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pages: 1 - 16

## BUILDINGS ERECTED WITH UNCONVENTIONAL MATERIALS IN GRAJEWO AND RAJGRÓD COMMUNES, N-E POLAND: RESULTS OF FIELD SURVEYS IN 2021

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DOI: 10.24427/aea-2022-vol14-no2-01

### Abstract

In October 2021 a series of field surveys were performed in the gminy (communes) of Grajewo and Rajgród in north-eastern Poland, to assess the present-day occurrence of old semi-vernacular buildings that had been made with unique materials or unconventional structures. The secondary objective was to develop and test the best methods of recording such buildings, assuming that they are an important part of the local architectural heritage. Eventually, six rammed earthen buildings and two cordwood masonry houses were found, assessed and recorded. However, the authors failed to find two other cordwood masonry buildings that had been mentioned in earlier writings. Old hollow brick buildings were also found and mentioned as important elements of rural landscape due to their ornamental values.

### Streszczenie

W październiku 2021 r. przeprowadzono szereg badań terenowych na terenie gmin Grajewo i Rajgród w północno-wschodniej Polsce, w celu oceny współczesnego występowania starych, semi-wernakularnych budynków, wykonanych z unikalnych materiałów lub niekonwencjonalnych konstrukcji. Celem drugorzędym było opracowanie i przetestowanie najlepszych metod rejestrowania takich obiektów, przy założeniu, że stanowią one ważną część lokalnego dziedzictwa architektonicznego. Ostatecznie odnaleziono, oszacowano i zarejestrowano sześć budynków z ubitej gliny i dwa murowane domy z drewna sznurowego; ponadto nie udało nam się znaleźć dwóch innych budynków murowanych z drewna sznurowego, o których wspomniano we wcześniejszych pismach. Odnaleziono również stare budynki z pustaków, które ze względu na walory ozdobne wymieniane są jako ważne elementy krajobrazu wiejskiego.

Keywords: cordwood masonry; stackwall structures; rammed earth; N-E Poland

Słowa kluczowe: konstrukcja gliniana; konstrukcje ze użyciem słomy; skrzynie z ziemią; pn-wsch. Polska

### INTRODUCTION

For centuries until 1945, the territories of the present-day communes of Grajewo and Rajgród in north-eastern Poland were borderland areas. During the Middle Ages those territories belonged to Yotvingians (Sudovians), later to the State of the Teutonic Order; then to the Kingdom of Poland. While being integrated into the territory of Poland, those areas still bordered on Duchal Prussia (until 1701), the Kingdom of Prussia (1701-1772), and East Prussia (1773-1795). In 1795 those territories were annexed by the Kingdom

of Prussia, then ceded to Tsarist Russia in 1807 (as part of the Duchy of Warsaw, 1807-1815; then Russian Poland, known as the Kingdom of Poland, 1815-1915), while still being adjacent to the Kingdom of Prussia. Annexed into the Second Polish Republic (1918-1939), the territories of the present-day communes Grajewo and Rajgród still bordered on the German East Prussia, then on Nazi Germany until the WW2. From 1939 to 1941 those territories belonged to the Soviet Union, then to Nazi Germany until 1945.

Due to their geographical placement, tangled history and multi-ethnicity,<sup>1</sup> the territories of the present-day communes of Grajewo and Rajgród were influenced by a great multitude of factors and forces that eventually have contributed to their cultural identity. Possibly, such variety of factors also shaped vernacular architecture of those communes, but at the same time, all the political twists and turns hindered orderly research on the subject matter.

Some social and legal factors, including the state advisory influence on vernacular architecture in the 20<sup>th</sup> century, gave reasons to distinguish a “semi-vernacular architecture” as an important heritage category at the territories that underwent repeated profound political changes and belonged to various political forces throughout the last century. Thus, semi-vernacular architecture is here meant to be just architecture that, after originating as vernacular, has then been evolving as the subject of architects’ improvements, advisory policies, legal directions etc. Assuming that such top-down forces acted stronger on borderland territories, the authors focus on their effects on (semi)-vernacular architectural heritage of Grajewo and Rajgród communes. In particular, the authors have surveyed the surrounding villages to look for old buildings that, while maintaining traditional forms and layouts, had uncommon structures or materials, such as rammed earth, brushwood or cordwood, etc.

