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ATRIAL DEVELOPMENT AS AN ECONOMICAL TYPE OF COMPLEX HIGH-DENSITY SINGLE-FAMILY HOUSING IN POLAND

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ABSTRACT: Atrial housing, as a type of high-density single-family, appeared in Poland in the 1960s and 1970s. First, in 1962, legal regulations were developed. This was followed by several atrium developments and research work. After 1990, it appeared in only a few publications, and in 2003, it disappeared from the legislation. The aim of the research presented in this article is to demonstrate whether it is possible to build an atrial house or a whole complex of atrial buildings today, based on existing legislation and planning conditions. To this end, the literature on the subject was studied, and 11 existing realisations from the 1970s were analysed. Based on the findings, an atrial house plan was developed, which in turn was used to develop an atrial housing complex located in one of the quarters of the Białystok Local Spatial Development Plan. The results confirmed that nowadays, subject to certain specific conditions in the provisions of the plans and on the basis of the legal regulations in force, atrial buildings may be used, despite the fact that they are not referred to in the legislation on housing development.

KEYWORDS: atrium, courtyard, atrial development, complex intensive single-family development

Introduction

Changes in the nature of single-family development in urban and suburban areas indicate a process of single-family housing intensification. More and more single-family housing complexes in the form of semi-detached and terraced buildings are being realised (Figure 1). This trend is mainly due to two factors: economic (the price of plots of land) and social (preference for low-rise housing close to the centre, with possible access to a home garden).

One solution for the creation of low-rise, high-density single-family is atrial development, also called “complex high-density single-family housing” (Adamczewska-Wejchert, 1978). It is characterised by a centripetal layout, the presence of an internal courtyard – an atrium, surrounded by the walls of a building (or buildings) and a high fence. Atrium houses are typically single-storey constructions. They are simple in layout and uncomplicated in function, which makes them economical to build. Bringing in natural light from the courtyard and front elevation eliminates the need for large plots of land, making it possible to combine them into various building arrangements. Yet, residents still enjoy privacy (Macintosh, 1973) and access to a garden. The density of this type of development is similar to that of 2 or 3-storey multi-family buildings (Paulhans, 1961; Adamczewska-Wejchert, 1978). Hence, it can be a transitional form between single-family and multi-family development, similar to like contemporary small multi-family housing (Matys, 2018).

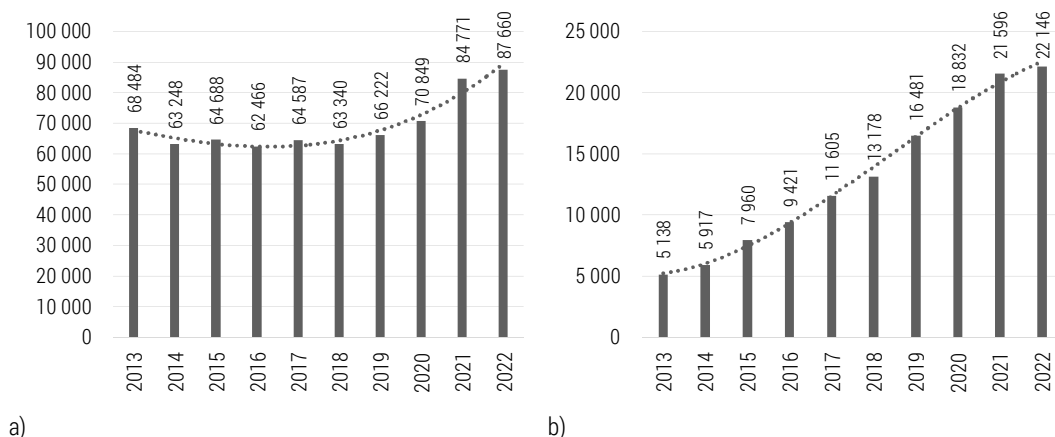


Figure 1. Quantity of detached single-family homes built between 2013–2022, split (a) individually owned residential buildings and (b) single-family residential buildings (presumably semi-detached and terraced houses) available for lease or purchase

Source: author’s work based on Statistic Poland [30-10-2023].

Atrium housing originated in the early 20th century as a modified version of terraced housing (Adamczewska-Wejchert, 1978). It became popular in the West after World War II, while in Poland, it emerged during the 1960s and 1970s. In that time, several experimental building complexes were constructed (e.g. in Warsaw, Cracow, Tychy, Poznan, Wroclaw, Lublin and Koszalin), multiple study analyses were conducted, and architectural competitions for atrium buildings were organised.

An overview of the literature

Publications on atrium buildings were present in Germany in the 1960s (Paulhans, 1961), in England during the 1970s (Macintosh, 1973), and in Poland (Adamczewska-Wejchert, 1978) and then, at the beginning of the 21st century again in Germany (Weidinger, 2007; Pfeifer & Brauneck, 2008). The leading publications on the subject detail all properties of atrium development, its origins, building types, and functional and urban assumptions, and offer a vast overview of completed realisations and present analysis (studies, competitions, concepts).

Furthermore, precise guidance on the definition of atrium buildings is found in architectural and urban design handbooks (Neufert, 2003; Korzeniewski, 1989; Czarnecki, 1965) and in legal acts (Zarządzenie, 1962).

