

Co-housing as the way to achieve a good density in the cities – Warsaw case study

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Constant population growth in urban areas is one of the main global problems, and its importance grows with the depletion of non-renewable resources. The efficient, effective and responsible use of land is supposed to be an aim, the achievement of which will profit cities. The crucial question is, how cities can achieve this aim. The author of this article intends to discuss the individual problems which prevent achieving an appropriate density in Warsaw, and find ways of solving or reducing these problems. A proposed main hypothesis is, that the introduction of an alternative type of housing, namely co-housing can become a way to obtain a good density in the cities. Confirmation of this hypothesis is derived on the basis of the analysis of residential estates created following the rules of co-housing developed in Germany, in relation to similar problems. The purpose of the article was also to remind that Warsaw has a rich tradition in creating social efforts developments. The main social ideas was presented on the basic of the project of Polish housing estate designed in the Rakowiec district in Warsaw by H. and Sz. Syrkus, which was established in 1934-1938. The research part of the article was conducted through a comparison of spatial elements of Warsaw, employing the same criteria, which were adopted based on the several, selected characteristics of good density published in the ULI report, such as: mixed use of land, planned, cohesive, liveable, spacious, flexibility, design, green. The conducted comparison demonstrates, that Warsaw has a lot of different problems with obtaining a good density. These are: mono-functional areas in the suburbs, social disparity, the housing market dominated by developers, lack of enough, well-arranged public spaces combined with residential areas, lack of identity neighborhoods, insufficient attention to the local context in the process of designing new buildings, insufficient attention to the environment in terms of creation of buildings, too little green spaces and gardens in the inner city. The presented analyses show that the introducing concept of co-housing can help Warsaw with obtaining a good density. In order to obtain a high quality of the urban space, decisions regarding it should therefore be made simultaneously on three scales: spatial planning, urban planning and architectural planning. Architecture must cooperate with the existing urban fabric. All users of urban life should participate in its creation: development companies, municipal authorities that are responsible for spatial order, architects and residents.

Keywords: density, housing environment, quality, needs, co-housing

Introduction

Constant population growth in urban areas is one of the main global problems, and its importance grows with the depletion of non-renewable resources. Density, as a criterion of generating a built environment, has its limitations. In the face of difficulties connected with population density in urban areas, the Urban Land Institute¹ has published a report (Clark, Moir, 2015, p. 5), which indicates that efficient, effective and responsible use of land is an aim the achievement of which will profit cities, as well as their citizens and companies working in the area. The crucial question is, however, how cities can achieve this aim. A dense environment brings positive as well as negative associations. On the one hand, following the principle of sustainable development of the city, dense areas facilitate a higher efficiency of the distribution of goods and services, including social services. (Stepniak, 2014, p.148) On the other hand, they can cause stress and conflicts connected with an increase of undesirable contacts. These are not, however, the result of physical density of the population or spatial ele-

ments. The determining factor affecting the perception of density by the inhabitants of highly urbanized environments is not the density itself in quantitative terms, but the combination of the social and physical features of the area. Therefore, it seems that the quality of the built environment is significant.

Methods

Every city has a certain set of features which shape its individual character. Those features influence the layout of its internal structures and determine its development and spatial changes. The author of this article intends to discuss the individual problems of Warsaw, which prevent achieving a good density and find ways of solving or reducing these problems. **For the purposes of this article, a main hypothesis is presented, that one of the ways to obtain a good density in that city is the introduction of an alternative type of housing, namely co-housing.** Confirmation of this hypothesis is derived on the basis of the analysis of residential estates created following the rules of co-housing developed

¹ The Urban Land Institute (ULI) is a non-profit research and education organization supported by its members. Founded in Chicago in 1936, the Institute now has over 35,000 members in 75 countries worldwide, representing the entire spectrum of land use and real estate development disciplines, working in private enterprise and public service

in Berlin, Hanover in relation to similar problems and of the analysis of old Polish social ideas created in the Warsaw Housing Co-operative. The choice of the analyzed examples created in Germany, as well as their comparison and assessment constitute the intended research methodology. Indicators of social interaction are not universal, because their perception depends on cultural changes, but it seems, that neighboring states: Germany and Poland are culturally similar. It is the main reason of choosing analyzed examples.

