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THE AESTHETICS OF INCREMENTAL ARCHITECTURE – AN IMPLEMENTATION OF TECHNICAL PRINCIPLES OR AN ATTEMPT TO CREATE A NEW AESTHETIC QUALITY FOR NEW FUNCTIONS IN THE CITY?

ESTETYKA ARCHITEKTURY WZROSTU – REALIZACJA ZAŁOŻEŃ TECHNICZNYCH CZY PRÓBA STWORZENIA NOWEJ JAKOŚCI ESTETYKI DLA NOWYCH FUNKCJI W MIEŚCIE?

Abstract

The paper addresses whether new architectural forms resulting from expanding the city maintain historical continuity. In Polish conditions, superstructures spark controversies over historical value and commercial profit. Incremental architecture aims to create new urban functions related to Sustainable Development Goals. These functions are mostly infrastructural and technical in nature. Presented case study analysis shows the main aesthetic features of this type of development.

Keywords: incremental architecture, housing, industry, urban agriculture, superstructure

Streszczenie

W artykule podjęto próbę odpowiedzi na pytanie o to, czy nowe formy architektoniczne powstałe w wyniku rozbudowy miasta zachowują ciągłość historyczną. W polskich warunkach nadbudowy wywołują kontrowersje związane z wartością historyczną i zyskiem komercyjnym. Architektura przyrostowa ma na celu tworzenie nowych funkcji miejskich związanych z celami zrównoważonego rozwoju. Funkcje te mają głównie charakter infrastrukturalny i techniczny. Przedstawiona analiza oparta na studium przypadku pokazuje główne cechy estetyczne tego typu zabudowy.

Słowa kluczowe: architektura wzrostu, zabudowa mieszkaniowa, przemysł, miejskie rolnictwo, nadbudowa

1. INTRODUCTION

Incrementality is defined as "a method of development born of the opportunities and possibilities of local residents."[1] The main difference between incremental architecture and a typical extension or superstructure of an existing building will be the way the construction

[1] C. Harnish, *Eco-incremental housing: researching typologies and systems in pursuit of a community-based approach to housing upgrades in informal contexts* [in:] A. Petrillo, P. Bellaviti (eds.) *Sustainable urban development and globalization. New strategies for new challenges – with a focus on the Global South*, Springer International Publishing, Cham 2018, pp. 449–461.

process is carried out and its complexity and impact on the daily operation in the building being extended**.** In the case of a typical superstructure, we are dealing with a process that encompasses the entire building and most often results in its temporary exclusion from use. Very often it is associated with giving the building a completely new function, the introduction of which requires the creation of a new utility program and an increase in volume in an accessible way – in this case through superstructure.

Unlike typical superstructure or expansion, incremental architecture is created as an additional layer above the primary function, often with no or minimal architectural input, as a realization of the specific emerging and changing needs of facility users over time. It is, therefore, not planned in advance as a specific function but it may represent a possibility of realization without certainty of its creation. This means that, in the case of incremental architecture, it is impossible to speak of a final, closed form, a "finished" building, but only of successive phases of development. This spontaneity of function and form, which it therefore adopts, is somehow attempted to be tamed in the realizations in Europe. This has led to the emergence of hybrids – buildings designed with the possibility of expansion in the maximum pre-set volume, often also in part of the pre-set function. This restriction is intended, on the one hand, to give a formal framework to spontaneous solutions, but most importantly, it allows for the incorporation of such solutions into the legal systems in force in Europe for the approval of construction projects. So, although the visual effect in both cases will be similar – a new synergistic form will be created, combining new and old tissue, in reality, the genesis of the architecture in both cases is different.

1.1. MATERIALS AND METHODS

The study used mixed research methods. The multiple case analysis method, supported by qualitative methods, was adopted as the primary one. The research was preceded by a semi-structured literature analysis based on PRISMA protocol guidelines. The databases used in the analysis were: Web of Science Core Collection and Artificial Intelligence Research Assistant (Scite.ai) to compare and verify the results obtained.

Table 1. Quantitative analysis of the researched articles by accepted keywords and exclusion criteria. Current as of June 15, 2024. Authors' own elaboration.

	Number of records			
Keywords	**Incremental architecture**		**Incremental housing**	
Exclusion criteria	Web of Science Core Collection	Scite.ai	Web of Science Core Collection	Scite.ai
Total number of records	27	12	85	60
Scope of issues divergent from intended 'architecture', 'art', 'civil engineering', 'architectural engineering' and 'urban design'	25	7	66	42
Duplication of records in databases	1		19	18
Remaining	2	4	18	0

The literature analysis was limited to publications published in English, published in scientific journals indexed in the database. The keywords 'incremental architecture' and 'incremental housing' were used for the initial search of publications. The results of the initial quantitative analysis are described in the Table 1.

