generally accepted social standards is wide-spread, especially if such actions generate incomes to the families that have no other means to support themselves.

5. CONCLUSIONS

The assumption of the criterion of health to improve the quality of life in pre-war housing estates makes it possible to determine the optimal conditions for healthy housing environment. Such approach accounts both for the needs arising from social expectations, but also from technical modernization requirements of the developments. Accordingly, the restoration of old housing resources the urban and social structure is feasible.

Although the inhabitants seem to accept the place of their occupancy and the existing poor standard of living, the old quarters are often areas of social exclusion from other urban zones, characterized by specific social norms and minimum expectations. Poor technical condition of the buildings becomes a synonym of social degradation. If the inhabitants of the old urban quarters are left on their own with their minimal expectations, the process of social exclusion and submissive attitudes towards reality will only intensify.

The improvement of the quality of the psychological and social aspects of health and life pertains to the immediate neighbourhood of the buildings, where the need of social functions of individuals is realized in a social structure. A promising chance for proper functioning of neighbourhood groups, apart from social programs activating local communities, is provided by semi-public spaces. Therefore, to improve the surroundings of the buildings the following measures should be undertaken:

a) The layout of the functional zones should be legible, as this will improve the supervision over the space surrounding the buildings and the feeling of safety: territorial and ownership separation of space is especially essential in central urban quarters. The separation of semi-private spaces (for example, private gardens in the courtyard) and

semi-public spaces (for example, meeting places) may significantly contribute to the elimination of acts of vandalism in the immediate neighbourhood.

b) Space should be shaped on the grounds of the form of urban interiors, especially as far as workers' estates are concerned, to incite the existing social bonds and strengthen the ties with the place of occupancy. The scale of the existing buildings and the concentration of 8-24 families in a single building provide good opportunities for the creation of social spaces used for the interaction activities for a specific and restricted neighbourhood group.

The inhabitants participating in the surveys signal a critical attitude towards their place of occupancy; however, 80% of the respondents declare the will of further habitation in the same place. Furthermore, they have formed neighbourhood bonds in the course of long-lasting co-habitation. A very impressive example of such bonds is the case of Katowice-Dąb estate, where the inhabitants of the pre-war communal buildings were subjected to the resettlement procedure because of obligatory demolition works required for the construction of a transportation junction. They made one condition for the resettlement: future occupancy with their present neighbours.

Despite many instances of pathologies, the inhabitants feel tied to the place of their living, and it is them that constitute the main value of the discussed housing resources and it is them that should be the main beneficiaries of revitalization schemes. Thus, any and all revitalization projects should be based on the concept of public consultations and co-participation.

REFERENCES

- Housing and Health In Europe. Report on WHO Symposium Bonn 6-8 June 2001. WHO Regional Office for Europe, Kopenhaga 2001
- [2] Integrated approaches to housing and Health, Report on a WHO Meeting. Regional Office for Europe. WHO, Copenhagen 2000
- [3] *Jałowiecki B., Łukowski W.*; Gettoizacja polskiej przestrzeni miejskiej. (Gettoization of Polish city space). Scholar, Warszawa 2007 (in Polish)
- [4] Juzwa N., Wenklar M.; Uroda starych osiedli patronackich Górnego Śląska oraz szanse ich przetrwania; przykład dzielnica Bobrek-Bytom. Maszynopis 1995. (Beauty of old workers' settlements in Upper Silesia and their chances for outlasting; case study of Bobrek district in Bytom). Typescript, 1995 (in Polish)

- [5] Rewitalizacja historycznych dzielnic mieszkalno-przemysłowych. Idee – projekty – realizacje. Red. Juzwa N., Wódz K. Wydział Nauk Społecznych, Urząd Miejski w Bytomiu, Katowice 1996. (Revitalisation of living-industrial historic districts. Ideas-projects-realizations. Red. Juzwa N., Wódz K., Faculty of Social Sciences, Katowice 1996 (in Polish)
- [6] Review of evidence on housing and health. Fourth Ministerial Conference on Environment and Health, Budapest, Hungary 23-25 June 2004
- [7] Schneider-Skalska G.; Kształtowanie zdrowego środowiska mieszkaniowego. Wybrane zagadnienia. (Shaping a healthy housing environment. Selected issues.) Politechnika Krakowska, Kraków 2004 (in Polish)
- [8] Stadtbildprägende Arbeitersiedlungen. Erhaltung und Erneuerung denkmalwerter Arbeitersiedlungen im Rhein-Ruhr-Gebiet. (Workers' settlements shaping the image of the city. Maintaining and modernization of historic workers' settlements.) ILS Schriften, Dortmund 1992 (in German)
- [9] Szewczenko A.; Modernizacja starej zabudowy mieszkaniowej w aspekcie zdrowia jej mieszkańców. (Modernization of old housing in aspect of inhabitants' health). Praca doktorska, Gliwice 2007 (in Polish)
- [10] Szewczenko A.; Kształtowanie bezpieczeństwa w modernizacji starej zabudowy robotniczej przełomu XIX i XX wieku. (Shaping of safety in modernization of old workers's settlements developed at the turn of the XIX/XX century). Habitaty 2006. Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2007 (in Polish)
- [11] Woloszyn M.A.; Projektowanie rewitalizacji zabudowy czynszowej z uwzględnieniem uwarunkowań ekologicznych. (Design of revitalization process for tenement housing quarters, taking into account the ecological conditions). Wydawnictwo Uczelniane Politechniki Szczecińskiej, Szczecin 2005 (in Polish)
- [12] www.buildingforlife.org