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## Detail, Façade, and Colour in the Architecture of Polish Single-Family Houses after 1989

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**Abstract.** The article presents single-family houses architecture transformations since 1989, with particularly close attention paid to the significance of detail, façade, and colour. The article presents the architecture as an art of designing and building facilities with both use and aesthetic value, an art of shaping space and building forms. Architectural work should correspond to the intended function, technique, economic and aesthetic requirements, thus shaping all elements of human immediate environment, both inside and outside of the building. Architecture of the building is perceived as form, structure, and function, as well as detail, façade, and colour. Façade and colour are created through materials used for external finishes. The solid of the building is noticed first while looking at the building, then the finishes detail such as colour, façade, and detail. Materials for external finishes are commonly selected for their aesthetic value equally with their technical characteristics. The detail was always a characteristic element of style. However, currently the fashion for details can be observed, the fashion for usage of materials for external finishes and inter-connected with that colour and façade. The architecture of Polish single-family houses underwent considerable metamorphosis after system change of 1989 – from destitute in form, devoid in detail and colour socmodernism, to architecture extremely varied in terms of form, utilised structures, materials, and detail. Hence, appearance of the phenomenon called fashion can be observed in the architecture, understood as constant changeability, seeking novelty, and creation based on opinion-forming centres. The architectural fashion consists of form, function, structure, building materials, detail, façade, and colour trends, e.g. after rejecting socmodernism, steep roofs characteristic for single-family houses trend started. After 1989, initially individual single-family house projects were created; however, rapidly developing building market precipitated the creation of catalogue solutions, repetitive and conventional. Currently, potential customers have access to catalogues of numerous design studios and companies, every last one including few dozens of comprehensive constructions design options of single-family house at the fewest. In the conventional catalogue designs, steep roofs began to gain popularity, becoming increasingly complicated with various choices of roof windows as time passes. The entrances are frequently adorned with porticos and columns. So-called “mansion architecture” of the single-family houses has developed. Recently, fashion alluding to modernism of 1920s has developed in the single-family houses architecture. New trends among architects are adapted with increasing frequency by investors looking for unconventional solutions. The neo-modernism trend is noticeable predominantly in individual projects; however, it appears in catalogue propositions with increasing frequency. Designs of single-family houses of simplistic shape and distinct expression emerge, with flat roofs, minimalistic detail, and vital, carefully chosen in terms of façade and colour, material solutions of wall finishes. Apart from the conventional solutions, presently the building market offers a vast variety of meticulously prepared, factory-made, and thoroughly checked in various realisations details. Architects discontinued using manufactured and individually designed detail in favour of utilising conventional solutions for designed objects. In a well-designed single-family house, façade, colour, and detail of materials utilised in external finishes should harmonise with the building shape and form.



## 1. Introduction

"Architecture – the art of designing and constructing buildings that have artistic value apart from their useful purpose... Nowadays, architecture is understood as a discipline that organizes and shapes the space in terms of real forms which are fundamental to satisfy material and spiritual needs of a human. It is thus a reflection of the social and economic reality, a testimony of a given stage of its development. An architectural work should correspond to the intended function, technique as well as economic and aesthetic requirements, and thus resolve problems associated with shaping all elements of direct human surroundings inside and outside the building. These are the invariable objectives of architecture which were pursued in the past and continue to be pursued today in various forms and technologies". [1]

In a colloquial sense, when we speak about the architecture of a building, we describe its form – the shape, function, structure as well as the detail, texture and colour. Colour and texture are associated with the materials used for the building finish. The role of the detail has changed within various styles. This element used to be closely linked to a building's form or served a purely decorative purpose.

The architectural transformations of single-family houses in Poland after 1989 are the expression of the dominating fashion trends, not a style. "An architectural trend depends on the investor, things he likes and decides to pay for; what he deems profitable. This, however, is only a part of the truth, because the investor is not the designer; he merely chooses the variants created by the architect". [2]

Human is the main subject of architectural activity. Single-family house designs are offered to an individual investor, whose behaviours, psychological preferences and habits stem from the tradition on one hand, but on the other hand they are also affected by the trends dominating during a given period, which the investor might embrace or reject.

