

Development of housing estate idea on the turn of the 19th century

KINGA KIMIC, MARTA TRUSZKIEWICZ

Department of Landscape Architecture, Warsaw University of Life Sciences – SGGW

Abstract: *Development of housing estate idea on the turn of the 19th century.* Housing problems caused by the processes of industrialization were characteristic for European towns in the 19th century. The improvement of that situation became one of the most important aims to tend for planners. The necessity of towns' reorganization forced new ideas of creation different concepts of housing estates which became the pioneer activity on social and spatial field – e.g. industrial housing, the neighborhood unit, social housing estate, soviet ideas of social unit, etc. The comparison analysis of their main elements concerned: rise period, unit area, localization and the founder of unit, unit layout, green space arrangement, transport arrangement, site organization, unit function, social living organization, etc. The valuation of them showed that independently of the time they come into existence all of them concerned the spatial, social and economic aspects. Pioneer concepts became very popular ways of towns' structure creation and the base for housing estate movement. The main rules of selected concepts showed the ways of solving housing problems what is the base for today realized revitalization processes of housing estates created in different years of the 20th century.

Key words: housing estate, industrial housing, the neighbourhood unit, social housing estate.

INTRODUCTION

Housing problems caused by the processes of industrialization were characteristic for European towns and intensified at the end of the 19th century. The improvement of that situation became one of the most

important aims to tend for town planners. The necessity of towns' reorganization forced new ideas of creation different concepts of housing estates, which became the pioneer activity on social and spatial field.

MATERIALS AND METHODS

The research concerned selected pioneer ideas and concepts of housing estates of the end of the 19th century and the 1st part of the 20th century. The aim was to find out the reasons of new concepts creation and their main rules, which decided of housing estates organization and functions. Following concepts were investigated: industrial housing, the neighbourhood unit, social housing estate, soviet ideas of social unit. The comparison analysis concerned selected elements of their structure and organization grouped in 3 main aspects:

- spatial aspects concerned units area, layout, transport arrangement, site organization connected with main service, green space arrangement;
- social aspect concerned social stratum with predominant share, main functions of units and forms of social living organization;
- economic aspect concerned founders of units, stage of units' independence

connected with their maintenance after the building.

The results gave the possibility to complete the similarities of selected pioneer housing units concepts' elements in relation to selected aspects.

DEVELOPMENT OF HOUSING ESTATES IDEA

The dire necessity of towns reorganization as the effect of social and economic changes happened in the 19th century forced the creation of *industrial housing* concepts (housing estates stayed under patron protection) (Jałowiecki and Szczepański, 2006). This idea was subsequent of the industrialists initiative who were the owners of all: factories, housing estates and services. The housing estates were founded to house only their factory

workers – to give them places for better living. The other aim of it was to bring industrialists the profit and increase the output (Gronostajska, 2007; Jałowiecki, 1972; Jałowiecki and Szczepański, 2006). Industrial housing estates built with traditional materials resembled rather the factory settlements where people subsisted on factory and lived for factory. That places didn't give workers the possibility to organize their social or cultural life (Chałasiński, 1948). One of the examples of industrial housing was Port Sunlight created for soap factory workers in 1880 near Liverpool, England. The estate was created by one-storied houses built around green courtyards and became the high standard, model village with rich program of schools, playgrounds, clubs, art galleries, sport places, etc. (Fig. 1). However as the opposite of that good

