Polski Komitet Narodowy Międzynarodowej Rady Ochrony Zabytków ICOMOS

FONDAZIONE ROMUALDO DEL BIANCO

SAPIENZA UNIVERSITÀ DI ROMA

POLITECHNIKA LUBELSKA

UNIVERSIDAD POLITÉCNICA MADRID

VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

FONDAZIONE FLAMINIA RAVENNA

Sustainable Urban Rehabilitation in Europe

Traditional, vernacular and historical architecture

Erasmus+

Sustainable Urban Rehabilitation in Europe

3rd Semester

Susana Mora Alonso-Muñoyerro
Ignacio Mora Moreno
David E. García García
M. Carolina Hernández Martínez
Camila Burgos Vargas

Traditional, vernacular and historical architecture.

HS

Heritage and Society

EC

Elective Courses

Erasmus+

SURE
SUSTAINABLE URBAN REHABILITATION IN EUROPE

UNIVERSIDAD POLITÉCNICA DE MADRID

Sustainable Urban Rehabilitation in Europe

Traditional, vernacular and historical architecture.

HS

Heritage and Society

EC

Elective Courses

1. Introduction to vernacular architecture.
2. Main climatic areas around the world and bioclimatic strategies. Low latitude climates.
3. Main climatic areas around the world and bioclimatic strategies. Medium latitude climates.
4. Main climatic areas around the world and bioclimatic strategies. High latitude and undefined location climates.
5. Materials and constructive systems in vernacular architecture.
6. Vernacular architecture in Europe: Mediterranean coast.
7. Vernacular architecture in Europe: Atlantic coast.
8. **Vernacular architecture in Europe: Central Europe.**
9. Vernacular architecture in Europe: Nordic area.
10. Vernacular architecture in Europe: High mountain areas.
11. Vernacular architecture: Singularities I: Caves.
12. Vernacular architecture: Singularities II: Architecture and production.
13. Vernacular architecture: Singularities III: External Influences.
14. Vernacular architecture and landscape.
15. Spanish traditional architecture.

Sustainable
Urban
Rehabilitation in
Europe

Traditional, vernacular and historical architecture.

LESSON 08. Vernacular architecture in Europe: Central Europe.

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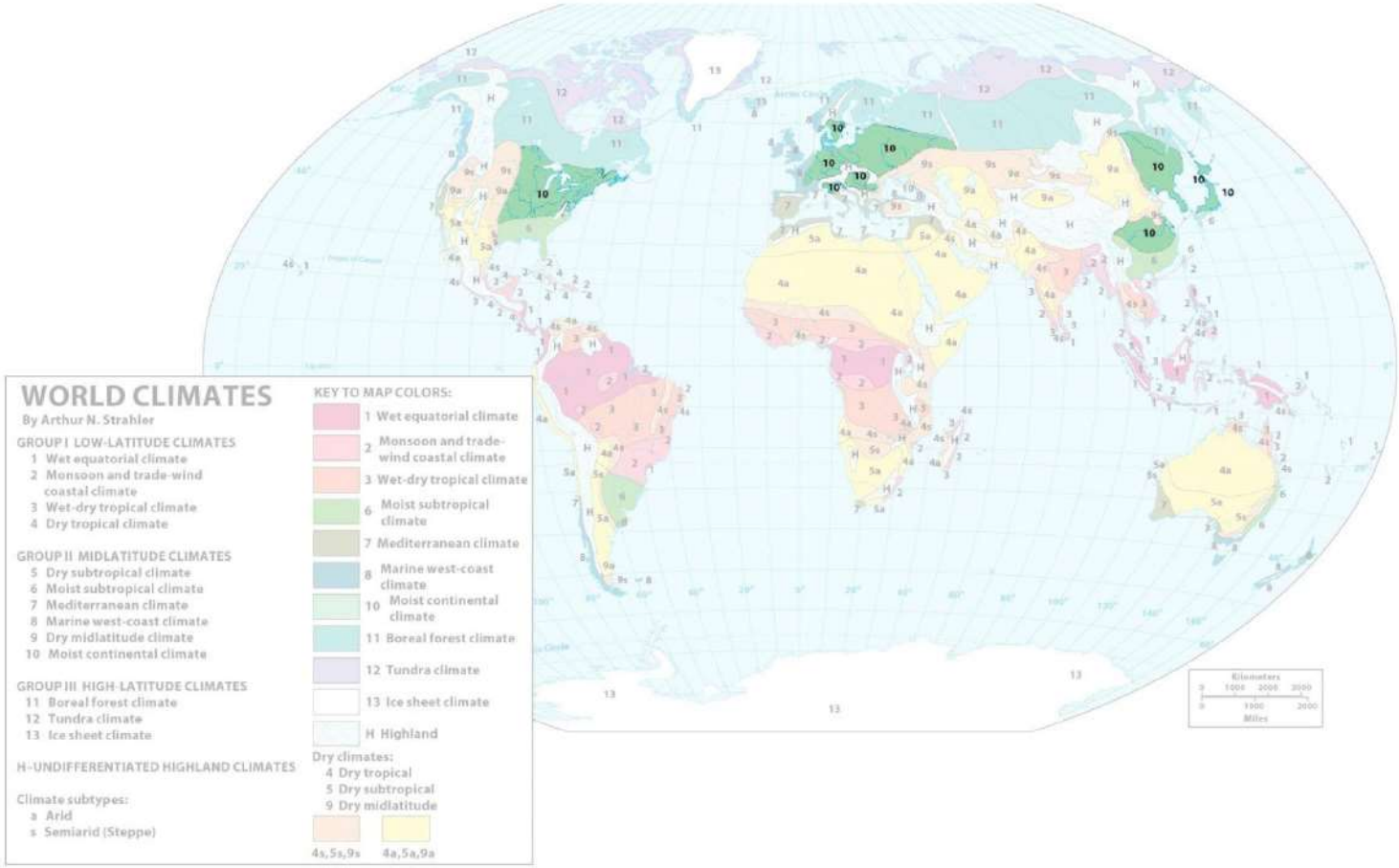
MOIST CONTINENTAL CLIMATE



