

Contemporary Housing Indicators in Poland on the Wroclaw Study Case

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Abstract—The paper presents the results of research on trends in shaping of multifamily buildings in Poland on the example of Wroclaw, after Polish accession to the European Union. The study is conducted within the research project: “Trends in creating of multifamily housing development since 2004, on the Wroclaw study case” supported by Polish Ministry of Science and Higher Education and will be completed in November 2011.

The research involves multifamily buildings completed in the last decade, in term of fundamental urbanization factors such as: building’s coefficient area, useable area, green area (biologically active surface), intensity of building development, amount of dwellings, dwelling area, amount of parking places, numbers of floors, etc.

The analysis of these indicators was conducted based on the data obtained in the study of approximately one hundred new housing units, completed in Wroclaw. The analysis attempts to formulate the main trends in creating of housing policy in Poland during the last 10 years in reference to local urban policy.

Keywords—Housing indicators, multifamily housing development in Poland, multifamily housing transformation

I. INTRODUCTION

MULTI-FAMILY housing development in Poland in the last 20 years has experienced changes that as a result of system transformation since 1989 and since the accession to the European Union in May 2004 [4]. The transition of a centrally controlled economy to free market economy, opening up to the European Community market [4] have changed the face of multi-family housing development differentiating form, structure and standard [2].

Those changes have affected the condition of housing. On one hand the apartments have become available for everyone (except for financial aspects), competitive, varied and individual in the form, on the other hand the amount of dwellings, results in changes of standard of dwelling (quality, functionality, furnishings, site planning). Dwellings prices do not always reflect their actual value, standard or quality of materials, etc. In fact there are no regulations, to estimate housing development quality, to specify its "value".

Standard of housing development could be partially determined by measurable parameters and indicators. However, at present, those values (parameters, indicators), are not explicitly standardized, largely as the result

of the economic calculation of the investor, to a lesser extent of interventions of the authorities or legislation which is relatively liberal in Poland. The legal standards contained in The Building Code, [11] the regulation of technical conditions [9] and the regulation of the local land development plans [12,13], with to a small extent use the guidelines defined by parameters or factors. However, gradually, changes proceed.

II. THE MULTIFAMILY HOUSING DEVELOPMENT IN POLAND. TRANSFORMATION PERIOD

THE STATE AND STRUCTURE OF MULTIFAMILY RESIDENTIAL DEVELOPMENT

The period of transformation in Poland, which has taken place for over the last 20 years - the transition from a centrally controlled economy (state) to a free market economy and market integration within the Community market in the European Union [4] - expressively have affected the shape and form of multi-family housing. Before 1989, multifamily housing development was executed by the state [7]. After the period of systemic transformation since 1989, there have appeared a diverse entities performing multi-family housing development. [3]. As a result, after 15 years, the private sector (private capital) dominates in housing, and the State (public entities), has become a minority shareholder in the implementation of multi-family housing development [2],[TABLE I].

In these conclusion multifamily housing development of the beginning of 2004 was started to function in the European real estate market of European Union. Polish accession to the European Union, has resulted in the freedom of movement of the goods, services and people, that led to the development of multifamily housing, as the result of interest of foreign investors in the Polish real estate market [4]. There has been dynamical development and growth of housing, visible in amount of dwellings.

Therefore, the growth investment of multifamily housing, has contributed to the increased competitiveness amongst executors (investors), which has contributed to the diversification of residential buildings, relating to the client's expectations, in this way to acquire a client.

At present, depending on the form of housing and the executive entities it is possible to distinguish the housing building entities : municipal and social, public building society, companies, co-operative, for sale or rent, and the individual (private investor) [Fig.1 and Fig.2].

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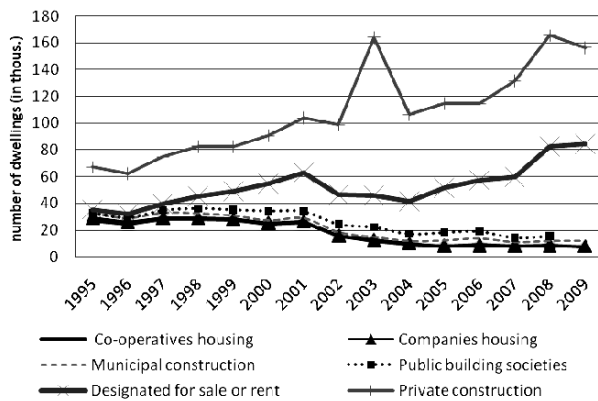


Fig. 1 Dwelling completed according to the participation of entities building the housing in Poland in years 1995-2009 (on the basis of data Central Statistical Office)

Until early 1989, the responsibility was vested to the State, to realize the multifamily housing building, because the public sector was the sole executor of multifamily residential buildings. After 1989, due to the systemic and economic, and social changes towards the free market economy, the multifamily housing development has undergone a complete transformation. [3]. The release from the supervisions of the state housing economy, that resulted that the public finances executed only municipal housing² (social dwelling³) by municipalities own budget, which in practice led to low share of municipal building stock (built in 1990 -2009) estimated on the 4.2%⁴[8].