## 1. WHY WERE THEY “SEMI-VERNACULAR”?

Vernacular countryside buildings in these two communes were mostly timber-constructed. Log walls prevailed amongst other structures. But in the 19<sup>th</sup> century, both Prussian and Russian authorities, as well as intellectual elites, initiated and intensified their campaigns against “flammable buildings”, and the resultant fire protection concepts, fire-proof structures and fire-resisting building materials started to spread slowly amongst the folk. In the Russian Empire and in its Polish dominion, both adobe and rammed earth became advocated in the early 1800s; brushwood-reinforced rammed earth in the 1830s; “sand pisé” or “rammed sand structure” (sand stabilised with 8% lime admixture) in the second half of the century. Since 1895 brushwood-reinforced rammed earth evolved into cordwood masonry, which gained its peak popularity later, in the 1930s, during the 2<sup>nd</sup> Polish Republic epoch. Also in the 1930s, self-made concrete hollow

blocks became an acceptable alternative. All these structures re-emerged in the 1950s, again.

Before WW2, all such ingenious structures were advocated top-down and usually without much stress on functional and aesthetical changes [see Tuliszkowski, 1927; Niewierowicz, 1930; Piaścik, 1938], except for nationalist architecture movement that promoted alleged “traditional” architectural forms but either opposed timber [see Balicki, 1908] or, on the contrary, opposed timber expulsion [see Szyller, 1915]. Therefore, merging new “top-down-advised” fireproof building materials with old traditional functional layouts of buildings and old aesthetical patterns, became common practice to bring countryside architecture up to date, at least in a sense. The resulting new farmhouses, cowsheds and barns were still vernacular in terms of their layouts, proportions, aesthetics, but not exactly in terms of material or structural pattern. They were neither vernacular, nor polite. They were just semi-vernacular.

### 1.1. Mid-war period

During the research survey, the authors found only the echoes of the mid-war “top-down-advisory” campaign against timber-constructed buildings. Namely, in a small hamlet Łazarze in the commune of Rajgród, older inhabitants recalled that a number of earthen farm buildings had existed there in the mid-war period but merely two of them have survived until now. These buildings were built in the late 1920s or the early 1930s and their construction was similar to that of the Suwałki region (fig. 1). But, in the region of Suwałki, earthen farmhouses seem vernacular and indigenous, rooted in its landscape at least since the 19<sup>th</sup> century. Still, in the communes of Grajewo and Rajgród, where timber buildings prevailed, earthen architecture seems a more recent derivative phenomenon, allegedly supported by lower insurance taxes in the mid-war period. Similarly, there also originated a mid-war phenomenon of farm buildings made with hollow bricks adorned with sculptural relief ornamentation. Such a phenomenon covered a much wider area [Choiński, Szewczyk, 2017].

### 1.2. Post-war state advisory for vernacular builders

After World War II, the communist authorities focused on countryside rebuilding with fireproof materials, advising to use local materials because of transport problems and general supply shortage. There were a number of building manuals for unqualified villagers [see Łukaszewicz, 1946; Piaścik, 1953].

<sup>1</sup>According to Franciszek Maksymilian Sobieszczarński [Orgelbrand, 1862, p. 435], in 1862 the population of Grajewo was 2,306 inhabitants, of which 1,724 (i.e. 76 %) were Jews.