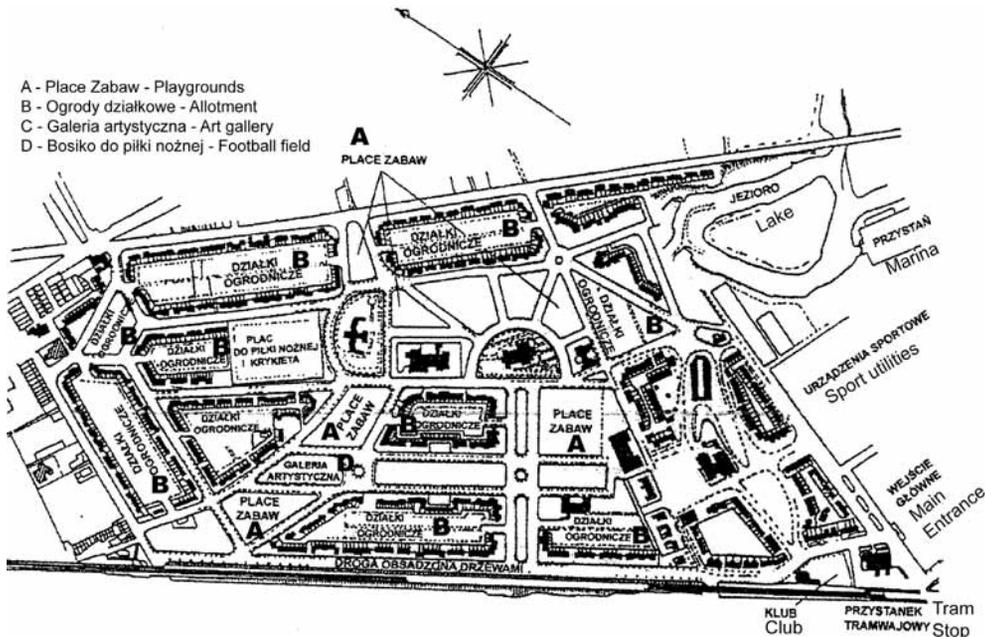


FIGURE 1. The garden village Port Sunlight in the suburbs of Liverpool. An example of industrial housing estate from 1880 (Uittik, 1960)

existed villages there were poor districts of very low living-standard in big towns (Benevolo, 1995). Industrial housing estates in Poland developed in towns of textile industry (Łódź, Żyrardów – housing estates had low-density of buildings' structure and much place for greenery) and mining-villages (Henryków, Dąbrowa – housing estates had close-order of buildings' structure and not much places for greenery) (Fig. 2).

There were made many new concepts of town planning on the turn of the 19th century e.g. *linear city* by A. Soria y Mata (presented in 1892) and also *linear city* by H. Gonzalez de Castillo (1919), the *idea of garden city* by R. Owen (1800), C. Fourier (1841–1848) and E. Howard (published in 1898 and 1902), industrial city by T. Garnier (1904 and 1917), and contemporary city by Le Corbusier and P. Janeart (1922) (Tołwiński, 1947; Pawłowski, 1972; Guzicka, 1974; Ostrowski, 2001). That period was considered to be the foundation of social and economic aspects perceived as one of the most important of towns planning.

Very low standards of living in towns, especially in their destroyed poor districts, improved changes. The period between the two World Wars was connected with progress of flats number (Burnet, 1978). At the same time three concepts of housing estates were newly created: *the neighbourhood unit*, *social estate unit* and *soviet ideas of social existence*.

The idea of “*The neighbourhood unit – A scheme of arrangement for family-life community*” was adapted very fast by west and north European countries, and then by middle-west Europe. It was created by American sociologist Clarence Perry, as a part of an extended process of regional planning for the New York area between 1922 and 1929 (Czarnecki, 2001). The main aim of his concept was to find a scheme for minor urban unit that would be self-sufficient and still related to the larger whole (Fig. 3). He proposed planning principles for the comprehensive layout of residential areas:

- The population and geographical size of neighbourhood unit was limited; the population of about 3000 to 10 000 is

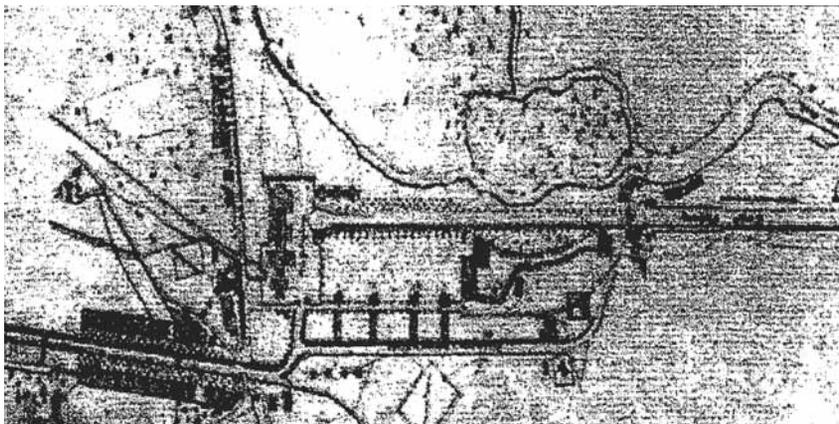


FIGURE 2. Henryków. The site of metallurgical factory and workers estate from 1844. An example of industrial housing estate by the mining factory (Dumała, 1974)