## 2. Polish cube houses

The starting point for describing the transformation of single-family housing after 1989 is the so-called Polish cube house (see Figure 1a). This cuboidal single-family building had to comply with then-existing regulations on the total area size, which could not be breached. The minimized floor space and built-up area determined the functional design of the interior as well as the parameters of the respective elements. The staircases were uncomfortable, cramped and usually utilized trapezoidal steps. At the same time, this house shape was also determined by the availability of building materials and structure types. Before 1989, the building materials market was very poor and hardly available to an individual "private" investor (see Figure 1b). Houses were built using any materials available at the time. The next version of the cuboidal building typically had two stories, a basement and a flat roof. It was characterized by the lack of detail, proportion, connection with the surroundings, poor finish of facade materials and, what is really important, the lack of colour.

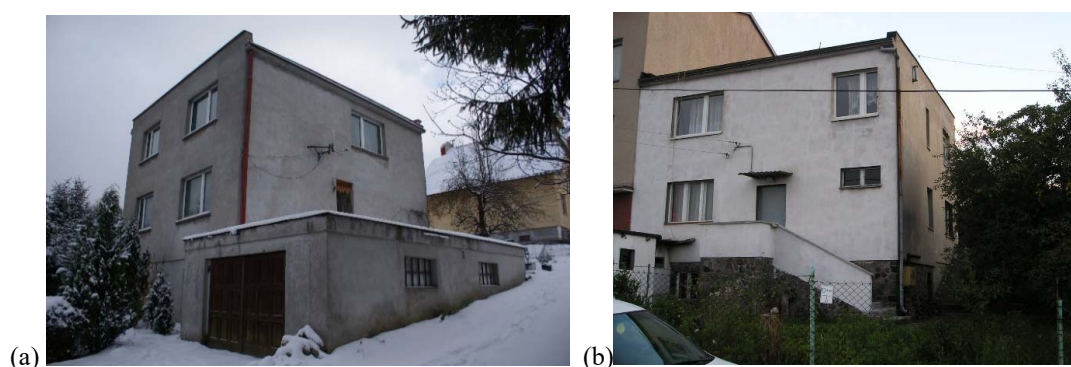


Figure 1 (a) (b) Polish cube houses

It can be found also find examples of attempts at breaking the monotonous character of such buildings through the addition of balconies, crafted railings, varied finish on basement walls and plinths with different materials – a common choice was stone from erratic boulders (popular on the north of Poland in many periods in the past) – a type of traditional material. People also added cornices to crown the building structure and emphasized entrances by means of stairs with railings and small roofs. In general,

traditional cement and lime plasters were used. However, they were rarely given any texture despite the fact that this aesthetic had been known for a long time. Basements were constructed in way to allow for their conversion into residential or utility rooms during the regular use of the building, thus bypassing then-existing regulations. The building program often included a basement garage, boiler room etc. Basements were located shallow in the ground, also to provide car access to the garage in relatively small construction plots.

Despite the fact that the simplicity of the building shape stemmed from modernism, this version of modernism was in fact very poor. The above described single-family housing had only one feature in common with the principles of modernism - simplicity of the form and flat roofs. There are few examples of single-family Polish cubes that were created after 1989. In most cases they were reconstructed, expanded and given additional stories so as to adjust them to the current needs of individual investors and requirements of the neo-modernist aesthetics and existing regulations.

