

# Inventory of earthen architecture in Czech republic

*(evolution of methodological approach from the beginnings of  
interest in  
the 19th century and present activities)*

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The earth has been one of the most widely used construction materials in rural architecture in all the regions of Czech republic. It served as a mortar and rendering for stone masonry, ceilings, isolation of wooden constructions especially granaries and so called “smoked” rooms, filling for the timber frame buildings... It was in the South-eastern and Central Moravia where the raw earth was the principal building material. The building construction manifestations of this region are similar to those of Danubian countries (Slovakia, Hungary, Lower Austria, Romania, Ukraine, Serbia, Slovenia and Croatia), from where they penetrate in a significant form through Southern and South-western Slovakia via the Moravia-Slovak and Moravia-Austrian contact. A great part of population, for the most part rural, live here still in houses built of unbaked earth.

The predominant techniques which can be still found in this particular region were three:

- the rammed earth construction mounted with wooden shuttering
- the sun dried bricks laid using a mortar of clay
- the specific danubian technique of “opus spicatum” - “rollers” put obliquely (spikelike) in the walls

The last mentioned one is a special archaic method of construction, not frequently found (the last examples survive in the Haná and Znojmo region). There were two ways of building from hand shaped bricks called “váľky” - “rollers”. According to the facts given in the village chronicle of Příklad (distr.Olomouc) and descriptions of Antonín Václavík wooden boards were used. J.Sháněl watched the proceedings for the erection of a “opus spicatum” barn without shuttering in Pačlavice (distr.Vyškov) in 1903 and described details of this method. No mortar was used, but the “rollers” prepared one or two days before construction were before application simply plunged in water. In Slovakia rollers were used also as filling in a simple timber-framed constructions. Václav Mencl assumes that the “opus spicatum” technique in Danubian region belongs probably to a tradition rooted in Roman times (referring also to the excavations of Dacian castle near Craiova).

The use of the fourth of the principal danubian construction method though known in the neighbour Slovak regions - the cob - is not proved in Moravia.

The walls are normally built on a stone plinth, but the oldest and archaic buildings grow directly from soil. The used method can hardly be distinguished without probes, as the walls are rendered with earth, mixed with finely chopped straw, whitened with lime or later brightly coloured in blue or yellow. External walls, especially those of barns and granaries were often left unrendered.

The beginnings of earth architecture in Czech republic are not well documented.

The first “zemnice” - underground or semi-under-ground dwellings of the Slavic population were dug out in soil. (*The last “zemnice” was documented by A.Kurial in 1950 in the poor “kopanice” region in South-eastern Moravia. This tradition survived also in so called “zbožní jámy” - “grain pits”.*) The definitive raising of the wood and earth dwellings above the level of the soil and the transition to a rectangular three-part plan took place during the so called “inner” colonisation. As far as we know today in the Middle Ages earth was used in conjunction with wooden structure as in wattle and daub and later timber construction. Except the regions close to Germany with their preference for the timber frame, the tradition of solid timber walls with trunks (round or adzed logs) laid horizontally on top of one

another and connected (slotted) together on corners is predominantly presented in Czech lands. The wooden walls were covered with a protective earthen coating (up to 20cm thick); good adherence of the earthen layer was achieved by means of large number of wooden nails and also by making axe cuts in the wood. Such coating accompanied the medieval "jizba" living rooms containing open hearth and bread-oven where ventilation was provided by a window or a hole in the wall; the tradition of wooden living rooms with thick earthen coat, connected with comfortable living, thermal insulation and reduction of fire risk, survived in such earthen regions as Haná.

The fertile nearly deforested region of Southern Moravia with long continuity of settlement going back to prehistory and with best soils for earth construction is thought to be the earliest in Czech lands, where the massive earthen walls were built. Though the "mud" houses and "sypanice" (one of the local names for the rammed earth) are mentioned in medieval texts, archaeological proofs are still missing. There are buildings known to date from the 18th and even 17th century, but most of them were not built until the end of the 18th century. The reforms of Mary-Therese and Joseph II with the building orders and repeated interdictions of wooden constructions undoubtedly played an important role in spread of unbaked brick construction in other Czech and Moravian regions, where it replaced wooden constructions. Earthen buildings of the period of classicism are by no means confined to rural areas but were recently identified also in town centres (Litoměřice, distr.Litoměřice; Slavkov, distr.Vyškov; Uherský Ostroh, distr. Uherské Hradiště).

Burnt bricks were not used in rural architecture until the second third of 19th century and only in the most rich Haná region, where the street façades were reveted with burnt bricks

Simultaneously the raw earth continued to be used until the nineteen-fifties with the last period of revival after the Second World War.