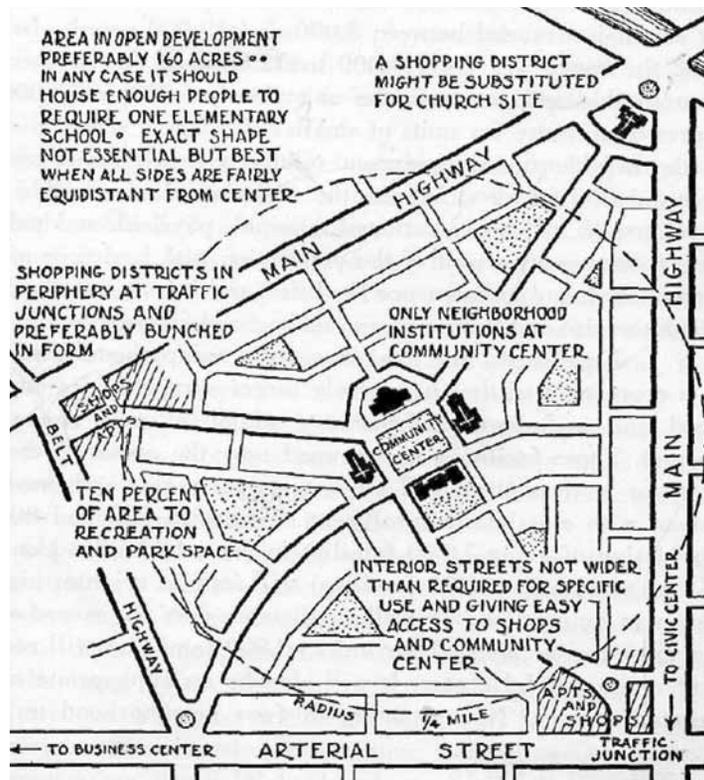
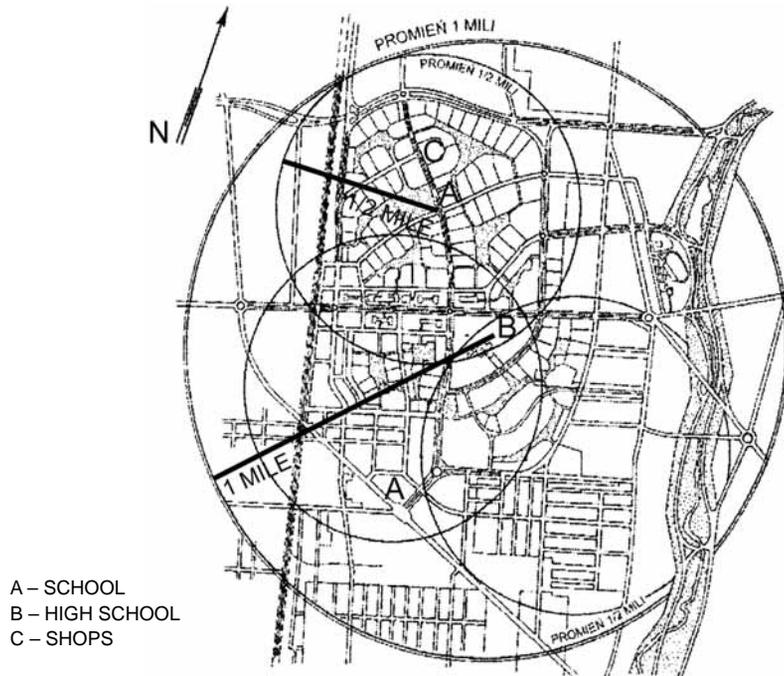


FIGURE 3. Neighbourhood unit by C.A. Perry. Project of neighbourhood unit from 1929 (Jałowicki, 1972)

- large enough to supply a full variety of local services with its own primary school of about 1000–1600 children;
- The school, along with other communal facilities like hall, library and church would be centrally located;
- No playground, primary school or local shopping area should be more than a quarter of a mile (0.4 km) from the houses they serve;
- The neighbourhood would be surrounded by arterial roads; the arterial road was to discourage through traffic into the residential neighborhood, but also to give a distinct boundary to the neighbourhood;
- The shopping area would be at the periphery of the neighbourhood, along the arterial road;
- The roads within the neighbourhood would be arranged in the system of the small local roads organized as ‘cul-de-sac’ or dead-end roads and collector roads that joined the local roads to the arterial roads;
- There was a system of small parks and recreation areas to serve the children and youth. 10% of the total area was predicted as a reasonably good provision.

