Silvija Ozola	**TRANSFORMATION OF TRADITIONAL WOODEN LOG HOUSES IN MODERN LATVIA**

Topic: Architecture

Author:

Silvija Ozola

Riga Technical university Liepaja branch

Latvia

References:

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Abstract:

In the lands populated by the Baltic tribes one could encounter only wooden buildings till the 13th century: the principal types of wooden constructions were pile building, structure of horizontal beams and filled framework building. These three building types of wooden houses can be found in the archaeological evidences of the ancient settlements and also nowadays in building of several European nations, but the performance technique, scale and quality have changed.

In the Curonian, Prussian, Semigallian, Liv and Estonian as well as Lithuanian society the smallest unity was the family. A house was built for its settlement, round which a fence was built, but due to the necessity of other rooms, separate buildings were built near the house, creating a fenced group of houses which was called a farmstead. The most important wooden structures were concentrated in building complexes on the mound peaks and farmsteads, where buildings were mostly made out of logs.

When looking at the log houses nowadays, one can see that the wooden construction has not lost its peculiarity and it has remained unchanged in its constructive essence through lots of centuries. Developing the constructive solution of log houses, new building types have been created nowadays and a completely new way of application has appeared – public buildings and relaxation complexes are being built in the ancient constructions. The traditional construction inspires creation of new architectonic structures for provision of modern functions.

The main goal of the research is to find out qualitative features in the modern architecture of Latvia.

Image of LIDO restaurant in Riga

Contact: *ozola.silvija@inbox.lv*	**Keywords:** architectonic structures, building of horizontal beams, traditions, wooden constructions, spatial environment

Transformation of Wooden Log Houses in Modern Latvia

Ozola Silvija

Riga Technical University

e-mail: ozola.silvija@inbox.lv

Abstract

In the lands populated by the Baltic tribes one could encounter only wooden buildings till the 13th century: the principal types of wooden constructions were pile building, structure of horizontal beams and filled framework building. These three building types of wooden houses can be found in the archaeological evidences of the ancient settlements and also nowadays in building of several European nations, but the performance technique, scale and quality have changed.

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Introduction

A long time ago large areas on the south-east coast of the Baltic Sea were covered by forests. Inhabitants used this natural resource in building of dwellings. By the 13th century only wooden buildings, mostly log houses were built on the lands populated by the Balts. The most significant building construction of log house was the beams' wall.

The smallest unity in the Curonians, Prussians, Semigallians, Latgalians, Livs, Estonians, as well as Lithuanians' community was the family. A house, surrounded by a fence was built for its shelter, but due to the necessity of other premises, separate buildings were built near the residential building. A group of buildings, surrounded by a fence, called a yard or farmstead, was made.

In the Baltic lands the diversity of populated areas was common: open settlements, where a group of buildings was surrounded by palisade and ditch, and settlements protected with natural obstacles. People began to build fortified settlements (Picture 1) on high natural hills with an adjusted plateau and steep slopes in order to protect themselves from predators and foreign tribe attacks. The most significant buildings were concentrated on the tops of the mounds, where fenced complexes (Picture 2) were made. Following the terrain features of the mounds, it was necessary to build houses of different configuration planning. Log houses were very appropriate for such conditions where it was possible to make combinations of rectangular, polygonal and free configuration walls out of the logs.
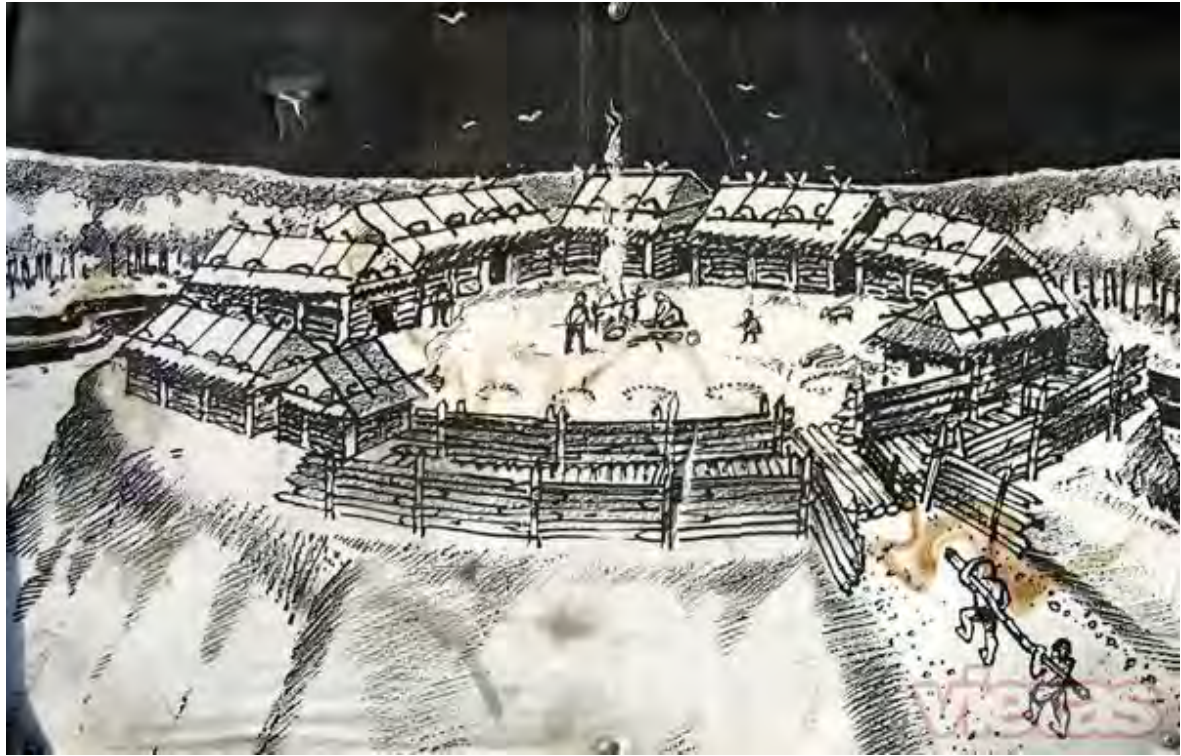