08. Vernacular architecture in Europe: Central Europe.

MOIST CONTINENTAL CLIMATE

It's conditioned by polar and tropical air masses merging so the climate is very variable, with defined seasons.

Long cold winters and short fresh summers with abundant precipitations.

BIOCLIMATIC STRATEGIES

In this latitude, the main strategies to achieve comfort are:

- Capacity of both protection and catchment from sun
- Evaporative cooling
- Radiative cooling
- Ventilation

BIOCLIMATIC STRATEGIES

The strategies applied result in some characteristic elements used in vernacular architecture, such as:

- Protective cornices (from sun and rain)
- Flexible openings
- Thick walls
- Use of thermal insulation
- Crossed ventilation

MATERIALS

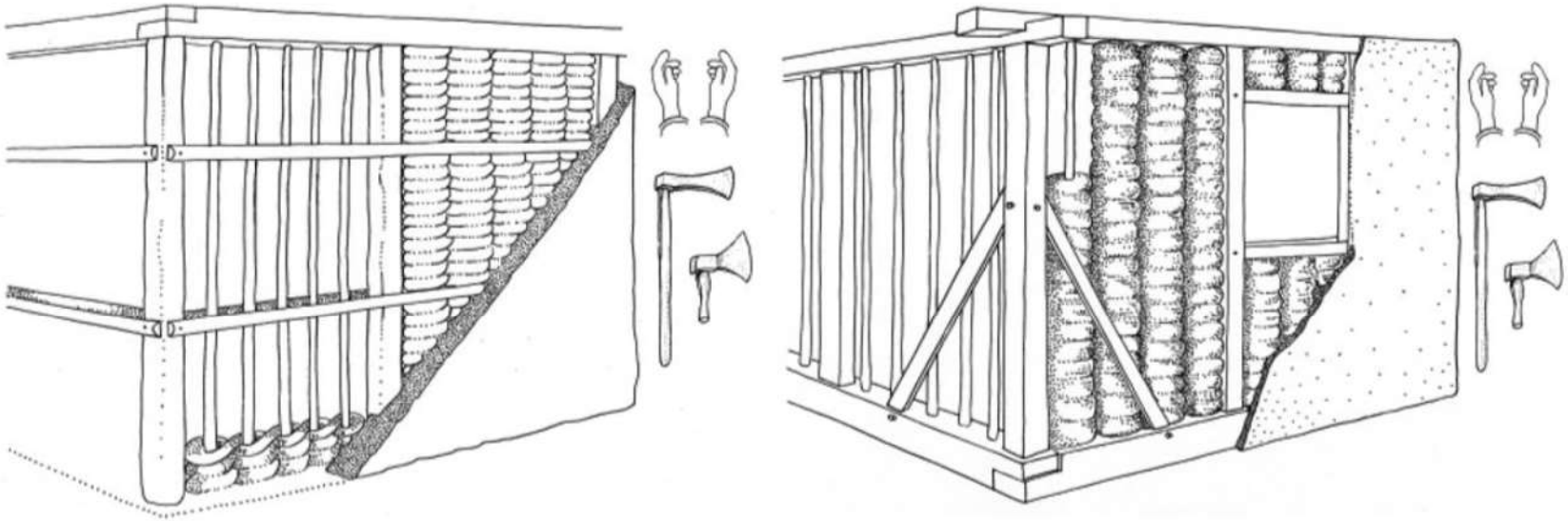
One of the most common main materials in vernacular architecture in central Europe is earth.