This small share of the housing building market, realized of budgetary means of communes or cities, also resulted from the fact that besides execution, the municipal budgets are burdened by the existing housing stock. Often it is the buildings in poor technical condition (the old housing stock - pre-war and post-war building), which require not only the modernization, but costly renovations. As well as, commune's budgets, additionally, have to pay for insolvent, or burdensome tenants of social housing stock.

Land designated for municipal housing development, are situated mainly on the peripheries or less attractive land, although is not the rule, as well as in areas of city centers and downtown. Due to land high prices and the possibility of profit

² Municipal construction – housing construction primarily with a social or intervention character, realised entirely with gmina funds for the residential needs of low income households; the definition for: Central Statistical Office.

³ A dwelling fit for residing in due to furnishings and the technical condition; the space of rooms of such a dwelling for a household dweller of the renter may not be smaller than 5 sq.m, and in case of single-person household must be at least 10 sq.m, whilst the standard of such a dwelling may be lowered. They are dwellings rented out by a municipality on the basis of a social dwelling lease contract signed in accordance with the Act of 21 June 2001 on occupancy rights, municipal dwelling stock, and the Civil Code; (Journal of Laws, 2001, No. 71 item 733 with the amendments). the definition for: Central Statistical Office.

⁴ by (according to): Grażyna Milewska Dąbrowska: Standard budownictwa mieszkaniowego wielorodzinnego w miastach Polski w latach 1990-2004 (The standard multi-family housing in Polish towns between 1990-2004): in: Tendencje w kształtowaniu zabudowy mieszkaniowej współczesnych miast , pod red. H.Zaniewska, A.Tokajuk, Białystok 2006, p. 18-23;

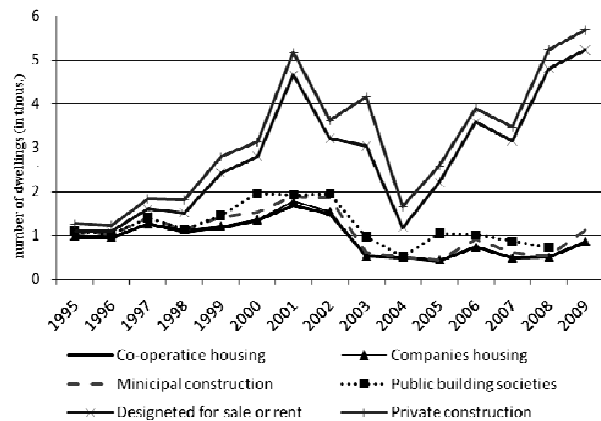


Fig. 2 Dwelling completed according to the participation of entities building the housing in Wrocław in years 1995-2009 (on the basis of data Central Statistical Office)

from the buying of plot in the center by a private investor, the municipality liberates these land from their investment, but still paying attention to maintenance of the residential function in the area of the downtown, and the city center. Standard of housing development is determined by the commune owners entity carrying out multifamily housing investment, taking into account the general rules being in force [9,11].

The average area of social dwelling (municipalities), completed during the period, equals 49.9 square meters [3]. Dwellings completed, in finished condition (painted walls, finished floor) are equipped with basic sanitary fittings (washbasin, bath, toilet bowl) and kitchen appliances (sink, cooker).

Public construction building society⁵ based on the Act of Law of 26 October 1995 "Some forms of supporting of housing construction" is indeed this form of housing which is co-financed by the state. Designated for this purposes The National Housing Fund⁶ [14] finances of 70% of the value, of which approximately 10% of investment costs after construction were written off. The Act determines who can apply for dwelling with public construction building society. Entities entitled by law to use the financial support of KFM, are: Public Building Society (TBS) (dwelling to let with higher rent) and housing cooperatives (dwelling for let). The National Housing Fund was liquidated May 31, 2009,

⁵ Public building society construction - housing construction realised by public building societies (operating on a non-profit basis), utilising credit from the National Housing Fund; the definition for: Central Statistical Office .