Some state-licensed building advisors published journal articles in "Budownictwo Wiejskie", assessing the speed of countryside rebuilding and usage of local fireproof building materials and structures. According to Menandr Łukaszewicz [1958, p. 12], who surveyed the whole region during the first post-war decades, "...buildings rammed in formwork with lime-and-sand mortar, were common in the commune of Grajewo. Numerous examples were found near Guty and Bęćkowo." "Rammed cob, i.e. rammed clay with straw, reed or other straw-like admixtures, is also a popular structure. It is exemplified by a house of [Mr.] Józef Gwiazdowski in Konopki in the commune of Grajewo, approximately 2.5 km from the town, built in 1958. (...) External walls are 50 cm thick and 3 m high;

*the house is 9.80 m long, 7.25 m wide*" [Łukaszewicz, 1959, pp. 21-22]. The above-quoted passages referred to the two communes that are also presented in this article.

### 1.3. Late communist and post-communist eras

The same state-induced stimuli that had encouraged villagers to use local materials for their farm modernisation, later resulted in further changes in forms, materials and structures of newly built countryside buildings, eventually leading to an ultimate replacement of older architecture with new, large brick and concrete farm buildings. Small low-cost cordwood-masoned and earthen barns occurred the most volatile and disappeared from the landscape almost completely.



Fig. 1. A map of Grajewo and Rajgród communes; source: the authors



Rys. 10. Wios Ciemnoszyje, pow. Grajewo. Dom mieszkalny ob. Kozakowskiej ze zrzynek tartacznych układanych na wapnie z piaskiem. Wybudowany w 1928 r. w czasie wojny był spalony, ściany jednak nie spaliły się i nie zniszczyły, chociaż połowa domu na zewnątrz tylko zarapowana, w połowie zaś drewnienka nawet nie zarapowane od czasu budowy, tj. od 30 lat, jednak nie uległy zmianie

Fig. 2. A farmhouse made with cordwood in 1928 in Ciemnoszyje; source: M. Łukaszewicz [1958, p. 14]

## 2. FINDINGS

The specimens found in the region (fig. 1), include cordwood masonry farm buildings, rammed earthen barns and barns built with self-made hollow bricks.

### 2.1. Cordwood masonry

In Ciemnoszyje, the commune of Grajewo, an old farmhouse was built with cordwood and lime mortar in 1928. Three decades later it was mentioned by Menandr Łukaszewicz [1958, p. 14] (Fig. 2). The authors failed to find it nowadays. Probably, the building was dismantled several decades ago.

Another cordwood masonry farmhouse in Ciemnoszyje was found by Jarosław Szewczyk in 2010 [p. 359] (Fig. 3). Presumably, it was built in the 1930s. According to a villager the authors met during the survey, the building had ceased to exist a few years before.

The authors also verified earlier mentions about an old cordwood masonry house in Rydzewo Kolonia, the commune of Rajgród. The house was in a ruinous state in 2010 [J. Szewczyk, 2010, p. 360-361]. Surprisingly, its ruins still exist (Figs. 4-7). No local villagers were able to provide any detailed information about the house. Assumedly, it was built in the late 1920s and inhabited for over about half a century or less.



Fig. 3. Another farmhouse made with cordwood in Ciemnoszyje; photo: J. Szewczyk, 2010



**Fig. 4-7.** Ruins of a cordwood house in Rydzewo Kolonia; photo: Renata Adamska and Katarzyna Karwowska, 2021



**Fig. 8, 9.** Cordwood masonry in Rydzewo Kolonia (wall details); photo: Renata Adamska and Katarzyna Karwowska, 2021

All these cordwood masonry buildings revealed the utmost workmanship perfection of their builders: brick foundations were robust, cordwood items and wooden reinforcing slats were carefully arranged and all the walls were perfectly vertical (Figs. 8-9). Window frames and jams, and door lintels were made of massive timber with their mortise tenon joints carefully carved out (Fig. 10).

According to Menandr Łukaszewicz [1958], cordwood masonry was a popular building method in

the commune of Grajewo in the mid-war period. Supposedly, a number of buildings with cordwood walls still exist, but they are difficult to find because their walls have been plastered. The authors found only one example which had not been described before, namely, a farmhouse in Pieńczykowo (Fig. 11). The building was erected in the 1920s, supposedly by a relatively rich family. Its showy front entrance stairs still witness its past relative glory, if compared to other farmhouses of that time.