Several publications, related to the topic, present individual case studies of completed realisations (Napieralska, 2015; Gala-Walczowska, 2011; Gajda, 2011; Zabłocki, 1977; Haintze, 1978), examine technical aspects of atrium itself (Matys, 2015), solar and day light aspects of atrium houses (Berardi & Wang, 2014; Li et al., 2019), potential for specific heating methods (Górecka, 2006) and analyse this type of development in terms of form and composition (Magdziak, 2019; Grzybowski, 2015; Serrano, 2011). There are also publications indirectly related to atrium buildings which address topics such as the contemporary typology of single-family houses (Załęcka-Myszkiewicz, 2013, 2014; Bradecki, 2021) or present atrium as a characteristic element of buildings of different types and functions (Saxon, 1986).

A separate group of publications contains articles related to the fact that atrial development has not been implemented in contemporary Poland (Orchowska, 2016; Hominski, 2022). Equally, the authors high light the advantages of this type of development, such as privacy and access to greenery for residents, as well as its efficiency and affordability. Additionally, Hominski (2022) examines atrium housing within the context of the current zoning plans of Cracow. Yet, no potential mechanisms that would currently allow for the construction of atrium housing were identified by the aforementioned authors.

This article, which partly acknowledges the conclusions of the above-mentioned publications, attempts to answer the following question: Is it feasible to construct atrium houses in Poland based on current legislation and planning documents? The author will also focus on outlining the necessary conditions for

constructing such buildings in present-day Poland. No publications could be found that address the topic raised in the article, and given the growing demand for such housing investments, it is vital that this issue is addressed.

Research methods

Initially, the available information on atrium buildings was collected using a monographic and analytical approach. To achieve this, relevant national and foreign literature, including book publications, articles and magazines, was reviewed. The gathered data was utilised to determine the origin and development stages of modern atrium buildings in residential structures in Poland. To address the subject fully, appropriate terminology was employed during the research, too. In Poland, the term “atrium house” has been used (Zarządzenie, 1962). German publications have used a similar term – “atrium häsuer” (German Dictionary, 2023). On the other hand, in the English literature, based on definitions taken from English dictionaries (English Dictionary, 2023), the term “courtyard house” was most appropriate with regard to the form under study (“*courtyard – an open area of ground which is surrounded by buildings or walls*” Collins Dictionary (2023)). Due to the fact that the research is limited to the area of Poland and the term courtyard house (or development) has never been present in the Polish legislation, its use is not justified. Therefore, the article retains the term atrium house or atrial development.

The author of this work examined legal regulations on single-family housing development in Poland from 1945 to the present, focusing on the appearance of the term “atrial development”. The research identified legal provisions, which, when additional conditions are met, could allow for the construction of an atrium house or a complex of such buildings. Following this, an analysis of 11 existing examples of atrial developments in Poland (Warsaw, Cracow, Tychy, Lublin, Wrocław, Koszalin, Poznan) was carried out for their feasibility under existing law. The obtained findings were employed to create a plan for a theoretical individual plot with an atrium house and a theoretical plan for a quarter of atrium buildings to identify the conditions necessary for reactivating atrial development in Poland despite the lack of the term itself in applicable regulations.

Also, for the record, all the figures and tables included in the article (excl. Figure 11) were created by the author. The North direction in Figures 2-10 and 13 is located toward the top of the drawings.

Results of the research

Atrium development emerged as a low-rise, high-density single-family development in Poland. Atrium houses, which were mostly single-storey, had typical characteristics of a flat (Adamczewska-Wejchert, 1978) and additionally had access to private gardens. Despite the criticism that such buildings were unrepresentable and ugly (Adamczewska-Wejchert, 1978), they defended themselves perfectly with functional layouts. Such projects were realised in urban areas near multi-family housing, utilising existing technical infrastructure.

Regulatory Analysis

In terms of legislation, the term atrium development first appeared in Polish law in late 1962. A decree was passed at that time which established and defined four types of single-family houses: detached, semi-detached, terraced, and atrial (*"an 'atrium' dwelling house is any single-family dwelling with an internal garden surrounded by the walls of that building, the walls of buildings on neighbouring plots or also by a fence."* (Zarządzenie, 1962)). At the same time, this kind of development could be recognised as one of the types of compact development – carpet-type development (*single-storey one-family houses on small plots, consisting of 'atrium' buildings... forming a compact arrangement of houses with common walls and isolated gardens*) (Zarządzenie, 1962)). This act also set indicators for atrium development, including specifications for plot sizes (10-12 m) and plot area (110-150 m²), as well as requirements for municipal sewerage and water supply systems. Following political changes in the early 1990s, the regulations on housing construction were updated. The Technical Conditions (Rozporządzenie, 1994) in §3 provide a definition of a single-family dwelling that includes atrium housing as one of the arrangements of a group of single-family dwellings – *"it means a single-family dwelling or a group of such buildings in the following arrangements: detached, semi-detached, terraced, atrial..."*. This provision was in effect until 2002, when the Technical Conditions (Obwieszczenie, 2002) was amended. The term *"single-family development"* was changed to mean *"a single-family residential building or a group of them, along with garages and out buildings designed for the occupants' needs."* (this provision with minor stylistic corrections still remains in effect (Obwieszczenie, 2022)). On the other hand, in 2003, the Construction Law (Act, 2003) was amended to introduce the concept of a single-family dwelling. The amendment states that *"a single-family dwelling should be understood as either a detached building or a building in a semi-detached, terraced, or group construction"*. As a result of shifting the definition of single-family housing complex types from the Technical Conditions to the Construction Law, an atrium development concept is no longer included in the legislation.