The research part of the article was conducted through a comparison of spatial elements of Warsaw, employing the same criteria which were adopted based on the several, selected **characteristics of good density**² published in the ULI report mentioned above, such as: **mixed use of land, planned, cohesive, liveable, spacious, flexibility, design, green.**

Results

1) Problems connected with achieving a good density – Warsaw case study

Warsaw is the capital of Poland and the Mazovia Province. It is the largest city in the country with an area of 517.24 km² and a population of 1,748,916⁴ inhabitants, but many estimates suggest the true figure may be closer 2,0-2.3 million (Śleszyński, 2011, p.35-37). An important physiological element in the spatial structure of Warsaw is the Vistula River, which divides the city into the left- and right-bank parts. According to the report presented by Urban Land Institute, *Warsaw is in a promising new cycle of re-ur-*

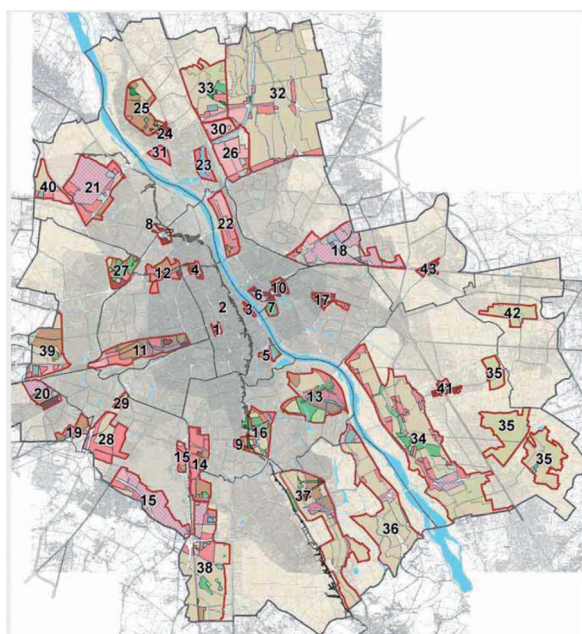


Fig. 1. Areas of planned or ongoing diversification and densification of Warsaw in the 2007 spatial planning policy³

banisation (Clark, Moonen, 2015, p. 1). Warsaw's current density profile is defined as a bad lower density. Despite of Warsaw's journey towards better density, the city is still much smaller and less dense it could be (Fig. 1). *As a dynamic capital city, it has the potential to grow to three million people within the city limits while still improving quality of life* (ibidem, p.3).

The most important event, which continues to significantly influence the spatial development of the city, was the historical discontinuity of the previously created urban fabric caused by the Second World War. Almost all of the buildings on the central left-bank side of Warsaw were destroyed. As a result, Warsaw was rebuilt according to new patterns and a completely different ideological context. The most important aim at the time was to adapt the city to the needs of industrialization and urbanization (Stępiak, 2014, p.16). The notion of density is inseparably bound with the development of housing. Since the end of the Second World War, we can identify the following stages in the development of housing in Warsaw:

- Years 1945 – 1970, the stage that included mainly the reconstruction of the destroyed urban fabric (until 1955), and the construction of new residential estates in later years. Housing construction was mainly focused on the central part of the city (Stępiak, 2014, p.59).
- Years 1971-1978 were the period of the so-called housing boom. In the light of the limited free areas in the city center, new housing investments were concentrated in the outskirts. The city developed mainly in the direction of the peripheries. The buildings constructed were tall, had predominantly eleven stories, and were built with the pre-fab technology (ibidem, p.61).
- Years 1979-1988 were the time of the economic crisis. It could be felt in housing construction, which caused the number of apartments placed in service to decrease drastically. This number was again focused on the peripheries, in the neighborhood of built-up areas (ibidem, p.63).
- Years 1989-2002 – the period of political transformation. Warsaw returned to the market economy in 1990. Several residential estates were built in the center of the city. Areas of new, intensive residential housing were located primarily outside of the city, but near built-up areas. As a result, the degree of concentration of housing resources increased (ibidem, p.65).
- After 2002. The time of the disappearance of large-scale expansion to new areas of the city. Housing is concentrated mainly in the built-up areas, filling the gaps in the structure (ibidem, p.86). The area of Warsaw is still too large in relation to the number of its citizens. The theoretical absorbability of the city area amounts to

