History of Architecture I

ARC 2313 - Spring 2022

Lecture-02

21 January 2022

For Monday, 24 January:

Ingersoll *pages 2-32 and 61-65*

Key concepts for understanding ***form***

> Solid & Void

> Positive & Negative

> Subtractive & Additive

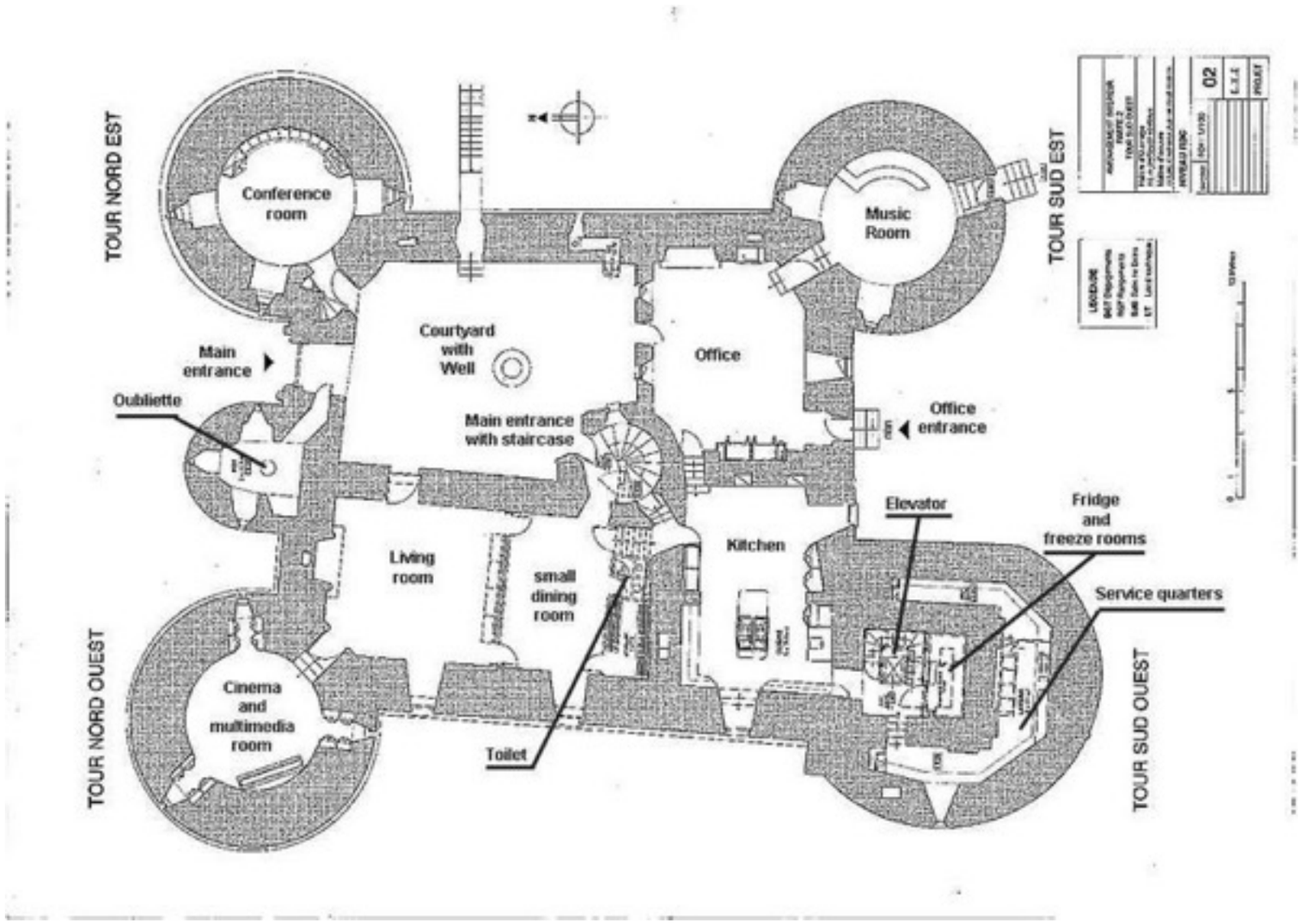
Key drawings that depict ***form***

> Plan

> Elevation

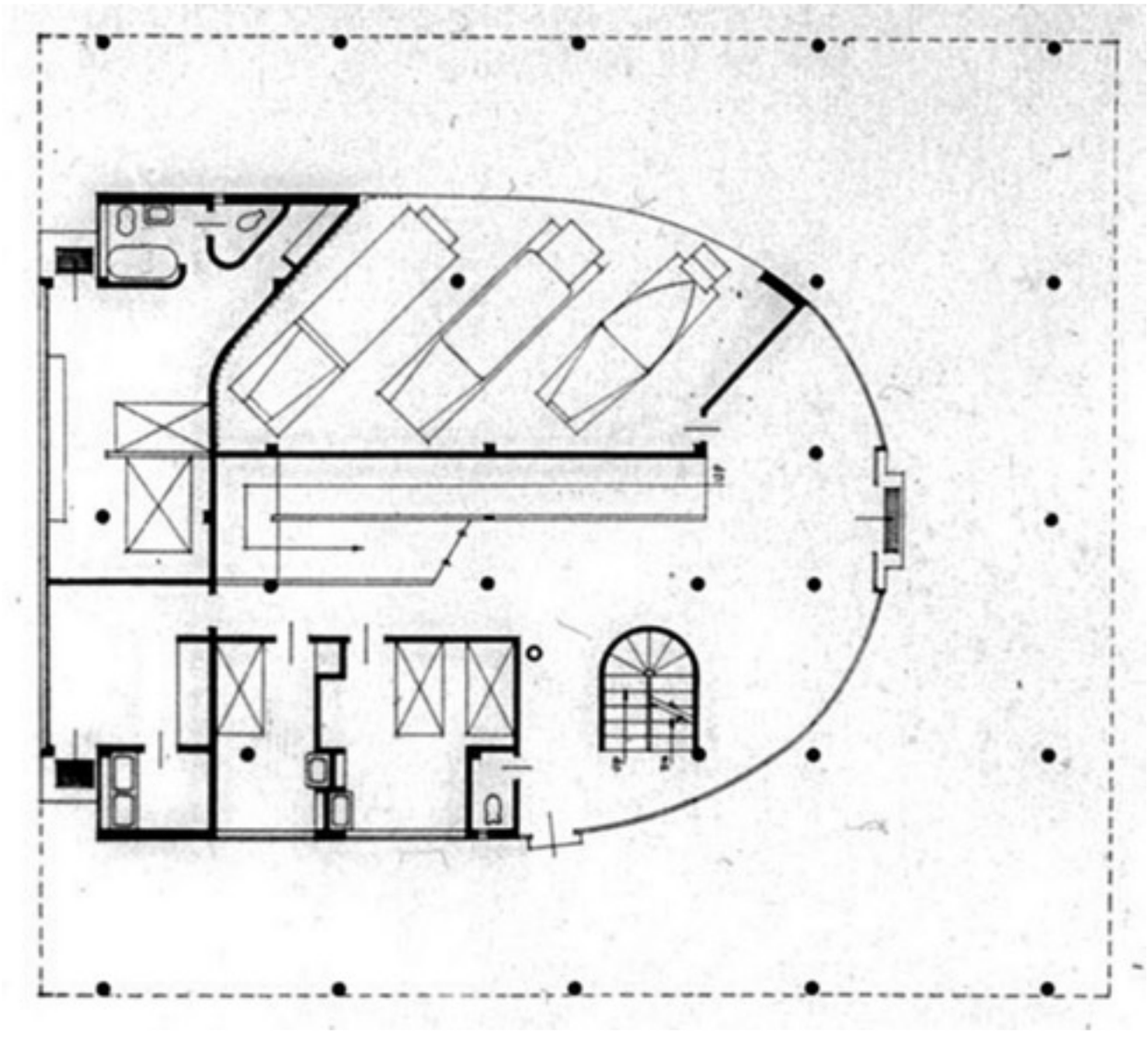
> Section

Solid material shaping spaces that are ***Void***