The Clarence Stein concept called *The Redburn System* (1942) based on

a)



b)

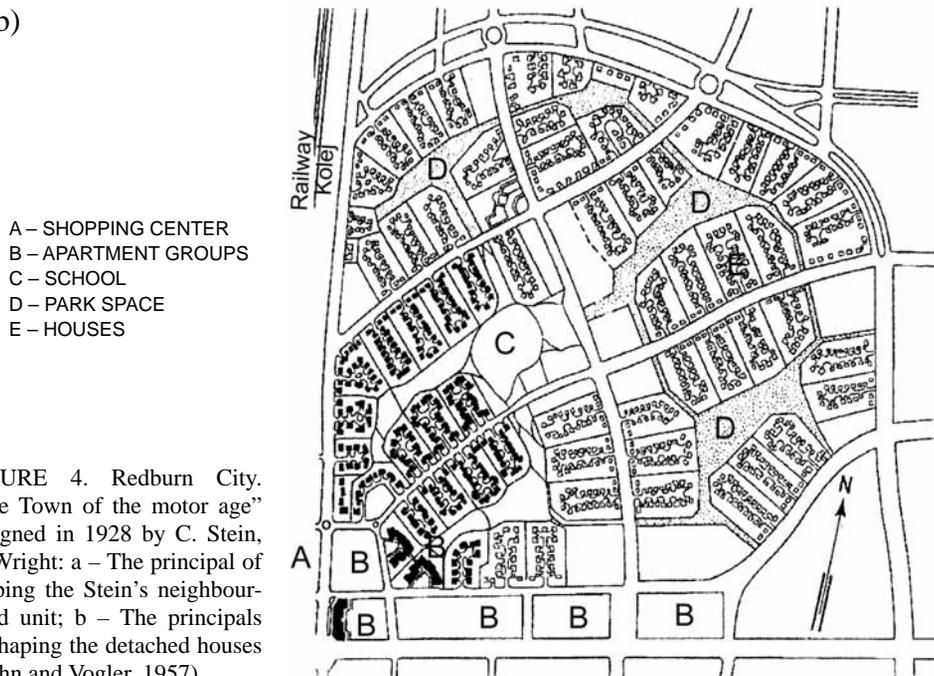


FIGURE 4. Redburn City. „The Town of the motor age” designed in 1928 by C. Stein, H. Wright: a – The principal of shaping the Stein’s neighbourhood unit; b – The principals of shaping the detached houses (Kühn and Vogler, 1957)

his project for Redburn Estate near New York, designed in 1928 with H. Wright. The main idea of it combined certain elements of *The Neighbourhood Unit* and the Howard's idea of *garden city*. Main aims of the concept were to reverse small buildings by “super blocks”, create four categories of road system with different functions, separate road and pedestrian traffic. Open privileged rooms to green areas and create gardens and public parks in courtyards surrounded by “super blocks” (Ostrowski, 1975) (Fig. 4).

The idea of social estate (*Siedlung*) was newly created in Germany as the result of flats deficit after the 1st World War (Chmielewski and Mirecka, 2001; Syrkus, 1984). 21 models of one-family

cheep houses of the *Weissenhof Housing Estate* were realized by famous architects (e.g. Mies van der Rohe, Le Corbusier, Gropius and Taut) for the competition organized on “*Die Wohnung*” exhibition in Stuttgart in 1927 (Fig. 5).

Next years of economic crisis and unemployment forced the government to create new housing program for poor people. Modern *social estates* were created with low costs of building and living (Wojtkun, 2004; Wołodźko, 2005). The linear system of houses arrangement secured the optimal flats' insolation, isolation from the streets and places for gardens, making the housing estates more healthy (Czarnecki, 2001; Gronostajska, 2007).

