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*Phd. Student,**University of the Basque Country UPV/EHU, Spain***TOWARDS A THEORY OF INTERVENTION IN WOODEN CHURCHS****НАЗУСТРІЧ ТЕОРІЇ ІНТЕРВЕНЦІЇ У ДЕРЕВ'ЯНУ ЦЕРКВУ**

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Анотація: Стаття присвячена збереженню дерев'яних сакральних споруд Європи, як пам'ятки громадського призначення. Для подальшого їх збереження автор наполягає у методі дослідження під призмою соціології, культури та архітектури.

Ключові слова: дерев'яні церкви, дерев'яні конструкції, реставрація, реконструкція.

Annotation: Taking as a starting point the cultural transformation undergone by our Western Society and the effects this has on our most fragile heritage, I propose a study on wooden religious architecture, with the idea of culture and heritage as a community building process which has evolved over time.

Key words: wooden church, timber construction, preservation, reconstruction.

INTRODUCTION

We choose to study wooden churches but why *wood*?

Wood is, after many centuries, the material with the wider range of possibilities for constructive purposes and a renewable natural resource.

Structures are the expression of man's cleverness in inventing mechanical devices for the support of buildings, which are the demonstration of mathematical theories as well as the manifestation of geometric and formal inventions, and evidence of the imaginative use of space conceived by the architect.

Wooden structures were the prototypes for the basic structural system that have continued until today with the addition of new materials.

Every wooden structure in existence is a valuable document of structural characteristics and techniques, as well as improvements in types of construction. They are, therefore, an important cultural heritage to be safeguarded.

The ideological contribution of the 1999 Mexico City Charter, prepared by the ICOMOS International Committee, on the principles for the preservation of historic timber structures is of tremendous importance, as are the recommendations of ISCARSAH, the working group belonging to ICOMOS which is concerned with the conservation of ancient structures.

They all agree in the respect for the original configuration and the authenticity of the materials: *"The aim of restoration is to conserve the historic structure and its load bearing function and to reveal its cultural values by improving the legibility of its historical integrity"*.

And why *churches*?

Churches have been for long the core from which not only developed the city but also the centre and the stage of most community social events.

So with the combination of *wood* and *church* we intend to cover all aspects of social, cultural, and environmental contents of these 2 elements. Safeguarding churches physical integrity and authenticity, we get to emphasize their value, because their preservation is as important as to keep the knowledge that made possible its construction.

All this will achieve that the buildings will be kept in use and valued by the community, lasting as transmitters of a knowledge that keeps surprising and enlightening us.

NORWAY WOODEN CHURCHES

Norway is the only country in Northern Europe with wooden churches from the middle Ages still intact. While immense cathedrals were being built in stone in other places in Europe, a similar technique was being developed in Norway for building in wood. Boat construction and home building in the Viking times had developed the technique and tradition of combining art with wood working. This culminated in the stave churches. Out of perhaps over a thousand originally, 28 stave churches have been preserved.

1. ENVIRONMENTAL CONTEXT AND TYPES OF WOOD

Stave churches are named after the supporting staves in the construction of the walls. These are placed in the corners and at other important connecting points in the churches. They are not only valuable as buildings but also as elements in the cultural landscape, and contribute to illustrate where the major traffic arteries have been routed and how the landscape has been previously used. It is therefore vital that the areas immediately around the churches should not be deconstructed or changed.

They were made entirely of wood except for ironwork detailing like door locks or hinges.

The only tools used in the construction of the stave churches were axes, augers, primitive planes, and various knives and chisels. The planks and pieces of wood were dovetailed, pegged, and wedged so each joint could expand or contract with the temperature and humidity, which varied greatly from season to season in Norway. The material is invariably pine. Oak is only found in the south of Norway, and beech from the beech wood at Laurvik.

If one may judge from the massive beams to be found in many of the stave churches, the ancient pine forests of Norway must have supplied many trees like those tall pines which were fit to be the mast of some great admiral.