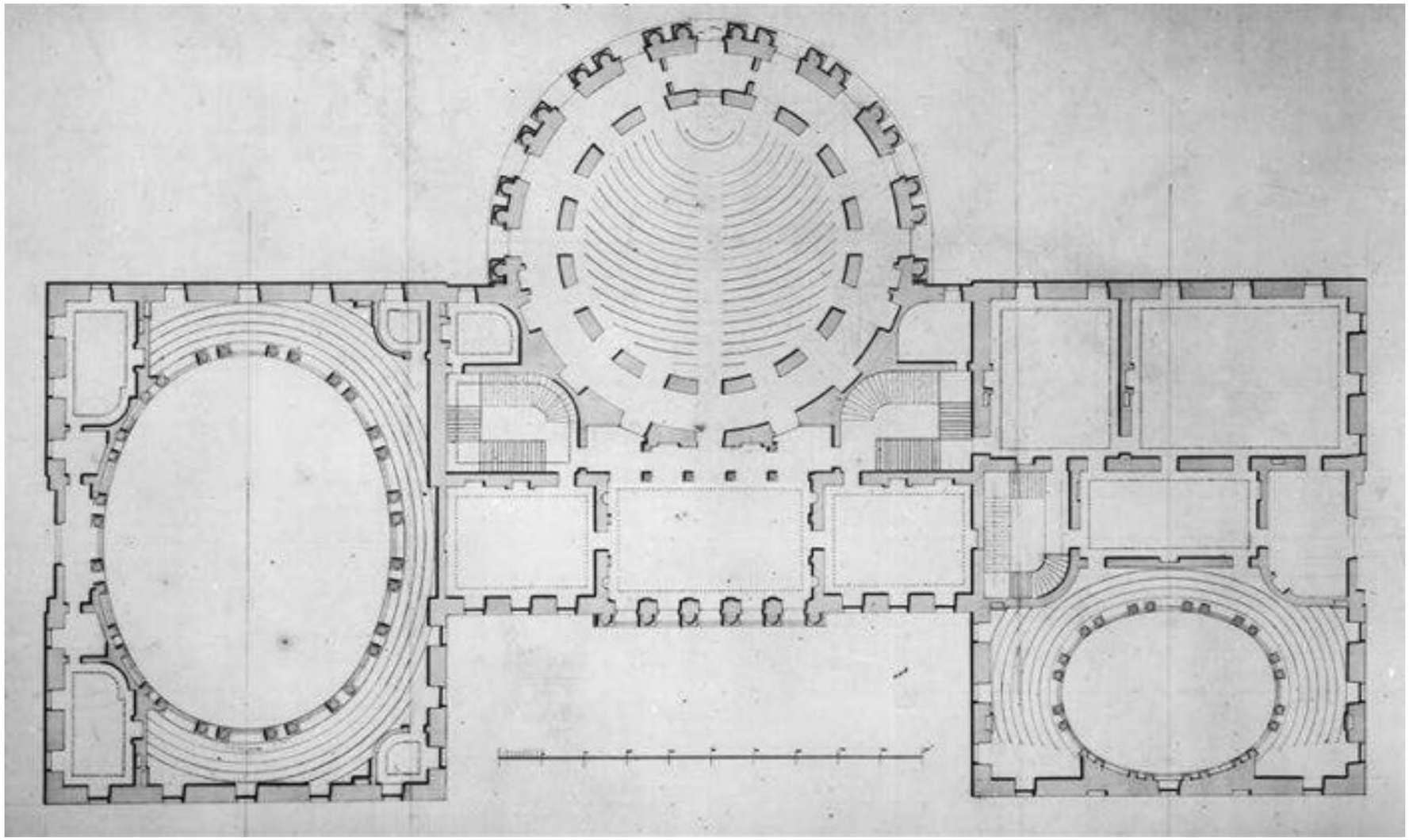
Plan Chateau de Montbrun

Solid material defining *Void* spaces in a different way



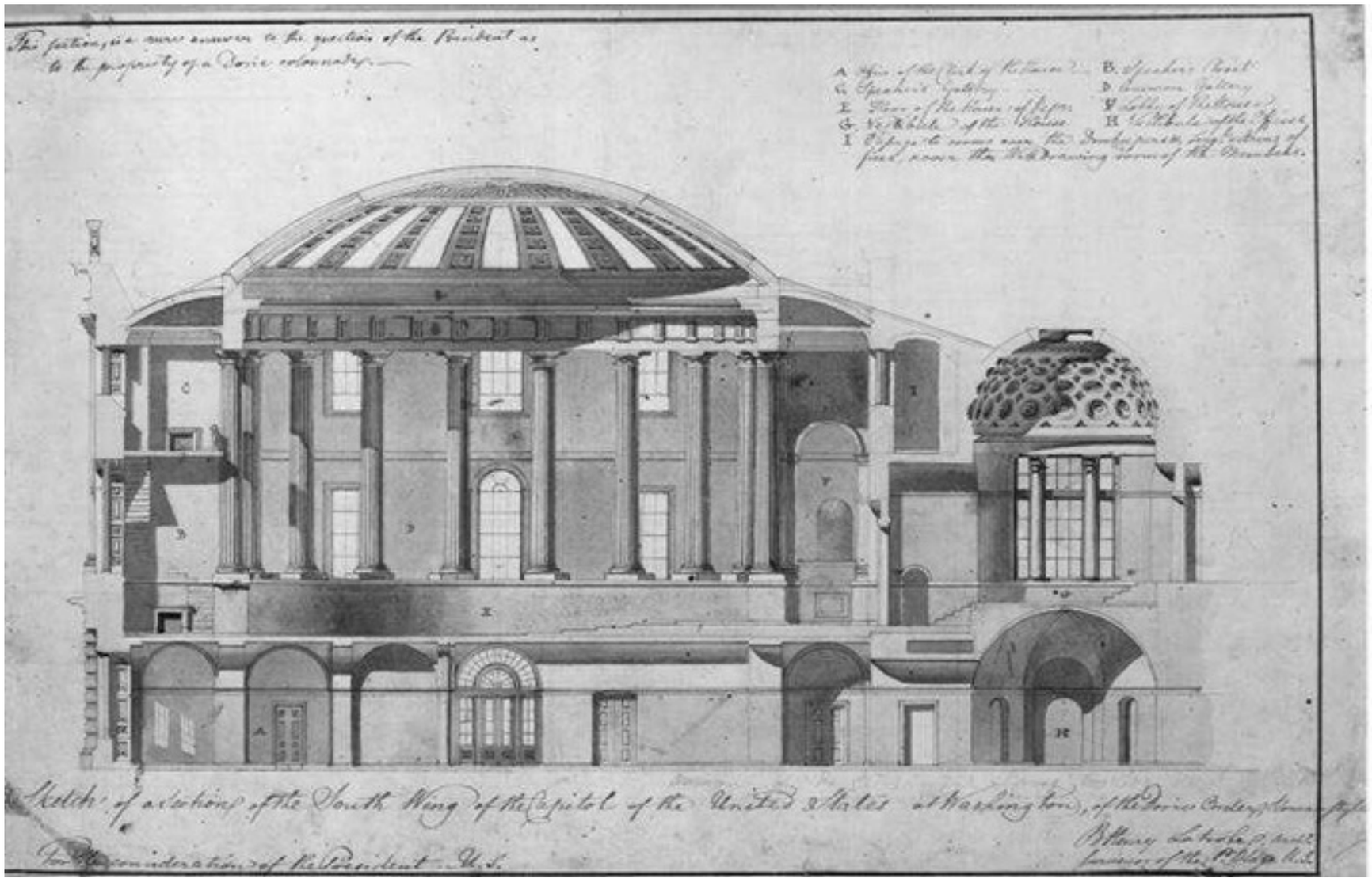
Plan Villa Savoye