**Fig. 10.** Wall and carpentry details of the cordwood house in Rydzewo Kolonia: (1) door lintel; (2) door header; (3) mortise; photo: Renata Adamska and Katarzyna Karwowska, 2021

## 2.2. Rammed earth

A dozen or so miles north and north-west away from Grajewo and Rajgród, one could find only several small earthen barns in the past, and farther northwards such type of structure was a bit more common. Still, a few rammed earthen buildings are in existence in the commune of Rajgród (Table 1). In the commune of Grajewo the authors managed to find only one rammed



**Fig. 11.** A farmhouse made with cordwood in Pieńczykowo; photo: the authors, 2018

earthen farmhouse, although there were a few more buildings of that type in the past.

In Łazarze, the commune of Rajgród, according to locals, there were more earthen sheds in the past. They all were used as tobacco curing sheds, as the local community grew tobacco crops for tobacco industry in Augustów (from 1951). An old tobacco shed in Łazarze 26 now serves as a bakery of *sękacze* (*sękacz* is a type of *Baumkuchen* cake, claimed to be a regional cake; Figs. 12-13).

Another old earthen barn in Łazarze, although not plastered, still remains in a quite good technical condition (Fig. 14). Its walls were constructed with three to four horizontal courses of earthen mortar. The mortar consisted of substantial amount of chopped straw and earth just dug from the site with no transport needs. Both these earthen sheds were built in the early 1950s.

About a kilometre north-east away from Łazarze there is a small hamlet Kosify. Amongst its buildings there is another rammed earthen barn (Fig. 15), but rather in a ruinous condition. Its walls were erected in the 1950s with four courses of rammed earth mortar, each approximately 50 cm thick.

Yet another earthen barn still exists in Kołaki. Its walls are all earthen, except for the western gable wall, partly brick-masoned. Curiously, this western part of the building was used as a farmhouse in the past (Fig. 16).

The most interesting old earthen farmhouse was found in Konopki Kolonia (Fig. 17). It is the oldest one, allegedly built in the 1930s. Currently uninhabited, it has still retained its floral stencils on some of its walls (Fig. 18). The walls were plastered in various

**Tab. 1.** Rammed earthen buildings

id	address	original type	changes	construction date
<b>The commune of Grajewo</b>				
2.2.1	Konopki Kolonia	small farmhouse	an extension attached in the 1970s	the 1950s (+1970)
<b>The commune of Rajgród</b>				
2.2.2	Kołaki	farmhouse with a barn adjoined	now uninhabited	approx. the 1930s
2.2.3	Kosily 33	barn	partially dilapidated	approx. 1925-1927
2.2.4	Łazarze 26	originally, a tobacco curing shed	now a bakery of sękacze	the 1930s
2.2.5	Łazarze 27	shed (mini-barn)	no changes	the 1930s

Source: prepared by the authors



**Fig. 12.** An old tobacco curing shed made with rammed earth, in Łazarze 26; photo: Renata Adamska and Katarzyna Karwowska, 2021





**Fig. 13.** The old tobacco curing shed inside (now a bakery), in Łazarze 26; photo: Renata Adamska and Katarzyna Karwowska, 2021



**Fig. 14.** An old rammed barn shed in Łazarze 27; photo: Renata Adamska and Katarzyna Karwowska, 2021



**Fig. 15.** An old rammed earth barn in Kosilų; photo: Renata Adamska and Katarzyna Karwowska, 2021



**Fig. 16.** An old rammed farm building in Kolaki; photo: Renata Adamska and Katarzyna Karwowska, 2021



Fig. 17. An old farmhouse made with rammed earth, in Konopki Kolonia; source: the authors, 2021