The final literature review of the topic included 24 articles dating from 2018–2023. This shows a significant increase in interest in the topic of incremental architecture as one of the sustainable solutions in the built environment.

1.2. LITERATURE REVIEW

Incremental architecture has been described in the literature as a method for building cities from the bottom up and ensuring that housing needs are met.[2] It mainly refers to areas of the so-called South, covering mainly South American, Asian and African countries.[3] Few studies refer to European territories. In this case, the phenomena described mainly concern European social experiments and their evaluations[4]. As the literature explains, non-voluntary incremental solutions are mainly used to meet the demand for housing in places where climatic conditions and legal requirements favour less technologically demanding forms of development. Where the climate is milder, little is needed to ensure proper partition parameters. In European conditions, on the other hand, in addition to the characteristics of the environment, it is necessary to add relatively standardized and restrictive legal requirements, seeking to achieve the greatest possible energy efficiency of the building.

This somewhat explains the distinctive form that has developed in Europe as a pattern of incremental architecture. This is the tendency to superstructure buildings beyond the contour of the finished roofing layers (usually flat roofs) so as not to interrupt the continuity of the insulation (thermal and waterproofing) used on the roofs. However, this is not a trend that has already been clearly recognized in the world literature.

According to recent research by Femke van Noorloos and her team, incremental housing is a strategy based on a progressive system in which incomplete construction is in habitable conditions. Houses are designed so that users can finish them with their own means and

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[2] A. Alam, *Incrementalism, housing supply and city-making from below: learning from Khulna, Bangladesh*, "International Journal of Housing Policy", 16.08.2023, pp. 1–26, article in press. DOI: 10.1080/19491247.2023.2232202 (access: 10.07.2024).

[3] *Ibidem*; F.van Noorloos et al., *Incremental housing as a node for intersecting flows of city-making: rethinking the housing shortage in the global South*, "Environment and Urbanization" 2020, no. 32(1), pp. 37–54. DOI: 10.1177/0956247819887679; R. Ingaramo, I.M. Lami, M. Robiglio, *How to activate the value in existing stocks through adaptive reuse: an incremental architecture strategy*, "Sustainability" 2022, no. 14(9), art. no. 5514. DOI: 10.3390/su14095514; C. D'Ottaviano, D.M. Bossuyt, *Vertical incremental housing in São Paulo. The case of Minha Casa Minha Vida – Entidades*, "International Journal of Housing Policy" 2024, 20.03.2024, pp. 1–26. DOI: 10.1080/19491247.2024.2308716; G.I. Marinovic, *The guideline for customising incremental housing based on two Chilean case studies*, "Journal of Architecture and Urbanism" 2020, no. 44(2), pp. 166–175. DOI: 10.3846/jau.2020.12056; D. O'Brien, S. Carrasco, K. Dovey, *Incremental housing: harnessing informality at Villa Verde*, "Archnet-IJAR – Journal of Architectural Research" 2020, no. 14(3), pp. 345–358. DOI: 10.1108/ARCH-10–2019–0237.

[4] C. Holland, *Wild architecture: The potential of self-build settlements*, "Architectural Design" 2018, no. 88(3), pp. 102–109. DOI: 10.1002/ad.2307.

according to their own needs and tastes. Based on this definition, incremental construction is a process in which people transform their living space over time.[5]

Contrasting incremental architecture, defined as informal or non-institutional architecture, with an institutional approach,[6] by definition, very much limits the spectrum of spatial solutions analysed, so to speak, depriving them of an assumed development plan and bringing to the fore the problems that have already been highlighted – lack of innovation, poor aesthetics, or finally, the need to adapt the emerging forms to technical and technological requirements, hence the much easier implementation of solutions in warm climates.[7]

Only recently has the concept of incremental architecture begun to be extended to other forms of development besides informal or semi-informal ones, combining it with the notion of "adaptive reuse" and a certain pre-planned and adopted strategy for developing and transforming underdeveloped areas with existing buildings.[8]

It is worth noting that the commonly accepted definitions of growth/incremental architecture do not address the direction of that growth. Thus, the examples analysed look at an extensive range of transformations, from the "popular" aestheticisation that in 1976 on the PREVI (Proyecto Experimental de Vivienda) estate in Lima, designed by Aldo van Eyck, made the brutalist form of the estate to be "coloured" with the addition of openwork detailing and plastic ornamental forms, to leaving complete freedom to the designers in the Almere Oosterwold neighbourhood. It is only recently that attention has been paid to the direction of the proposed transformations, because, contrary to its name, growth architecture can involve the expansion of existing structures and their planned reduction along with the changing needs of future users. Thus, vertical growth did not appear in research on residential development in São Paulo until 2024.[9] Only recently has an attempt been made to typify emerging spatial solutions and analyse them morphologically. This is all the more difficult because, in most cases, the analyses conducted still concern informal developments. In research dating back to 2020, Hesam Kamalipour and Kim Dovey identified and named six basic types of growth projects in the case of informal development: additions (extend, attach), renovations (replace, divide, infill, connect).[10] At the same time, Goran Marinovic, defining the typology of incremental housing development, did not assume the possibility of superstructure at all, focusing instead on different types of structure infill and growth by combining segments or extending the outer shell of the building.[11] The same example of the Villa Verde development located in Chile was also used to illustrate the potential for the evolution of incremental development. Evaluation research carried out after several years of operation identified the degree of transformation of the original fabric and the significant degree of expansion of the houses, often beyond the original scope.[12]

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[5] F. van Noorloos et al., *op.cit*.