Picture 1. Semigallians' settlement on Tērvete Hillfort. Reconstruction. [10]

Picture 2. Semigallians' fortified place of residence on Dobele Hillfort. Exposition model of Jelgava history and art museum of Gedert Elias. [9]

1. Constructive Solutions of Log Houses

Log houses, which by their essence are archaic and solid wood buildings, were built in Latvia countryside and towns for lots of centuries. Nowadays they are considered as more elite and impressive than the log houses made of wooden pillars and panelled with wooden boards and insulated walls during the modern times. The microclimate stability in the room, the "breathing" wood surface and its artistic decoration and sense of safety are considered as the advantages of the solid wood buildings. A log house is made of round logs (Picture 3), bevelled logs with dovetail, full edged logs (Picture 4) without dovetail and of milled logs with several rebates.
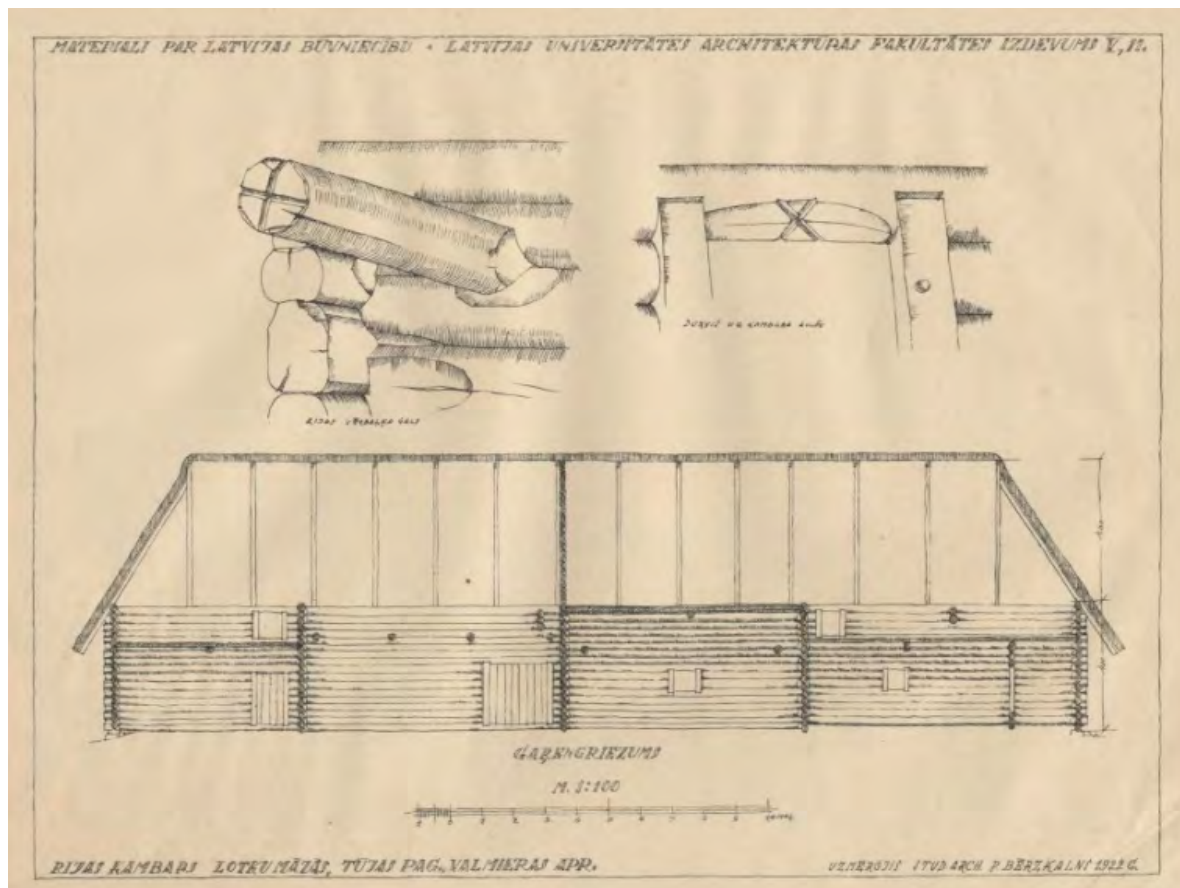
Picture 3. Drawing of the barn of the "Lotkas" House in Tūja Parish, Valmiera Region. Author: Pēteris Bērzkalns. 1922. [7]