² Characteristics of good density are adopted based on the ULI report, p. 11

³ Source: <http://europe.uli.org/wp-content/uploads/sites/3/ULI-Documents/The-Density-Dividend-Warsaw-case-study-FINAL.pdf>, p.8

⁴ Data from June 30, 2016, <http://demografia.stat.gov.pl/bazademografial/Tables.aspx>

apartments for approx. one million of citizens and houses for 200,000 people⁵.

The question of whether Warsaw will become a more dense, lively and attractive place will depend on innovative solutions, which will help to transform the mono-functional areas which arose mainly in recent years. A good first step is the strategy of solving social problems for the years 2009-2020 proposed by the City Council of the Capital City of Warsaw⁶. The intention is to focus on the problems of housing environment, but also other difficulties associated with them, can not be ignore. The city is faced with the fairly unique problem of land restitution whose origin lies in the nationalisation of land in 1945. Since Warsaw returned to market democracy, numerous claims of ancestral entitlement to strategic land in the city have been filed. Unfortunately, these claims has not been settled so far. Warsaw needs act property restitution to solve these problems.

The issue of housing are primarily connected with the shortage of apartments. A high demand for apartments, dependent on the indicators of the construction market, results in the creation of structures with one function, without a social infrastructure. Another challenge which Warsaw faces is the increasing “social disparity”. This disparity is not only reflected in different interests and systems of values, but also primarily in considerable stratification of the level of income. This results in districts and estates which are too homogeneous – to the extent which fosters social segregation.

The pre-fab housing blocks, created in the 1960s and 70s, will soon become another serious problem for the city. Let us remind that the period in question was the time of an accelerated development of housing in Warsaw. The majority of the residents of Warsaw lives in apartment blocks from that period. Affluent people move to new, better apartments and houses, and their place is taken by poorer tenants, who have problems with the maintenance of the properties. In result, the buildings and the neighborhood deteriorate and social disparity deepens.

At the other extreme is the luxurious apartment housing and suburban single-family housing developments, fenced and guarded, which also contribute to the deepening of social disparity. This indicates how important the blending of various areas is, not only in the context of areas of different function, e.g. residential – service areas, but also in the residential areas themselves. It is crucial that such areas should be inhabited by people of varying material status.

The diversification of housing in terms of financial capacity is related to another problem, not only for Warsaw, but the whole country, that is the lack of structuring of the housing market. The structure of housing in Warsaw, as well as in the entire Poland, is dominated by developers

who offer flats for sale or rent. In 2015 those constituted 87.36% of all flats placed in service in Warsaw. The second place was taken by single-family housing, which amounted to 8.28%. Cooperative apartments constituted only 3.01%, social apartments – 0.9%, social rental apartments and company apartments – 0.11%⁷. Private investors generally work on the principle of the highest possible space efficiency, which causes too little green spaces and gardens in the city.

The program of housing policy in the strategy proposed by the City Council of the Capital City of Warsaw mentioned above states that it is necessary to engage the city council in supporting social processes that produce such values as identity with place of residence. It is important to add that one of Warsaw’s features, significant for the development of the city, is the high percentage of migrants (Stępnik, 2004, p. 20). This causes the lack of relation between the population and the inhabited area. Warsaw is a city which offers plenty of opportunity for development, e.g. academic or professional development. This is the main cause of migration, but also of the choice of location for the apartments of migrants, who search for locations near their place of work or study. Another determining factor is the affordability. The decision is not, however, at all determined by family and social considerations, or sentiment towards specific estates. It is, therefore, important to find a solution to this problem, so that residents would develop a stronger connection to the place where they live.

The summary of the problems of Warsaw, according to characteristics of good density⁸ is presented in the table 1.