However, historically wood was used, but the use of earth was extended in the XVIII century as houses were more resistant to fire and it was required less amount of wood, that was starting to be scarce or which cutting down was forbidden in some places.

ARCHITECTURE CHARACTERISTICS

Source: Terra [IN]cognita Project

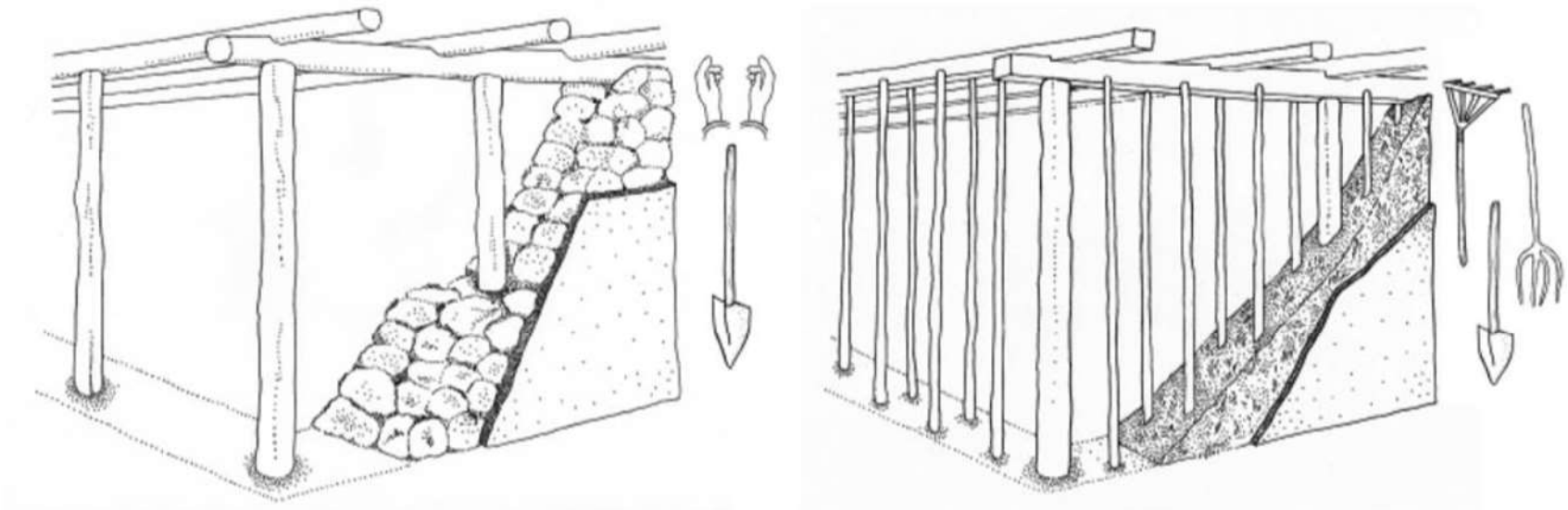
ARCHITECTURE CHARACTERISTICS



Earth with permanent wooden frames (North Slovenia)
The earth could be attached to each side of the wood structure or surrounding it with a doghnout shape.

