

**Bogna Ludwig\***

## *Half hip and hip roof with an attic in Lower Silesian towns at the beginning of the Prussian rule. Systematization of fire regulations and the form of roofs*

### *Introduction*

The half hip roof, typical for towns in the sub-Sudeten region, appeared after the Silesian Wars in places where the first brick houses, usually covered with tiles, were built, or tenement houses were rebuilt after war devastation or fire damage. At the same time, a different construction was used – a hip roof, in many cases supplemented by a transverse roof with a large dormer on the front side. In the crowning of the façades of such tenements, a complex structure was used – a half gable [1], with attached walls on the sides creating the form of an attic (Figs. 1, 2). It was not only a regional solution – outside the cities of this region it occurred sporadically in several Czech towns (e.g. Prague or Pardubice) and in the Inn and Salzach valleys (e.g. Innsbruck, Scharding or Burghausen). It was fundamentally different from the French and Viennese attics, which became the model at the turn of the 17<sup>th</sup> and 18<sup>th</sup> centuries in the Central European region, as well as from the comb or gable attics still used in the 18<sup>th</sup> century in the Polish-Lithuanian Commonwealth. The form of the half hip roof attic was so unique that Polish researchers beginning their work in Lower Silesia after World War II were unable to recognise it in the engravings by Friedrich B. Wernher and suggested that the notation was an inept interpretation of Renaissance attics. Over time, the surviving specimens made the mistake clear. A detailed study of the history of the Świdnica tenement houses by Małgorzata Chorowska and Czesław Lasota focuses on earlier periods; nevertheless, it presents the characteristics of Baroque alterations, indicating examples of Baroque attics

[1, p. 178]. A very important publication for the study of Baroque tenement houses in Silesia, which collected and analysed earlier works on the subject, was devoted to the townhouses of Wrocław [2]. It contains a review of the most important resolution of the Wrocław City Council of

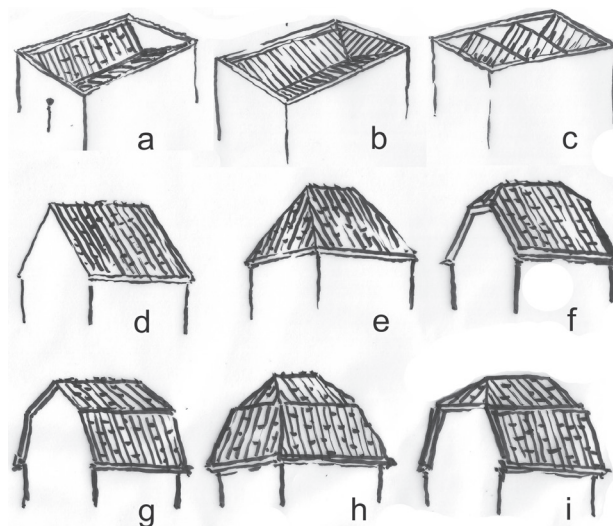


Fig. 1. Roof shapes mentioned in the text:

- a) concave simple butterfly roof, b) compluvial roof,
- c) multi-element butterfly roof (compound, Grabendach),
- d) gabled roof, e) hip roof, f) half hip roof, g) mansard,
- h) hip mansard, i) half hip mansard (elaborated by B. Ludwig)

Il. 1. Kształty dachów wspomiane w tekście:

- a) dach pogrążony pojedynczy dwuspadowy,
- b) dach pogrążony pojedynczy (zamknięty)
- c) dach pogrążony wielokrotny (złożony, Grabendach),
- d) dach dwuspadowy, e) czterospadowy, f) naczółkowy,
- g) mansardowy, h) czterospadowy mansardowy,
- i) mansardowy naczółkowy (oprac. B. Ludwig)

\* ORCID: 0000-0002-7755-5835. Faculty of Architecture, Wrocław University of Science and Technology, Poland, e-mail: bogna.ludwig@pwr.edu.pl



Fig. 2. Required by fire regulations: a) crowning of the half hip roof meeting the requirement not to exceed the height of the gable with the outlines of an equilateral triangle, b) a fire wall 4 ells high as the base of the gable and c) a fire wall of this height realised as an attic (elaborated by B. Ludwig)

II. 2. Wymagane przepisami przeciwpożarowymi: a) szczyt dachu naczółkowego wypełniający wymóg nieprzewyższania wysokości szczytu o zarysach trójkąta równobocznego, b) mur ogniowy o wysokości 4 łokci jako podstawa szczytu i c) mur ogniowy takiej wysokości zrealizowany jako attyka (oprac. B. Ludwig)

1668 for the legal basis for building in Silesia. This study is the only one to address the question of the influence of regulations on architectural form, including the question of the shape of the roof discussed here.