Solid material shaping *Void* (figural) spaces



Plan of U.S. Capitol - Thornton

Solid material shaping *Void* (figural) spaces



Section of U.S. Capitol - Latrobe

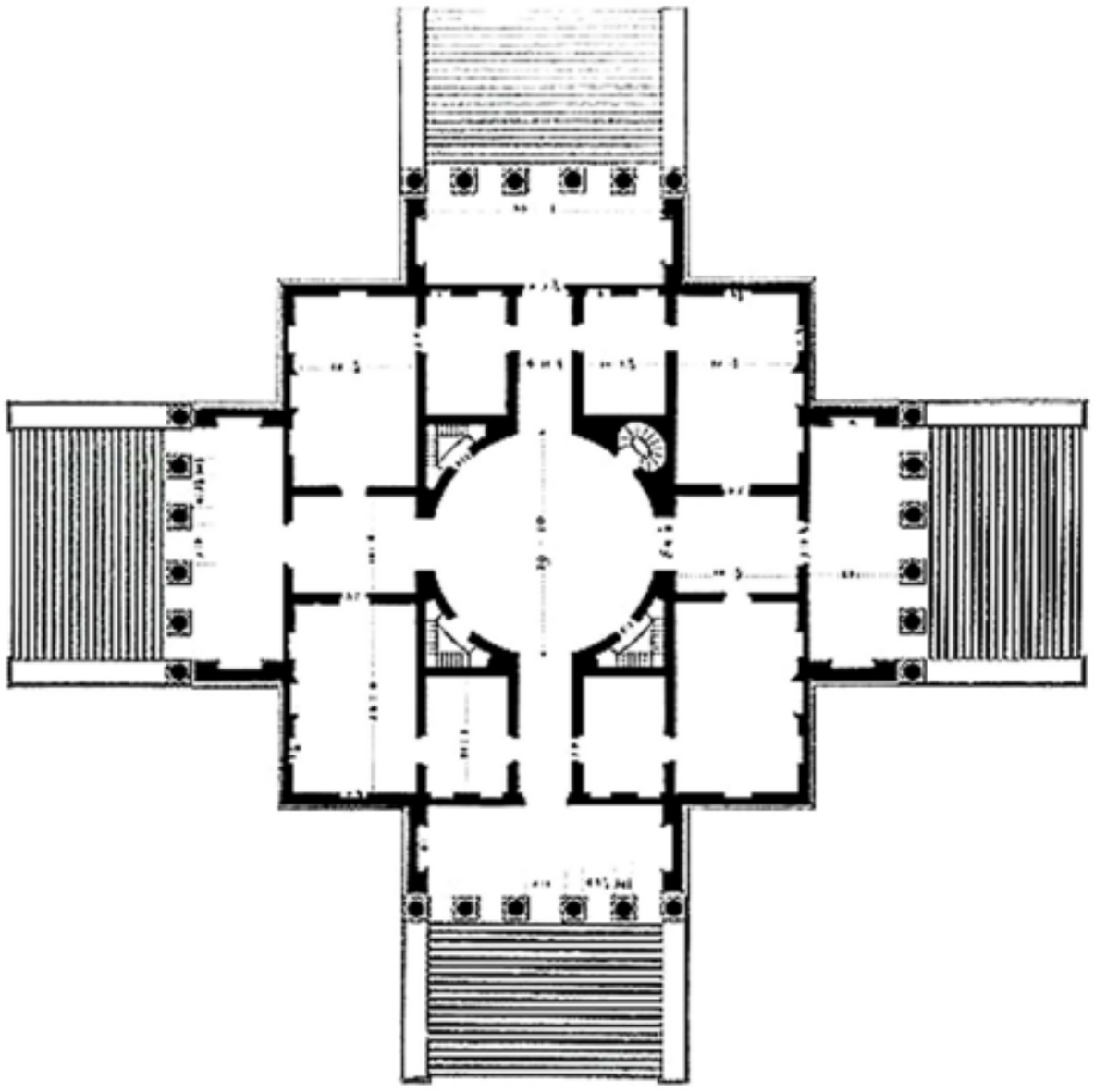
Shaping Space within Architecture

Interior rotunda - Villa Rotunda

An Object in the Landscape

Aerial view - Villa Rotunda

Architectural *object* in a large *space*
(in this case a landscape that is partly designed)