Source: TÉCNICAS CONSTRUCTIVAS AUTÓCTONAS EN TIERRA: LA ARQUITECTURA TRADICIONAL DE LA LLANURA PANÓNICA. Vegas, F., Mileto, C. Cristini, V., García, L., García, S. From ARCHÉ. PUBLICACIÓN DEL INSTITUTO UNIVERSITARIO DE RESTAURACIÓN DEL PATRIMONIO DE LA UPV (2011-2012)

ARCHITECTURE CHARACTERISTICS



Earth with auxiliary half timbered structures (Hungary)
They can be just wood pillars with earth walls or with auxiliary posts covered on both sides with earth and straw.

Source: TÉCNICAS CONSTRUCTIVAS AUTÓCTONAS EN TIERRA: LA ARQUITECTURA TRADICIONAL DE LA LLANURA PANÓNICA. Vegas, F., Mileto, C. Cristini, V., García, L., García, S. From ARCHÉ. PUBLICACIÓN DEL INSTITUTO UNIVERSITARIO DE RESTAURACIÓN DEL PATRIMONIO DE LA UPV (2011-2012)

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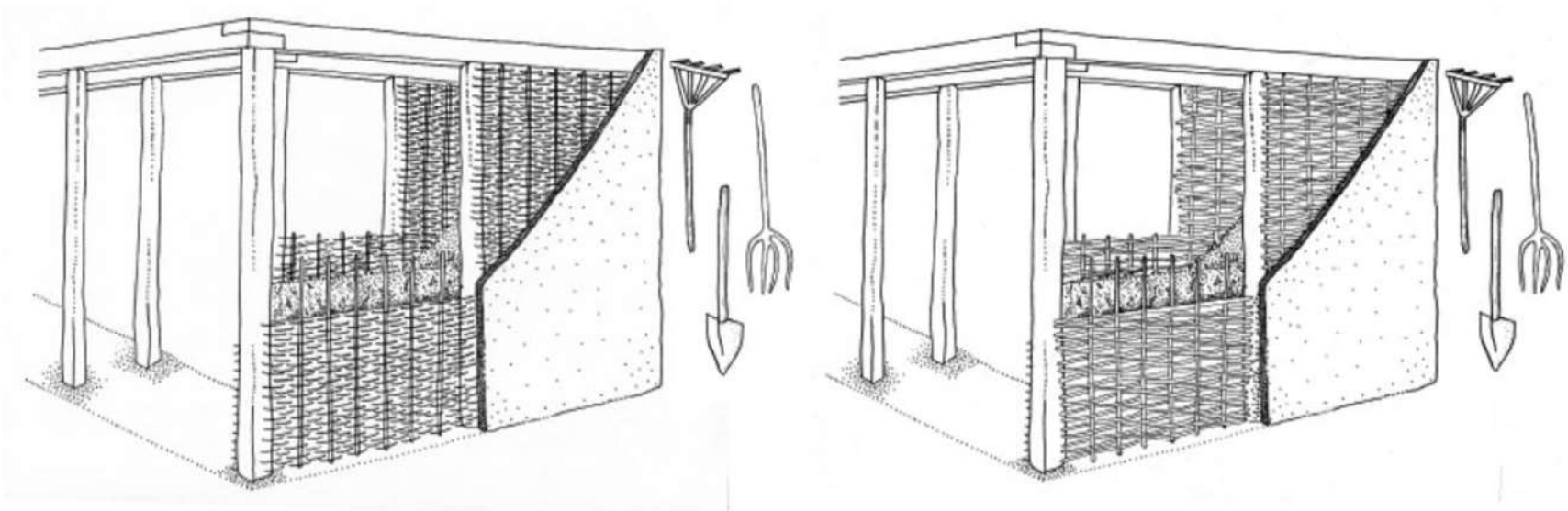

Earth as a filling (Moravia)
Braided or basketish elements serve as form to fill the walls and remain after the they are built.