Economic stagnation and religious restrictions meant that the process of revival of Silesian towns in the 2<sup>nd</sup> half of the 17<sup>th</sup> century and in the 18<sup>th</sup> century was slow. Only the cities of the Sudeten foothills and the Sudeten valleys were in a different situation, being subject to the greatest changes [3], [4]. Further devastation was caused by the Silesian Wars. During the sieges there was damage to urban buildings from bombardment, with the fortress towns in the created defence system of the lands taken over by the Prussian state being particularly vulnerable. It was the effects of fires caused either by deliberate arson during the war or by unfortunate accidents that were far more severe. The prevention of fires was the reason why the first ordinances relating to building rules in towns were enacted. In particular, this concerned the question of how to erect and secure roofs. After the First Silesian War in 1742, when Lower Silesia together with the County of Kłodzko came under Prussian rule, these became state-wide regulations.

### **Fire regulations and roof construction rules**

Fire ordinances appeared as early as at the end of the 13<sup>th</sup> century in the laws of German cities promulgated by the city councils and then also in neighbouring areas, the first in Augsburg and Lübeck in 1276 and in Vienna in 1278<sup>1</sup> [5, p. 25], [6]. In the following centuries, separate ordinances of a fire-fighting nature were issued. Some of these were extensive and multi-faceted (Zwickau 1349, Cologne 1403, Nuremberg 1439) [7]. The principles, though made more specific, were enshrined in the *Saxon Mirror*. They focused on giving warning of the appearance of fire and

extinguishing it [8, pp. 247–252]. They also prescribed how to secure sources of fire, how to make passable street and square spaces (e.g. Prague 1331) [9, pp. 67–73], [10, p. 361]; they also mandated removing or re-bricking of wooden arcades (Cologne and Nuremberg 1355, Kroneburg 1384). They encouraged the construction of brick houses (Hildesheim 1381), fireproof partitions and ceramic tile roofing (Kroneburg 1384), reducing taxes (Göttingen 1342) or promising subsidies to their owners (Brno 1375–1384) [9, pp. 47, 58–61, 63], [10, p. 362].

Such ordinances appeared also in Silesia. The first recommendations to build brick houses were issued in Wrocław as early as in 1272 by Duke Henry IV [11, pp. 40, 41]. Regulations promulgated after successive fires from the 1<sup>st</sup> half of the 14<sup>th</sup> century onwards by the municipal administration or the supreme dukes were not limited to indications on the conduct and financing of firefighting (as in the case of the oldest from Legnica in 1340 [12] or the Świdnica one from 1406 [13, Bd. 1, p. 179]); they ordered the removal of wooden arcades and construction of brick basements (Świdnica 1362 [13, Bd. 1, pp. 79, 80], [1, pp. 35, 87–95], Wrocław 1363 [11, p. 207], Legnica 1384 [14]), the replacement of wooden chimneys with brick ones, the separation of bakeries and malt houses, kitchens and workshops with fire walls (Wrocław 1377) [15]. It was also recommended to cover roofs with tiles (Świdnica 1386) [13, Bd. 1, p. 211].

In the 15<sup>th</sup> century, the first sets of rules, the so-called fire orders (Feuerlösch-Ordnungen) were drawn up in Frankfurt (1439), Nuremberg (1449), Vienna (1454, 1458) or Lübeck (1461) [10, p. 26]. In the following centuries they were published in most of the major cities [16] (also in Poland, e.g. in Poznań 1544 and Kraków 1627 [8, p. 248], [17, pp. 76–80], [18]). Many of these were printed. The inevitability of fires was assumed, and the ordinances served to try to prevent the spread of fire, from house to house, usually via roofs. At the same time, the rulers looking after the cities provided building material – stone, bricks or tiles to rebuild houses destroyed by fire, exempted them from

<sup>1</sup> The earlier legislation appeared in 1086 in Meran and in 1189 in London.