Therefore, it was not feasible to construct an atrium house in its original form in compliance with legal requirements. Buildings were constructed with an inner courtyard, but also with windows on each side of the building and at distances defined by the Technical Conditions – at a minimum distance of 4 or 3 meters (exceptionally 1.5 meters) (Obwieszczenie, 2002) from a plot border.

Atrium-style developments could be created only as a modification of terraced development, and final implementation depended largely on the interpretation of the authority approving a construction project (e.g. Akacja Estate, Tychy).

Meanwhile, in 2009, a change was made in §12 of the Technical Conditions (Rozporządzenie, 2009) that permitted, for single-family developments, the location of “*a building with a wall without window or door openings directly on the border with a neighbouring building plot..., on a building plot with a width of not less than 16m*”. This amended regulation (current to date), although lacking direct lexical reference to atrium development, appears to enable the design and construction of such houses and development.

Analysis of Existing Realizations of Atrium Development

In the 1970s, inspired by Western Europe, Poland began constructing experimental settlements of atrium houses. Over a dozen such settlements were built, predominantly in main Polish cities and Warsaw.

Eleven locations were designated for the study: 2 from Warsaw (Figure 2) and Poznan (Figures 4, 5), 1 each from Cracow (Figure 3), Wroclaw (Figure 6), Tychy (Figure 7) and Lublin (Figure 8), and 3 from Koszalin (Figures 9,10). The analysis was based on materials obtained from the geoportal.gov.pl website (GEO Service, 2023) and was focused on the comparison of an existing development of the area with atrium houses in relation to the land use when corrected on the basis of existing legal provisions (distances from plot boundaries). It is important to underline that the area, plot outlines and building lines along entries remained unchanged; only the outlines of buildings were modified. If any irregularities were found in relation to existing legal provisions, the walls of buildings were set back from the boundaries to normative distances (3 m) in accordance with applicable Technical Conditions. It was assumed that the walls were without window and door openings.

The analysis showed that it was necessary to make changes to the structure of buildings in 10 locations and, consequently, to reduce their built-up area.

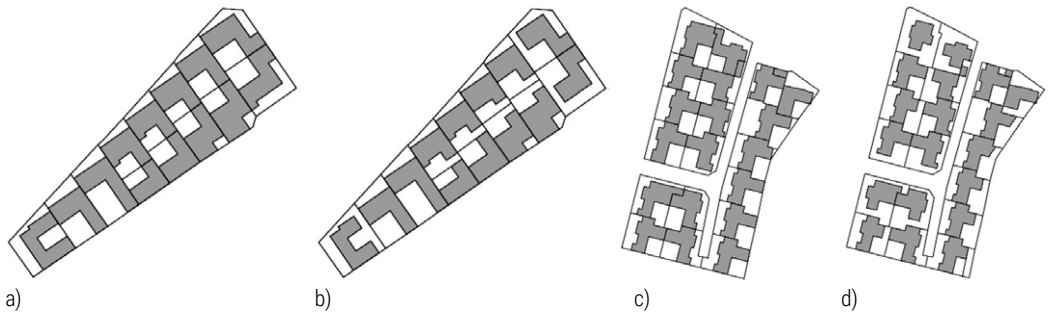


Figure 2. Warsaw, Orezna St. a) existing, b) corrected; Zolkiewskiego St. c) existing, d) corrected