2) Co-housing as a response to solve some of the problems with achieving a good density

Co-housing is a concept of community efforts aimed at shaping the residential environment, which began in Denmark. The first co-housing community was established in 1972 near Copenhagen. It was designed for 27 families by a Danish architect and psychologist (Lietaert, 2010, p. 578). The idea quickly spread to the United States, Canada, Australia, New Zealand, and other European countries, among others to the Netherlands, Sweden, Germany, and, in recent years, also to Italy, France, Belgium and Spain (ibidem). Despite attempts to initiate co-housing in Poland, namely in Gdansk, Bialystok and Wrocław; Warsaw hasn’t any examples of co-housing.

A distinguishing feature of this housing model is the fact that it is often connected to the urban or semi-urban contexts (ibidem, p. 577). McCamant and Durrett identify six features that characterize co-housing (Idem, p. 90), such as: **participatory process** – residents actively participate in the planning of housing estate, so that it directly responds to their needs, **neighbourhood design** – design is focused on

⁵ data from 2015, on the basis of calculations of consulting firm specializing in issues related to the residential market - REAS

⁶ Based on Strategy of solving social problems for the years 2009-2020 proposed by the City Council of the Capital City of Warsaw, p. 45-47

⁷ Calculations made by K. Kosk, based on data provided by the Central Statistical Office of Poland

⁸ Characteristics of good density are adopted based on the ULI report, p. 11

Table 1. Problems of Warsaw with achieving a good density according to several selected characteristics of a good density

no	Characteristics of a good density	Problems of Warsaw with achieving a good density
1	Mixed use of land	- Mono-functional areas, social disparity - The housing market dominated by developers (87,36%),
2	Planned	- Incomplete spatial development plan, - the problem of land restitution
3	Cohesive	- Too expensive apartments (not for every budget) - In-migration, which causes the lack of relation between the population and the inhabited area.
4	Liveable.	- Lack of enough, high-quality spaces, - Structures with one function, without a social infrastructure,
5	Spacious	- Lack of well-arranged public spaces combined with residential areas,
6	Flexibility	- Problem with customize and make more attractive the pre-fab housing blocks, created in the 60's and 70's according to the new needs of residents,
7	Design	- The need to meet housing in quantitative terms, without taking into account the quality of housing environments and good design,
8	Green	- Insufficient attention to the environment in terms of creation of buildings, - Private investors work on the principle of the highest possible space efficiency, which causes too little green spaces and gardens in the city.

creating neighborhood community and on the formation of social interaction between residents, **common areas** – private apartments are supplemented by common facilities for residents, **resident management**, **non-hierarchical structure** – decision are making as a result of a compromise, **separate source of income** – the residents are responsible for their own finances.

The main question is how the introduction of an alternative way of housing can contribute to eliminating or reducing the problems relating to achieving good density, currently faced by Warsaw. Although there are no co-housing projects in this city at present, the capital of Poland has a rich tradition in creating social efforts developments. An example of these efforts is complexes of residential buildings created as part of the Warsaw Housing Co-operative in the districts of Żoliborz and Rakowiec in the 1930s.

This social tradition was distorted after the WW II, when the bottom-up movement was incorporated into the policy of the state. However, it appears that there is still a chance to restore the splendour of the old Polish social ideas in the form of housing co-operatives.

Before we look closer at the contemporary buildings and their surrounding areas developed in Berlin and Hannover, following the rules of co-housing, attention should also be paid to the old social Polish ideas.

Therefore, the first of the projects in question is a Polish housing estate designed in the Rakowiec district in Warsaw by H. and Sz. Syrkus, which was established in 1934-1938 (Fig. 2). Although from the west side, the layout of the buildings creates an irregular frontage, the south side (Fig. 3) does not result from the shape of the plot, but from the desire to provide for residents the maximum access to air, sun, and greenery. This was achieved thanks to the free placement of the buildings on the northwest axis, as well as to the park designed on the north side (Fig. 4). The apartments were very small, with an area of 32 m². They were designed for workers in the most economical possible way, so as not to exceed the rentable future payment options of the tenants. Very good interior lighting was also obtained by the block shape itself, which resembles the letter „Z.”