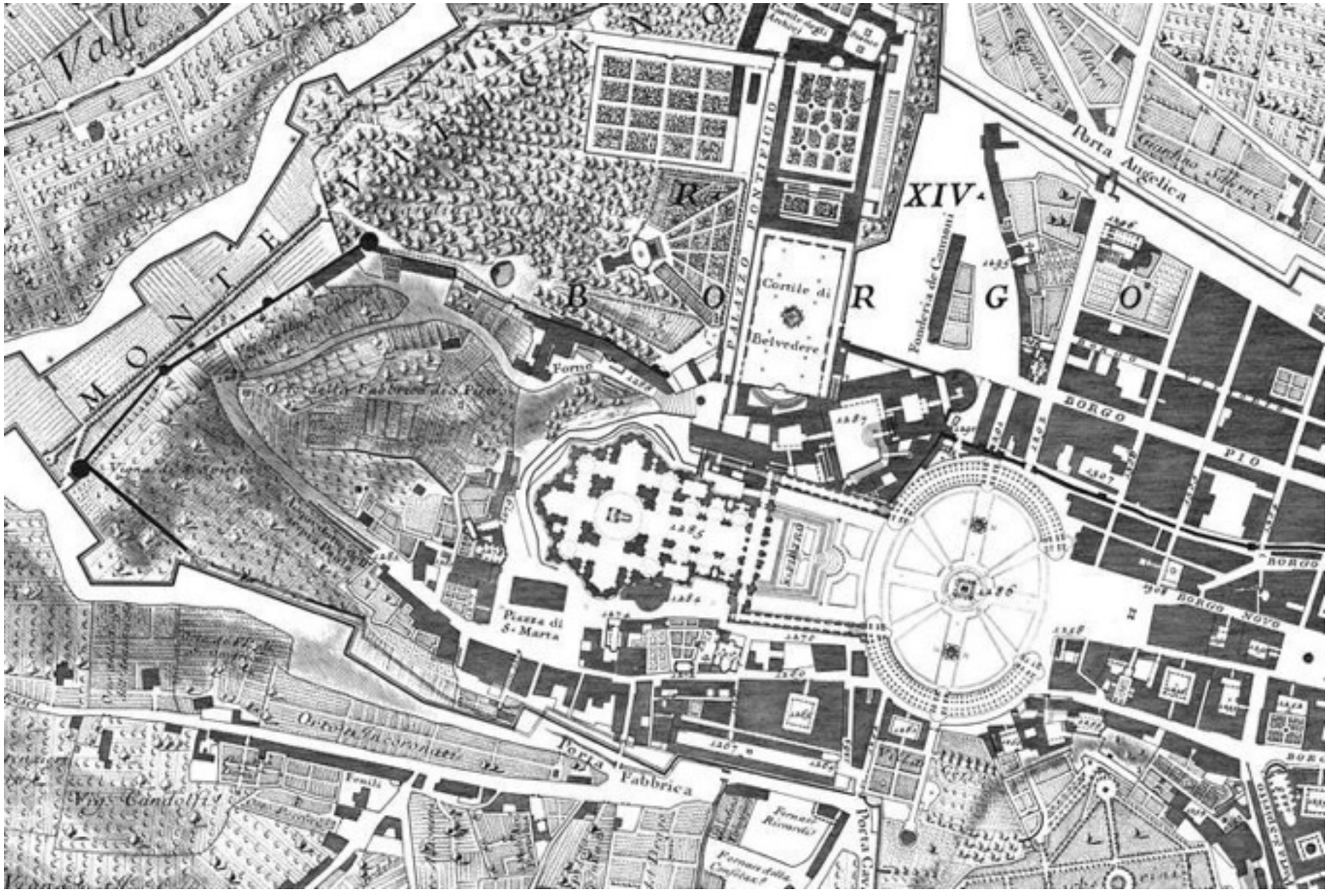


Plan Villa Rotunda

Ambiguity :: an architectural *object* as viewed from exterior, yet shaped *space* on the interior

Urban *space* shaped by the architectural *objects* around it

A city that is composed of Shaped Spaces (articulate and designed spaces shaped by buildings)



Nolli Plan of Rome, 1748

A city that is composed of Objects in a Landscape
(no shaped spaces - space between buildings is arbitrary)