taxes and allocated funds for construction with fire-resistant materials. Fire walls around buildings were beginning to gain importance. It was noted that lower roofs hidden behind them were better protected against fire spread. At the beginning of the 16<sup>th</sup> century in Innsbruck, the future Emperor Maximilian I Habsburg introduced regulations recommending low roofs with a durable covering, hidden behind fire walls with crenelated parapets (*Zinne*). There is information of further similar ordinances that he issued after the fires for Freistadt, Linz and Klagenfurt. These provided exemption from taxes for reconstruction in the “Innsbruck way”. Subsequent years saw subsidies for this purpose [10, pp. 361–368], [19]. The fire ordinances of 1542 issued in Linz and enacted in Innsbruck in 1561, and earlier such municipal ordinances in Krems and Stein mandated similar solutions. Thanks to them, fire walls and roofs hidden (*verborgen*) behind them – due to the width of the property, usually multi-element butterfly roofs (Grabendach, Fig. 1) – became a characteristic feature in the towns of the Salzach and Inn valleys [20]. They also became widespread in Upper and Lower Austria and Vienna itself. Similar regulations to those of the Habsburgs were introduced by the city council of Kraków in 1544. They prescribed the construction of roofs on new or renovated buildings, including wooden ones, as concave and closed (*immersum et inclusum*) [21] (Fig. 1). Such roofs surrounded by a fire fall taking the form of an attic became a distinctive element in many towns of the Polish-Lithuanian Commonwealth in the late 16<sup>th</sup> and 17<sup>th</sup> centuries. In Silesia, no tenements with such a covering were built. Perhaps an exception was the large tenement house in Dzierżoniów, later the house of the Sadebeck family [22]. On the other hand, Silesian towns promulgated fire ordinances at a similar time. In Wrocław, a revised ordinance was enacted in 1551<sup>2</sup>, to be followed by the next ones of 1574, 1586<sup>3</sup>, 1602 and 1639, in printed form [8, pp. 250, 262–271], [23]–[25]. Similar regulations were formulated in most of the significant Silesian cities from the 1560s onwards: in Ziębice in 1560, in Świdnica in 1560 (also called a police ordinance) and then in 1589, in Złotoryja after the fire of 1576, in Oleśnica in 1612, in Legnica in 1613 after the great fire of 1584, and in Głogów in 1617 [13, Bd. 1, pp. 365–372; Bd. 2, pp. 171–177], [26, p. 124], [27]. In addition to the organisation of a warning system and firefighting, the securing of water and fire-fighting tools, some of these ordinances contained applicable or recommended building rules. It was mandated that fire sources ought to be prevented from spreading outside malting houses, breweries and workshops with fire walls. The construction of brick or at least clay-lined flues and chimneys was also mandated. Among the regulations for Wrocław and Legnica was the order to erect fire walls

4 ells (approx. 2.3 m) high to separate neighbouring properties, and the necessity to build two-storey facades facing the street, made by an expert mason, was ordered, and the recommendation to cover houses with tiles was reiterated [23, p. xxxi], [24, pp. iii, viii], [25, p. ii], [26, p. 8]. It was also ordered that breweries and malt houses should be covered with shingles or tiles [24, p. vii].

Further fire orders were established after the Thirty Years’ War from 1673 onwards, e.g. in Głogów (1673), Legnica (1674), Nysa (1678), Świdnica (1682 and 1702), Brzeg (1685), Złotoryja (1691), Grodków (1698), or already in 1713 in Jelenia Góra and in 1719 in Oleśnica and Żagań [28], [29], [13, Bd. 2, pp. 172, 173], [30]. The rapid rebuilding after the destruction of the war probably raised questions about fire safety. It was not only the cities that were threatened, but also the seats of power within them. There were stricter orders to construct brick buildings and workshops that were particularly at risk from fire, such as locksmith shops, forges or breweries, malt houses and bakeries [28], [29], [13, Bd. 2, pp. 288–294], to build brick or at least wattle-and-daub fire walls and chimneys. In Legnica, it was ordered that corner houses and those located near churches and the castle must be made of brick and tiled. Particular emphasis was placed on the use of walls, gables and fire walls with a height of 4 ells above the roof for each building, leading from a point in front of the gutters (e.g. records for Świdnica or Jelenia Góra [29, pt. 4], [13, Bd. 2, p. 171], [30, p. 222] (Fig. 2). These regulations were based on the principles of the Wrocław construction arrangement of that time.