**Fig. 18.** Stenciled walls in the earthen farmhouse in Konopki Kolonia; source: the authors, 2021



**Fig. 20.** Wall plaster in the earthen farmhouse in Konopki Kolonia (outer plaster above; inner plaster below); source: the authors, 2021



**Fig. 19.** Stenciled wall in the earthen farmhouse in Konopki Kolonia; source: the authors, 2021



**Fig. 21.** Grain storage in the former main room in the earthen farmhouse in Konopki Kolonia; source: the authors, 2021



**Fig. 22.** Hollow brick walls in various villages in the communes of Grajewo and Rajgród: Brzozowa Wólka, Łosewo, Białogrądy, Ciemnoszyje, Flesze, Łosewo, Kolonia Sojczyn Borowy (g, composed with stone and brick masonry), Turczyn (h) - a collection of photos taken in 2012-2022

manners: the external side of the wall was plastered with thick two-layer plaster fixed with ceramic shells and stones (Fig. 20: upper photo), whilst the inside three-layer plaster was fixed with a reed mat (Fig. 20: lower photo). These days, the main room of the farmhouse in Konopki Kolonia serves as a granary (Fig. 21).

### 2.3. Hollow bricks

From the 1930s to the 1970s, in Ciemnoszyje, numerous barns as many as a few dozen stables and even a few farmhouses were erected with self-made hollow bricks. About 60 per cent of them have until now ceased to exist, but there are still many interesting specimens of that simple structure in existence. Simi-

larly, old barns with hollow brick walls were in existence in other villages in both communes. Their landscape value refers to their aesthetics, because self-made hollow bricks were often ornamented<sup>2</sup>, thus adding pattern coverage to walls and building façades. When old and covered with lichens, hollow brick walls gain unique ambience.

A few decades ago, in the 1980s and the 1990s, in both communes of Grajewo and Rajgród, there were many more buildings that had been built with self-made hollow bricks. The recent profound change in rural landscape and architecture has led to annihilation of many of these structures; nevertheless, numerous villages still abound in such objects or their picturesque ruins. Amongst them there is a small tobacco curing shed in Pieńczykowo. The shed was made with ornamented hollow bricks in the 1960s.