The residential buildings were divided into two equal parts by a staircase. Each half was moved in relation to the



Fig. 2. The housing estate in the Rakowiec district, view from Wiślicka street, 2017, © Katarzyna Kosk

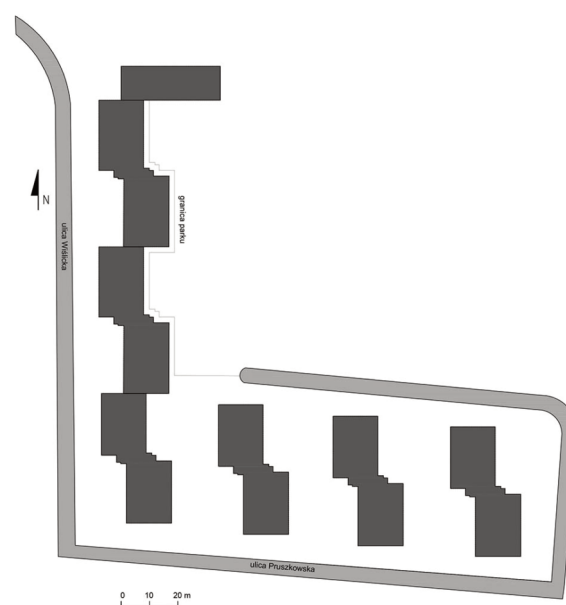


Fig. 3. The housing estate plan in the Rakowiec district, © Katarzyna Kosk

staircase to the depth of the flat and corridor. In this way, the long corridor was divided into two smaller parts, giving it better access to light on both sides, and ventilation.

The layout of the buildings proposed by the H. and Sz. Syrkus also provided for a social space within the housing estate. Between the blocks, spaced every 24 m, internal streets and a flowerbed were provided. A social common building was also designed here that consists of a laundry room a watering place, a kindergarten, and the space belonging to the Association „Glass Houses,” providing a meeting room with an area of 120 m², library, reading room, and club rooms. Public space, located outside the housing estate, along the thoroughfare, was complemented with service points and shops. The whole assumption was based on a three-level system of shaping the social bond (house - colony – housing estate). Although the residents were only slightly involved in the design of the estate, there were many architectural elements supporting social contacts, such as common external and internal spaces, a lot of green space (Fig. 4), and architectural detail.

Therefore, it turns out, that the co-housing strategies can support the social contacts in two ways: in a „spatial form” through a properly designed architecture, or in an „organizational form” by the participation of future residents in the designing, managing, and building of a common housing area. During the entire investment process, which usually takes at least a dozen or so months, future neighbours get to know one another by working towards a joint construction project, and identify with the space they create and are responsible for.

The second of the projects in question, called **Spreefeld** (Fig. 5) was constructed in 2014 and designed by Bar Architekten. It consists of three blocks of flats, situated directly on the Spree River in Berlin-Mitte, formerly in the no man’s land between East and West Berlin (K. Ring, p. 29). This project is the best example how to prevent structures with one function, without a social infrastructure. It

should be reminded, that is one of the main problem, which arose mainly in recent years in the suburbs of Warsaw. The initiators of Spreefeld are pursuing the goals of integration, participation, self-help, and alternative forms of living (ibidem, p. 31). Common external areas and internal facilities are the key of the Spreefeld initiative. The project provides, next to living spaces, commercial use, child care, neighborhood center, rooms for optional use, house maintenance – related services , meeting rooms, 3 guest apartments, 3 roof terraces, and laundry room (ibidem, p. 156-157). Shared spaces, that are financed, constructed and used together by all inhabitants, lead to a better social awareness and interaction with the surrounding neighborhood. It seems that, this solution could be a response to the Warsaw’s problem with in-migration, which causes the lack of relation between the population and the inhabited area. It should be added, that in Spreefeld project was used “soft borders”, which means that private, semi-private, and public spaces gently permeate each other.

The Spreefeld concept also prevents the occurrence of “social segregation”. The communities take care to stay diverse. Decisions are made through a consensus, regardless of the neighbors material status. The project also offers special alternatives for those who have less income. Thanks to another financing model on the real estate market, such as co-op association, which was applied here, wider public can participate in that initiative (ibidem, p. 32-33).