### 3. Single-family housing after 1989 - transformation.

After 1989, Poland experienced a social and economic transformation. The building market was expanding gradually yet quite rapidly; the latest construction technologies, building materials and finishing materials became available. An individual investor had unrestrained access to those resources, with prices being the only limitation. At same time, the rigid restrictions regarding the living area size were lifted. In 2003, Krzysztof Muszyński wrote that during that time Polish architects had full access to the latest materials and technologies; unlimited access to information on the internet, professional literature and television as well as the possibility of visiting constructions sites, trade fairs or exhibitions, either as an individual customer, a researcher or a delegated employee. Foreign investors and designers also participated in the Polish 'reality' of construction and design. [3] It can be agreed that this claim still remains valid. This was reflected in the designs and completed projects of buildings in varied shapes (see Figure 2a), forms, which were built from different materials and utilized various construction solutions. At first, these were individual projects (see Figure 2b).

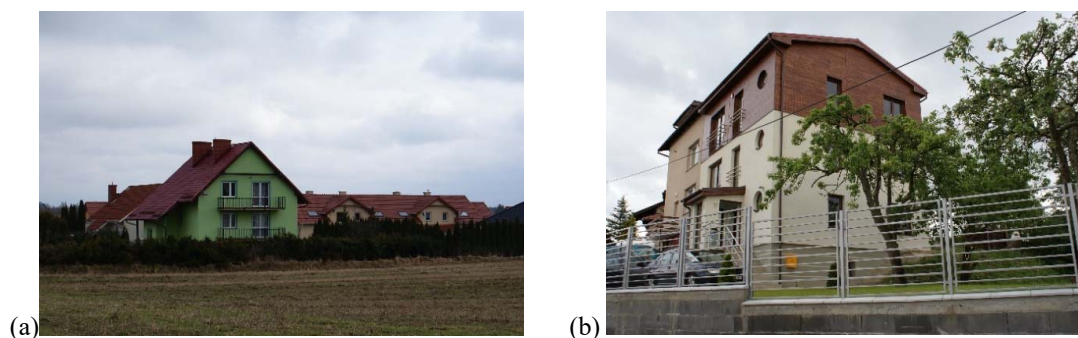


Figure 2 (a) (b) Individual projects

Architects soon became aware of the huge interest in such designs while also taking into account the investors' desire to minimize the costs of design documentation. Design companies started to publish catalogues with comprehensive construction designs. This growing *catalogue architecture* is less expensive than designs made to individual order. Designs from a catalogue only require adaptation to the conditions of the plot (terrain) where they are going to be implemented. Those catalogues often contain as much as several hundred design proposals.

### 4. Popularity of steep roof.

"Fashion in individual single-family housing is a distant and clearly belated echo of general trends in modern architecture. For example: it is currently fashionable to raise houses with steep roofs and adding steep roofing to the existing buildings with flat roofs. This tendency greatly transforms the scenery of entire streets and districts which have been full of Polish cube houses..." This is a statement of an architect from 2003. [4] After the rejection of socmodernism, there ensued a fad for steep roofs, which



became increasingly complicated over time. We can notice this while browsing catalogues with single-family house designs that have been published since the 1990s. Roofs are the dominating element in the shapes of the designed and constructed buildings. Typically, these are single-story buildings with a residential attic. In order to light the attics, people started to use dormers in various shapes as well as roof windows, which appeared in great numbers on the building market. The investors' demand for expanding the functionality and increasing the floor area was reflected in the designs by complicating the building shape and providing additional accents such as porches with two columns in order to emphasize the entrance. The designs of single-family houses started to resemble Polish manors and gained the name of "manor architecture" (see Figure 3 a, b).