[6] M. Żyła, *Architektura przyrostowa i problemy naśladownictwa nieformalnych rozwiązań architektonicznych*, "Środowisko Mieszkaniowe" 2020, no. 32, pp. 24–33. DOI: 10.4467/25438700SM.20.024.12888.

[7] *Ibidem*, p. 31; C. Holland, *op. cit*.

[8] R. Ingaramo, I.M. Lami, M. Robiglio, *op. cit*.

[9] C. D'Ottaviano, D.M. Bossuyt, *op. cit*.

[10] H. Kamalipour, K. Dovey, *Incremental production of urban space: A typology of informal design*, "Habitat International" 2020, no. 98, art. no. 102133. DOI: 10.1016/j.habitatint.2020.102133.

[11] G.I. Marinovic, *The embodiment of shell housing: collective creativity for customising dwellings*, "Journal of Housing and the Built Environment" 2023, no. 38, pp. 999–1021. DOI: 10.1007/s10901-022-09977-7.

[12] D. O'Brien, S. Carrasco, K. Dovey, *op. cit*.

The question of the aesthetics of the adopted incremental solutions now seems to be a secondary issue in research on this type of architecture. The already mentioned poor aesthetic quality, being at best an expression of the owner's sense of aesthetics and most often resulting only from the availability of specific means and building materials, is now sometimes raised to the rank of aesthetics itself, which "formal" architecture tries to imitate.[13] Part of the research, however, also draws attention to individualism as the guiding principle of created spaces and the resulting adoption of specific formal solutions.[14]

In the case of formalizing some of the incremental solutions for residential development, the methodology of the design process was also described, requiring an extension to the typical one with an element of extensive and targeted public consultation on potential opportunities and constraints taking place not only at the pre-design and design stage but also during the settlement and during the normal use of the estate.[15] Thus, research has already begun to explore "assisted" growth, guided by selection from a limited range of spatial possibilities.

Only recently has isolated research drawn attention to the possibility of applying forms of incremental architecture at the urban scale and in areas other than just developing countries. In this case, it is immediately linked to the concept of sustainable development and the Sustainable Development Goals (SDGs), and is explicitly included in the adaptive reuse trend.[16]

2. INCREMENTAL ARCHITECTURE, AND FORMAL SOLUTIONS

2.1. FUNCTIONAL DIVISION

According to the typological division proposed by Kamalipour and Dovey,[17] the analysed cases represent a form of additions extending or attached to an existing facility with an essentially finite and permanent form. Few of the newly constructed buildings nowadays assume, as it were, a possible extension as planned from the moment of construction, although we find such examples as well. They are then mainly associated with new, experimental urban forms and functions such as urban agriculture in its various guises.[18]

Incremental architecture is implemented in two main directions. The first involves the implementation of functions that are key to urban life, i.e. aimed at increasing the housing stock, especially in downtown areas. Some of this type of superstructure is part of the planned expansion of functions when changing the use of facilities and adapting them to new purposes. It should be remembered, however, that this is not an actual incremental

[13] M. Żyła, *op. cit*.

[14] F. Encinas et al., *Individualism as public policy: The incremental housing threatened by energy poverty*, "Revista INVI" 2023, no. 38(109), pp. 17–70. DOI: 10.5354/0718-8358.2023.70681.

[15] G.I. Marinovic, *Limits of the current implementation of incremental housing*, "arq: Architectural Research Quarterly" 2020, no. 24(4), pp. 369–378. DOI: 10.1017/S135913552000041X.

[16] R. Ingaramo, I.M. Lami, M. Robiglio, *op. cit*.

[17] H. Kamalipour, K. Dovey, *op. cit*., p. 3.

[18] Cf. Abattoir BIGH in Anderlecht (Belgium), Agrotopia (Inagro) in Roeselare (Belgium) S*Park in Denver (USA), Gotham Green urban farms in New York (USA), Lufa Farms in Ahuntsic, Anjou, Laval or Villa Saint Laurent (Canada).

architecture, since it assumes a single-stage design activity, intended to lead to a permanent change in the body of the transformed building, very often with significant interference with the historical substance and for a certain period of time (for the duration of construction) carried out in facilities that are not in normal use. Thus, they cannot be fully counted as forms of incremental architecture, but as an example of adaptive reuse.