Spreefeld initiative attaches also a great importance to environment-friendly activities. The project provides a considerable amount of green spaces, such as: roof terrace, garden, beach and river front public path, where are many trees and plants. These green spaces are opened to the public. The connections created between the green areas and surrounding urban spaces is a valuable resource for the city. The Project leads also the way in ecology by using solar



Fig. 4. The Park which is a part of the housing estate in the Rakowiec district, © Katarzyna Kosk



Fig. 5. Spreefeld Berlin – co-housing project⁹

⁹ The author of the photo: © Andrea Kroth, <http://www.bararchitekten.de/projects/sfb.html>

thermal heating system, photovoltaics and electro- car-sharing. The buildings built in Spreefeld are passive.

Another Berlin's co-housing example (Fig. 6), constructed at the street **Ordeberger Strasse 56**, in 2010, shows how architecture can withstand changes happening over time. Floor plans of this building, designed also by Bar Architekten, are suited specifically to the needs of the users. Modular system with various types of separable spaces were used here, so inhabitants can change the space of their flats according to the new expectations (Fig. 7). Each apartment already has also two doors. In this way, the building can offer suitable solutions for changing situation in life and easy conversion of one big flat to two smaller ones. (ibidem, p. 42). Mentioned innovative solutions also helps with creating a multigenerational and flexible model of living.

Flexibility is also manifested in the fact that existing abandoned, buildings in good working order can be used by co-housing, and so an old district can be invigorated. It could be a good idea for customize and make more attractive, the pre-fab housing blocks, created in the 60's and 70's in Warsaw, according to the new needs of residents. The best examples of reactivation and reuse old building is **Süd-stadt School in Hanover** (Fig. 8), which was converted into housing complex. After the closure of the school, the old building (built in 1962) was sold in 2009 for the co-housing group called: "Baugruppe Südstadt-schule". Most of the residents participated in the design process, and created, with collaboration of the architectural office – Mosaik Architekten, 16 residential units (60-170 m²), three offices

as well as libraries for children and young people¹¹. This example presents how resources of the city can be reused, developed, and permanently preserved.

Reactivation Südstadt School is a good example, that introduction of a co-housing to an existing urban context enables the new housing function to be incorporated into the existing service infrastructure, without the need to design new services or create new channels of communication. This solution provides, with an instant, connection between flats, needed services, and access to the public transportation.

The fourth of the projects in question, built in Berlin, in the street **Strelitzer Strasse** (Fig. 8), in 2008, shows that co- housing is adapted both to the needs of the residents and to the existing context, and also provides urban interactions. New block of flats was designed by Anna von Gwinner and Florian Kohl on small, unused plots of land



Fig. 6. Odeberger Strasse 56 Berlin, co-housing project¹⁰

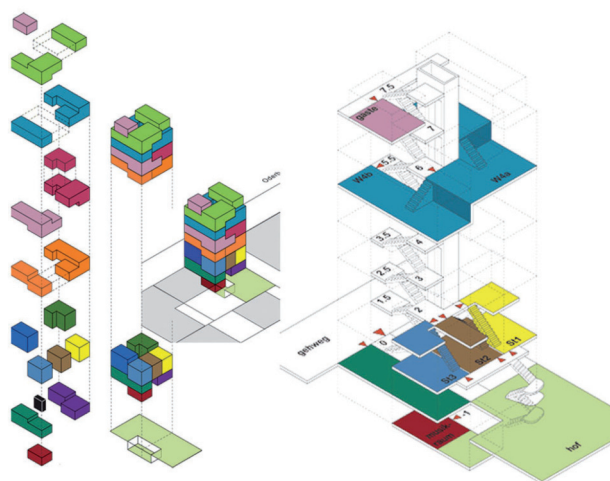


Fig. 7. Odeberger Strasse 56, the concept of the placement of residential modules in a building



Fig. 8. Südstadt-schule, Hanover, co-housing project¹²

¹⁰ The author of the photo: © Andrea Kroth, <http://www.bararchitekten.de/projects/oderberger.html>

¹¹ Based on the web page of architectural office: <http://www.mosaik-architekten.de/>

¹² The author of the photo: © Olaf Mahlstedt, <http://www.mosaik-architekten.de/>

in the city center, between two, existing buildings. The new, common house is perfectly fitted into the existing street frontage. Thanks to the gate in the front façade, and the internal path, running through the building and along the inner courtyard, the project provides connection to the neighboring buildings behind.