In 1668, a new building arrangement for Wrocław [31] was promulgated<sup>4</sup>, which, unlike the first one of 1574, dealt mainly with the question of boundary walls, water drainage and sewage [32], comprehensively covered all the recommendations for the construction and roofing of buildings, thus stemming from the fire regulations. It specified the rules for the erection of smoke ducts of the required cross-section, chimneys and fire walls, built of brick, elevated 4 ells, starting from the lowest point, at the point where the gutters ran, which were to hide behind them [31, pp. xi, xii], [33]<sup>5</sup> (which would require the construction of such a height of the gable pedestal or the addition of walls on its sides). In the case of buildings of different heights, the course of the walls had to be level and the required height of chimneys and walls had to be built above the higher of the adjacent roofs. Roofs were ordered to be covered with tiles, and roofs with lower pitches were to be constructed. In contrast to the regulations in the towns of the Tyrole and Upper Austria, the permitted height of

<sup>2</sup> *Khunglichen Stad Breslaw New aufgerichte Feuerordnung*, Breslau 1551. We only know the date of publication [8, p. 251].

<sup>3</sup> The regulations and their dates, the content of which is not discussed in more detail in the text, are given on the basis of preserved documents in archives and museums, as well as legal collections, lists of archival inventories and bibliographies, as well as chronicles of towns and villages not cited due to publishing restrictions. They are also printed in library collections (available in digital version).

<sup>4</sup> Full text translation: [2, Appendix, p. 322 ff.].

<sup>5</sup> The term *Feuermauer*, which refers to both the walls of the chimney flues [2, pp. 322–332] and the firewalls above the roof [33], requires comment. The fact that the second part of the chapter refers to fire walls, and not chimney walls, is evidenced by the provisions of the fire regulations of Świdnica (and later other towns, e.g. Jelenia Góra), which literally quotes a provision from the Wrocław order, supplementing it with an order that if the walls are under a roof, they must be extended [29, point 4], and each house with an attic must be separated from the neighbouring ones by a gable, walls and firewalls of the right height and gutters [29, point 6], [30, pp. 222, 233].





Fig. 3. The market square in Jelenia Góra showing buildings with high mansard roofs and hip roofs with attics on the F.A. Tittel's graphic (source: F.A. Tittel, *Der Marktplatz und das Rath-Haus zu Hirschberg*, Schmieberg 1828, oai:www.sbc.org.pl:410543)

Il. 3. Rynek w Jeleniej Górze z uwidocznioną zabudową z wysokimi dachami mansardowymi i dachami czterospadowymi z attykami na grafice F.A. Tittela (źródło: F.A. Tittel, *Der Marktplatz und das Rath-Haus zu Hirschberg*, Schmieberg 1828, oai:www.sbc.org.pl:410543)

newly built roofs with gables not exceeding an equilateral triangle (i.e. roof slopes of  $60^\circ$  [31, p. viii]) was precisely defined (Fig. 2). The erection of tarred wooden terraces and their attics (balustrades) was also banned<sup>6</sup> [34] – only stone-clad and copper sheeting was allowed [31, p. xv].

Under Prussian rule, municipal fire regulations were systematised, which drew on earlier regulations [35, p. 670]. As early as in 1742, the War and Demesne Chamber (Kriegs- und Domänenkammern) issued sets of rules for Głogów [36, Bd. 1, part 2, p. 100 et seq.], Jelenia Góra [36, Bd. 1, part 2, p. (117)], Złotoryja [36, Bd. 5, pp. 25–32], then Bolesławiec [36, Bd. 5, pp. 97–117] and Szprotawa (1744), and after the Second Silesian War in 1751, among others Prochowice, Wrocław (supplemented in 1760) [36, Bd. 6, p. 65; Bd. 4, p. 1; Bd. 6, p. 793] and Wałbrzych, and a regulation for all villages and suburbs [36, Bd. 4, p. 139]. In 1765, general fire regulations were issued and an order to draw up regulations in all towns on the model of Wrocław [36, Bd. 8, pp. 614 ff., 646]. This was immediately followed by the fire regulations of Dzierżoniów, Lwówek, Oława, Opole or Złotoryja [26, p. 275]. Unified regulations for all cities were issued in 1776 [36, Bd. 15, pp. 104–149]. They referred in most cases to the Wrocław construction arrangement of 1668 [31]. The ordinances placed particular emphasis on the construction of masonry and firewalls, masonry of chimney flues and securing of chimneys, roofing with tiles and the use of metal gutters only [36, Bd. 4, pp. 1–5, 7, 8, 113; Bd. 8, p. 614; Bd. 15, pp. 104–109], [37]. Tariffed penalties were introduced for non-compliance. The legal provisions were to supplement

the regulations of the introduced compulsory fire insurance, imposing premiums correspondingly high to the fire risk [36, Bd. 1, part 2, pp. 5, 119, 217].

