

# ECCE BUILDING CERTIFICATE IN SUSTAINABLE CONSTRUCTION



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## PARTNERS:



# ECCE BUILDING CERTIFICATE IN SUSTAINABLE CONSTRUCTION



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Coordinator:  
Melanie Tanase

## LECTURE 2. FABRICATION AND USE OF WOODEN COMPONENTS

GENERAL FEATURES

FABRICATION AND USE OF WOODEN TILE – MR ENACHE

SCULPTURE AND USE OF WOODEN BEAMS – GEORGE DOBRIN

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institution

# LECTURE 2. FABRICATION AND USE OF WOODEN COMPONENTS

GENERAL FEATURES

WOODEN TILES "SHINGLES"

SCULPTURE AND USE OF WOODEN BEAMS

## LECTURE 2. FABRICATION OF WOODEN COMPONENTS IN ROMANIA.

### ITEM 2.1: GENERAL FEATURES

- 1- Mind map

## TRADITIONAL BUILDINGS IN ROMANIA ARE MADE IN WOOD.

The need of maintenance of old buildings has designed the contents of this course.

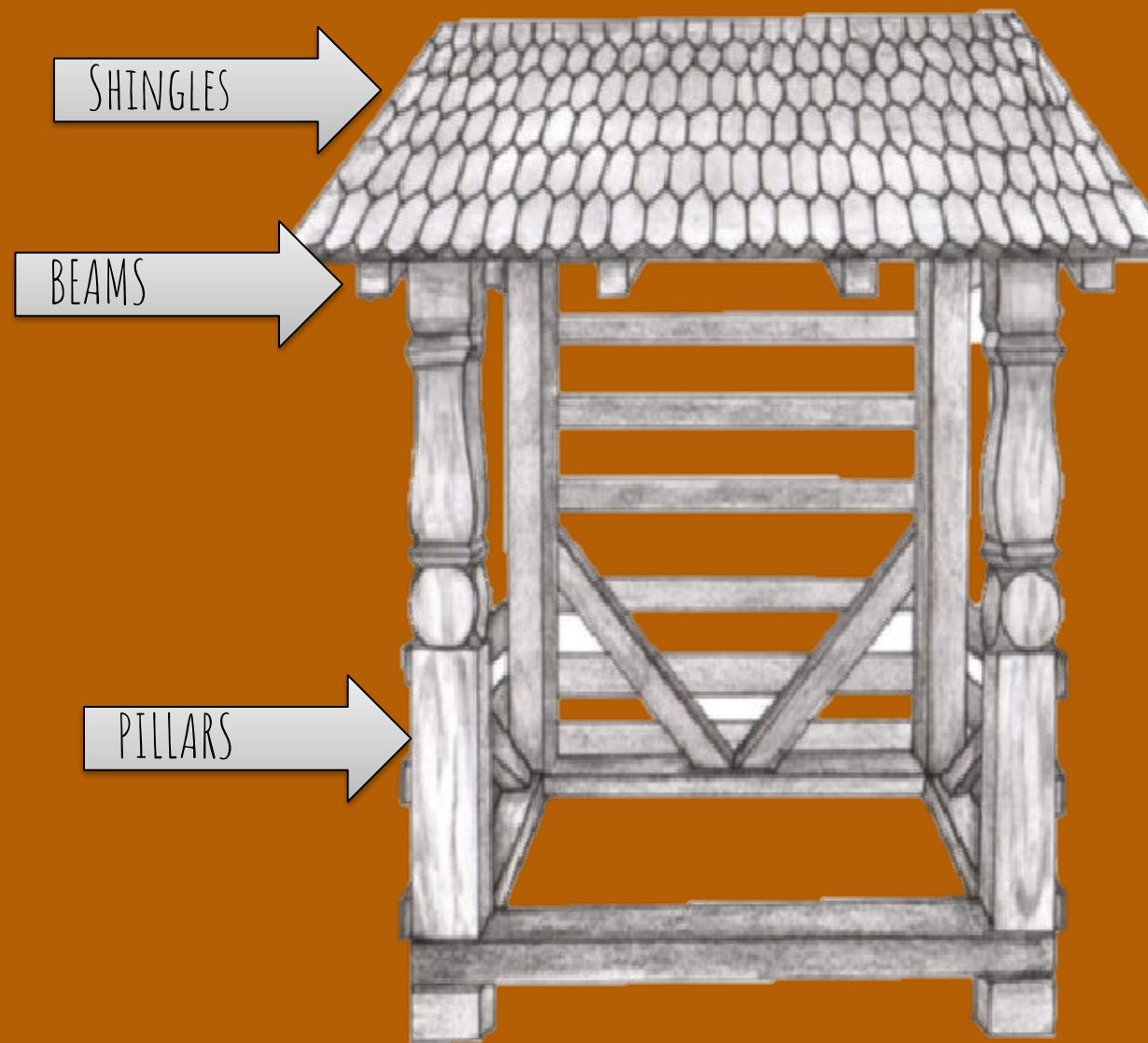
The objectives of this course are:  
To acquire the theoretical basis to work in Rumanian traditional buildings.  
To learn about diferent local materials  
To know the wooden properties.  
To see how tho place the til-les  
Apply techniques for carving wood.