This is an element that has been successfully introduced based on various local characteristics, mainly resulting from local laws. Thus, the adapted element includes multifamily buildings from different historical periods, with preference given to those in some way typified, dating from the second half of the 20th century or earlier – 19th-century townhouses with a repetitive layout.

The second trend includes superstructures of mainly industrial facilities with a change in the original function (from more to less onerous or more socially accessible) or without interference with the function of the building being superstructed. Both trends have developed their own type of solutions, which, of course, limited by technical possibilities, have produced a specific type of aesthetics.

2.2. OFFICE AND SERVICE BUILDING AT 7 KAZIMIERZA WIELKIEGO STREET IN WROCŁAW

In 2016, the renovation and extension of a former market house on the corner of Ruska and Kazimierza Wielkiego streets in Wroclaw began. Dating back to 1899, the building, originally with a commercial and residential function, was built by Robert Burghard and was the site of two earlier townhouses. Rebuilt several times, it gained its final shape in 1925 with the addition of the last arcade span on the side of Kazimierza Wielkiego Street. In this place, the last (fourth) story was moved back to connect it with the neighbouring, lower buildings.[19] Later, the height and shape of the dormers were also changed, adapting the interiors for new functions.

The renovation project for the facility, designed by Tomasz Marhall,[20] assumed a far-reaching functional and structural transformation. In addition to the re-division of functions into a commercial and retail first floor and basement, and two more office floors, the fourth historic floor, along with two more additions in place of the roof, was designated as a residential function. The addition, covered with anthracite-coloured sheet metal, slightly slopes the exterior walls, and their minimal setback from the face of the wall in a way pretends with its geometry to be a roof structure. The superstructure itself reached less than the height of the corner turret of the historic part of the building, which would have been completely absorbed by the tall superstructure. Therefore, the withdrawal of the body of the superstructure in the immediate vicinity of the turret was used. The effect obtained was, on the one hand, the infiltration of the new form into the historic one and, on the other, the "escape" of the new tissue from the accented corner. The applied axial division of the superstructure in part (except for one axis) duplicates the division of the historical part.

[19] K. Kierschke, *Budynek biurowo-handlowy: d. dom handlowy: ul. Kazimierza Wielkiego 7* [in:] R. Eysymontt et al. (eds.), *Leksykon architektury Wrocławia*, Wydawnictwo Via Nova, Wrocław 2011, p. 219.

[20] M. Kokoszkiewicz, *Nadbudowa zabytkowej kamienicy przy Ruskiej wzbudza kontrowersje* [in:] Wyborcza.pl, 6.03.2016, https://wroclaw.wyborcza.pl/wroclaw/7,35771,19723493,nadbudowa-zabytkowej-kamienicy-przy-ruskiej-wzbudza-kontrowersje.html (access: 30.06.2024).

2.3. CONCORDIA HUB IN WROCŁAW

The tenement houses located at numbers 7 and 7a on Słodowa Island in Wrocław were until recently the only remnant of the island's buildings, destroyed during World War II and several years after its end. Dating back to the second half of the 19th century, the buildings were part of a planned, orderly development of an area with previously more industrial use. The 6-story corner townhouse was flanked by a 3-story outbuilding. They served a residential function until they were sold to a private investor, who, in 2018–2020, formally carried out remodelling and superstructure within limits allowed by planning regulations[21]. In fact, all that remained of the original structure were the exterior walls, which were heavily transformed. The facility's function was changed to offices, services and restaurants, giving it the name Concordia Hub[22].

The designers of the facility were MVRDV and Wrocław-based Q2Studio. Of the numerous variants for the solution of the superstructure and expansion, the version that was finally implemented was one that very strongly unifies the historic and new fabric, so much so that the delimitation becomes very difficult to read. The historical elevations were greatly simplified, imposing a monochromatic colour scheme identical to the new one. The exact rhythm of the windows and the axial division of the elevations mean that the presence or absence of artistic detail is not clearly visible. The roof over the entire premise was replaced by a glass and steel structure, partially covered. The lack of clear distinction of the fabric causes only the glazed part to be read as a superstructure.