The last one, Berlin's project in question, called **RUSC** (Fig. 10) is the best proof that co-housing strategies can create a considerable amount of green spaces in the inner cities that are shared even by the public. The connections



Fig. 9. Strelitzer Strasse Berlin, co-housing project¹³



Fig. 10. RUSC Berlin, co-housing project¹⁴

created between the green space that belongs to the co-housing group, and surrounding urban space, in this case, is a resource by the city. A characteristic feature of the project is that the newly built buildings do not tightly close the investment area, consisting of three plots located next to each other in Berlin's centre (Fig. 11). Architects decided that the corner plot should remain unbuilt and they created a public square on it. On the other two plots, two twin buildings were designed, which continue with the frontage buildings, both from Ruppiner Straße and Schönholzer Straße. This architects's unconventional urbanist idea allowed for the lighting of all flats from three sides. Twelve households that created a building group for the duration of planning and construction not only decided to fund a public square from private funds, but also committed to maintain it at their own expense.

Although this article focuses on the quality of density, **Strelitzer Strasse** and **RUSC** projects show that cohousing strategies improve quantitative density in the cities as well, because they develop small, empty, unused plots of land located in the city centres that are unattractive for developers. It is a good way of increasing density in the existing infrastructure. This conclusion is also confirmed by research carried out by K. Ring: „Filling in the leftover holes in the urban fabric densifies the city, and recently in many areas, this process has dramatically dynamized, also spurred on by the co-housing projects”. (Ring, 2013, p. 40) (Fig. 11).

The summary, which is presented in the table 2., shows how co-housing concept can response to solve the problems of Warsaw with achieving good density.

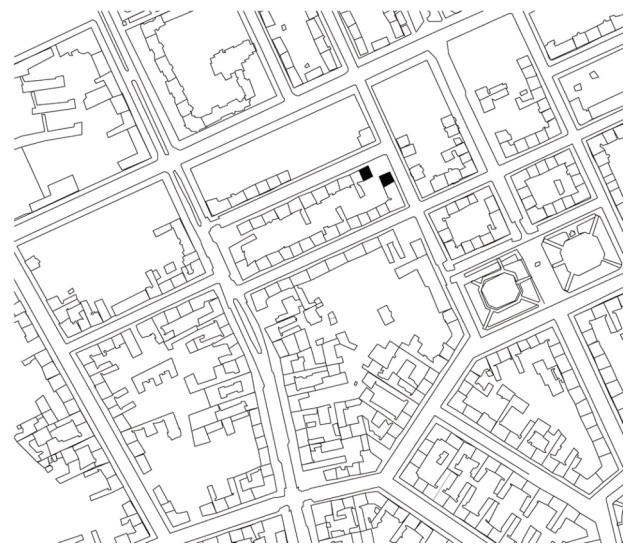


Fig. 11. RUSC Berlin, a situational plan¹⁵

¹³ The author of the photo: © Jan Bitter, <http://www.archipendium.com/en/architecture/new-building-strelitzer-strasse/>

¹⁴ The author of the photo: © Andrea Kroth

¹⁵ The author of the plan: © Zanderroth Architekten

Table 2. Co-housing as a response to solve some of the problems with achieving a good density