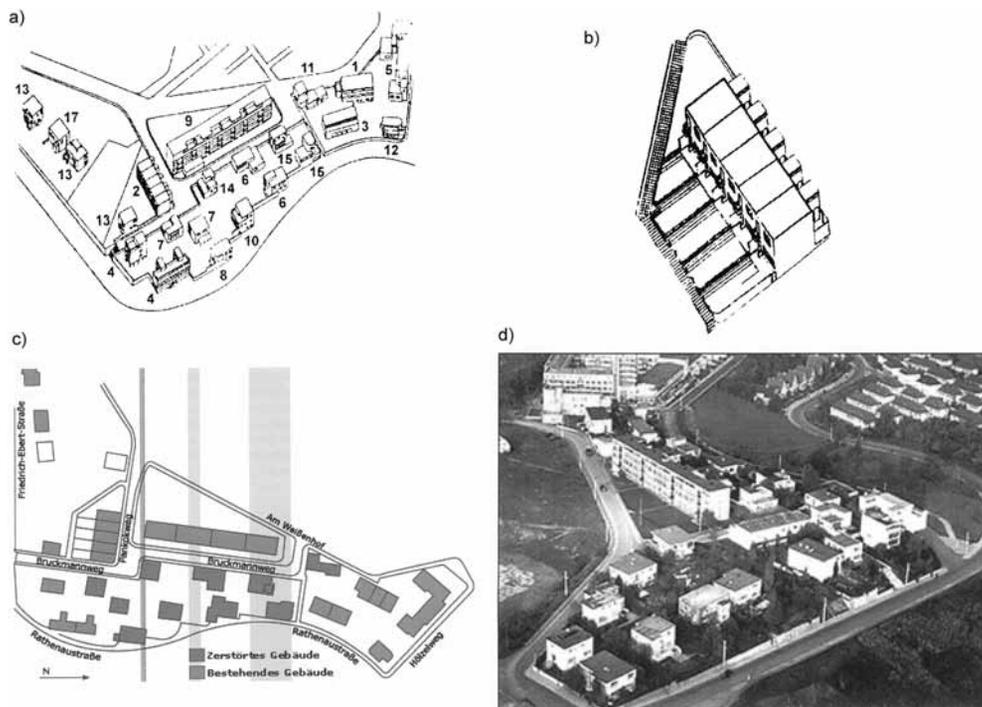


FIGURE 5. Werkbund. „Neues Bauen” exhibition. Weissenhof estate in Stuttgart from 1927: a – The site of estate; b – Terrace houses of J.J. Quada (Gieselmann, 1979); c – The view of estate; d – An aerial photograph of housing estate (Gronostajska, 2007)

Main aims of the social existence idea created in the 2nd part of the 20th century in Soviet Union were connected with concepts of small flats with collective service to equalize social status of all inmates (Orlańska, 1968). Big housing estates with giant buildings corridor formed colonies that create people life by specific spatial and functional division. They were designed to give the possibility to realize main life processes: sleeping, resting, eating, cultural and social development, education, good health condition, etc. (Wojtkun, 2004; Goldzamt, 1971; Jałowiecki and Szczepański, 2006) (Fig. 6). Concepts of social units organized the belt system with functional separation of: living zones, traffic, green spaces with recreational zones for children and adults, green spaces with services, etc. The concepts of housing estates were concentrated on main spatial aspects connected with standardization of building rules realized by more compact buildings arrangement and minimalization of buildings costs (Wojtkun, 2004). The comparisons of main and character-

istic elements of selected housing units are completed in Table 1.

The housing estates, as a way of town reorganization, consisting of individual buildings were characteristic for all countries. The rules of their creation and arrangement were listed in Athenian Chart in 1933 during the 4th CIAM Congress (rewrote in 1941) and concerned main aspects of housing estates:

- the hygienic aspect connected with the sun and greenery influencing on peoples life;
- the spatial aspect connected with separation of buildings and functional zones connected by transit roads (Jałowiecki and Szczepański, 2006).

CONCLUSIONS

Pioneer concepts and ideas of housing estates created in different countries from the end of the 19th century were a result of bad economic and social situation of those times. The valuation of selected concepts give the possibility to point out similarities in three aspects.