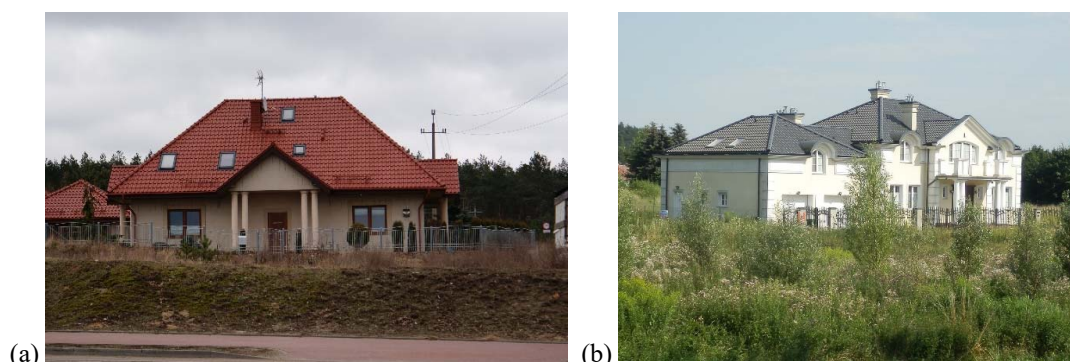


Figure 3 (a) Manor architecture; (b) Manor architecture

The dominant role of roofs requires designers to exercise great diligence in the selection of materials for roof covering, considering not only their technical properties but their aesthetic value as well. The type of covering is reflected in architecture as the texture. Manufacturers of various types of roof coverings provide designers with a vast selection of colours while maintaining the same texture of the used materials. The textures and colours proposed in catalogue designs are often changed at the investor's behest during project execution. An arbitrary change of the roof covering material, especially with respect to its colour, greatly impacts the architecture of a building. At first, simple colours were commonly used - red roofs were combined with bright (usually white) walls. Roofs were covered with tiles (see Figure 4a) or metal shingles (see Figure 4b) which imitated the texture of roof tiles.

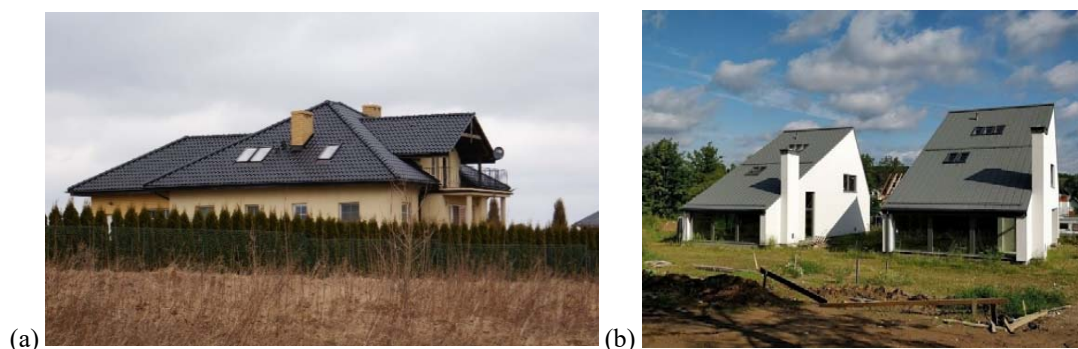


Figure 4 (a) Roof covered with tiles; (b) Roof covered with metal shingles

There is a wide selection of roof tiles in terms of their texture, colour and finish, including fish scale roof tiles or monk and nun tiles. The most common colours offered by manufacturers include: brick-red, dark red, natural red, brown, chestnut brown, copper, black-brown, graphite, anthracite, black, grey and dark blue. Surfaces - matte, engobed matte, glazed gloss. Metal shingles were becoming increasingly popular as they were less expensive than ceramic roof tiles. They offered large possibilities in terms of colour use. Certain manufacturers offer shingles in all RAL colours.

Apart from red roofs, we can also spot some in green, blue, brown, blue-gray, black, graphite, gloss or matte finish. The texture of these roofs is also varied. However, a roof covered with plain tiles is a more elegant solution. The most common facade finish, regardless of the type of materials used for wall construction, has been, and still is, thin-layer plaster placed on the insulation layer. Various manufacturers offer materials and technologies which allow for the use of different textures and almost any colour. However, the dominating colour seen on "manor houses" was white. The popularity of steep roofs and manor architecture, created by investors and architects, was reflected in the created local land use plans which imposed the placement of roofs at an angle between 40 to 45 degrees.