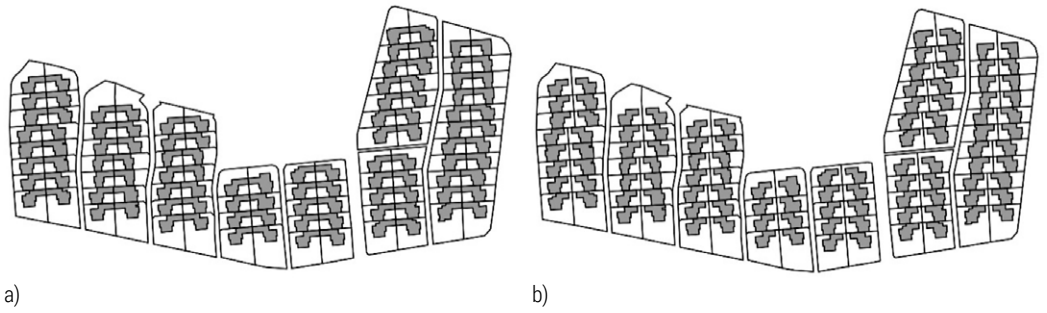


Figure 3. Cracow, Widok Zarzecz, Wiedenska St. a) existing, b) corrected

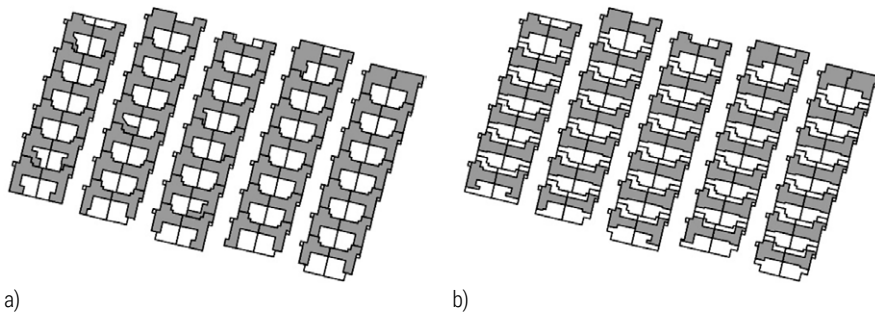


Figure 4. Poznan, Kurlandzka St. a) existing, b) corrected

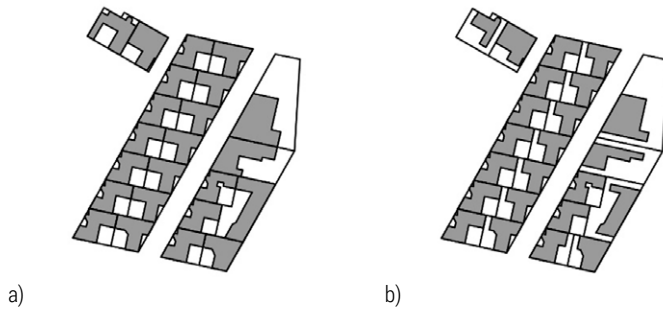


Figure 5. Poznan, Zodiakowa St. a) existing, b) corrected

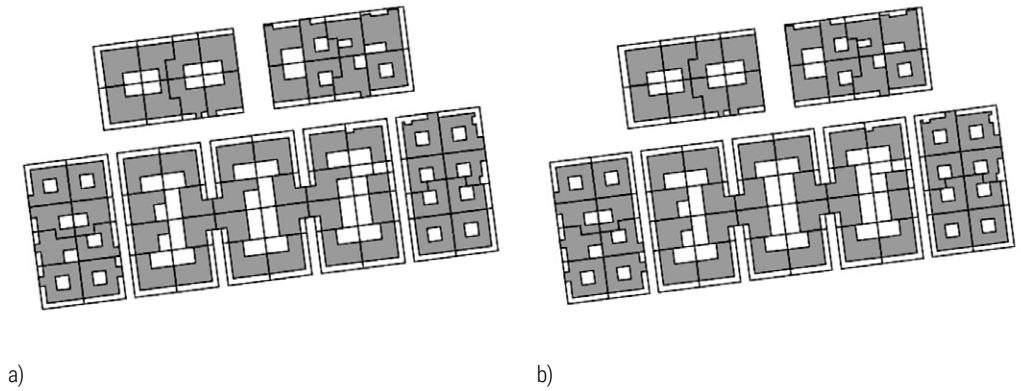


Figure 6. Wroclaw, Nabelaka St. a) existing, b) corrected

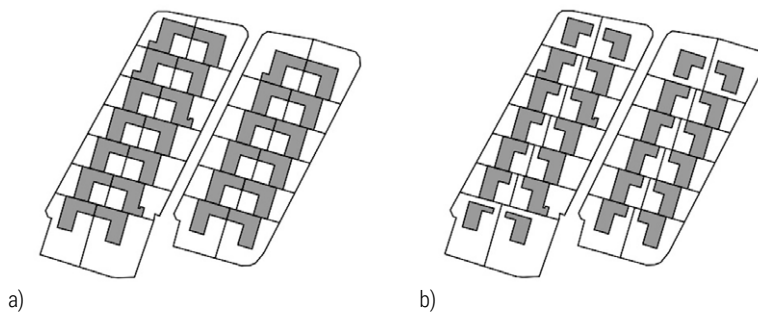


Figure 7. Tychy, Skalna St. a) existing, b) corrected

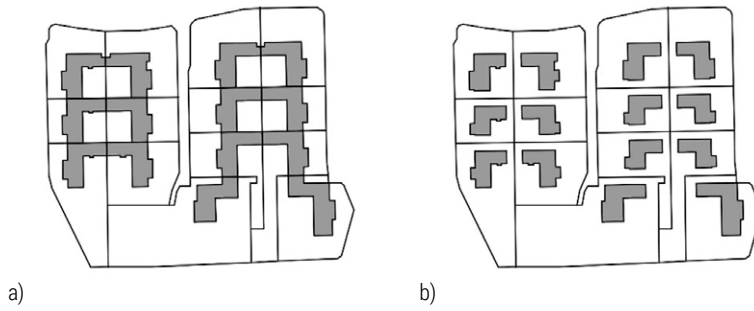


Figure 8. Lublin, Z. Noskowskiego St. a) existing, b) corrected

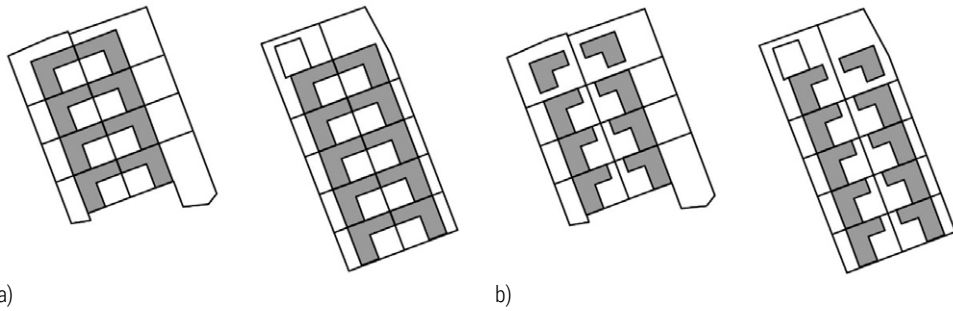


Figure 9. Koszalin, Kilinszczakow St. a) existing, b) corrected

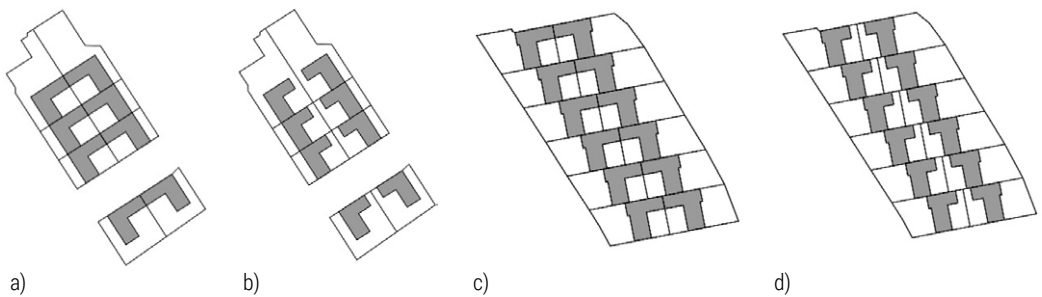


Figure 10. Koszalin, Franciszkanska St. a) existing, b) corrected; Bursztynowa St. c) existing, d) corrected

Observed changes in the structure of development, deriving mainly from the dimensions of plots:

- the most frequent modification observed was a carpet-type structure changing into semi-detached or terraced housing-type layouts (Figures 2,3,4,5,7, 9,10),
- in one case, the buildings were corrected to the form of detached houses (Figure 8),
- only the realisation of atrial development in Wroclaw (Figure 6) could be built in accordance with existing legal regulations (realisation was mostly on regular plots with dimensions of about 15.6×15.8 m; the outlines of the remaining plots have undergone minor modifications but did not affect the development).

Observed built-up area changes (Table 1):

- built-up areas decreased on average by 5.58%,