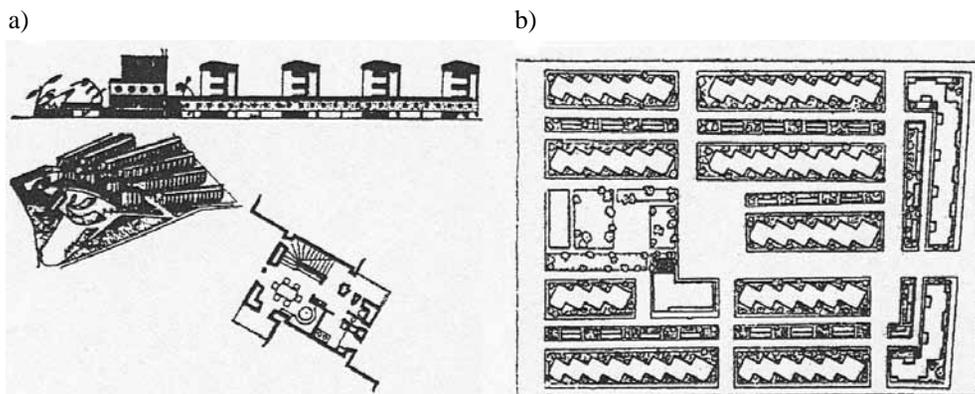


FIGURE 6. Soviet social – functional concept of housing estate from 20. of 20th century: a – „Model workers housing estates” from 1922 by K. Mielnikov; b – United housing estate with collective service for Samara from 1927 by F. Białostocka, Z. Rosenfeld (Goldzamt, 1971)

TABLE 1. Comparison of main characteristics of selected housing unit concepts of the turn of the 19th and the first part of the 20th century

Unit name	The Neighbourhood Unit			Social estate	The soviet ideas of social existence arrangement
1	2	3	4	5	
Author of concept	Initiative of factory owners organizations	C.A. Perry	C. Stein / H. Wright	Representatives: B. Taut / M. Wagner / E. Engelman / Otto Haesler / Walter Gropius / J.J.P. Quad	K. Mielnikov „model (exemplary) workers estate” S. Serafimov – collective house M.A. Ochitowicz / M.J. Ginzburg / W.N. Wladimirov / M.O. Barszcz – settlers lines – linear city
Rise period	19th century the beginning of 20th century	1923	1942	1925	1923 workers estate (worker housing) 1921 collective house 1930 settlers line (linear city)
Unit area	From several to a few hundred of block of houses	About 45 ha	Different size units, from few houses to few dozen of apartment groups	50 ha	e.g.: 5 housing plants – 600 ha area settler lines (linear city) – 25 km length
Unit layout	Low-density, one or three storey detached houses, later blocks of flats arranged around courtyards, bungalows or one to five storey block of houses, frequently axel layouts directed on main factory building	Low-density, exact shape not essential but best when all sides are fairly equidistant from center with shopping districts preferably in periphery at traffic junctions, the maximum radius for walking distance from the home to the community center should be only 1/2 mile (402 m)	„Superblocks” – detached houses, the elementary school is the center of the unit and in a one-half mile radius of all residents in a neighborhood	Recurrent and typical components of buildings, linear or perimeter block organization	Recurrent corridor buildings form giant colonies – collective house, Central city strip is aligned parallel to a strip of factory production and separated by a greenbelt that keep the noise and pollution of the factory from the housing zones separated from factory zones – settler line (linear city)

Green space arrangement	Rear or within courtyards gardens, often park spaces, landscapings and recreational zones	10% of site is designed for green spaces, landscapings and recreational zones	The house being reversed so that the living rooms face on the rear garden with pedestrian paths leading to the continuous park space, residential streets are isolated with greenery, introduction of public green spaces to the estates' interiors	Introduction of public green spaces to the estates' interiors.	Separation of green spaces, landscapings, recreational zones for children and adults – workers estate (worker housing) Greenbelts (with commercial, educational and cultural facilities), parallel strips of recreational zones and cultivations – settlers line (linear city)
Transport arrangement	Residential streets suggested as 'cul - de - sac', 'dead - end' or service roads isolated with greenery	Residential streets suggested as 'cul - de - sac', 'dead - end' or service roads eliminate through traffic	Segregation of road and pedestrian traffic	Segregation of road and pedestrian traffic	Traffic belts – settlers line (linear city)
Site organization	Unit equipped with ancillary services such as: restaurants, inns, community facilities – market, shop, post, laundry, baths, temple, (church), managing buildings, hospital, garden etc.)	Unit equipped with basic commercial and social services. A public community center, educational, cultural facilities, neighbourhood services such as: small shopping centers for daily needs and first of all primary and secondary schools are embedded within the neighbourhood.	Unit equipped with basic commercial services (1 or 2 major commercial centers) and social services (primary and secondary school, high school)	Unit equipped with basic commercial services, frequently non define.	Lot of collective services (living and cultural); the following needs were taken into consideration: supply and food; culture, education, upbringing, hygienic and sanitary needs, medical care.
Unit function	Residential	Residential	Residential	Residential	Residential
Social living organization	Worker housing – workers knowing each other from work in factory	Possibility for forming the neighborhood's relations in spatial separated estates' interiors	Neighborhood's relations formation within „Superblocks“	Neighborhood's contacts through the use of common commercial and social facilities.	Collective house – Contact through the common centralized living facilities, professional uniformity of collective occupants – family institution and household elimination; Settlers line (linear city) – leveling differences between village and city