⁶ National Housing Fund (KFM) - established in The National Economy Bank (Bank Gospodarstwa Krajowego - BGK) Act of Law 26 October 1995 some forms of supporting residential construction (Journal of Laws of 1995 No. 133, item. 654, with the amendments, under the so-called the new housing order. The purpose of KFM, were to ensure the access to dwellings for people with average incomes, by financing of investments by the Public Building Society Construction (TBS) and housing co-operative (SM). Dwellings financed by the KFM were given to rent (TBS + SM) or allocated on the basis of tenants' rights to property (SM). The tenant (renter) is not possible to buy the property. In 2009, KFM was closed down, the National Economy Bank (BGK) took over functionality from KFM.

TABLE I
DWELLINGS COMPLETED IN THE YEARS 1995-2009 ACCORDING TO THE STRUCTURE OF ENTITIES REALIZING HOUSING DEVELOPMENT
(BASED ON THE DATA: THE CENTRAL STATISTICAL OFFICE)

Statistical Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	Participation of entities in housing construction over the period 1995-2003	2004	2005	2006	2007	2008	2009	Participation of entities in housing construction over the period 2004-2009	
Dwellings total number	67 072	62 130	73 706	80 594	81 979	87 789	105 967	97 595	162 686			108 117	114 066	115 353	133 698	165 189		160 002
	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Dwellings owned by housing co-operatives	26 800	24 641	28 131	28 039	27 490	24 391	25 835	15 406	11 957		9 432	8 222	9 032	8 240	8 647	7 260		
	%	39,96	39,66	38,17	34,79	33,53	27,78	24,38	15,79	7,35	29,05%	8,72	7,21	7,83	6,16	5,23	4,54	6,62%
Dwellings owned by companies	2 531	1 612	1 380	1 438	964	1 205	1 004	608	997		621	543	241	429	577	643		
	%	3,77	2,59	1,87	1,78	1,18	1,37	0,95	0,62	0,61	1,64%	0,57	0,48	0,21	0,32	0,35	0,40	0,39%
Dwellings owned by public building societies	0	59	277	1 422	3 356	4 019	6 765	4 653	5 856		7 197	5 412	6 013	5 281	3 205	3 600		
	%	0	0,09	0,38	1,76	4,09	4,58	6,38	4,77	3,60	2,85%	6,66	4,74	5,21	3,95	1,94	2,25	4,13%
Dwellings owned by a gmina (Municipal construction)	3 299	2 992	3 745	3 410	2 670	1 904	2 318	2 525	1 998		1 779	3 563	4 513	2 452	2 719	4 202		
	%	4,92	4,82	5,08	4,23	3,26	2,17	2,19	2,59	1,23	3,39%	1,65	3,12	3,91	1,83	1,65	2,63	2,46%
Dwellings owned by natural persons (construction designated for sale or rent)	2 767	2 691	5 099	8 963	14 195	20 728	29 403	21 970	23 844		24 230	33 047	37 960	45 653	66 703	72 326		
	%	4,13	4,33	6,92	11,12	17,32	23,61	27,75	22,51	14,66	14,7%	22,41	28,97	32,91	34,15	40,38	45,2	34%
Dwelling owned ⁷ (Private construction)	31 675	30 135	35 074	37 322	33 304	35 542	40 642	52 433	118 034		64 858	63 279	57 594	71 643	83 338	71 971		
	%	47,23	48,5	47,59	46,31	40,63	40,49	38,35	53,73	72,55	48,37%	59,99	55,48	49,93	53,59	50,45	44,98	52,4%

pursuant to the Act of 2 April 2009. Sureties and guarantees were taken over by the State Treasury to the Bank of National Economy (BGK) .

Pursuant to the Act, the National Economy Bank (BGK) will provide the entities with loans on preferential arrangements terms and will build the municipal technical infrastructure for housing construction, but its own behalf and on its own account⁸.

The share of public building society in completed dwellings has remained at the relatively low level [Table I, Fig. 1].

⁷ Housing construction realised by natural persons (regardless of whether they conduct economic activity), churches and religious associations, designated for the use of the investor and the investor's family or for meeting the residential needs of the investor's employees or for sale or rent (in order to earn a profit).

⁸ Journal of Laws, 02.04.2009 No 65 item 545, Article 15 of the Act eliminates the institution of the National Housing Fund by requiring BGK to the preparing the financial statements of the Fund within six months from the date of liquidation, at the same time the liquidation of the Fund's net assets will increase the statutory fund BGK.
(Source: <http://www.bgk.com.pl/krajowy-fundusz-mieszkaniowy-kfm>)

On average, 81,5% of public building society (TBS) dwellings are with the area less than 50 m² (of which 25.5% are apartments with the area less than 30m², 29,4% are dwelling between 30-39m²; 26,4% - dwelling of 40 to 49 m²), and 16% of dwellings with the area of 50-79 m², the rest 2,4% are flats with the area over 80m² [8,3].