Trees for timber were felled and taken home only in winters. To achieve a tight fitting of overlying logs they were hewn and provided with moss-cladding from inside, though earlier houses are known to have been built of untrimmed or only partly trimmed timber [8].

The logs were fastened in the corners of the buildings (Picture 4). A roundish notch was cut on the upper side of logs in about half of their depth, where the next log was put on, or also both on the upper and lower sides a notch was cut in about one quarter. Latvians called these about half-foot long ends of logs as corners [3, 22].
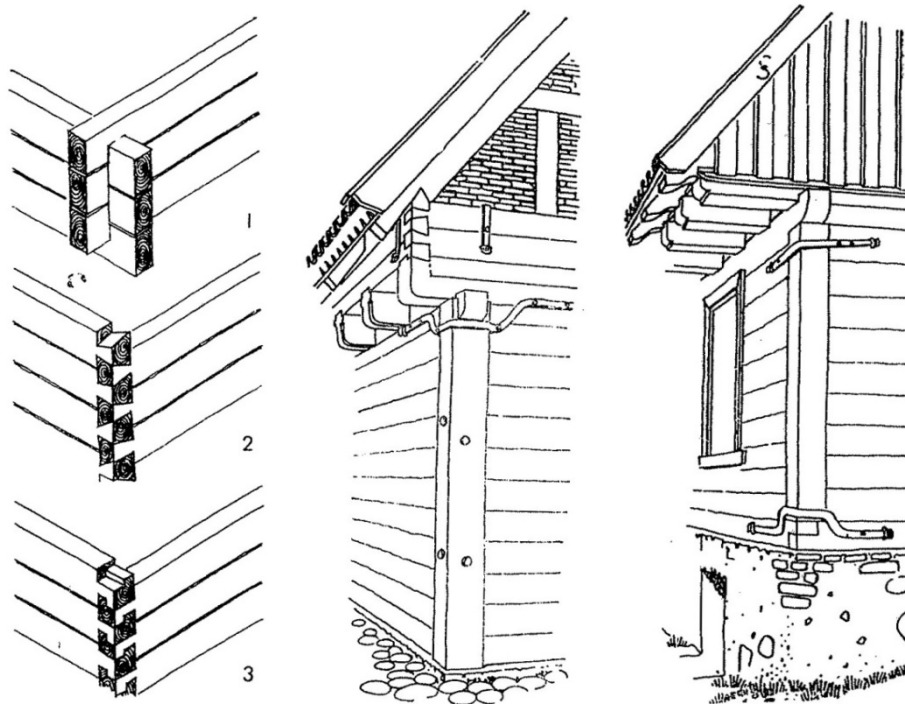
Picture 4. Corner joints of horizontally edged walls: 1 – with corners (a cross corner), 2 and 3 – the smooth corner. [1]

Picture 5. A horizontally edged building with corners joined in a strut and overhang for the 18th century warehouse in Liepaja [1]

Picture 6. A horizontally edged building with deep eaves under the ends of the beams for the 18th century dwelling house in Liepaja [1]

A strut log house (Picture 5 and 6) is built of bevelled logs with dovetail, full edged and milled logs with several rebates. However, it is hard to make complicated wall combinations for such buildings, as the struts become too complex. In Courland the old warehouses of Liepaja Port, residential buildings, pubs and other buildings were built in log struts, the scheme of frames was applied: vertical struts tied the upper and lower row of logs. Struts were also placed on both sides of the door and window openings. A horizontal beam construction was applied for the space between the struts, placing the ends in the rebates of struts. A strut design log house cannot have a cross corner, as the external walls and corners of the building are smooth, therefore the processing of the parts has to be done precisely. Excellent logs are necessary only for the struts, as well as for the upper and lower row of logs [4, 32].