Table 1. (continued)

1	2	3	4	5
Founder of unit construction	Factory owner	State	State with housing associations collaboration	State
Stage of unit independence	Self-sufficient	Self-sufficient	Self-sufficient	Self-sufficient
Social stratum with predominant share	Workers, factory workers	Lower class community	Initially unemployed and low social, existence and possession status persons, workers, later intelligentsia	Factory workers – occupants with similar social and professional status
European and word examples	Saltaire w Yorkshire (1851–1853) Kronenberg (1875) Port Sunlight (1880)	Design concept of neighbourhood unit in studies for New York and suburban zone's development spatial scheme (1929)	Britz near Berlin (1925) Dammerstock w Karlsruhe (1928)	Kuźnieck (1928) – collective house Magnitogorsk (1930), Socgorod (1930) – settlers line (linear city)
Polish examples	Łódź (district Nowe Miasto 1823–1830) Żyrardów (1863–1871) Henryków (1838–1841) Huta Bankowa (1835–1842) Giszowiec (1909–1914) Nikiszowiec (1908–1911)	Elements in polish estates from 60's and 70's of 20th century	Piaszów Estate in Krakow (1926–192) Warsaw's esates: Pionier (1928) WSM Estate on Rakowiec (1941–1942) Kolo Estate (1947–1950)	–

Spatial aspect:

- units layout concerned loose building arrangement with tendency to axial (*industrial housing estate, the Neighbourhood Unit*) developed to the linear layout created by structurally repeating elements of architecture (*social estate*);
- housing estates' organization guaranteed the social service realized by commercial, educational and cultural facilities;
- the area:
 - gave a possibility to develop in arrangement with main rules of their spatial organization from few buildings to complex system (*industrial housing estate, the Neighbourhood Unit of C. Stain/H. Wright*);
 - guaranteed full service in limited area (*45 ha in the Neighbourhood Unit of C. A. Perry, 50 ha in social estate*);
- the roads categories of different functions secured the safety walk for pedestrian and easy access to all places and services;
- the spatial division guaranteed the place for public green space (parks and gardens) created in different scale – one of the most important housing estates structure element of spatial, social, aesthetic and scientific functions.

Social aspect:

- residential function was the main aim to execute in pioneer housing estates concepts (to secure the sufficient flat number for social needs);
- very important aim was to create suitable living standards for people working in towns by secure the necessary minimum wage (on that field were created general principles of architecture, spatial division, main service, etc.);

- housing units gave the possibility to create and maintenance the social ties on different levels: between people living in selected urban interiors and between people that met during exercise of accessible for all service;
- modern concepts were connected with the sun influence on the people's existence – the most important thing was to create healthy, good insulated and airing flats and places in the housing estates.

Economic aspect:

- housing units' building were financed by private founders (*industrial housing estate*) or by the government (*the Neighbourhood Unit, social estate*);
- the program of all concepts planned that housing estates were self-sufficient in economic aspect by owing social service realized by cultural, educational and commercial facilities.

Concepts of housing units created at the end of the 19th and in the 1st part of the 20th centuries initiated the development all ideas connected with social, spatial, functional, scientific, and economic aspects, creating the best place for people living in towns. That rules became very important instructions for planners working on creation modern and functional housing estates in 21st century. This knowledge is the used in revitalization programs that are based on similar aspects today and should be adapted for present-day needs.

REFERENCES

- BENEVOLO L., 1995: Miasto w dziejach Europy, Oficyna Wydawnicza VOLUMEN, Warszawa.
BURNETT J., 1978: A social history of housing. London: Methuen & Co.