Multifamily housing development realized by the private sector⁹ (defined on classification as for sale or let), with dwellings ownership¹⁰, at the beginning of 90's of the XX

⁹ Housing construction realised in order to earn a profit by various investors (e.g., development companies, gminas), excluding construction of natural persons conducting economic activity, included in private construction. This form of construction also includes construction of public building societies, realised in order to earn a profit (from rent or the commercial sale of dwellings), designated in full for building rental housing.

¹⁰ Dwellings, the ownership title to which belongs to a natural person (one or more, e.g. spouses), while this person:
- can have a share in a shared real estate, as the right related to the separate ownership title to a dwelling, e.g. located in a building included in a condominium. The ownership right to the entire real estate or only the dwelling with the assigned part of real estate (so-called share in a shared real estate) should be revealed in the land and mortgage register, and in case of lack of such, in other document certifying the ownership title.

century, was almost non-existent, which over time took on, significantly in the share of multifamily housing on the housing market.

Privately owned dwellings of multifamily housing are being constructed by private construction companies - development companies, and in a small extent - by housing co-operative.

The percentage of dwelling with ownership title, in years 2004-2009, equals 86% of total housing stock [Table I].

In case of constructed of privately owned dwellings (private construction, for sale or rent), there are no detailed technical guidance standard concerning the area size of dwelling (room), or other parameters determining the standard of dwelling. Free market and the general building law (The Building Code¹¹, The Technical Conditions¹²) determine the standard of housing development. In this form of housing buildings have become physically separated spaces (enclosed by a fence). Additionally, the mentioned multifamily residential, are monitored or overseen by the security agency worker. This is becoming the standard, not only in this type of multifamily housing developments. Legislative requirements [9,11-13] as well as limitations of site area, and the desire to maximize sales area, caused the increase of usable area changing attics who the residential function, and underground storey for garage.

Company housing construction is realised by workplaces of the public or private sector (excluding construction by natural persons conducting economic activity, included in private construction), designated for meeting the residential needs of the employees of these enterprises. In Poland there is a negligible share of the multifamily housing construction.

Cooperatives housing construction by definition, is realized to meet the housing needs of members of these cooperatives¹³. Some housing cooperatives build for sales to people not related with the housing cooperative¹⁴.

By definition private housing construction, includes the multifamily housing development realised by natural people (whether or not they conduct business activity),

- can be the owner of the whole real estate in which the dwelling is situated; for example an individual single family house,

¹¹ The Act of 7 July 1994. The Building Code, Journal of Laws No. 89, item 414 with the amendments.

¹² Regulation of The Ministry of Infrastructure / dated 12 April 2002 concerning the technical specifications which should be fulfilled building and their location. Journal of Laws No. 75, item 690 with the amendments.

¹³ Voluntary association with unlimited number of person, with variable composition and variable share fund, which, in the interests of their members engaged in business activities

¹⁴ The Act of 15 December 2000 on housing cooperatives(Journal of Laws No. 4, item 27 with the amendments), *art.1, para..2. Cooperative housing cannot the financial gain profit an expense of the members cooperative, , particularly with regard the transformation of rights to housing.*

2. Object of the cooperative can be:

- 1) constructing or acquiring buildings in order to establish for the benefit of members of cooperative tenancy rights to those in the dwellings buildings;
- 2) constructing or acquiring of buildings in order to establish for the benefit of members the separate ownership located in these buildings, dwellings or another premises, as well as the fractional participation in co-ownership in multi parking garages;
- 4) help to members build their housing or single-family homes;
- 5) constructing or acquiring of buildings, for rent or sale, which are located in of these buildings - dwelling or premises.

including churches and religious organizations, designed for the own use of the investor and his family, and to meet the housing needs of its employees, or for sale or rent (for profit). This definition includes the other individual entities, not included in the cooperative housing , companies housing, and of municipalities.