2.4. TOWNHOUSE UNDER THE GOLDEN SCISSORS IN KRAKOW

Completed between 2018 and 2022, the expansion and superstructure of the tenement house located at 15 St. Gertrude Street in Krakow is a much less spectacular example of incremental action than the previous ones but one that fits much better into the site context. The original design of the tenement, dating from 1878, by Nachman Kopald, was transformed by architects Jakub Turbasa and Wojciech Zagórski[23]. The originally two-story building was a compositional gap in the much higher, compact frontage line. The proposed solution added another two stories of variable height to the tenement, preserving the axial division of the façade. The line of the crowning cornice was maintained as the dividing line of the superstructure part. At the same time, the principle of varying the thickness of the walls of the upper stories was used, which resulted in a natural withdrawal of the superstructure from the face of the wall. The building is crowned with a simplified crowning cornice, levelling the line of the St. Gertrudy Street frontage. The whole building has been given a consistent monochromatic palette – the façade of the superstructure has been covered with rendered brick, with visible

[21] Uchwała nr XLVII/1419/10 Rady Miejskiej Wrocławia z dn. 18 marca 2010 r. w sprawie uchwalenia miejscowego planu zagospodarowania przestrzennego w rejonie ulicy Bolesława Drobnera oraz Wyspy Słodowej i Wyspy Bielarskiej [Resolution No. XLVII/1419/10 of the Wrocław City Council of 18 March 2010 on the adoption of the local spatial development plan in the area of Bolesława Drobnera Street and Słodowa Island and Bielarska Island].

[22] K. Kunka, *Wyspa Słodowa zmieni swoje oblicze* [in:] wroclaw.pl, 3.10.2018, https://www.wroclaw.pl/przedsiebiorczy-wroclaw/concordia-hub-wyspa-slodowa (access: 30.06.2024).

[23] J. Turbasa, J. Turbasa, *Kamienica pod Złotymi Nożycami, Kraków: proj. Jakub Turbasa, Wojciech Zagórski*, "Architektura & Biznes" 2023, no. 5(370), pp. 92–95.

joints. The original residential function of the building has been preserved, and the superstructure used makes it relatively easy to give it a new use in the future.

2.5. GREENPOINT (GOTHAM GREENS) IN NEW YORK

The urban farms created under the common name Gotham Greens function as a commercial enterprise with nationwide industrial operations, creating a network of urban green vegetable production facilities across the USA.[24] The urban farm in Greenpoint,[25] Brooklyn, was built in 2011 as Gotham Greens' first commercial hydroponic rooftop farm. It was designed by New York architect Giuseppe Rosario Anzalone on the roof of a two-story industrial and warehouse building. The facility, in the shape of a typical modular greenhouse, was made of steel construction covered with glass panels. Much of the energy required is provided by a system of rooftop photovoltaic panels occupying the remainder of the roof in addition to the greenhouse. Two staircases from the first floor give access to the facility. One of them is an existing staircase, while the other was added on the east side, interfering slightly with the internal structure of the superstructure. Thus, the superstructure only includes a modular, enclosed vegetable greenhouse and a module of packaging/storage space adjacent to production to the north. The greenhouse solution with a shed roof duplicates the structural module used in the superstructure building. This results in a repetition of the axial division with a contrasting material solution.

This building is an example of the implementation of the idea of incrementality in the conditions of highly regulated construction processes. Taking advantage of the capabilities of industrial buildings, due to the specific way they are designed, providing greater flexibility for changes over time has become a reason for increased interest in them as superstructure facilities.

2.6. ABATTOIR BIGH IN ANDERLECHT

NV Abattoirs et Marchés d'Anderlecht-Cureghem was a complex of suburban slaughterhouses connected to a meat and cattle market, built after 1888. The designers of the complex were Adolphe and Guillaume Charlet, Emile Pierret, Emile Tiron and Henri Chevalier. The analysed building and its extension are part of a larger-scale process planned to revitalise the entire establishment. As part of the FEDER-EFRO program, a decision was made to build a new public market hall that would provide retail space by 2013. The Abbatoir 2020 master plan envisioned a gradual transformation of the site from an industrial, enclosed area into an open area serving the local community and forming an essential part of Cureghem's urban fabric.[26]

Foodmet Hall, now a symbol of the revitalisation process of the complex, has become an essential element of the concept and is used as a host facility in the development process of the farm. Its modern yet simple form is meant to relate to the multicultural character of the district. It was built on an area where an open market (both formal and informal) had long operated.

The Foodmet Hall was built to extend an existing market hall on an open (formal and informal) market site. Designed and realised between 2009 and 2015 by ORG Permanent

[24] A. Philips, *Designing urban agriculture. A complete guide to the planning, design, construction, maintenance, and management of edible landscapes*, John Wiley & Sons Inc., Hoboken 2013.

[25] Gotham Greens Farms Llc, Puri V., *Gotham Greens Farms, Llc Sustainable Urban CEA. Final Report*, https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Publications/Research/Environmental/Gotham-Greens-Sustainable-Urban-CEA.pdf (access: 31.03.2022).

[26] T. Navas, *Monument for an Open Society* [in:] PublicSpace, update 22.08.2019, https://www.publicspace.org/works/-/project/k156-monument-for-an-open-society (access: 10.07.2023).

Modernity design team, it became the basis for a later realisation by the same designer, the Abattoir BIGH urban farm. Construction of the farm began in 2016, the outdoor garden was built in 2017, and the greenhouse was completed in 2018.