- the largest area loss occurred on Kurlandzka Street in Poznan, with a reduction of 13.15% (projections of houses with irregular, complicated shapes, with plot boundaries adjusted to the projections of buildings),
- the smallest reduction of area occurred in Wroclaw with a decrease of less than 1% (0.41% – change mainly resulted from later modifications made by residents).

Table 1. Comparative analysis of the built-up area of existing and corrected development (in compliance with existing regulations)

City	Street	Plot area [m ²]	Built-up area [m ²]		Difference
			existing	corrected	
Warsaw	Orezna	3 744	2 167	1 987	180
		100%	57.88%	53.07%	4.81%
	Zolkiewskiego	5 050	2 545	2 223	322
		100%	50.40%	44.02%	6.38%
Cracow	Wiedenska	43 073	15 771	14 248	1 523
		100%	36.61%	33.08%	3.54%
Poznan	Kurlandzka	19 760	11 934	9 336	2 598
		100%	60.39%	47.25%	13.15%
	Zodiakowa	7 155	4 648	4 053	595
		100%	64.96%	56.65%	8.32%
Wroclaw	Nabielaka	11 910	7 620	7 571	49
		100%	63.98%	63.57%	0.41%

City	Street	Plot area [m ²]	Built-uparea [m ²]		Difference
			existing	corrected	
Tychy	Skalna	11 036	3 986	3 379	607
		100%	36.12%	30.62%	5.50%
Lublin	Z. Noskowskiego	9 570	2 322	1 743	579
		100%	24.26%	18.21%	6.05%
Koszalin	Kilinszczakow	6 100	2 352	2 025	327
		100%	38.56%	33.20%	5.36%
	Franciszkańska	2 968	1 045	925	120
		100%	35.21%	31.17%	4.04%
	Bursztynowa	4 733	1 638	1 458	180
		100%	34.61%	30.80%	3.80%
Average					5.58%

Atrium House Model

Based on the research and analysis carried out, a theoretical plot development with an atrium house was created on a single plot of 16x16 m in accordance with current regulations. The functional layout of the house was based on the L-House Type E L. Hilberseimer'a (Figure 11) from 1931 (Macintosh, 1973).