The biggest fire protection problem perceived by the Prussian administration, while regulating and standardising various ordinances [38], was flammable roofing, shingles and thatch, still commonly present in all Silesian towns. They were used to cover houses and outbuildings both in the countryside, in towns and in large cities. Recommendations for tile roofing appeared in all fire regulations. Subsequently, ordinances were also issued for the whole of Silesia. In 1743, the King of Prussia introduced an order to cover dilapidated roofs with tiles, and this was renewed with the granting of concessions and subsidies over the following years [36, Bd. 6, p. 65; Bd. 20, pp. 51, 431]. In 1752, tax offices and town councils were encouraged to reduce the duties of those carrying out construction [36, Bd. 4, p. 700]. Particular care was given to the building of fortress towns: high subsidies from the state coffers for the making of the ceramic covering and other benefits were allocated for the property owners there [36, Bd. 6, p. 65; Bd. 20, pp. 51, 52], in 1768 the municipal authorities were reminded of the due reduction in taxes and encouraged to press homeowners on this issue [36, Bd. 10, pp. 124, 125]. The obligation to erect new buildings as brick and to cover new and repaired roofs with tiles and to replace at least one roof within the city walls was introduced in 1764 [36, Bd. 8, pp. 159–162] and was renewed four years later [36, Bd. 10, pp. 300–302], [35, p. 732]. A realistic assessment of the implementation of the regulations prompted an ordinance of 1764 that at least the trusses should always be prepared for tile roofing [36, Bd. 8, p. 181]. All subsequent fire and then building ordinances emphasised the importance of durability of

<sup>6</sup> It is worth noting that attics and balustrades on roofs were referred to as *Altane* (*Altan*).



buildings, fire resistance, but also of order and beauty, understood as uniformity and simplification of forms. Such a solution was recommended in the building regulation for Wrocław in 1784, where it was proposed that two or three narrow houses should be houses covered with one single roof with a ridge parallel to the street and only distinguished by façades [36, Bd. 18, pp. 136–142]. At the turn of the 18<sup>th</sup> and 19<sup>th</sup> centuries, fire protection regulations (rules for erecting fire walls) enforced the use of roofs constructed in this way [39, p. 31].

### **Implementation of building regulations of fire significance. Roofs and firewalls**

The introduction of the regulations progressed with difficulty. This is evidenced by the successive renewals of the ordinances. At first, these only applied to newly constructed buildings or roofs. Changes to roof coverings, which were most important for the fire resistance of buildings, were unsatisfactory in the cities of Prussian Silesia<sup>7</sup>. Even in Wrocław itself, as late as at the end of the 18<sup>th</sup> century, many of the townhouses were covered with shingles [39, pp. 25, 29]. In Legnica at the end of the 18<sup>th</sup> century the number of shingled roofs within the walls was estimated to be one-third [40, Bd. 8, p. 149], and in Jelenia Góra it was almost half [41, p. 243]. In small towns thatched roofing may have even prevailed. However, changes were taking place and e.g. within the walls of Świdnica in 1741, 12 houses were thatched, while in 1788 only 8 remained under shingle [41, p. 64], while in Kamienna Góra, according to the chronicler, at the beginning of the 19<sup>th</sup> century all houses were thatched [42]. The lowering of the roofs determined the exclusion of thatch roofing, and made it difficult to use shingles. Maintaining the steeper slopes made it possible to use mansard or hip roofs (Fig. 1). The new shape of the roof also prompted the choice of other solutions for the truss structure. Nevertheless, in some of the towns, especially fortresses such as Brzeg and Nysa, heavily damaged during the First Silesian War, high roofs were often retained in the reconstruction [43, T. 128–133]. The process of introducing lower roofs with gables progressed from the 17<sup>th</sup> century until the 1830s. They were initially designed in a two-storey version, e.g. in Jelenia Góra (market houses No. 32a, 27–29, 52, 55 and 56) (Fig. 3). However, more and more single-storey gables were erected, e.g. in Legnica (in Środkowa and NMP streets), market squares in Namysłów, Lwówek, Jawor, Jelenia Góra, or in dynamically expanding Kamienna Góra [43, T. 105, 124, 125, 76, 48, 49, 28–36], [44, *Der Marktplatz zu Landeshut*] (Fig. 4). There were similar ones in the frontages of the market in Głogów until the fire of 1831 (Fig. 5). This can also be seen in Wernher's drawings. Drawings with market frontages and streets in Głogów, Legnica, Brzeg, Wołów or Ząbkowice clearly show tenements with gables in the outline of equilateral triangles [45, p. 48], [46, pp. 566,