The elements fabricate:

- Shingles in roofs
- Pillars sculpted
- Beams fabricate

A part of this we could improve techniques in:

External walls  
Interior walls  
Floors  
etc



# LECTURE 2. FABRICATION OF WOODEN COMPONENTS IN ROMANIA.

## ITEM 2.2: WOODEN TILES "SHINGLES"

- 1-
- 2- Case study
- 3- Workshops
- 4- Video
- 5- References
- 6- Evaluation

Mind map

Case study

Workshops

Video

References

Evaluation

## LOCAL MATERIALS.

Shingles in Romania are traditionally made from this original wood:

Spruce, fir, larch, chestnut, oak, beech or acacia depending largely on what is available locally. In other places as in Northern America Cedar is more widely used.

The wood is always shaped green as it becomes less malleable and more prone to splitting the drier the wood becomes



## FABRICATION PROCESS

**The first step** in the fabrication of shingles is the choosing and cutting of the tree. This should be without visible disease or damage. Once felled and branches removed the trunk should be cut into lengths of 300-500mm. Using a sledgehammer and wedge create a block. This will be your starting point for shingles. Set your axe head on the wood at about 1/4 inch from the edge. Strike it with the mallet to force it through the wood. Continue this method to make the amount of shingles you need for your roof or siding.

## IDEA

Wooden Shingles or shakes (sindrila si sipca in Romanian) is a traditional roofing material dating back to the iron age.

## FUNDING

The price for shingles can range from 1 leu to 3 leu depending on the material

## MATERIALS

Sufficient wood for the roof. Shingles are generally between **50 and 130 mm** wide and

## EQUIPMENT

Chainsaw, sledge hammer, axe, wedge

Mind map

Case study

Workshops

Video

References

Evaluation



Two examples of traditional Romanian houses using the straight wooden shakes on the roof.



Mind map

Case study

Workshops

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We can also see the pattern on overlay with at least 50% of the shingle being covered by the next layer. This is the minimum requirement with 30-40% more common, increasing thermal insulation on the roof

The pictures demonstrate the use of the duck beak shingle being used on a traditional roof. The duck beak shingle is specific to the Romanian architecture.