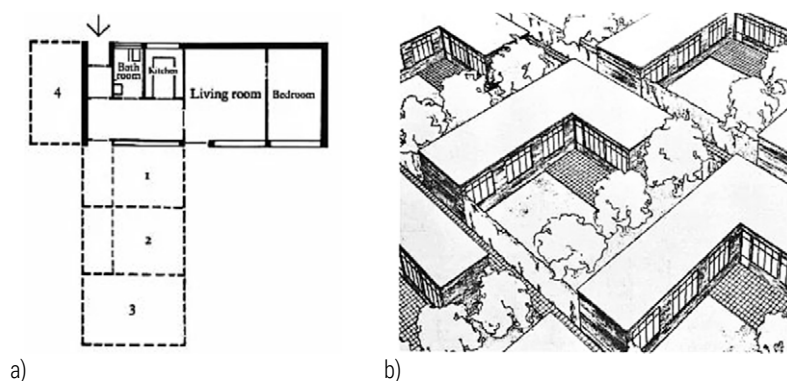


Figure 11. L-House Type E L. Hilberseimer'a from 1931 a) plan, b) vie

Source: Macintosh, 1973, p. 32.

An “L” type atrium house was constructed (a span in structural axes of 6m), located along the plot boundaries from the side and rear elevations. The positioning of the front wall was determined by spatial analysis and depended on relevant legal requirements. The initial parameter of the building line was defined in Article 43 of the Act on 21 March 1985 (for a municipal road in a densely populated area, the minimum distance is 6 meters and is calculated from the building’s wall to the edge of the roadway; a road manager has the option to reduce this distance). According to the guidelines outlined in the Act from 24 June 2022 (Rozporządzenie, 2022), a sidewalk width of 1.8 meters was assumed, resulting in a front elevation distance from the plot’s border of 4.2 meters – a statutory variant.

Two additional options with a building line offset were also created:

- 5 m (minimum variant) – one of the most common sizes in planning (zoning plans, development conditions); the layout allows for parking cars perpendicular to the building,
- 2.5 m (maximum variant) – with a minimum distance that allows for parking of vehicles along the access road.

These assumptions allowed the creation of initial designs of an atrium house on a single plot (Figure 12, Table 2). The house is divided into an entrance area, a living area near the kitchen, and a sleeping area (Adamczewska-Wejchert, 1978). This scheme is best visible in the maximum variant.

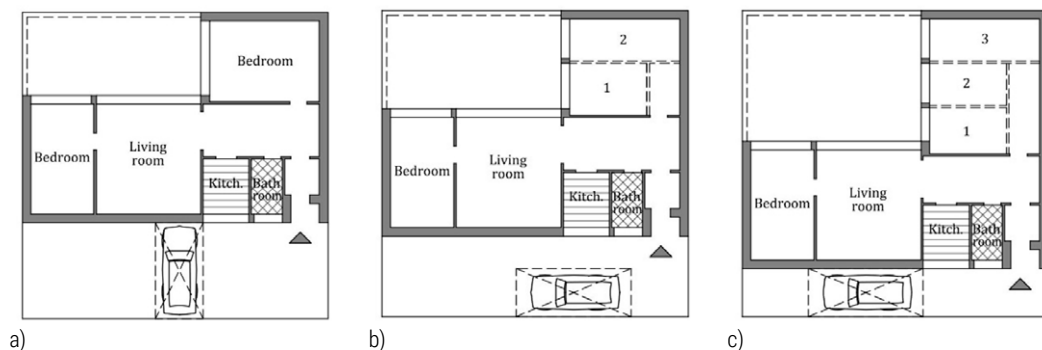


Figure 12. Plan of teoretical atrium-house a) minimal variant, b) statutory variant, c) maximum variant

Table 2. Summary of the area of theoretical plot development with the atrium house on a plot of 16×16 m

Plot area (16 x 16 m)	[m ²]			100%		
	256.00					
	min.	statutory	max.	min.	statutory	max.
	(BL-5m)	(BL-4.2m)	(BL-2.5m)	(BL-5m)	(BL-4.2m)	(BL-2.5m)
Built-up area	135.35	140.65	151.95	53%	55%	59%
Usable area	105.45	108.70	117.35			
Atrium area	40.65	48.15	64.05	16%	19%	25%
Front yard area	80.00	67.20	40.00	31%	26%	16%

Developed Complex of Atriumhousing

In an attempt to accomplish the concept of an atrial development complex, after an analysis of Local Spatial Development Plans (LSDP) in the city of Białystok, zoning plan no. 138 on the Jaroszwowka estate was selected (GIS Service, 2016). The plan's provisions for single-family housing are highly permissive, making it feasible to conduct the intended research. A single-family housing quarter denoted by the symbol 11MN was chosen. The rectangular area of approximately 63x168 meters, covers more than 1 hectare and is enclosed by public roads. The building line along the public roads is set back by 5 meters. Within the quarter it is allowed to develop all applicable types of single-family houses and flat-roofed houses. Other parameters and indicators of building and development (LSDP no. 138) (for terraced housing) are as follows:

- maximum built-up area – 45%,
- min. biologically active areas – 30% (not subject to analysis),
- maximum height of buildings – 10 m (single-storey buildings).

Three variants for the development of the quarter were created (Figure 13), using the already designed atrium house and its plot as a starting model:

- theoretical variant (maximising site usage) – the required parameter of site development was not taken into account; plot areas in accordance with (Table 4); 40 buildings were obtained (Table 3),
- LSDP-compliant variant – a variant that adheres to the provisions of the plan regarding, among other aspects, the development area for each of the resulting plots; the buildings were significantly reduced in their size (Table 4); additional parking spaces and green areas for residents on the shorter sides of the quarter, due to their irregular shapes, were proposed; 36 buildings were obtained (Table 3),

- alternative variant – the quarter was developed in accordance with technical conditions, building lines, without taking into account the provisions of the zoning plan and applicable types of single-family housing complexes; obtained: 31 houses with common green areas, accessible partially from an atrium part of houses, and parking lots for visitors.