Source: TÉCNICAS CONSTRUCTIVAS AUTÓCTONAS EN TIERRA: LA ARQUITECTURA TRADICIONAL DE LA LLANURA PANÓNICA. Vegas, F., Mileto, C. Cristini, V., García, L., García, S. From ARCHÉ. PUBLICACIÓN DEL INSTITUTO UNIVERSITARIO DE RESTAURACIÓN DEL PATRIMONIO DE LA UPV (2011-2012)

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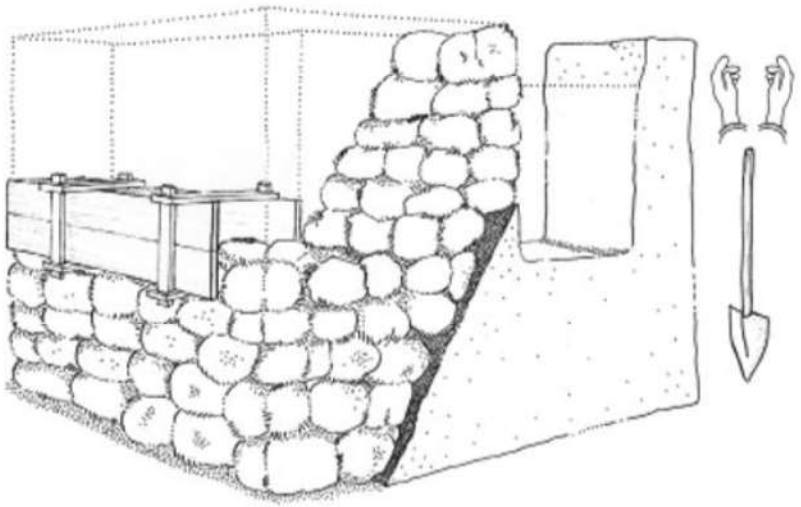

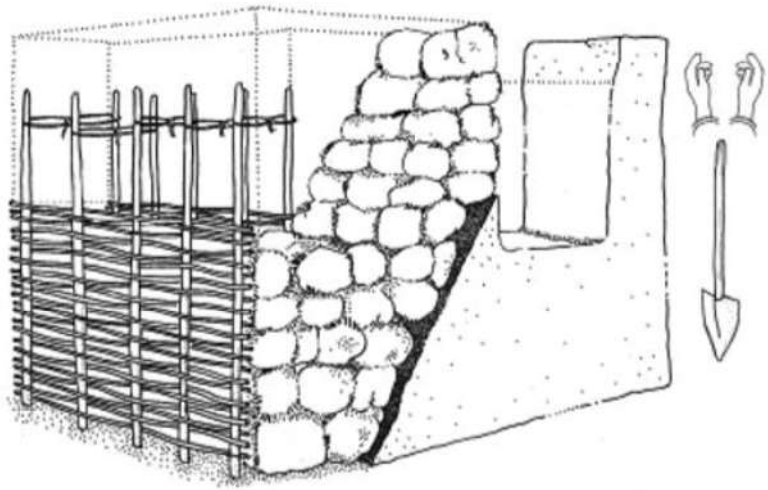

Cob construction (Austria, Moravia)
There are some variations of this type of construction. Masonry walls with just piled earth or forms to build more easily straight walls can be used.

Source: TÉCNICAS CONSTRUCTIVAS AUTÓCTONAS EN TIERRA: LA ARQUITECTURA TRADICIONAL DE LA LLANURA PANÓNICA. Vegas, F., Mileto, C. Cristini, V., García, L., García, S. From ARCHÉ. PUBLICACIÓN DEL INSTITUTO UNIVERSITARIO DE RESTAURACIÓN DEL PATRIMONIO DE LA UPV (2011-2012)