All of the parts exposed to the weather have been coated over and over again with tar of a dark red colour, and this, added to the age of the timber, gives to these churches a rich, dark brown colour which forms a very pleasing contrast indeed to the white paint which is almost invariably used to cover the outside as well as frequently the inside of the modern Norwegian country church.

The external appearance of most of these stave churches is quite unique; it reminds us of an oriental building: roof rises above roof like a pagoda, and quaint dragon heads adorn the gables. These in many instances, resemble the prows of the ancient Viking ships, like the one found buried in the earth near the seashore.

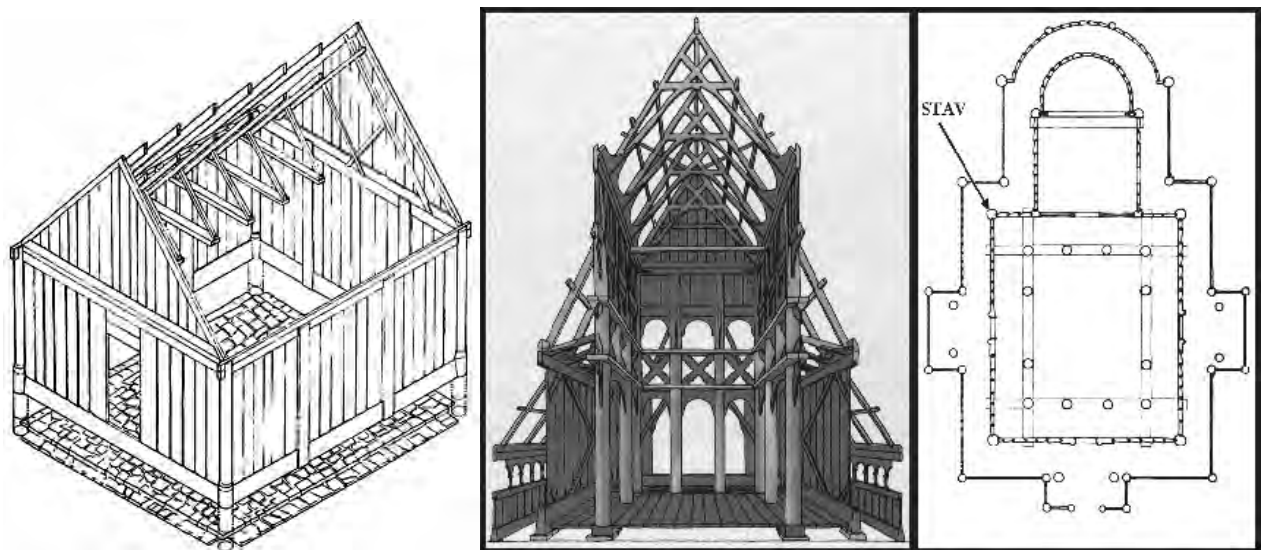
2. TECHNIQUES AND CONSTRUCTION METHODS

As opposed to the “ordinary” kind of post-borne construction, in which the posts bases are anchored in the ground, stave-built structures stand on stone foundations. There are variations on the types that have been built: There is a Type A and a Type B.

Four heavy beams form the base of **Type A** churches which are interconnected in the corner notch. The corner posts are cross-cut at the lower ends and they fit over the corner notches. It gives complete protection from moisture. On the top of the beam is a groove, where the wall planks will fit. The last wall plank is wedge-shaped.

The entire structure consists of frames. In the end, you have a sill frame on the foundation, four walls made of sills, corner posts, and a wall plate.

Type B churches have a raised roof. Four huge beams are placed like a hash (#) sign. The ends stick out, and they support the sills of the outer walls, which in turn form a separate horizontal frame. The posts on the inside are placed on the frame of the large beams, and carry the roof above the central nave. The wall planks rest on the frame of the outer sills. It carries the roof over the aisles. The roof then tapers down, like a basilica. This form of church is recognizable because of the holes in the ground that remain from past churches built on the same site.