As a result, nowadays it is difficult to obtain a permission to use different solutions due to the provisions of the above mentioned plans. Later, architects became disinterested with this architectural trend in single-family housing. The more sophisticated investors expected changes. Steep roofs ceased to be as much popular. There was a change towards neo-modernism. Krzysztof Ingarden defines neo-modernism as: "Architecture that is disciplined in form, restrained in expression, relates to the modernism of 1930s and Gdynian modernism, is often sophisticated in terms of structure, but it also does not avoid references to the scale and tradition of a place..." [5]

### 5. The neo-modernist trend

"Trend - constant variation of the form, lack of continuity, search for novelty, creation based on opinion-forming centres", [6]. The architecture of single-family houses in the second decade of the 21st century is strongly affected by neo-modernism. This notion denotes the return to geometrical shapes with a strongly defined expression, flat roofs and particular colours. While browsing the currently published catalogues with typical houses offered for the years 2017 and 2018, we can find a very wide selection of designs influenced by this trend. Manor-like buildings with steep roofs have ceased to dominate. On the other hand, the latest buildings with steep roofs significantly differ from the previous designs. They have different shapes and the roof is often connected with the walls as a result of the materials used for their finish (see Figure 5a). Eaves are no longer used; roof drainage systems are also different. The colours of the entire building form are uniform - we cannot find striking contrasts between the wall and the roof. At the same time, there are increasingly more designs relating to the concept of modernist houses. "The modernism of 1920s propagated unity of construction and form, which was supposed to be simple and terse by definition... the "new modernism" of today is, above all, a trend for the modernism from the first half of the 20th century..." [7] Custom designed single-family houses, which emphatically refer to their surroundings, serve as an impulse for modernist designs offered in catalogues (see Figure 5b).



Figure 5 (a) Roof connected with the walls; (b) The neo-modernism trend

"A single-family house is a task, where the recognition of needs, which the architect has to adjust for the individual user by utilizing his reason, intellect and imagination, is possible only through conversation with the client, which is not the case when there is no defined recipient." [8] The trend for neo-modernist single-family houses gained popularity among architects within the last few years, and currently receives more and more appreciation from the more sophisticated investors. Catalogues containing reproducible house designs are published not only by Polish design companies, but also international companies having their branches in Poland. This offers a greater selection of modern and

unusual designs for the investors. At the same time, a comprehensive construction design of a selected typical building is considerably cheaper than custom designs. However, the provisions of local land use plans still continue to be an obstruction. In Poland, a single-family house designed and constructed based on a custom design plan made according to the latest trends is a rarity. It can be assumed that over time those simple shapes with a strongly defined expression and flat roofs, selected by investors from single-family house catalogues, will dominate in the newly designed single-family housing estates, provided that the provisions of local land use plans allow for this to happen.

## 6. Colour in the architecture of Polish single-family houses

"...in the architecture of the last few decades there exist clear colour tendencies, which come and go every five or ten-odd years as the new varieties of the same colour leitmotif." [9] In the latest catalogues of single-family house designs we can observe not only a change in the building shape design, but also in the colour trends; a change occurring both in single-family houses with steep roofs and typically neo-modernist buildings. Neo-modernist facades are predominantly white, sometimes with a small addition of its various shades (see Fig 6b). Light-coloured walls are juxtaposed with the fragments of the building that need to be emphasized, which are made from wood finished in natural and soft brownish colours. Different shapes, sizes and methods of combining wooden elements allow for obtaining different textures, from smooth surfaces with a slightly noticeable shape of vertical or horizontal divisions to strongly accented louver designs. The colour is selected depending on the wood type, from very light browns to dark brown. Another solution to be frequently used in house designs is the use of light-coloured stones, usually sandstone. The texture of the entire fragment of the building is obtained by means of the size of stones, their surface texture, the method of combining all elements and the selected natural colour of the material. The available colours include grey, ochre, light brown, cream and white-grey. Some designs also utilize ceramic finishes on certain fragments of the building form. The selected ceramic elements have light colours and matte surface. The texture is determined by the manner in which they are placed and pointed. White colour is dominant in the form of the building. Smooth walls with plaster finish are usually white. White is juxtaposed with other colours. The entire form of the building usually utilizes up to three colours. Different colour solutions are proposed, including a combination of white with black, black with brown, white with grey or white with grey and brown. Large parts of the facade are glazed (see Figure 6a).