III. NORMATIVE GUIDELINES, PARAMETERS AND INDICES CHARACTERIZING MULTIFAMILY HOUSING DEVELOPMENT

At present, in Polish law existed in limited extent housing building indicators, as the guidelines are constituting design and execution for multi-family housing. Existing in the "The Building Code¹¹ "and "The Technical Specification, which should be fulfilled buildings and their location¹²" is specified in [9,11]:

- the conditions of building location, as to minimum distance of other buildings (also others facilities),
- the conditions of building insolation, and dwelling lighting (illuminance of the premises);
- the conditions of physical characteristic for premises (i.e. minimum and maximum width and height);
- the conditions and definitions(categories) for type and hight of buildings;
- the fire regulations (a fire conditions, area and classes of fire risk and fire protection);
- general rules regarding to: architectural fittings, standing finish fitting, sanitary fitting, fire equipment (mainly of enabling the connection of equipment to systems installation (pipes or cables) of: hydraulic, heating, water, sewerage, wiring etc.;
- a legal aspects concerning the execution of work and acceptance of the building, powers of persons engaged in independent technical functions in the construction sector.

The above-mentioned laws [9,11] are generally applicable regulations concerning the design and execution of buildings in general.

Last directive specific about parameters (as well as architectonic and urban planning) , was directive by Minister of Land Development and Environmental Protection¹⁵ (published in 1974), later, by the years of 80 of XX century, only recommended for use (now is no valid). Indeed, the directive were specified: the minimum usable areas of housing, number of rooms, usable floor space per 1 inhabitant, building intensity factor,¹⁶ etc.[10].

Today, free market, where private sector is the most dominant share holder in the implementation of housing development, determine the execute standard of multifamily housing There is no guidelines that specify the minimum areas of premises or other functional parameters related of the forming dwellings (i.e. metric area of dwelling or the other premises, density of building, etc.). The exception

¹⁵ Directive No. 9 of the Minister of Land Development and Environment Protection of 29 January 1974. concerning to indicators and guidelines for housing areas in cities

¹⁶ The ratio of building gross floor area to site area.

of abovementioned statement, can be partly subsidized public building society¹⁷ from the state, where for the type of building society, are specified minimum requirements for such dwellings in the surface area depending on the number of people, etc.¹⁸[14].

The law states in the form of the Act on Spatial Planning and Development¹⁹, to gives the local authorities [12] (local government, municipalities, or authorities of cities), the ability to specify in law local - the local spatial land development plan - specific guidelines as to the spatial development of facilities or buildings (an architectural and urban planning space) and the shaping of space in general (including of housing areas). As a result, the records of in the local spatial land development plan have been so different, that some of there were too restrictive (as a barrier to investments), the other too general (giving "free hand" for future investments).

The latest amendment of the Act on Spatial Planning and Development²⁰ has introduced clear requirements regarding to legislation in writing of the local spatial land development plan, specifying obligatory records as to parameters of building development [14]. Lack of entries the amended law, in the past, resulted in, depending on the realization of housing of an insufficient number of parking spaces, limited to a few percent of the bioactive area (green area), or a high intensity of building development. The amendment of Law on Spatial Planning and Development of 2010, has identified following factors concerning to writing of local legislation [14]:

Art. 15, para. 2.:

Item 6. Design principles and indicators of development land, the maximum and minimum the intensity of building, as the indicator gross building floor area in relation to the plot; the minimum percentage of biologically active plot with regard to the plot, the maximum height of buildings, the minimum number of parking places and method executing, the building lines and overall dimensions of building objects.

Item.8. Method of situating buildings in relation to roads and other publicly accessible land, also to borders of real estate adjacent, color settings of building and cover of roofs.

Item 10. Minimum area of the newly separated building plots."

Entering the abovementioned record, important to put in order of spatial policy and factors of spatial development, is further step in the through to defining normative guidelines for urban planning (still unregulated and still under discussion urban planners, and other cooperating profession) [2,3,5]. Lack of these indicators, in effect leads to densification of land development²¹, also limit the areas of undeveloped land, including green areas, etc.[5]. In the aftermath, the city could appeared in the situation with the high compaction of land development (density coefficient of building), and intensification of building development (coefficient building development), as well the communication problem, etc. [5].

IV. CONTEMPORARY PARAMETERS

OF MULTIFAMILY HOUSING IN POLAND

AFTER ACCESSION TO THE EUROPEAN UNION

- ON THE EXAMPLE OF WROCLAW MULTI-FAMILY HOUSING²²

The increase in number of completed dwellings, in Poland, has clearly stated in the years 2003-2008 [4], caused potentially by opening of the Polish market, and the functioning of within the European Union market. The influx of investors and foreign capital has contributed to a revival of housing construction situation in Poland, which is connected also with increased demand on housing amongst the "baby boom generation" of the 80's of the twentieth century (age group of 26-30). The growth of supply and demand, has been brought an increase prices, to within 3-4 years have increased more than twice in the major polish cities (Warsaw, Cracow, Wroclaw, Poznan). As resulted of housing development, the growth of investments - housing buildings and completed dwellings, the multifamily housing development became differentiated, as the means to attract client, and also, to live up of his expectations.