Mind map

Case study

Workshops

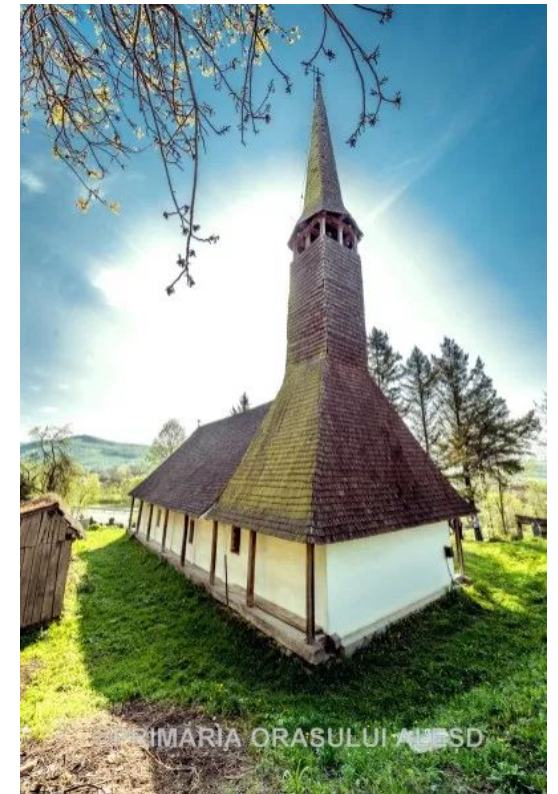
Video

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The Church in Pestis, Judet Bihor is an example of a wooden church with a shingle roof. The church was built in 1797 and is recognised nationally as a historically important building. It last underwent a major renovation in 1922. The church demonstrates the versatility of sindrila with regards to the shape of the tower which would be impossible to cover with ceramic or slate tiles.



Mind map

Case study

**Workshops**

Video

References

Evaluation



STEP 1:



STEP 2:

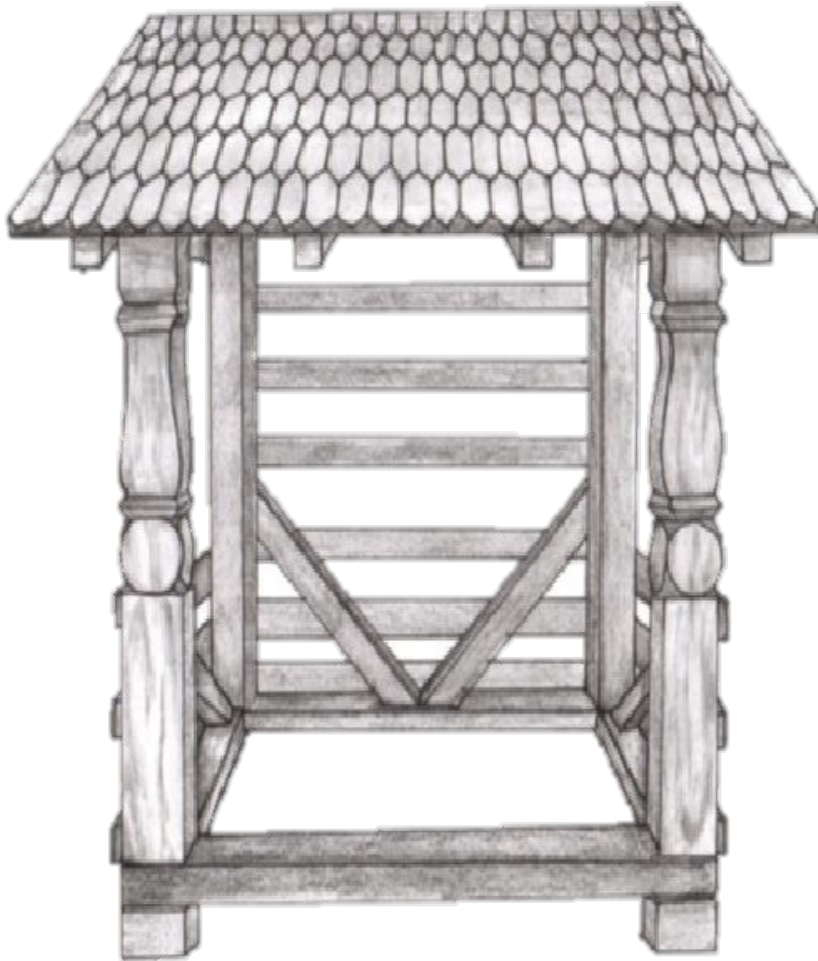


STEP 3:



STEP 4: Description

This is the Wooden Structure created by the training group using the techniques and tools specified. Cutting and carving in rough form by Chainsaw, shaping by Atz and sandpaper.