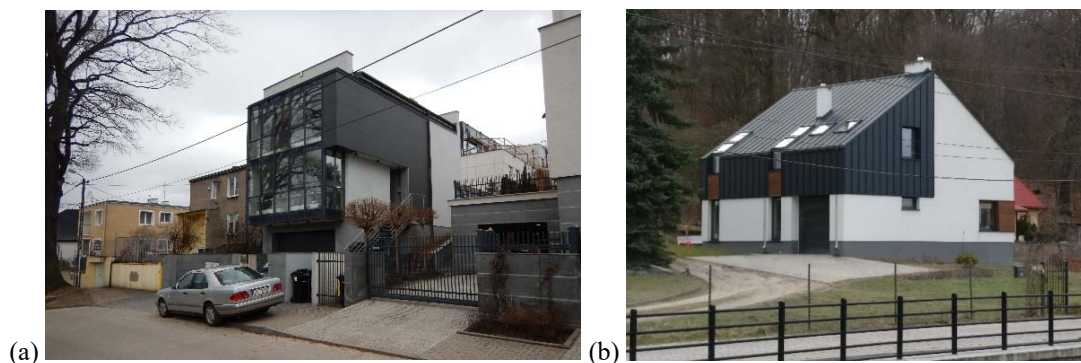


Figure 6 (a) Glazed facade; (b) White facades with a small addition of its various shades

The latest designs of buildings with steep roofs propose reserved colours. Walls are mostly painted white or white mixed with another colour while roof coverings are light grey, light blue, light green, beige, blue-grey or in natural metallic colours. There is a lack of clear contrasts.

We can find interesting colour solutions in single-family houses constructed according to custom designs: white, even entire buildings in white, white combined with another colour, contrasting white and black, white and dark brown, a juxtaposition of white and its shade with small wooden accents, or even the entire building form in dark brown or anthracite. When constructing houses according to a design selected from a catalogue, the colour solutions proposed by their authorized are not always adhered to. It is good when those changes are introduced with the designer's permission and take into

account the building's surroundings. The choice of colours, their proportions and distribution on the building form determines the level of its definition and architectural value. At the same time, the texture of materials used for the building finish, on which the colour is subsequently applied is also not without significance. A colour applied on a smooth surface is perceived differently from the same colour on a heavily textured surface. The texture and colour are closely related in the architect's vision, being important elements of the constructed form. In the perception and assessment of a modern single-family house from an architectural point of view, we treat them as a factor that may strengthen the effect evoked by the form.

### 7. Details in the architecture of a single-family house

In a colloquial sense, a detail is a small element being a part of a whole. In the architecture of a building, it may serve a function closely linked to the form or be there for merely supplementary, decorative purposes. By looking at the detail in buildings constructed in various periods we can flawlessly determine the architectural styles they belong to. This also applies to the architecture of single-family houses in Poland. The details crafted according to individual designs, which were widely used in Poland before 1989, have been replaced by typical factory-manufactured details with a clearly defined installation method. The same details are currently used in buildings serving various purposes. The architect must use his skills to choose appropriate finished details for a given single-family house design so that these details harmonize with the form, texture and colour. Nowadays there is a wide selection of typical finished details available on the market.