During the boom of new farms construction in the 20s and 30s of the 20th century thousands of farms were made: lots of buildings had to be constructed – most of them were built in forest parcels of former manors. Farmers themselves prepared 9 to 10 metres long logs on the building sites. An even corner or cross corner was used for the corner joining. Single-family dwelling houses were built in the new farms, applying local materials, thus the construction was comparatively inexpensive [6]. The floor height of a log house was 3,5 to 4,5 metres. Some upgrading was implemented: beams were built into 2,7 to 3 metres height, but above them some rows of logs were built to make a small *drempel*. The archaic log pediment was used on the ends of the oblique roofs.

For the sake of the stability of the log houses' walls the window openings were usually made no closer than 1,5 metres from the corner to provide the wall rigidity. Mostly vertically stretched window openings were made, even though the characteristics of continuous windows also appeared. Some openings of the solid wood log walls, e. g. the main entrance doors, whose sizes were bigger, were supported by division walls.

2. Artistic Expressivity of Log Houses

The architectonic value and artistic expressivity of log houses is determined by the constructive logic, which was cultivated and developed during long centuries, creating a tradition which is carried on till nowadays: due to common designers and builders' work balanced and tasteful houses are made. When the constructive logic and traditions are not observed, atypical and unsuccessful solutions to solid wood buildings appear – houses built of thin logs with badly made corners, too wide window openings for a traditional log house, leaving atypical and non-resistant "posts" of sill corners. Continuous window openings should be used in the log houses with struts or in the buildings of solid wood frame construction. When the logical and plain basic volume is supplemented with colonnades, balconies and bays, the building obtains a distorted construction volume. In the modern architecture preserving the constructive logic of construction, successful samples of log house application are found; in lots of contemporary buildings the contrasts between the log house and strut construction are emphasized [4, *35*].

Using smooth surfaces of milled logs, round log walls with cross corners and expressive exchange of the fat end and thin end, a different texture has been created for the external surfaces of log houses. In the ethnographic regions of Vidzeme and Latgale the houses had round log walls, but in Courland the log houses were built of hewed logs on two and even four sides. In the southern part of Courland the smooth log walls were embedded into smooth corners, but in the northern part of Courland cross corners with the roof overhang can be met [3, *22*].

3. Functional Diversity of Log Houses

By World War I mostly monumental one or one-and-a-half storey residential and social buildings, also railway stations, were built in Latvia countryside. In Vidzeme since 1739 till the end of the 19th century 130 church congregation houses were built – one of the most impressive was *Ceplis* Congregation House (Picture 7) built in 1817 by Lake Alauksts [4, *31*].

Picture 7. Brothers' worship house "Cepļi" in Vecpiebalga [11]

Sill or frame pediments were made above the sill walls of the ground floor. The sill floor included several blocks of rooms. Large size threshing barns (Picture 8) were specific, which were not built at the end of the 19th century any longer.

Picture 8. Barn in the ethnographic region of Vidzeme, Latvian writer Rudolf Blaumanis (1863–1908) memorial museum „Braki" (created in 1959). [12]

Not a long time before World War II banks in Latvia supported building of fireproof houses and farmers started to build stone buildings, therefore the construction of log houses decreased. Rural residential buildings obtained also flat roofs and they reminded of urban buildings. After World War II houses were built of bricks and concrete in order to regenerate the housing fund.

Lots of wooden churches were built as log houses – one of the most impressive is Church of Jesus in Riga [4, *31*]. Currently known oldest of church's buildings in Latvia, built as log house with

smooth corners, is a sixteenth-century church in Vecborne (1537). This church is one of the earliest exhibits (since 1936) of the Latvian Etnographic Open-air Museum [2].