Multifamily housing development of Wroclaw, are realized since 2004, the biggest area are covered the southern and southwestern region of the city, including the suburban areas, (The dominant type of housing building on the suburbs is remained the single-family housing, in the following order : ribbon houses, semi-detached houses, and detached houses (i.e. villas)).On the basis of research conducted by the authors under which have been analyzed 108 of multifamily housing development in Wroclaw from the years 2004-2010, defined initial characterization of the building development to relative defined parameters..²²

¹⁷ Public building society construction - housing construction realised by public building societies (operating on a non-profit basis), utilising credit from The National Economic Bank (BGK), before from the National Housing Fund; the definition for: Central Statistical Office .

¹⁸ Regulation of Council of Ministers of the 7th November 2007, concerning conditions and procedures for granting credit and loans from the National Housing Fund and certain requirements relating to premises and buildings financed with these funds, Journal of Laws 212 item. 1556 with the amendments.

¹⁹ The Act of 27 March 2003 on spatial planning and development; Journal of Laws No. 80 item. 717 with the amendments.

²⁰ The Act of of 25 June 2010, to amend the act on planning and spatial development, the Act on the State Sanitary Inspections and the Law of Monuments Protection and conservation of monuments, Journal of Laws, No 130 item 871, with the amendments.

²¹ The authors in [5], have analyzed housing plots (situated in Wroclaw downtown), which, during the last few years were built-up, which led to disproportionate increasing of the indicators to the disadvantage of quarter (more: residents, cars, built-up area, less green area, worse ventilation and insolation, etc.).

²² On the basis of the research within the research project "Tendencies in the development of housing after 2004 on the example of Wroclaw". Research work financed by funds for science in the years 2009-2011 as a the research project.

Marcin Michalski research work, also financed by fellowship co-financed by European Union within European Social Fund.

In the period 2004-2010 the largest superficial of housing realizations, were constructed on sites away from the Wrocław center, of the share about 14% (housing investments of the plot area more than 2 hectares). The investments of housing developments for 28% accounted, which plot area were in the range from 1-2ha, the investments of 0.5-1 hectare were the most - 39%, and the 0.5 hectare below - 19%.

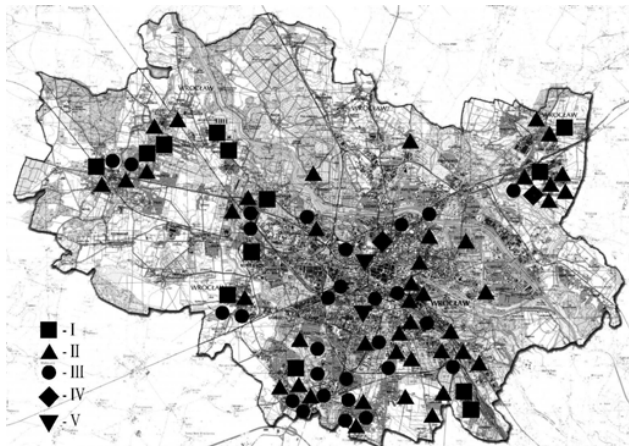


Fig. 3 The indicative Map of Wrocław with the location of housing investment, according to the values of coefficient building development (the basis on the data of the research more than 100 of multi-family residential developments, carried on by author). Key – the value of coefficient building development, regards to pictogram: I : <0.25 ; II : $0.25-0.35$; III: $0.35-0.45$, IV: $0.45-0.5$, V: $0.5 <$.

The percent of plot built-up, of multifamily housing development (also called coefficient of building development) covered in the range of $0.25-0.35$ of value coefficient, are covered the biggest share of housing building - 45%, while the coefficient in the range from 0.35 to 0.5 , at 23%. These investments were located mainly in the border of down town and suburbs, or developmental areas (in borders city). The realizations with highest coefficient of building development²³, means more than 0.5 , is estimated at approximately 7% (in the center and the down town), while the remaining 25% of lower values than 0.25 (situated on the areas developmental). Looking at the Fig.3. showing the realizations, in the Wrocław borders, in terms of value the coefficient of building development, the coefficient of the lowest value of 0.25 , is related to housing realizations, situated on the areas of extensive built-up (in the borders city). The high coefficient of building development is characterized of built-up areas in the downtown, additionally, also called. areas developmental of housing building (which are built-up intensively eg. Nowy Dwór, Pilczyce, Maślice, Leśnica, Brochów). However, there is no rule, by which, the lowest coefficient characterized by an area of the suburbs, and the highest coefficient - areas of the city center and down town.