Fig. 4. Equilateral triangle-shaped roof gables with high plinths as fire walls on townhouses at the market square in Kamienna Góra (photo by B. Ludwig)

Il. 4. Szczyty dachów o kształcie trójkątów równobocznych i wysokich cokółach o charakterze ścian ogniowych na kamienicach przy rynku w Kamiennej Górze (fot. B. Ludwig)

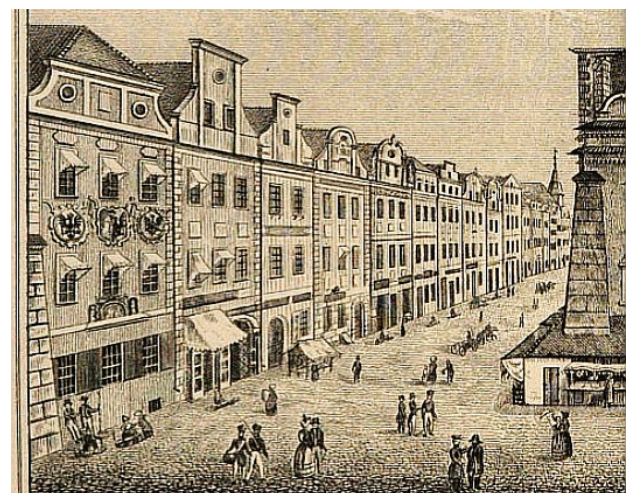


Fig. 5. The half hip roofs at the market square in Głogów in the early 19<sup>th</sup> century (source: C. Bouet, *Die südliche Seite des alten Rathauses zu Glogau*, lit., W. Hinzer, Glogau ca. 1825, detail, urn:nbn:de:bvb:12-bsb10013651-1)

Il. 5. Naczółkowe dachy przy rynku w Głogowie na początku XIX w. (źródło: C. Bouet, *Die südliche Seite des alten Rathauses zu Glogau*, lit., W. Hinzer, Glogau ok. 1825, fragm., urn:nbn:de:bvb:12-bsb10013651-1)

<sup>7</sup> And so, in comparison with Wielkopolska (Poznań Chamber), where at the end of the 18<sup>th</sup> century only 26% of roofs in cities were covered with tiles [17, p. 161], Lower Silesia looked better.





Fig. 6. Partially reconstructed half hip roofs over townhouses in the western frontage of the Świdnica market square (photo by B. Ludwig)

II. 6. Częściowo zrekonstruowane dachy naczółkowe nad kamienicami w pierzei zachodniej rynku w Świdnicy (fot. B. Ludwig)



Fig. 7. Attic shielding the half hip roof of the building at No. 7 at the market square in Świdnica (photo by B. Ludwig)

II. 7. Attyka osłaniająca dach naczółkowy kamienicy przy rynku w Świdnicy pod nr 7 (fot. B. Ludwig)



Fig. 9. Tenement houses with half hip roofs in the western frontage of the market square in Kłodzko in a graphic by E.W. Knippel

(source: E.W. Knippel, *Parade=Platz zu Glatz*, [Schmiedeberg] [ca. 1840], <https://www.sbc.org.pl/dlibra/doccontent?id=34531>, detail)

II. 9. Kamienice z dachami naczółkowymi w zachodniej pierzei rynku w Kłodzku na grafice E.W. Knippela

(źródło: E.W. Knippel, *Parade=Platz zu Glatz*, [Schmiedeberg] [ok. 1840], <https://www.sbc.org.pl/dlibra/doccontent?id=34531>, fragm.)



Fig. 8. Crowning of the townhouses at Nos. 6 and 8 Długa Street in Świdnica (photo by B. Ludwig)

II. 8. Zwieńczenia kamienic przy ul. Długiej nr 6 i 8 w Świdnicy (fot. B. Ludwig)

317, 320, 326, 333, 341]. The differences in the height of the roofs are also clearly visible in the rebuilt parts of the burnt cities, e.g. in the views of the frontages in Złotoryja or Oława [46, pp. 168, 396, 397].