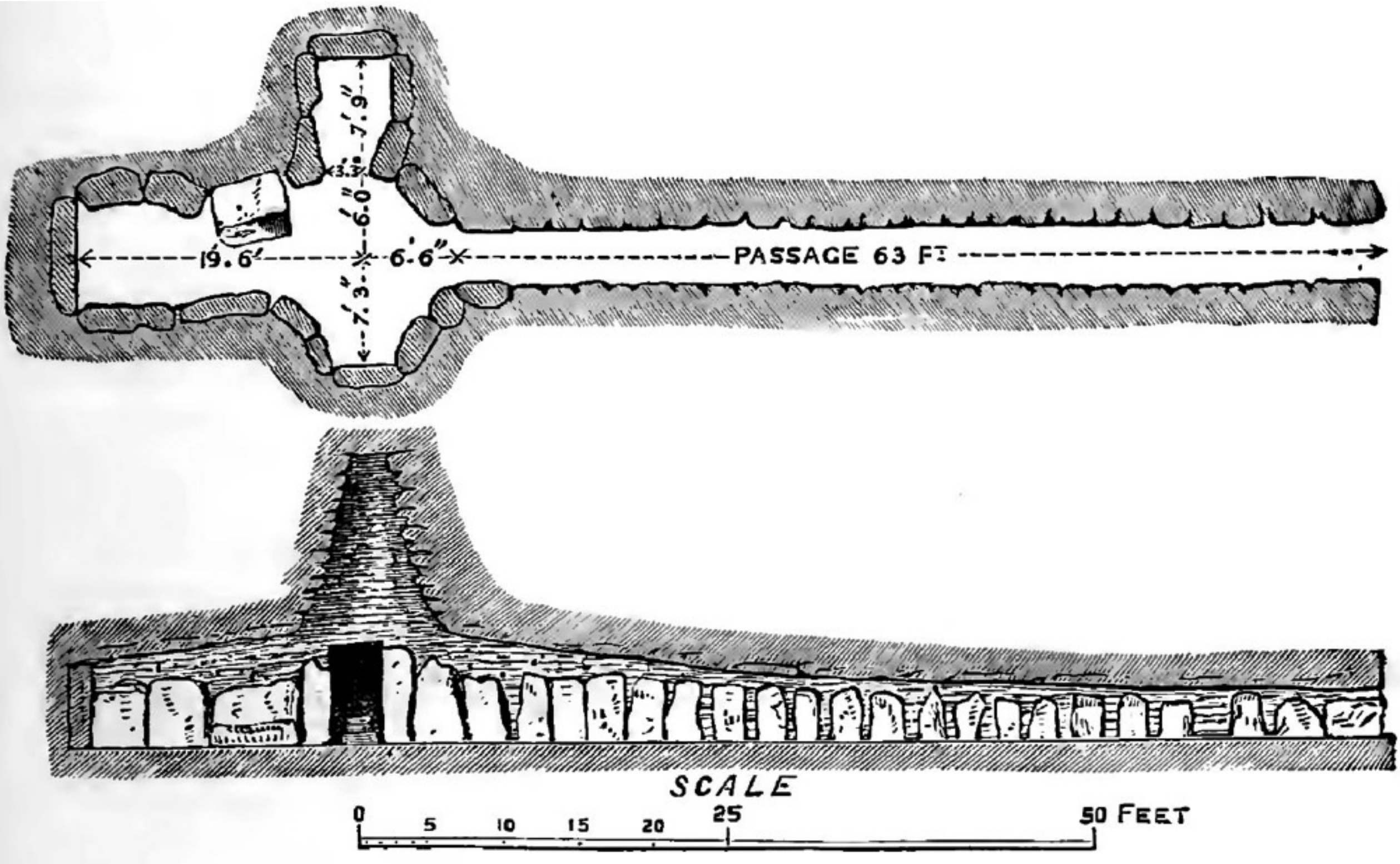
Form that is carved from material (subtractive)