The building is one of the first examples of planning new buildings for their future superstructure with an undefined function. In addition to a particular structural limitation, the future investment was imposed only because of the need to move the façade line back from the face of the building and the limited height parameters.

3. CONCLUSIONS

In each case, the superstructures built in Poland constitute an element permanently connected with the building being superstructed, not only in terms of physical connection but, above all, functional dependence. Incremental architecture is created in Poland as part of a broader process of adaptation, far-reaching formal and functional transformations of buildings. Therefore, the forms given to these superstructure parts relate much more strongly to the existing parts, both in terms of material solutions, colours, and purely compositional solutions, duplicating the compositional divisions even in situations not forced by the duplication of the structural arrangements of the existing parts.

In the case of solutions used for the superstructure of industrial facilities, they are less often associated with significant transformations of the existing function. The additional element is a circulation path, if the situation requires it (dictated by legal or functional requirements). The form given to the superstructure results not so much from the need to adapt to the existing facility but from the added facility's function and structural requirements. Hence, the high formal and aesthetic consistency of all superstructures with agricultural and teaching functions is evident in the selected examples.

As such, incremental architecture implemented in the circle of Western culture has many standard features. The superstructure parts are formally different from the host part, distinguished by simplicity of form. Generally, they interact in space with solidity and contrast rather than elaborate detail. The composition is built of elements on the principle of comparison of matter and form, using the general principles of architectural composition consistency, allowing to distinguish the rhythm of the façade, accents inherent in the building as a whole, etc.

Successful realisations occur when using superstructures of buildings that do not harmonise with the surroundings (for example, in the case of building heights lower than the neighbouring frontage development) while not exceeding the height of the surrounding buildings by more than one storey.

Not using solutions known as historicism and avoiding mimicry in shaping the form gives better results, while being consistent with generally accepted conservation doctrines, than trying to "correct" historical solutions. Incremental architecture is characterised by greater randomness of the form of the extended building and greater consistency of the superstructure forms.

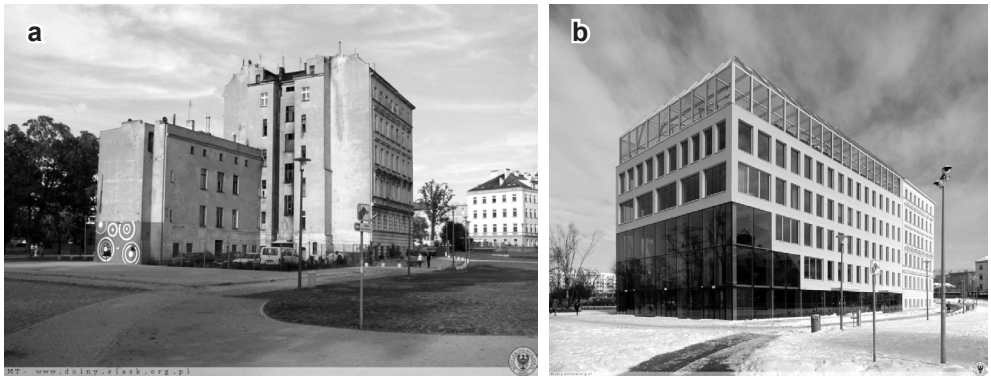
4. SUMMARY

This analysis shows the differences in how incremental architecture forms in areas with a formalised building process. In Poland, it is tough to speak of typical incremental architecture as a form that interferes as little as possible with the function and structure of an existing building.

The examples discussed, and many others that did not fit into this analysis, show significant interference with the entire structure and functional layout of buildings, with extreme examples of leaving only the historic exterior walls and their compositional layout, while completely replacing the interior substance. In this case, the greater the interference with the structure, the greater the compositional coherence of the new and historical elements. On the other hand, the few examples of genuine incremental architecture also remain independent regarding aesthetics.

Based on the examples currently under construction, it is difficult to determine what direction further developments will take. At present, the solutions implement technical assumptions, but one can see the emerging formal unification. At present, it is due to the systematic nature of the solutions, but in the future, it may create a form that is different and characteristic only of the next layer of the transformed city.