Type A

Type B

3. HERITAGE PRESERVATION

The Directorate for Cultural Heritage is under the authority of the Ministry of the Environment and is responsible for the formulation and execution of cultural heritage management policies, which basis are provided by *The Cultural Heritage Act* and *the Planning and Building Act*.

In 2001, a project is initiated to restore all the stave churches in the country because several of them were in poor condition and in danger of further decay. The Programme is scheduled to end in 2015 and its goal is to repair and to supplement the documentation about the churches.

Some years before, the Medieval Programme (1991-1999) showed that much of the knowledge of the old techniques used in buildings from before 1537 had been lost, so it was important to activate this knowledge and placed craftsmanship and craftsmen at the centre. It is of crucial importance that there are craftsmen all over the country who can perform everything from simple repairs to complicated restoration work. It is important that they begin to take part in the planning as early as possible, as this will often give the authorities the best basis for making the necessary decisions. The main source of knowledge is the building itself. However, traces of tools

are copied so that the old techniques can be perfected. Studies are made on the quality of the original materials and corresponding qualities are found where replacements are needed. Very interesting findings have been made thanks to the investigations carried out by craftsmen. The interaction between them and the authorities may increase the level of knowledge.

SLOVAK CHURCHES

Twenty-eight wooden churches scattered across Eastern Slovakia in the Carpathian Region are an irreplaceable national treasure, and have been declared a National Cultural Monument. Eight of the churches have also been added to UNESCO's World Culture and Natural Heritage list.

The Carpathian Mountains, unlike the other European mountain regions did not have a uniform culture that would be characterised by its typical formal manifestation. Two cultural streams, the Russian-Byzantine and the Gothic area, were fully reflected in the construction of the sacred buildings.

The churches were built during the 16th and 17th centuries in small villages with available materials in the area. Each church of log construction was unique to its master builder, but incorporated the same basic design features consisting of three interior spaces and three towers each with a cross. The roofs are of hand-made shingles. The altar in the sanctuary is separated from the nave with an iconostasis, a wall on which icons are placed. The churches were set in a natural landscape away from houses, and represented the dominant feature of the village.

Being built of wood, the churches and iconostasis are threatened by weather and micro organisms. Approximately 300 churches were built.

1. ENVIRONMENTAL CONTEXT AND TYPES OF WOOD

For centuries wood had been a traditional and a very versatile natural material in the Carpathian region. Nowadays about 40% of the Slovak land is covered with forests and in the past the areas of forests were even more extensive, the building material for wooden churches was exclusively local: the long, even wood of the coniferous trees predominated as the spruce, the fir, the larch and rarely the Arolla pine or the yew. The hard wood of oak and beech was used for more stressed parts of constructions as the bell tower.

Axe remains as the basic tool till today, used in endless variations of a shape and size. As building technique develops there is growing need for variety of quality tools, saw, plane, drill and many more were used. Most of these tools are almost the same nowadays as they were several centuries ago. Time of industry revolution destroyed many skills and carpentry knowledge. Beautiful and cleverly crafted wooden constructions of the 18th and previous centuries often disappear, because the lack of skilful repair and knowledge of a proper carpentry techniques.

2. TECHNIQUES AND CONSTRUCTION METHODS

The construction system is a log-building technology which belongs to the carpentry group, the oldest technique of adjusting the accessible natural material to the building purpose. The post constructions were used for building the towers and belfries. The shape of the constructions is in their ground plan rectangular, or polygonal. The timbers have been trimmed into prisms. Nails were not originally used because of the spiritual reasons, and that is why the dovetail joints and oak-wood wedges were used in the corners instead. Walls were covered with vertical wooden planking in the interior and in the exterior as well. Sometimes the walls of the church were in the so-called "fur coat", as the horizontal beams were plastered with a coat of plaster and over-painted with the lime coating.