Applicants for state or municipal subsidies or tax relief after war damage and fires had to comply with the regulations. This was particularly true for the reconstruction of fortress towns. There, the use of hip roofs became more common. It is likely that the lowering of gables required by the regulations could have been achieved by the construction of mansard roofs and using half hip roofs (Fig. 2). Judging from Wernher's notation, before the middle of the 18<sup>th</sup> century in Silesian towns there were half hip roofs, e.g. in the market frontages of Świdnica (especially in the southern and western frontages, rebuilt after the fire) (Fig. 6), Jelenia Góra (Fig. 3), Mieroszów and Otmuchów [47, Bd. 3, pp. 118, 119, 143, 144], [48, Bd. 1, pp. 223, 224], [43, T. 29–32]. In Nysa, single houses were built with





Fig. 10. Crowning of the hip roof of the tenement at market square No. 6 in Kamienna Góra (probably designed by M. Frantz the Younger) (photo by B. Ludwig)

Il. 10. Zwieńczenie czterospadowego dachu kamienicy przy rynku nr 6 w Kamiennej Górze (prawdopodobnie projektu M. Frantza Młodszeo) (fot. B. Ludwig)

half hip roofs (e.g. the house of von Bata [43, p. 74, T. 129, 133]). The half hip roof also became a distinctive feature of wooden buildings in Upper Silesian cities and towns, initially using shingle roofing, and of half-timbered buildings in Lower Silesia and Lusatia [43, pp. 14–16, T. 7–9]. The introduction of numerous half hip roofs in the other two frontages of the market square in Świdnica, in Długa and Grodzka Streets, was already taking place after the destruction in the 1850s and 1860s (Figs. 7, 8) [1, p. 178]. In the 2<sup>nd</sup> half of the 18<sup>th</sup> century, this solution became widespread in Jelenia Góra and Kamienna Góra, as well as in Kłodzko, which was incorporated into Silesia [43, T. 28, 32–36, 38] (Figs. 3, 9). Single roofs of this type appeared at market squares in Złotoryja (several at the Upper Square in the eastern frontage), Bolesławiec (Nos. 6 and 7), Gryfów (No. 13) and Wałbrzych [43, p. 61, T. 87, 54], [47, Bd. 3, p. 300, 301]. In the early 19<sup>th</sup> century the use of half hip roofs was already becoming common (e.g. in the market frontages of Lwówek, Gryfów, Kłodzko, Lubań, Żagań or Głogów [43, T. 83, 84, 118]).

The introduction of firewalls on the roofs compliant with the regulations required the addition of walls to the sides of the gables. For new buildings, it was sometimes decided to construct a hip roof, usually a mansard roof, valued for prestige reasons (Fig. 1). Such roofs were indicated by theoreticians as covering palace buildings. In cities, e.g. in Wrocław, it was the seats of the aristocracy that were roofed this way [2, pp. 291–296]. Outside Wrocław, few of them were erected on tenement houses in compact buildings. From the first decades of the 18<sup>th</sup> century they were erected in Jelenia Góra (market square, Nos. 1–3) and Kamienna Góra (Nos. 6, 16 and Nos. 1, 2, and 11, already with Classicist detail) (Fig. 3, 10) [43, p. 18]. The largest number of such buildings was erected at the market square and in Wrocławska Street in Oleśnica, e.g.

in the neighbourhood of the land house. In other towns there were single buildings; in Oława (market tenement house/town house no. 25, and the non-existent one at 14 Wrocławska Street), in Niemcza (Marketplace no. 10, later town hall and no. 16, 34), in Bierutów (Krausenz house), in Gryfów (Marketplace no. 33, 32, now after late 18<sup>th</sup>-century rebuilding and non-existent no. 14 [43, T. 54]), in Kluczbork two of the mid-market buildings erected after a fire (the so-called 12 Apostles). Examples of townhouses from the 1860s can be found in the iconography of the market square of Brzeg [43, T. 123] at no. 19 and Legnica at no. 13 at that time.

The simplest solution and ultimately the most common, was to use a roof with a ridge parallel to the street. These were already quite common in Wrocław or Goerlitz in the late 17<sup>th</sup> century [2, pp. 51–61, 205–214], [43, pp. 29, 34, T. 56, 57, 64, 71]. In the reconstruction of towns after fires at the end of the 18<sup>th</sup> century, towns were often made up still of timber or half-timbered buildings, frontages of lengthwise terraced houses with low ridge roofs were also increasingly erected, e.g. in Złotoryja, at Lower Square [49] and in the southern part of the town, in Prudnik [43, T. 126], or Kowary, where slate roofing was most commonly used [44, *Ansicht des Rath=Houses und des Marktplatzes zu Schmiedeberg*].