no	Problems of Warsaw with achieving good density	Co-housing as a response to solve the problems
1	- Mono-functional areas, social disparity - The housing market dominated by developers (87,36%),	Diversity. Co-housing prevents the occurrence of “social segregation”. The communities take care to stay diverse. Decisions are made through a consensus, regardless of the neighbor’s material status. An alternative for mixes use of land. Co-housing broadens the scope of housing possibilities – it is a new product on the market.
2	- Incomplete spatial development plan, - The problem of land restitution	Co-housing concept is a planned process, in which are involved residents as architect. However, it is important, that co-housing should be introduced to urban plans. It is also important to solve the problem of property ownership in Warsaw.
3	- Too expensive apartments (not for every budget) - In-migration, which causes the lack of relation between the population and the inhabited area.	Profitability. It is estimated that this way of housing is 30% cheaper than apartments built by developers. Social participation facilitates also the building of social bonds. Because the space is designed, built and managed by the residents, they start to identify with it and take responsibility for it.
4	- Lack of enough, high-quality spaces, - Structures with one function, without a social infrastructure,	Co-housing enhances quality of life and liveability for residents. What distinguishes architecture is: common rooms for the residents, low-rise buildings, green areas, which fosters the development of social relations. Close relations among the neighbors have influence on the security of the estates. No one can protect our property better than a friendly neighbor.
5	- Lack of well-arranged public spaces combined with residential areas,	Gradation of space to public, semi-public and private with attention to the quality of each of them is very important in co-housing.
6	- Problem with customize and make more attractive the pre-fab housing blocks, created in the 60’s and 70’s according to the new needs of residents,	Flexibility. Numerous examples of co-housing, show how architecture can withstand changes happening over time – the modular design. Flexibility is also manifested in the fact that existing abandoned, buildings in good working order can be used by co-housing, and so an old district can be invigorated.
7	- The need to meet housing in quantitative terms, without taking into account the quality of housing environments and good design,	Co-housing cares also about the quality of environment and good design. The project becomes unique, due to the fact, that is designed according to the needs of different residents.
8	Insufficient attention to the environment in terms of creation of buildings, - Private investors work on the principle of the highest possible space efficiency, which causes too little green spaces and gardens in the city.	Green, Care for the natural environment. The majority of the co-housing concepts attaches great importance to environment-friendly activities. Cohousing projects usually create a considerable amount of green spaces and gardens in the inner cities, that are shared, sometimes even by the public; spaces that would otherwise not exist. The connections created by the green and surrounding urban space is a resource by the city.

Discussion

The conducted comparison of spatial elements of Warsaw with several, selected characteristics of good density published in the ULI report demonstrates, that Warsaw has a lot of different problems with achieving a good density. These are: mono-functional areas in the suburbs, social disparity, the housing market dominated by developers, lack of enough, well-arranged public spaces combined with residential areas, lack of identity neighborhoods, insufficient attention to the local context in the process of designing new buildings, insufficient attention to the environment in terms of creation of buildings, too little green spaces and gardens in the city.

The presented analysis of old Polish social ideas created in the Rakowiec district shows that the co-housing strategies can support the social contacts in two ways: in a „spatial form” through a properly designed architecture, or in an „organizational form” by the participation of future residents in the designing, managing, and building of a common housing area.

The presented analyses of the buildings and their surrounding areas created following the rules of co-housing developed in Germany, in relation to similar Warsaw’s pro-

blems, show that introducing concept of housing can help Warsaw with obtaining a good density. The projects in questions are: green, flexible, livable, spacious, good designed, planned and adapted both to the needs of residents and to the existing context. They prevent to social segregation and promote social contacts. They also support mixed use of land. The last one characteristic of good density is the most visible in that co-housing examples, which are introduced to an existing urban context, for example: when they reused, old, abandoned buildings, or small plots of land in the city center, with good infrastructure. In this way, introduction of a co-housing to an existing urban context enables the new housing function to be incorporated into the existing service infrastructure, without the need to design new services or create new channels of communication. In order to obtain a high quality of the urban space, decisions regarding it should therefore be made simultaneously on three scales: spatial planning, urban planning and architectural planning. Architecture must cooperate with the existing urban fabric. All users of urban life should participate in its creation: development companies, municipal authorities that are responsible for spatial order, architects and residents.

Conclusion

This paper proves the presented hypothesis, that one of the ways to achieve a good density in the cities is the introduction of an alternative type of housing, namely co-housing. The proof of this thesis are presented examples of co-housing, created in Berlin and Hanover. Analyzed, German co-housing projects have all of good features, which can help Warsaw with obtaining good density.

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