Figure 7 (a) Decline of details; (b) Simplified details

Along with the changing trends regarding the architecture of single-family housing, in recent years we have observed a decline in the amount applied details or even a complete lack thereof (see Fig 7a). The used detail is exactly as the building form - simple and geometric. It can be concluded that their choice is determined by the building form and finish materials. The simpler the building form, the less detailing is applied. In a single-family house with simplified steep roofs, eaves-less roofs, and particularly neo-modernist houses with flat roofs, the detail serves a role in creating the form, and does not perform a decorative function. The detail harmonizes with geometric divisions of the facade and selection of materials used for the external finish of a building. The most common forms of detail are: balcony railings, terraces, French windows and loggias. The most popular types of railings are those made from organic, tempered and laminated panels, with subtle tinting in various colours or completely transparent (see Fig 7b). Laminated glass panels also utilize glass with patterned films. We can also choose solutions available in manufacturers' catalogues, which offer meticulously developed systems for mounting glass panels on metal profiles and the building's structure. Profiles made from coated and uncoated steel and aluminium are typically used. Less popular solutions include openwork railings made from stainless steel, zinc-coated steel, coated steel and aluminium profiles. Another available option is a steel cable railing system.

In buildings with steep roofs we can also find details in the form of finishes applied on eaves, gutters, roof tops, chimneys etc. Neo-modernist buildings utilize external decorative louvers, sliding shutters



which can cover large glazed fragments on the facade, louvered shutters as well as elements of terrace architecture.

In catalogues with single-family house designs we can find neo-modernist houses with almost no detail.

## 8. Conclusion

We can observe two trends in the design and construction of single-family houses in Poland during the second decade of the 21st century: custom house designs and reproducible catalogue designs. The custom designed houses are located in unusual situations, where the proposed building form is determined by that situation and harmonizes with the surroundings. Some of the constructed houses were located on large plots; in open spaces within the landscape, which meant they were free from any neighbourhood-related interference. [10] Those conspicuous single-family houses are an inspiration for creating reproducible designs. Reproducible catalogue designs are adjusted in order to be implemented on smaller plots and are chosen by investors due to the substantially lower costs of documentation. [11] However, at the time of their creation those designs could not take the building's surroundings into account and therefore the finished buildings may sometimes not blend well with the rest of the neighbourhood. A reproducible design is adjusted to the particular conditions of the area where it is going to be implemented only in cooperation with the design creator. The creators of reproducible designs sometimes propose different colour and material variants. If that is not the case, it is possible to change the finish materials with the permission of the creators, which leads to a change in terms of the colour and texture, giving the opportunity to partly adapt the building's aesthetics to its surroundings or cause it to contrast with the neighbouring structures.

There is a lack of spatial harmony in Polish single-family housing estates (see Figure 8). The neighbouring houses were designed over ten years ago, being arbitrarily chosen from old catalogues by different investors. As a result, we have a domination of steep roofs in various shapes. Neighbouring buildings are usually situated on small plots, relatively close to each other. It can be also stated that they lack any interconnecting elements.



Figure 8 Lack of spatial harmony in Polish single-family housing estates

When selecting a design, the investor should consult his choice with an architect and not rely on his own taste. A collaboration between architects and investors enables for considering not only the aesthetics of a single house, but also the spatial order of the entire single-family housing estate. A housing estate should not be merely a collection of arbitrarily selected houses. "A house is not only the place that we experience in our everyday life, and in which we want to feel homely and safe. A house is also a place which shapes our desires, views as well as family and social bonds..." [12] Here we should emphasize the phrase "social bonds". A house together with its surroundings, separated from the housing estate area by means of a fence or a hedgerow, should correspond to the rest of the housing estate through certain visual elements. This might be the detail, texture, colour or a well-shaped form (which is however a more difficult task to complete).

The colour, texture and detail of a building play an important role in the perception of its form by an observer who assesses its architecture. These three factors are determined by the selection of materials used for the external finish of the building form.

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