- CHMIELEWSKI J.M., MIRECKA M., 2001: Modernizacja osiedli mieszkaniowych. Oficyna Wyd. Politechniki Warszawskiej, Warszawa.
- CZARNECKI W., 2001: Historia architektury, rozwoju miast i urbanistyki: elementy. Wyd. WSiFiZ, Białystok.
- DUMAŁA E., 1974: Przemiany przestrzenne miast i rozwój osiedli przemysłowych w Królestwie Polskim w latach 1931–1969. Wyd. Ossolineum. Wrocław–Warszawa.
- GIESSELMANN R., 1979: Wohnbau. Friedf. Vieweg & Sohn Verlagsgesellschaft mbH, Braunschweig.
- GOLDZAMT E., 1971: Urbanistyka krajów socjalistycznych – problemy społeczne. Wyd. Arkady, Warszawa.
- GRONOSTAJSKA B.E., 2007: Kreacja i Modernizacja Przestrzeni Mieszkalnej. Teoria i Praktyka na Przykładzie Wybranych Realizacji Wrocławskiej z lat 1970–1990. Oficyna Wyd. Politechniki Wrocławskiej, Wrocław.
- GUZICKA J., 1974: Organiczny zespół miejski. PWN, Warszawa.
- JAŁOWIECKI B., 1972: Miasto i społeczne procesy urbanizacji. PWN, Warszawa–Kraków.
- JAŁOWIECKI B., SZCZEPAŃSKI M.S., 2006: Miasto i przestrzeń w perspektywie socjologicznej. Wydawnictwo Naukowe Scholar, Warszawa.
- KÜHN E., VOGLER P., 1957: Medizin und Städtebau, München-Berlin-Wien.
- ORLAŃSKA B., 1968: Warszawskie osiedla ZOR. Wyd. Arkady, Warszawa.
- OSTROWSKI W., 1975: Urbanistyka współczesna. Wyd. Arkady, Warszawa.
- OSTROWSKI W., 2001: Wprowadzenie do historii budowy miast. Ludzie i środowisko. PWN, Warszawa.
- PAWŁOWSKI K.K., 1972: Tony Garnier – pionier urbanistyki współczesnej. PWN, Warszawa.
- SYRKUS H., 1984: Społeczne cele urbanizacji. Człowiek i środowisko. PWN, Warszawa.
- TOLWIŃSKI T., 1947: Urbanistyka. T. II. Budowa miasta współczesnego. Ministerstwo Odbudowy, Warszawa.
- UITTIK A., 1960: Evropeiskaja architektura XX wieku. Moskwa.
- WOJTKUN G., 2004: Osiedle mieszkaniowe w strukturze miasta XX w.: Wyd. Uczelniane Politechniki Szczecińskiej, Szczecin.
- WOŁODŹKO A. 2005: Niechciana spuścizna. Co dalej z blokowiskami [w:] Blokowiska, Nr 4-2005, Małopolski Instytut Kultury, Kraków.

Streszczenie: *Rozwój idei osiedla mieszkaniowego końca XIX i początku XX wieku.* Zła sytuacja mieszkaniowa miast końca XIX wieku, będąca następstwem powszechnej industrializacji przyczyniła się do poszukiwania rozwiązań związanych z poprawą tego stanu. Wpłynęło to na kształtowanie rozwijających się miast, w których strukturze przestrzennej ważne miejsce zajęły zorganizowane tereny o funkcji mieszkaniowej. Nowe idee i koncepcje coraz liczniej powstawały w końcu XIX i pierwszej połowie XX wieku. Celem przeprowadzonych badań było rozpoznanie cech charakterystycznych wybranych koncepcji jednostek mieszkaniowych (osiedle patronackie, jednostka sąsiedzka, osiedle społeczne, radzieckie koncepcje społecznej organizacji bytu), decydujących o sposobie ich organizacji i funkcjonowania. Analizie poddano m.in.: wielkość i układ przestrzenny jednostki, zagospodarowanie terenu, organizację terenów zieleni, układ komunikacyjny, funkcje, formy organizacji życia społecznego i stopień samodzielności poparte zrealizowanymi przykładami na gruncie europejskim i wybranych rozwiązań ze Stanów Zjednoczonych. Otrzymane wyniki pozwoliły na określenie cech wspólnych pionierskich koncepcji jednostek mieszkalnych w odniesieniu do aspektu społecznego, przestrzennego i ekonomicznego.

MS. received March 2008

Authors' address:
Katedra Architektury Krajobrazu SGGW
02-776 Warszawa, ul. Nowoursynowska 159
Poland
e-mail: kinga_kimic@sggw.pl
m.m.jerz@wp.pl