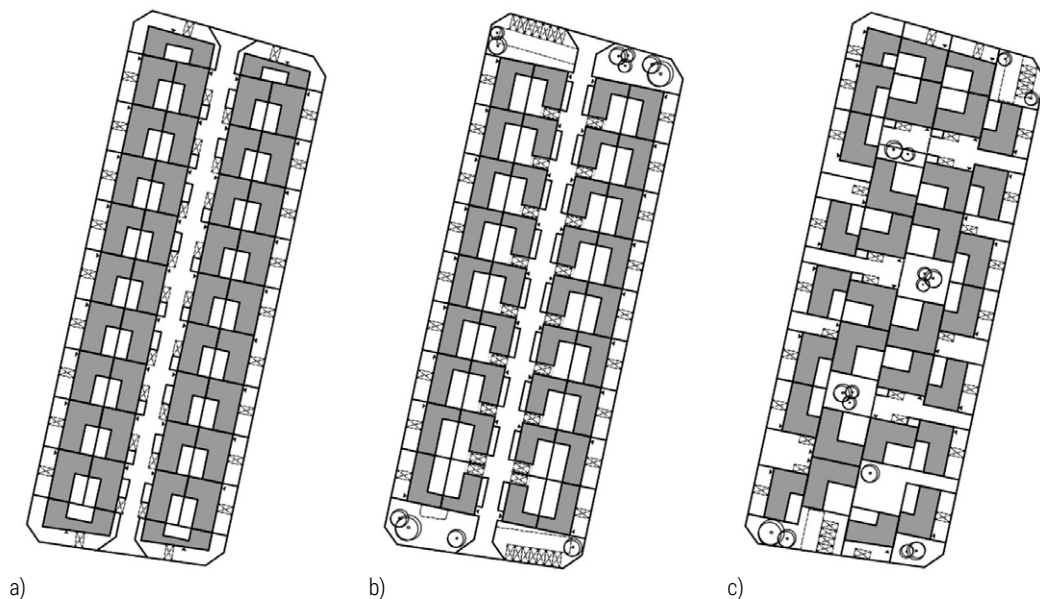


Figure 13. Bialystok, LSDP no. 138, quarter 11MN a) theoretical variant, b) LSDP-compliant variant, c) alternative variant

Table 3. Balance of built-up area and number of houses in each variant

	Plot area [m ²]	Built-up area [m ²]	Number of houses
a) Theoretical	10 587	5 277	40
	100.00%	49.84%	
b) LSDP	10 587	3 756	36
	100.00%	35.48%	
c) Alternative	10 587	4 376	31
	100.00%	41.33%	

A comparison of the theoretical variant a) and the LSDP-compliant variant b) reveals that the permissible built-up area plays a crucial role in the complex's development. The zoning plan requires a maximum building area of 45% for

each designed plot with an atrium house in variant b). This resulted in a reduction of the built-up area of houses in the entire area compared to the theoretical variant a) (Table 4) by:

- 15% for plots with an area of 256 m² (external),
- 28% for plots with an area of 208 m² (internal).

Table 4. Comparison of the built-up area of atrium-houses in: a) theoretical variant, b) LSDP-compliant variant

Exterior plots	Plot area [m ²]	Built-up area [m ²]	Interior plots	Plot area [m ²]	Built-up area [m ²]
a) Theoretical	256.00	135.35	a) Theoretical	208.00	130.60
	100.00%	52.87%		100.00%	62.79%
b) LSDP	256.00	114.87	b) LSDP	208.00	93.55
	100.00%	44.87%		100.00%	44.98%

The smaller plot resulted in a greater loss of built-up area which caused design issues for the atrium house. To maintain the concept of internal courtyard and the functional layout of the dwelling, it was necessary integrate parking space into the structure of the building and replace the bedroom adjacent to the living room.

Variant (c) resulted in fewer houses but a larger development area relative to the entire quarter than in variant (b) (Table 3). The obtained indicator of approximately 41% shows that regulatory interpretation in development approvals is critical. Depending on how the parameter is set (for the entire site or for each plot), the final land use specification will differ.

Discussion/Limitation and future research

The study results align partly with the findings discussed in Orchowska's (2016) and Homansky's (2022) publications regarding among others spatial planning limitations.

The designed variants of atrium building complex on the selected site can be compared to realisations, study projects, and competition works of the 1970s on atrium buildings.

Some problems were associated with identifying a suitable location for the development concept. 34 local zoning plans in the Bialystok city area, which included single-family housing, were analysed. Out of these plans, only 6 satisfied the criteria for selecting a location (quarter) for atrial development (excluding one plan that did not permit a terraced housing complex). The remaining plans had clauses precluding our study for the following reasons:

- too low percentage of permissible built-up area (less than 45%) – 23 cases,
- inability to design a single-storey building – 4 cases,
- inability to install a flat roof – 17 cases,
- provisions limiting the division of plots by their sizes – 3 cases (including, among others, the obligatory provision on the minimum width of 17 m),
- building line at a distance of more than 5 m from the access road – 10 cases,
- restrictions on terraced housing – 10 cases,
- templates – 2 cases.