²³ The building development ratio (building) to plot area.

The existing building development, in the city's district with a significant cultural value (urban design, landscape value, historical), as the area of Wielka Wyspa (includes: Biskupin, Sepolno, Szczytniki, Zacisze), is in fact, a restriction for the increasing coefficient of building development. The buildings constructed, in a greenery of villa buildings (as in case of Wielka Wyspa), are refer, to context requires, resulting of the percentage of building development of relatively low value (~ 0.25).

Regarding to the Fig.4. are shown the multifamily housing construction according to coefficient of intensity building, it can be seen a relation between of housing building location

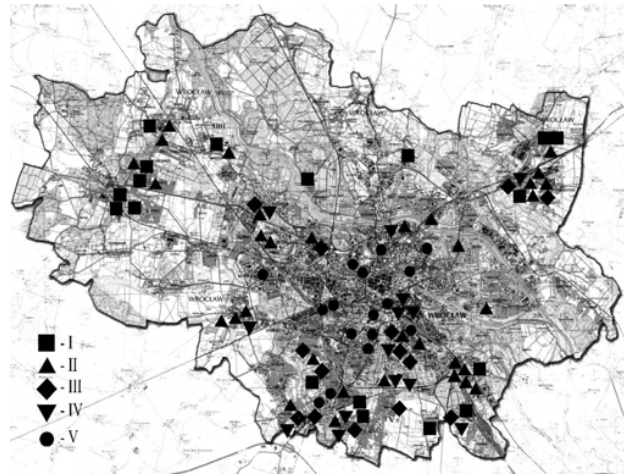


Fig.4 The indicative Map of Wrocław with the location of housing investment according to the values coefficient of intensity building (density) (the basis on the data of the research more than 100 of multi-family residential developments, carried on by author). Key – the value of coefficient of intensity building, regards to pictogram : I : 0.5 to 1.0 ; II : $1.0-1.5$; III: $1.5-2.0$, IV: $2.0-2.5$, V: $2.5 <$

and the values coefficient. Realizations of housing building, characterized by a low coefficient of building intensity, in the majority, are located on peripheral areas within the administrative boundaries of the city, or with extensively built-up (open development building, disperse building development). However, the closer to the center (to the old town and the downtown) and also the built-up areas of intensively (onetime the areas of old villages, in the XX th, are incorporated to the town) the coefficient of building intensity, reaches the highest value. An extremely high coefficient of development intensity occurs rarely in several cases related to the execution of high-rise buildings (skyscraper) in the area of Old Town and down town.

The share in the site planning of plot: building development, a surface with hard standing (paved access roads, car parks) for vehicles and pedestrians, compared with surfaces of biologicaly active, is predominant. Among the analyzed realization of multi-family housing development, approximately 34% had a coefficient of greens biologicaly active from 0.3 , to 0.4 area of parcel, followed by 30%

was characterized by the coefficient of greenery biologically active in the range of 0.2-0.3. The smallest proportion of greenery, under 0.2 coefficient value, occurred in 13% of the investment, while in the case of 7% investment, the share of green biologically active was higher than 0.5. In the remaining 16% of green space the realization multifamily housing building, the coefficient biologically active, was in the range 0.4 -0.5. In general, it would be concluded, the closer to the city center the share of green areas is lower. However, due to arranged green areas on rooftops buildings or at slab of underground car park, or on the terraces, these area, in accordance with law in force, is increasing the percentage of greenery biologically active, are calculated as 50% the area, as the greenery arranged on the biologically active grounds. In view of the prices real estate and economic profit with the sales area of parcels, (the higher prices the closer to the center), in the city center is the minimum share of green areas in the plot area, often as the greenery (green terraces) arranged on the rooftops, terraces or garage roof.

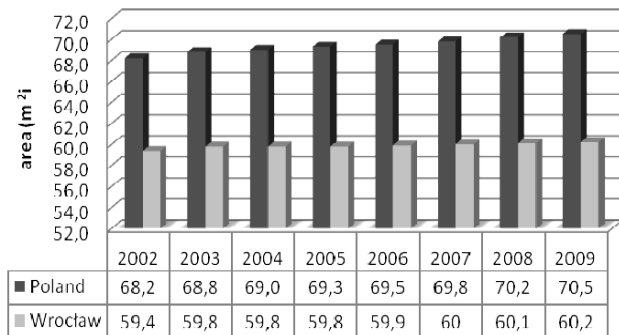


Fig. 5 The average area of dwelling, for Poland (Total) and for Wrocław. (on the basis of data Central Statistic Office)

The prices of building plots, thereby smaller and more limited of plots surfaces, also an investor expectations to profit, growth price the building sector in general, these cause increase intensity of building, mainly in the Downtown areas, where building development are being dense compacted [5].