### Conclusions

The shape of the roof and the forms of the crowning, which were important for the body of the building, and thus also for the character of the street frontages in cities, as well as the material and construction possibilities, tradition and fashion, were also determined by issues relating to protection against the greatest danger, which was fire. Municipal and later state regulations sought to elim-

inate flammable coverings by prescribing lower roofs (or, in fact, gables) that given such materials were not tight. However, high roofs had major advantages for the burghers, particularly merchants. They could accommodate considerable storage space, as well as small flats for rent. This may explain the attempt to reconcile the lowering of roofs with the retention of spacious attics, such as the construction of mansard roofs and the shortening of gable heights through the introduction of half hip roofs. The rules governing the erection of firewalls around roofs determined the forms of the crowning of townhouses. They

required the construction of a low-rise wall shielding the roof as an attic or gable pedestal. Under the Prussian administration's supervision, all the ordinances in question were raised in rank, systematised and better enforced, though they had already been formulated in earlier times, based on local experience and information from other centres during the reconstruction period after the Thirty Years' War.

Translated by  
Jacek Szela

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### Abstract

#### *Halfhip and hip roof with an attic in Lower Silesian towns at the beginning of the Prussian rule. Systematization of fire regulations and the form of roofs*

In Silesian towns, especially those in the Sudeten foothills and the Sudeten valleys, the use of hip and half hip roofs became common in the 2<sup>nd</sup> half of the 18<sup>th</sup> century. Along with them, late Baroque crownings of townhouses appeared. They combined the decoration of a low half hip gable, sometimes called a half gable, or dormers with a wall, obscuring the roof of the entire building. As a whole, this structure formed an elaborate attic. The author's aim was to show that both the spread of roofs of such shapes and the forms of attics resulted from the adaptation of the tastes and needs of city dwellers to the ordinances in force. Municipal and then state regulations for the construction of houses, especially their canopies, resulted primarily from fire regulations. The research presents the process of formulating ordinances relating to the shape of roofs, roofing materials and surrounding fire walls. The analysis of preserved monuments and iconographic records depicting the roofs and crowning of tenement houses erected after the introduction of successive regulations made it possible to trace the ways in which they were implemented. The prescription to lower gables, in addition to erecting low roofs, resulted in a compromise in the form of constructing mansard roofs and shortening the height of gables by introducing pediments. The regulations on the method of erection and the height of fire walls influenced the way in which the gables of townhouses were designed and thus the form of attics became widespread.

**Key words:** Lower Silesia, baroque, attic, half hipped roof, firewalls

### Streszczenie

#### *Dach naczółkowy i czterospadowy z attyką w miastach dolnośląskich w początkach panowania pruskiego. Usystematyzowanie przepisów przeciwpożarowych a forma dachów*

W miastach śląskich, przede wszystkim z Przedgórze Sudeckiego i kotlin sudeckich, w 2. połowie XVIII w. zaczęto powszechnie stosować dachy naczółkowe i czterospadowe. Wraz z nimi pojawiły się późnobarokowe zwieńczenia kamienic. Połączyły dekorację niskiego szczytu naczółkowego, czasem nazywanego półszczytem, lub lukarnę ze ścianką przesłaniającą dach całej budowli. W całości struktura ta tworzyła rozbudowaną attykę. Celem autorki było wykazanie, że zarówno upowszechnianie się dachów takich kształtów, jak i form attyk wynikało z dostosowania upodobań i potrzeb mieszkańców miast do obowiązujących przepisów. Przepisy miejskie, a następnie państwowe dotyczące budowy domów, zwłaszcza ich zadaszeń wynikały przede wszystkim z regulacji przeciwpożarowych. W wyniku przeprowadzonych badań przedstawiono proces formułowania zarządzeń odnoszących się do kształtu dachów, materiałów pokryć i otaczających je murów ogniowych. Analiza zachowanych zabytków i przekazów ikonograficznych obrazujących wznoszone po wprowadzaniu kolejnych przepisów dachy i zwieńczenia kamienic pozwoliła prześledzić sposoby ich wdrażania. Nakaz obniżania szczytów, oprócz wznoszenia niskich dachów, zaowocował kompromisem w postaci konstruowania dachów mansardowych i skracania wysokości szczytów poprzez wprowadzanie naczółków. Regulacje dotyczące sposobu wznoszenia i wysokości murów ogniowych wpłynęły na sposób projektowania szczytów kamienic i rozpowszechnienie formy attyki.

**Słowa kluczowe:** Dolny Śląsk, barok, attyka, dach naczółkowy, mury ogniowe