Mind map

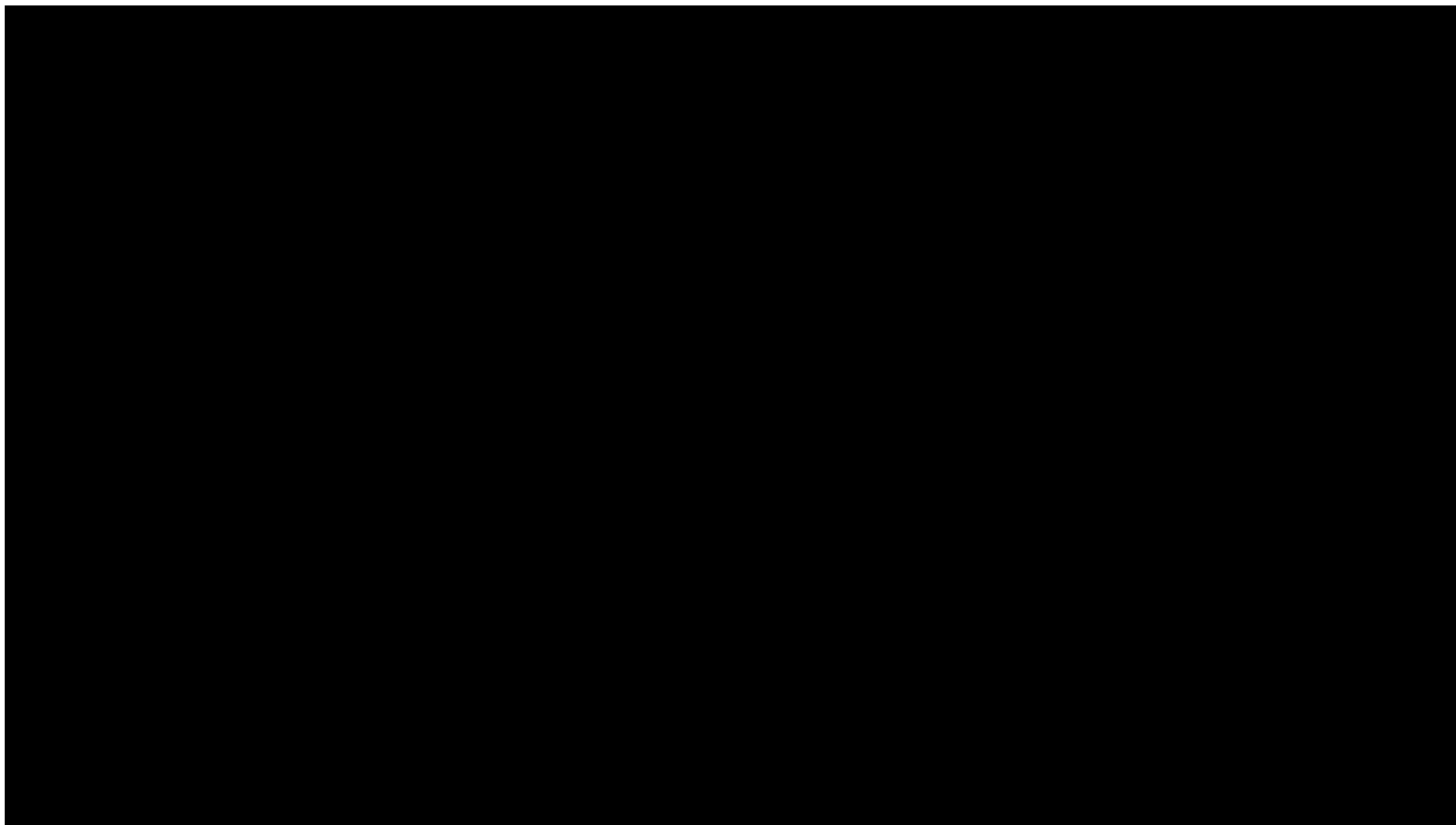
Case study

Workshops

**Video**

References

Evaluation



Contantin Enache – Field notes on the construction and renovations of Shingle roofs

John Wiley and Sona, Best Practice Guide to Residential Construction

Cristian Dinu- Film – Le Flocon

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Mother Nature – guide to shingles

Timber Construction and Use, 7<sup>th</sup> Edition J. M Dimwoodie



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# THANK YOU

FOLLOW TO LECTURE