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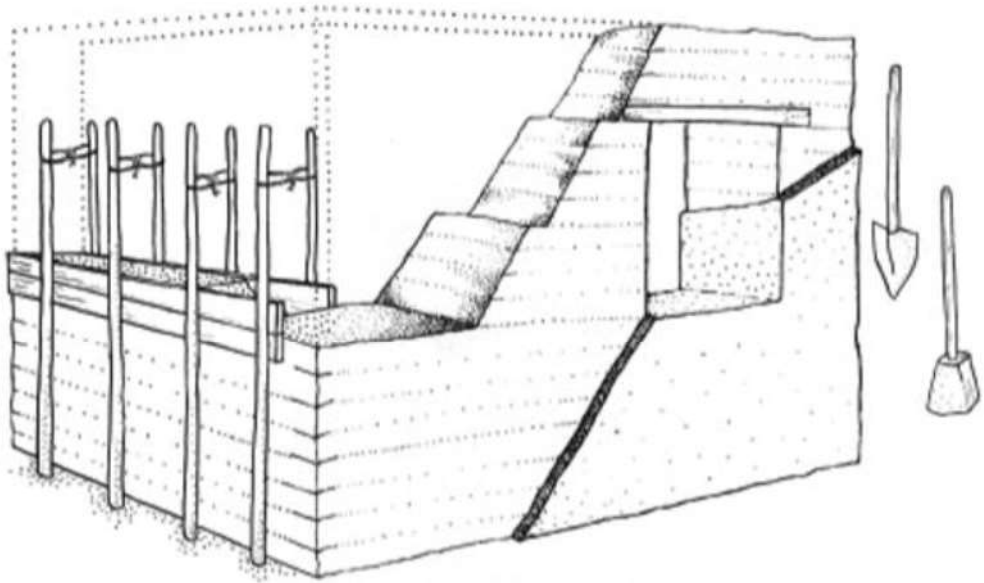

Rammed earth (Austria, South Slovakia)
There are two main ways of rammed earth building, one with trespassing stakes and the other one without them and with posts to the ground to hold the forms.

Source: TÉCNICAS CONSTRUCTIVAS AUTÓCTONAS EN TIERRA: LA ARQUITECTURA TRADICIONAL DE LA LLANURA PANÓNICA. Vegas, F., Mileto, C. Cristini, V., García, L., García, S. From ARCHÉ. PUBLICACIÓN DEL INSTITUTO UNIVERSITARIO DE RESTAURACIÓN DEL PATRIMONIO DE LA UPV (2011-2012)

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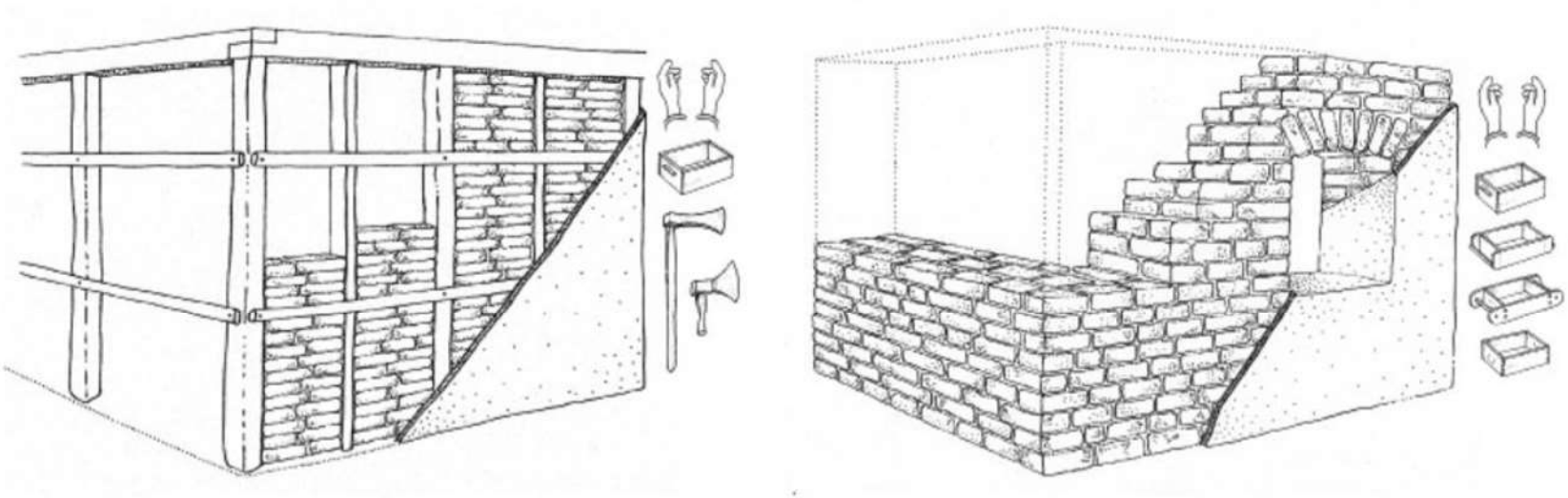

Adobe (North Slovenia, South Slovakia, Moravia, West Romania)
Built with earth and straw, walls are usually cross bonded, and once finished they are covered with earth linings, like all the other techniques (except in auxiliary structures).