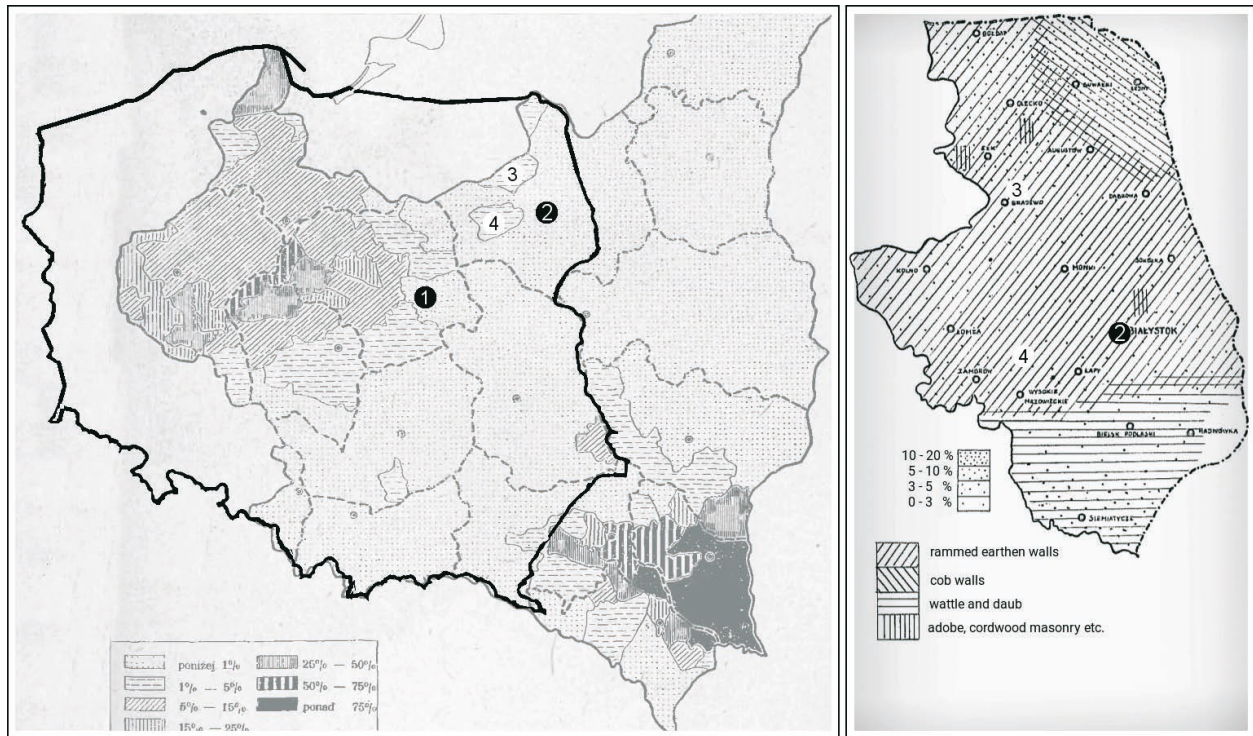
## DISCUSSION

As shown in figure 23, according to the 1921 census [Sochaniewiczówna, 1928, p. 91], from 1 to 5% buildings were constructed with clay on the territories of the present-day communes of Grajewo and Rajgród, against a background of surrounding communes in mid-war Poland where only 1% of buildings (or less) were made with clay or earth. This proves that earthen buildings in both communes, while neither prevailing nor quite common, had been known before that time. After 1921, there appeared some other consecutive stimuli towards buildings with earth and other cheap local materials; namely, they reflected the period of the Great Depression in the 1930s, mid-war governmental campaigns against fires and against flammable buildings (including lower insurance rates for clay-constructed buildings), WW2 damage with subsequent rebuilding efforts, and the post-war governmental “top-down-advisory” towards cheap substitutes of traditional building materials and towards local materials usage in the countryside as a remedy for general supply shortages in construction industry.

## CONCLUSIONS

In the past, both the communes Grajewo and Rajgród were known for their farm buildings made with unconventional materials, such as stovewood, earth, straw and hand-made hollow bricks, the latter being vividly ornamented. Although earthen and stovewood

<sup>2</sup> Sometimes, cinder concrete was used to produce hollow bricks. Usually, such cinder bricks, „żżaki”, were not adorned. Cinder concrete walls, being unadorned and darker than common hollow brick walls, were plastered instead.



**Fig. 23.** Left: communes of Grajewo and Rajgród (area no. 3) against the background of a map of earthen architecture prevalence in mid-war Poland (grey hatched background; source: J. Sochaniewiczówna [1928, p. 91], based on the 1921 census) and present-day Poland (black outline; 1 - Warsaw; 2 - Białystok; 4 - the surroundings of Wysokie Mazowieckie and Łomża); right: unconventional materials and constructions shares in north-eastern Poland in the 1950s, according to M. Łukaszewicz [1959, p. 21] (the legend was translated and graphics corrected)

structures were not as abundant as in some nearby communes,<sup>3</sup> it was rather the co-existence of various unconventional structures that seemed specific for these two communes. Such a statement could be supported both by literature [Łukaszewicz, 1958; Łukaszewicz, 1959; Sochaniewiczówna, 1928; Szewczyk, 2010] and by the authors' field survey findings in 2021 (two cordwood masonry houses, six rammed earthen buildings and dozens barns made with handmade hollow bricks).

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<sup>3</sup> For example, cordwood masonry was more abundant in the communes of Białystok and Łapy; the communes of Suwałki and Sejny were famous for their cob barns; wattle-and-daub construction was widely used in the commune of Rudka south-west of Bielsk Podlaski; rammed earthen constructions were common in countryside near Ciechanowiec; wickerwork walls were known in Plutycze, the commune of Bielsk Podlaski etc.

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