Most of housing investments (in Wrocław) was realized in the building complex, where the number of dwellings amount to 100 to 200 - approximately 40% of the investment, followed by 200-300 dwellings, estimated about to 30%. The other 20% are housing building complex with less than 100 of dwellings and also intimate housing buildings (mostly to 20-40 dwellings). Minority, only less than 10% of housing complexes, were realized with more than 300 dwellings in the complex (primarily located in areas furthest from the center).

Since the beginning of 2000 has appeared the tendency of gradual growth in the average dwellings area for both the Polish and Wrocław (Fig.5). In the realizations of the predominant 2-room apartments from 45 -85%, followed by 1-room and 3-rooms, others: 4-room, 5-rooms and 6-rooms dwellings accounted for a negligible percentage.

In fact, less demand to multi-rooms dwelling for potential client, is resulted of choose the house single-family, is more attractive and comfortable form for family living regarding to their family's needs. In conclusion, multi-room dwellings are less competitive to single-family housing, regards to prices, space living, usable areas, etc.

The dwellings area 1-rooms were contained to ranged from 25 to 38 m², 2-rooms from 35 -52 m²; 3-rooms between 47 - 68 m², 4-rooms from 61 to 91 m², and the 5-rooms with areas from 84-110m². Varied surface dwellings, is due to functional arrangements of dwellings, for example the kitchen combined with living room (optional dining room), additional premises (pantry, toilet, wardrobe, second bathrooms, etc.).

According to data of Central Statistical Office (table), the average area of dwellings had an increasing trend in the during the period 2002-2009²⁴. In Wrocław - the average usable area dwellings in 2002 amounted to 59,4 m², while in 2009 - 60.2 m². The average of the country has increased from 68,2m² in 2002 to 70,5m² in 2009.

Comparing to Polish, smaller growth of the average usable area for Wrocław, is a result of growth the price per square meter of apartment, which increased over twice in 3 years, with a relatively small increase of salary. Limited loan abilities of the future customers, had resulted the demand of multifamily housing, dominated by small and medium-sized dwellings, mostly 2-rooms.

V. CONCLUSION

The multi-family housing construction, have been realized in the last 20-year period, during the period of the political, social and economic transformation, have undergone changes, tracking the standard housing building in the European Union countries. [8] The opening of community market's of the European Union accelerated the process of transformation as well.

Increase the quantity of dwellings and housing buildings (multifamily housing) in the period after Polish accession to the European Union, have necessitated of the competitiveness among of realized investments. The investors wants to acquire the clients, have been trying to differentiate their offers, raising the standard of their realization.

Although of the last six years in Poland, is appeared the symptoms that indicate the changes of multifamily buildings [4] "in plus", these changes are still small, in general. The likely crucial factor affecting to the development of housing construction, was, as called: the economic crisis, started in 2008, which has been influenced into decrease in demand, and additionally in the meantime the growth in housing prices bounced off negatively (e.g. the most popular 2-rooms dwellings with still smaller usable areas, be stopped a tendency of growth dwelling area and the share of the multi-rooms of dwellings, larger than 2-rooms dwellings). Land development of housing areas is simpler than the housing estates of the years 1970-

²⁴ Data due to the change of statistics classification are available since 2002

1989 [1] had realized by the State and regulated by detailed urban planning standards [6,7,10]. The present housing estate, realized mainly by private entities, often has poor access of social infrastructure (executed by commune).

This is due to discrepancies between the housing investment locations and the law in force for determining the spatial policies of the city. - the locals spatial development plans. It should be noted that are growing number of the basic services (i.e. small shops, small services), or places for housing communities to recreation, or housing estates with swimming pool, cafes, offices or other services to meet the residents needs (i.e. private kindergardens). It is observed increasingly more accuracy in relation to site development: playground, community residential square, as well the surface of biologically active - i.e. greenery, small garden.

The parameters and indicators characterizing the housing buildings, show an improvement of terms and environmental housing, but only the future could show the scale of changes. If nothing will happen, which could lead to collapse of global or European economy, as it did after 2008, the changes will be more evident.

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