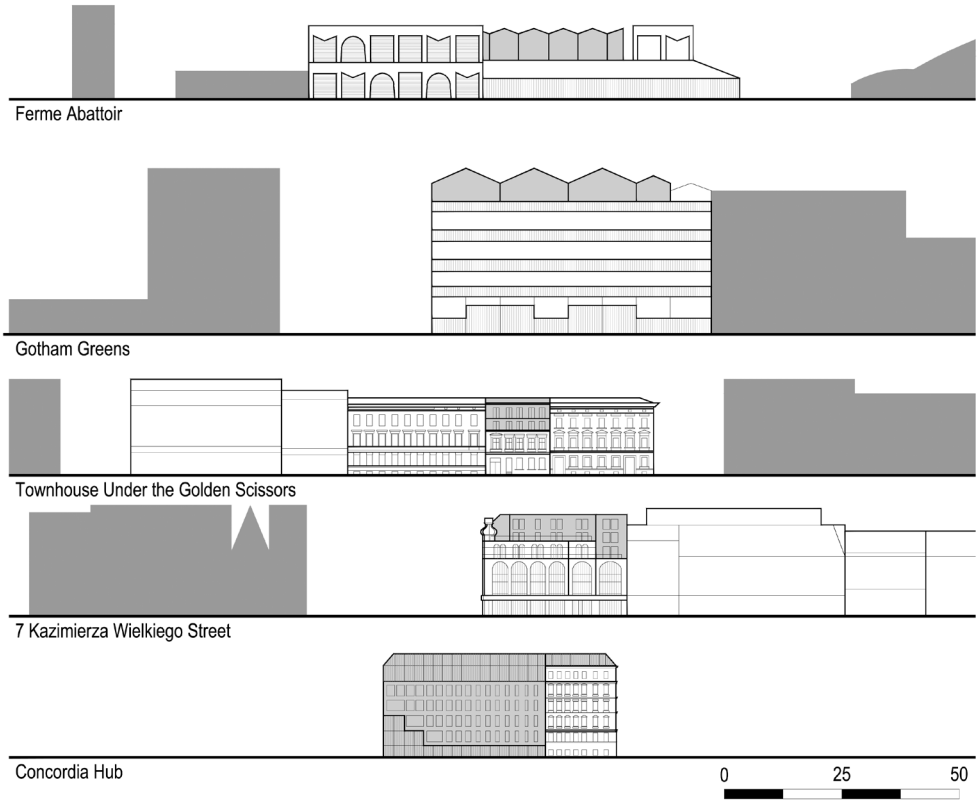
Ill. 1. Tenement house on the corner of Ruska and Kazimierza Wielkiego streets in Wroclaw: a – view from around 2003, photo by Neo[EZN]; b – present view, photo by Dawid Galus, source: Neo[EZN], Kamienica nr 16–17 (7) [in:] Polska na fotografii, 3.10.2003, https://polska-org.pl/601557,foto.html?idEntity=547749 (access: 30.06.2024).



Ill. 2. Tenements No. 7 and 7a on Słodowa Island in Wrocław: a – view before 2017, source: MT, Kamienica nr 7–7a (dawna) [in:] Polska na fotografii, 16.08.2007, https://polska-org.pl/672386,-foto.html?idEntity=521536 (access: 30.06.2024); b – view of Concordia Design, source: jary, Concordia Design Wrocław – Wyspa Słodowa 7 [in:] Polska na fotografii, 13.02.2021, https://polska-org.pl/9166023,foto.html?idEntity=7547269 (access: 30.06.2024).

Ill. 3. Gotham Greens rooftop farm in Greenpoint, source: 810 Humboldt Street [in:] Greenpoint Manufacturing and Design Center, https://gmdconline.org/gmdc_buildings/810-humboldt-street (access: 30.06.2024).

Ill. 4. Ferme Abattoir on the roof of Foodmet Hall, Anderlecht, 2022, photo by author.



Ill. 5. View expansions of the analysed facilities: 1 – Abattoir Bigh in Anderlecht, 2 – Greenpoint (Gotham Greens) in New York, 3 – Townhouse Under the Golden Scissors in Krakow, 4 – office and service building at 7 Kazimierza Wielkiego Street in Wroclaw, 5 – Concordia Hub in Wroclaw, author's own elaboration.

References

[1] Alam A., *Incrementalism, housing supply and city-making from below: learning from Khulna, Bangladesh*, "International Journal of Housing Policy", 16.08.2023, pp. 1–26, article in press. DOI: 10.1080/19491247.2023.2232202 (access: 10.07.2024).

[2] D'Ottaviano C., Bossuyt D.M., *Vertical incremental housing in São Paulo. The case of Minha Casa Minha Vida – Entidades*, "International Journal of Housing Policy" 2024, 20.03.2024, pp. 1–26. DOI: 10.1080/19491247.2024.2308716.

[3] Encinas F. et al., *Individualism as public policy: The incremental housing threatened by energy poverty*, "Revista INVI" 2023, no. 38(109), pp. 17–70. DOI: 10.5354/0718-8358.2023.70681.

[4] Gotham Greens Farms Llc, Puri V., *Gotham Greens Farms, Llc Sustainable Urban CEA. Final Report*, https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Publications/Research/Environmental/Gotham-Greens-Sustainable-Urban-CEA.pdf (access: 31.03.2022)

[5] Harnish C., *Eco-incremental housing: researching typologies and systems in pursuit of a community-based approach to housing upgrades in informal contexts* [in:] Petrillo A., Bellaviti P.