In the research by professor *Arturs Krūmiņš* (1879–1969) one can find descriptions about the technical solutions of churches built as log buildings – the churches built as log houses were coated with boards from the outside, but the pediments, towers and other parts built above the eaves were made in the ridge frame construction, thus the consumption of boards for such buildings was higher than other buildings [5]. In the plans of churches it is possible to notice the features typical for log house construction: the wall dominates over the opening, the window openings are distanced from the wall joints, and wall blocks of the log house provide the rigidity of the building that are placed in the corners of the building and served as towers or utility rooms. The rigidity of the long sill walls was provided by the posts built on both sides. Wider rooms with rows of columns were divided in the middle nave and side naves [4, *31–32*].

In the 18th century in Latgale, where all wooden churches used to be log buildings which were covered with boards from the outside nowadays Orthodox Churches are built like log houses: in Rēzekne right now St. Nicholas the Wonderworker's Orthodox Church (Picture 9) is being built like a log house.

Picture 9. The new building of St. Nicholas the Wonderworker's Orthodox Church in Rēzekne built as a log house. 2015. [9]

In Balvi the design initiator and concept author of the Orthodox Church of the Dormition of the Holy Mother of God (Picture 10) was Pastor Vladimirs Rubcihins. According to the northern traditions the church was designed as a log house of canonical forms with two Holy Tables. The image of the Orthodox Church had to be recognisable, but the symbolism of the church had to create a visual impression about the Universe – the worlds of the Earth and Heaven, about the God and His attitude to the world and people.

The construction of the church consists of different proportion volumes: the Heavenly World is symbolized with a cubic basic volume covered with a tent type four-edged roof, whose centre is crested with the big "Head" and cross – the Universe Church Ruler's Symbol. The big "Head" placed on the octagonal base symbolizes the God's Law. The belfry crested with the small "head" is lower. The plan of the church is made of the iconostasis and canonical enfilade of rooms – porch, anteroom, front church, middle-room, altar- directed towards the altar or from the "darkness of sins" towards the Reconciliation with God. In the middle of the church the side extensions form the cross plan. The basic volume of the church is emphasized by the windows above and big windows in the side extensions in order to give the space good lighting. In the anteroom the small windows create shadow. Engineers Arnis Asis, Aleksandrs Lukjanecs, Jeļena Šklevska, Juris Šataikins, Tatjana Kiriliva, Andrejs Libers, Alla Kere, Oļģerts Lukaševics, Olga Pilipenko took part in the projection. The projection was started in September 1994, but a year later the developed project was confirmed by Balvi Building Board and with the Head Office manager Juris Gertmanis's agreement it was presented to the church congregation for free of charge.

Picture 10. The Orthodox Church of the Dormition of the Holy Mother of God in Balvi built as a log house (2012–2014). Author: architect Ludmila Kļešņina. 2015. [9]

In 1990 in Latvia after the restoration of national independence the interest in wooden buildings and also log houses increased. The restaurant "Lido" was built in Riga – the biggest log house by its size (Picture 11); its upper part was made in the strut design, the same way as the mill (Picture 12) of this building complex.

Picture 11. Restaurant „Lido" in Riga at the Christmas light. [13]

In Turaida the roadside restaurant "Kungu Rija" (*The Lords' Barn*) is ambitious, spacious and beautiful, built from grand round logs with a big roof overhang with a wooden shingle roof (Picture 13).

Picture 13. Roadside restaurant „Kungu rija" in Turaida. [15]

The restaurant-guest house "*Medzābaki*" (Picture 14) built by Lake Lilaste has got a basement and plinth made of chipped stones, the ground floor is made of sills, but the roof of reeds. The guest house "*Puduri*" ("Clusters") is a multifunctional recreation complex (Picture 15) on the bank of the River Daugava.

Picture 14. Restaurant-guest house „Medzābaki". [16]

Picture 15. Guest house "Puduri" not far from Ķegums. [17]

The buildings made as copies of historic houses are very specific. Single-family residential buildings are an important group of new log houses that can be divided into two groups: the handcrafted log homes and milled (manufactured) log homes [4, *34*]. Nowadays lots of customers perceive log houses as something profound, natural and healthy.

– **Conclusions**

1. The traditions of wooden log houses construction continues in Latvia: transforming the characteristic and visually clearly perceivable construction volumes of Latvia ethnographic regions, nowadays complexes of impressive restaurants and guest-houses are being built as log houses in picturesque places by the water, whose planning and architectonic construction is usually complicated. In order to integrate the multifunctional buildings in the landscape, natural materials are used for the roofing.

2. In ethnographic region Latgale, where the building construction of log houses has been cultivated for centuries, nowadays new Orthodox Churches are built in compliance with the canonical planning and architectonically spatial structure.

3. In different ethnographic regions of Latvia the single-family residential buildings built as log houses are exclusive and unique.

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