The roofs of the churches differed: the mostly used was the saddle roof or the broach roof topped by onion-shaped spires, but the conical roof was used as well. All the roofs have been covered with wooden shingles.

There are 2 basic churches types of Eastern liturgy but only the **Bojkian** type can be found in Slovakia. It has a lengthwise ground plan, which consists of 3 log-rooms with three spires above them. Its lengthwise axis is situated in the east-west direction. The nave of the church is the largest log-room above which the highest spire is situated. The **Lemko** type of a church has evolved from this type. Its spires gradually rise westwards. The tripartite character of the space is the common feature: the first log-room functions as an entry to the church and for women; the second is the nave of the church and the men space and the third is the sanctuary of the church.

3. HERITAGE PRESERVATION

The protection and restoration of monuments in Slovakia today is governed by the Act of the National Council of the SR No 49/2002 on the Protection of Monuments Stock.

This Act has completely changed the philosophy of monuments protection in Slovakia which in the past was only advisory for other state administration authorities. The new organization has become part of the specialized state administration which now can take decisions in legal terms and maintains the Central List of Monuments Stock.

The Monuments Board is responsible for special state administration in relation to the protection of monuments and historic sites. Therefore the principal task of recent years has been the revision of the Central List of Monuments Stock by means of basic field research and documentary research. The synthesis of data obtained, supplemented with the data of the preceding generations of preservationists, as well as the latest scientific studies, is the basis for the new edition, in which the entire monuments stock of Slovakia will gradually be introduced to the general public.

The aesthetic principle of rehabilitation has won over the historical one. Particular architectural periods and styles and their techniques are respected, none of them are negated at the expense of the other. At the same time, the preservation of the authenticity of the monument and its heritage values are highlighted. If restoration as a specific kind of recovering the state of a historic place is not necessary, artisan works and the use of traditional technologies and materials are pushed forward. Equally, in the presentation of a cultural monument, such a method would be applied to best preserve its heritage values, highlighting them, or optimally using them. What is important is the overall, self-contained reflection of the restored monument, although an analytical presentation of its exceptional elements is not ruled out. The improvement of the construction and technical conditions of the monument and the elimination of causes of decay and malfunctions are taken for granted in restoration efforts. Revitalization of the surrounding environment also contributes to the resulting overall effect of the historic site restoration. The monument preservationist-versus-owner relationship is not always ideal. It is therefore important in this situation to be steadily raised for new educational and promotional initiatives to be developed.

Conclusions

We believe that through the study of the social, cultural and building features of any society which have developed a cultural identity around wooden churches is possible to elaborate an intervention theory for the future preservation of these fragile monuments.

After the European analysis, we are now going to move forward to the peninsula of Chiloé in Chile, South America, in order to prove this hypothesis.

Our society must face the challenge of rethinking the best way to preserve these buildings, which have been based for many years in the community rebuilding.

Now that community has been replaced by the State and individuality is fully exploited, it is time to undertake a study to achieve new light on the struggle always complicated of restoration and authenticity.

Literature:

1. *BUXTON, D. (1981) "The wooden churches of eastern Europe: an introductory survey". Cambridge: Cambridge University Press*
2. *ICOMOS (1999) "Principles for the preservation of historic timber structures" 12th General Assembly in Mexico*
3. *JENSENIUS, J. (1988) "The Stave Church of Lomen, a mathematical analysis". Oslo, Alvheim & Eide*
4. *MEHLUM, S. "Craftsmanship and the Directorate for Cultural Heritage". Management of Unesco World Heritage Sites in Poland and Norway, pp. 306-317*
5. *SEIP, E. (2000) "A Stave Church for Iceland". Oslo, NIKU pp.36-47*
6. *TAMPONE, G. and SEMPLICI, M. (2006) "Rescuing the Hidden European Wooden Churches Heritage, an International Methodology for Implementing a Database for Restoration Projects". Italia*