(eds.) *Sustainable urban development and globalization. New strategies for new challenges – with a focus on the Global South*, Springer International Publishing, Cham 2018, pp. 449–461.
[6] Holland C., *Wild architecture: The potential of self-build settlements*, "Architectural Design" 2018, no. 88(3), pp. 102–109. DOI: 10.1002/ad.2307.
[7] Ingaramo R., Lami I.M., Robiglio M., *How to activate the value in existing stocks through adaptive reuse: an incremental architecture strategy*, "Sustainability" 2022, no. 14(9), art. no. 5514. DOI: 10.3390/su14095514.
[8] Kamalipour H., Dovey K., *Incremental production of urban space: A typology of informal design*, "Habitat International" 2020, no. 98, art. no. 102133. DOI: 10.1016/j.habitatint.2020.102133.
[9] Kierschke K., *Budynek biurowo-handlowy: d. dom handlowy: ul. Kazimierza Wielkiego 7* [in:] Eysymontt R. et al. (eds.), *Leksykon architektury Wrocławia*, Wydawnictwo Via Nova, Wrocław 2011, p. 219.
[10] Kokoszkiewicz M., *Nadbudowa zabytkowej kamienicy przy Ruskiej wzbudza kontrowersje* [in:] Wyborcza.pl, 6.03.2016, https://wroclaw.wyborcza.pl/wroclaw/7,35771,19723493,nadbudowa-zabytkowej-kamienicy-przy-ruskiej-wzbudza-kontrowersje.html (access: 30.06.2024).
[11] Kunka K., *Wyspa Słodowa zmieni swoje oblicze* [in:] wroclaw.pl, 3.10.2018, https://www.wroclaw.pl/przedsiebiorczy-wroclaw/concordia-hub-wyspa-slodowa (access: 30.06.2024).
[12] Marinovic G.I., *Limits of the current implementation of incremental housing*, "arq: Architectural Research Quarterly" 2020, no. 24(4), pp. 369–378. DOI: 10.1017/S135913552000041X.
[13] Marinovic G.I., *The embodiment of shell housing: collective creativity for customising dwellings*, "Journal of Housing and the Built Environment" 2023, no. 38, pp. 999–1021. DOI: 10.1007/s10901-022-09977-7.
[14] Marinovic G.I., *The guideline for customising incremental housing based on two Chilean case studies*, "Journal of Architecture and Urbanism" 2020, no. 44(2), pp. 166–175. DOI: 10.3846/jau.2020.12056.
[15] Navas T., *Monument for an Open Society* [in:] PublicSpace, update 22.08.2019, https://www.publicspace.org/works/-/project/k156-monument-for-an-open-society (access: 10.07.2023).
[16] van Noorloos F. et al., *Incremental housing as a node for intersecting flows of city-making: rethinking the housing shortage in the global South*, "Environment and Urbanization" 2020, no. 32(1), pp. 37–54. DOI: 10.1177/0956247819887679.
[17] O'Brien D., Carrasco S., Dovey K., *Incremental housing: harnessing informality at Villa Verde*, "Archnet-IJAR – Journal of Architectural Research" 2020, no. 14(3), pp. 345–358. DOI: 10.1108/ARCH-10–2019–0237.
[18] Philips A., *Designing urban agriculture. A complete guide to the planning, design, construction, maintenance, and management of edible landscapes*, John Wiley & Sons Inc., Hoboken 2013.
[19] Szmygin B. (ed.), *Międzynarodowe teksty doktrynalne ochrony i konserwacji zabytków*, Wydawnictwo Naukowe Politechniki Lubelskiej, Polski Komitet Narodowy Międzynarodowej Rady Ochrony Zabytków ICOMOS Polska, Lublin, Warszawa 2023.
[20] Turbasa J., J Turbasa., *Kamienica pod Złotymi Nożycami, Kraków: proj. Jakub Turbasa, Wojciech Zagórski*, "Architektura & Biznes" 2023, no. 5(370), pp. 92–95.
[21] Uchwała nr XLVII/1419/10 Rady Miejskiej Wrocławia z dn. 18 marca 2010 r. w sprawie uchwalenia miejscowego planu zagospodarowania przestrzennego w rejonie ulicy Bolesława Drobnera oraz Wyspy Słodowej i Wyspy Bielarskiej [Resolution No. XLVII/1419/10 of the Wrocław City Council of 18 March 2010 on the adoption of the local spatial development plan in the area of Bolesława Drobnera Street and Słodowa Island and Bielarska Island].
[22] Żyła M., *Architektura przyrostowa i problemy naśladownictwa nieformalnych rozwiązań architektonicznych*, "Środowisko Mieszkaniowe" 2020, no. 32, pp. 24–33. DOI: 10.4467/25438700SM.20.024.12888.

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