Source: TÉCNICAS CONSTRUCTIVAS AUTÓCTONAS EN TIERRA: LA ARQUITECTURA TRADICIONAL DE LA LLANURA PANÓNICA. Vegas, F., Mileto, C. Cristini, V., García, L., García, S. From ARCHÉ. PUBLICACIÓN DEL INSTITUTO UNIVERSITARIO DE RESTAURACIÓN DEL PATRIMONIO DE LA UPV (2011-2012)

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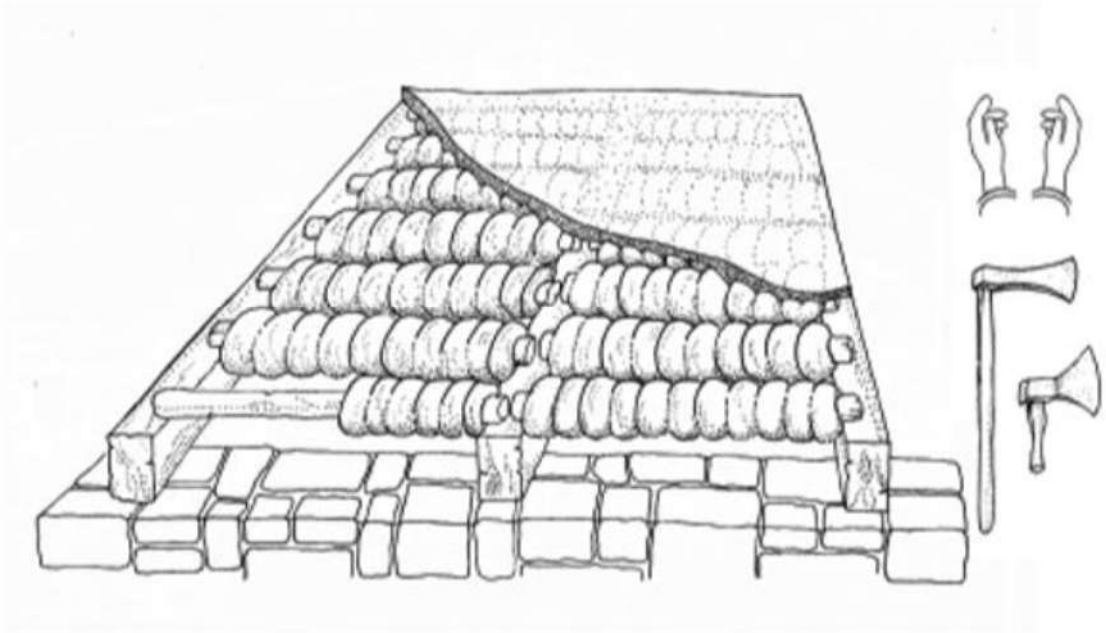

Example of a slab's construction with earth

Source: TÉCNICAS CONSTRUCTIVAS AUTÓCTONAS EN TIERRA: LA ARQUITECTURA TRADICIONAL DE LA LLANURA PANÓNICA. Vegas, F., Mileto, C. Cristini, V., García, L., García, S. From ARCHÉ. PUBLICACIÓN DEL INSTITUTO UNIVERSITARIO DE RESTAURACIÓN DEL PATRIMONIO DE LA UPV (2011-2012)

EXAMPLES

Limburg-a-d-lahn (Germany)

Limburg-a-d-lahn, Germany.
(photo: H. Schreckenbach)

Source: Earthen Architecture in Central Europe. Guérin, R., Schroeder, H., Jörchel, S. Kelm, T.
from Terra Europae- Earthen architecture in Europe

Stonje village (Slovenia)

Bukovici village (Slovenia)

Source: Earthen Architecture in East Central Europe. Vegas, F., Mileto, C., Cristini, V. from Terra Europae- Earthen architecture in Europe

Stubbing open air museum (Austria)

Szentendre open air museum (Hungary)

Source: Earthen Architecture in East Central Europe. Vegas, F., Mileto, C., Cristini, V. from Terra Europae- Earthen architecture in Europe

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