The earthen architecture was always searched as a part of rural architecture. The beginnings of interest in this subject are connected with the national revival movement of the 19th century, which is also the period of emergence of ethnographical science in Europe. The

scientists, writers and painters searched for the roots of nation and its identity in the "folk" or "popular" art. Their interest was concentrated on the decorative details or such exceptional elements as "žudr"- large porches with a chamber for storage of grain above or classical colonnades of Haná farmsteads, "žudro" - little porches of the Moravo-slovak region. The first descriptions of construction methods and the work of famous Czech painter Josef Mánes (1820-1871) is to be mentioned here; his drawings from Haná region are of great documentary value. The history of the attempts of the 19th century culminates in the Czechoslovak Ethnographic Exhibition in Prague in 1895. Ethnographic village was set up by architects Dušan Jurkovič (1868-1949), Jan Koula (1855-1919) and Antonín Wiehl (1846-1910). The construction of Prague exhibition village was preceded by important preliminary regional surveys, including also the earthen region (the study of Jan Koula on decoration in Podluží published in *Český lid 1894 - Malby domků v jejížnější Moravě*). The documentation of these surveys is dispersed in regional museums, but an important part is placed in the archives of the Ethnographic museum in Prague. (This materials were partially published by Zdeněk Wirth (1879-1961) - Art of Czechoslovak people, destined for foreign countries - *Umění československého lidu, Praha 1928*). The surveys of the end of the 19th century and the beginning of 20th century are still focused on ornamentation and paintings of old black kitchens or porches. The decoration appreciated at this time is in fact very recent and the models are adopted from the costume of the people, textiles and ceramics.

The architects of Prague exhibition continued their ethnographic studies during the following years. As in many European countries it was the time of orientation to vernacular models in connection with efforts at creating a national style of architecture. The folklorist movement in architecture found a reflection in remarkable projects for whole quarters of earthen farms and family houses in Uherský Ostroh and Uherský Brod (distr. Uherské Hradiště), built after the great inundations before the first world war. Reciprocal influences can be followed till nineteen forties.

The pioneer works of first ethnographers and architects were followed by more intensive studies. Lubor Niederle (1865-1944) ("Moravian Slovakia" - *Moravské Slovensko, Praha 1918*) brought an archaeological approach to the subject. Ethnographic monographs of

Antonín Václavík give excellent analysis of the Slovak earthen village Chorvátský Grob (*Podunajská dedina, Bratislava 1925*) and the Zálesí region (*Luhačovické Zálesí, Luhačovice 1930*). In the period of first Czechoslovak republic earthen heritage recording was represented by the work of Josef Kšír (1892-1978), regional conservator and chief of the planning office in Olomouc, who completed the inventory of Hanak houses with porch - "*žudr*", and Václav Mencl (1905-1978), who documented since 1920 with his wife and students of Prague university hundreds of earthen buildings in Moravia (especially in so called little and great Haná) and in Slovakia. Besides beautiful photographs they elaborated plans, elevations, cross-sections and structural details at a scale of 1:100/1:200. The inheritance of Václav Mencl placed in archives of National Museum in Prague has not yet been worked up, which is one of the greatest debts of our research. Mencl summarised the results of his research in the field of rural architecture in the fundamental synthesis "Vernacular architecture in Czechoslovakia" (*Lidová architektura v Československu, Praha 1980* - the manuscript was finished already in 1968). He analysed the rural architecture from the point of the history of art, described its typology with regard to the materials it uses and defined the basic regions in European context (with the definition of the Danubian region of earthen and stone construction).

The interest of architects in vernacular architecture knew an important revival during the Second World War. In 1941 it was the national competition regional types of farms and houses based on preliminary study of local architecture and urban structures. Though the results of this competition are partially indebted to the functionalist theories dominant at that time, it awoke deeper interest of many participants in this theme. One of them, Antonín Kurial (1907-1982), continued his research also after the war. He prepared preliminary inventory of more than three thousands vernacular constructions documented by analytic descriptions, sketches and photographs. It served for the selection of nearly six hundred of records, provided by students of the Brno faculty of architecture in 1946-1966. Professor Kurial developed procedures for the detailed recording at scale 1:50 or 1:25. The documentation from the Kurial's archives started to be published by districts in 1966.

Among the ethnographic works from the period after the second world war we have to mention Václav Frolec (1934-1991) who

conducted the research of vernacular architecture of Moravia and Silesia at the department of History and Ethnography of Central, Eastern and South-eastern Europe at the Brno University (the results published in "*Lidová architektura na Moravě a ve Slezsku*", Brno 1974).