None of the plans, including those from Hominski's (2022) study, considered atrial development. Hominski (2022) notes several reasons for this, including residents' preference for a detached house type of dwelling as the most representative and the lack of involvement of potential investors in the planning process. In doing so, however, he overlooks the issue of low-rise, high-density residential development emerging since 2007 (Matys, 2018). This type of development is constructed on the basis of single-family housing complexes (semi-detached and terraced houses), using the possibility of separating two dwelling units within one segment (back-to-back and over-and-under layout). Investments of this type are present all over Poland, and the popularity of this type of housing solution is constantly growing. This trend also indicates visible changes in the quantitative structure of single-family housing types, driven by economic and social aspects, leading to an increasingly frequent use of low-rise, high-density housing concepts. Therefore, there is a potential for an increase in interest in atrium housing structures, which are a perfect alternative to low-rise, high-density single-family housing, given their many advantages. Additionally, atrial development benefits the surrounding space in urban areas. The dimensions of the atrium buildings create a neutral form that blends in with the neighbouring high greenery, making it almost unnoticeable at times.

Unfortunately (as in the case of small multi-family housing), currently, the only way to create atrial developments is to apply the laws intended for single-family developments. Although their literal application allows for the erection of atrium buildings, they are limited by many factors, also listed in this article. That is why there viewed examples of existing atrial developments, with the exception of one case, would not meet current legislative requirements and technical conditions and thus would not be created in their existing form.

Taking into account all the above mentioned aspects and constraints, the author believes that this type of cost-effective, low-rise, high-density single-family housing should be reintroduced into the residential construction space of Polish cities.

Therefore, further research on atrial development is necessary, including the exploration of the following:

- aesthetics of atrium houses,
- size and functional layout of all types of atrium houses and also their relation with the urban surroundings,

- size and shape of plots for a single atrium house and for atrial development complexes and their locations in urban and suburban areas,
- size and shape of an atrium and related sunlight exposure,
- pro-environmental solutions that can be applied in atrial development,
- potential for using prefabricated systems for construction (materials, structure),
- defining the issue of common spaces (communication, green areas, playgrounds),
- clarification of aspects related to the construction of a complete atrial development complex (an organised form of investment (Adamczewska-Wejchert, 1978)) and managing the developed housing community,
- need to modify legal provisions regulating the formation of atrial development (parameters, indicators).

Conclusions

As a result of the study, it was found that it is possible to build an atrium house or a complex of atrium buildings in certain locations, on the basis of applicable regulations and planning acts, provided the conditions outlined below are met:

- regular, square or rectangular plots with dimensions of maximum 16x16m,
- provisions in Local Spatial Development Planning or Decision of Site Development and,
- Management Conditions:
 - allowing any division of plots (without indicating their minimum size),
 - permitting the construction of single-family housing complexes (semi-detached, terraced, group),
 - allowing the erection of single-storey buildings with flat roofs,
 - setting building lines as close as possible (maximum 5m) from the border with an access road (public road or internal road),
 - determining a maximum built-up area at min. 45% (65% advisable),
 - lack of obligation to use development templates,
 - not specifying the width of the front elevation.

However, in order to realise the full potential of atrial development, a modification of regulations is needed to restore this style of development and allow all types of atrium buildings for plots of any size.

Until then, attention should also be paid to the influence that atrial development may have on spatial order and the environment resulting from the uncontrolled such realisations in non-urbanised and/or suburbanised areas.

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ZABUDOWA ATRIALNA JAKO EKONOMICZNY TYP ZESPOLONEJ INTENSYWNEJ ZABUDOWY JEDNORODZINNEJ W POLSCE

STRESZCZENIE: Zabudowa atrialna, jako typ intensywnej zabudowy jednorodzinnej, pojawiła się w Polsce w latach 60-tych i 70-tych XX. Najpierw, w 1962, opracowano regulacje prawne. Następnie wzniesiono kilkanaście realizacji oraz prowadzono prace badawcze. Po roku 1990 pojawiała się już tylko w nielicznych publikacjach, a w roku 2003 zniknęła z ustawodawstwa. Celem badań przedstawionych w artykule było wykazania czy istnieje możliwość współczesnego wybudowania domu atrialnego lub całego zespołu zabudowy atrialnej w oparciu o istniejące przepisy prawne i dokumenty planistyczne. W tym celu przestudowano literaturę tematu oraz przeprowadzono analizy 11 istniejących realizacji z lat 70-tych XX. Na podstawie wyników opracowano plan domu atrialnego, który z kolei posłużył do zaprojektowania zespołu zabudowy atrialnej zlokalizowanego na jednym z kwartałów Miejscowego Planu Zagospodarowania Przestrzennego Białegostoku. Wyniki badań potwierdziły, iż współcześnie, przy spełnieniu określonych warunków zawartych w zapisach planów oraz w oparciu o obowiązujące regulacje prawne można zastosować zabudowę atrialną, mimo braku jej przywołania w przepisach dotyczących zabudowy mieszkaniowej.

SŁOWA KLUCZOWE: atrium, dziedziniec, zabudowa atrialna, zespolona intensywna zabudowa jednorodzinna