The remarkable monograph on the Moravian Slovakia region by Otakar Máčel (1920-) and Jaroslav Vajdiš (1920-) "*Slovácko*", 1958, describes the vernacular architecture of this region, structure of villages and their development. The desire to preserve and record the earthen architectural heritage was quickened as it vanished from scene after the socialist collectivisation. The surveys of architects Máčel and Vajdiš served as an important source for the construction of the first open air museum in Earthen region of Southern Moravia in Strážnice (distr.Hodonín), designed by O.Máčel. The most of the constructions built in this museum are copies; the originals still exists and are protected by law "in situ"... The preparative documentation of Máčel and Vajdiš include records at scale 1:200/1:100 among them the remarkable Máčel's records of the parts of historic centres of villages (Kněždub, distr.Hodonín) or rows of wine cellars (Prušánky, distr.Hodonín).

Jaroslav Vajdiš became chief of the studio for vernacular architecture in SURPMO - the State institute for reconstruction of historic monuments and towns. He developed still used procedures for systematic inventories, recording and analytic studies of vernacular architecture, based on SURPMO methodology applied for the "noble" architecture.

There are three basic categories of surveys:

1/ inventorial surveys of whole districts or regions (national parks etc.), elaborated at scale 1:5000; the plans in this scale allow the basic identification of inventoried buildings and elements; the inventory contains for every inventoried building or element black and white photographs (exterior, significant details and if possible interior) and a short report with description, analysis of architectural evolution (datation) and evaluation, recommendation for listing and future interventions.

2/ surveys of villages (or towns), their historic centres or parts of settlement (methodology used also for village conservation areas), at

scale 1:2880 - 1:1000; more detailed analytic text - with addition of references on archive plan and photographic documentation - is elaborated for every building in surveyed area; not only the buildings are studied in greater depth on this level (the obligatory survey of interiors) but also urban structure and its historic evolution is analysed; archival sources, particularly farmstead registers (going back to 16th century), land surveys before and when after the Thirty Years War, cadastral surveys (beginning from the first known as terezian (edict of 1718)) and the old building plans are explored for this analysis; another useful source (especially in case of simplified survey for example for the state program of the "renewal of village") may be "Vlastivěda moravská" (published by districts since eighteen-nineties) - the "national history and geography" including historic monographs of all villages; in many cases also village chronicles may be used.

The study of evolution of urban structures is largely based comparative analysis of so called imperial or stable cadastral plan. The edict of emperor Francis I of 23th December 1817 marks its beginning - geometers and surveying commissions worked in 1826-1843. For the study of our earthen architecture is important that the survey of the Austro-Hungarian monarchy was started in Southern Moravia. Despite some technical imperfections and a certain degree of imprecision it constitutes an irreplaceable document for study of villages and buildings. The plans at scale 1:2880 (with detailed 1:1440 sketches of centres of villages and towns) allow are also to identify the used building material (distinguished by colour) or the village quarries, where the earth for the construction was excavated (the farmhouse cellars dug out of the earth might also have been source of the building material). They are important for identification of constructions and parts of urban structure that have disappeared.

Thought the application of the modern building rules from the end of the 18th century and the beginning of 19th century with the obligation to present the plans for building permission became customary in the villages later than in towns we can find in communal and regional archives documentation useful for the understanding of architectural evolution of buildings and their rehabilitation. One of the most rich archives is that of the village Příkazy (distr.Olomouc) conserving plans for reconstructions or new constructions of nearly all village buildings - farmsteads with stables, barns etc. and building protocols describing used construction methods and materials. This

documentation with archival photographs is important for rehabilitation of buildings that have now lost their original character.

Results of the survey are summarised in three or four plans - with graphical analysis of the periods of construction, of the architectural value, of the preservation policies and comparative analysis of stable cadastre.

At least one survey of this level should precede the basic inventorial survey; it is helpful for better understanding of architectural types, datations etc. of the region.

3/ detailed analytic surveys of buildings elaborated at scale (1:100), 1:50 - 1:25 take place prior to intervention on significant building (or before the demolition - it is obligatory for the buildings protected by law); in comparison with the second category, where only the "surface" is described, it is accompanied by necessary probes and tests, eventually archaeological survey (identification of implantation and orientation of oven etc.).

Thanks to the systematic analytic surveys much progress has been made in recent years in the understanding of vernacular architecture and its history. In this context are stimulating studies of Jiří Škabrada (1946-) has thrown new light upon the whole study of evolution of the plan and the structure of the farmhouse and cottage and the heating system of the period of 16-17th centuries.

Besides the better identification of the vernacular oldest buildings, a valuable contribution of latest surveys is the appreciation the neovernacular architecture of the firsts decades of our century.

The official list of protected buildings was completed in the beginning of sixties. It is product of its time and of the scientific orientation of the surveyors. Unfortunately during the communist period there existed no link between the analytic surveys (that were if high quality) and listing. Only a small proportion of our earthen architectural heritage is protected by conservation law. The list is still very imperfect and insufficient, though in the last few year some buildings were listed.

Apart from the listing of individual architectural features the law enables protection of so called "architectural reserves" (conservation

areas) and “zones” - those of villages have been prepared during for twenty years and this year perhaps become reality.

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