Michelangelo

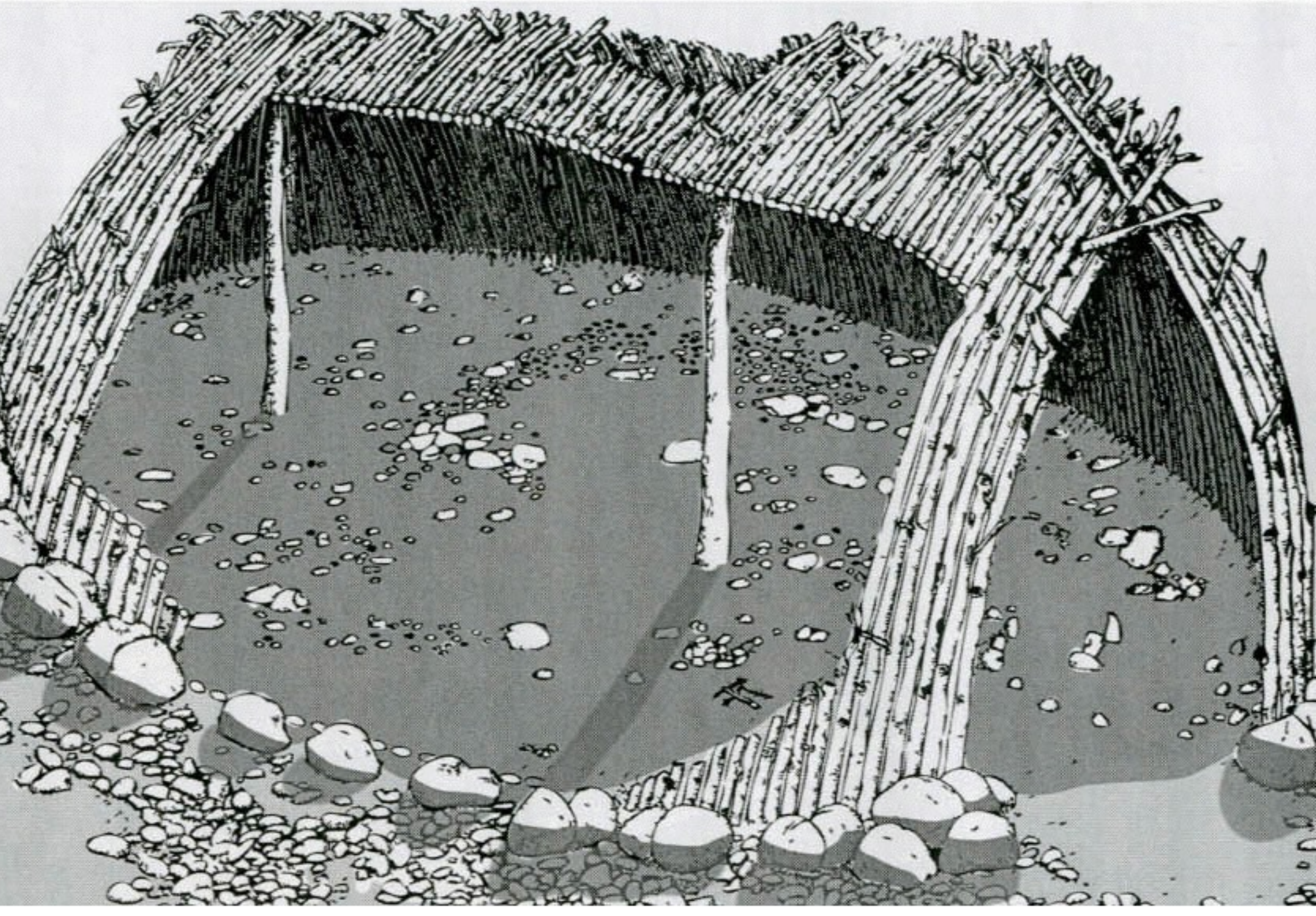
Form that is assembled using material (additive)

Sir Anthony Caro

THEREFORE



Plan and Section of Chamber in Newgrange Tumulus.



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Written language introduced 3000 BCE

As a result our early investigations must be allotted a certain ***timelessness***…

Admittedly, concepts of vast stretches of time are difficult to comprehend

Two Major Themes:
Shelter & **Symbol**

The act of *dwelling* for humans addressed at once the problem of creating shelter and the challenge of making a symbolic representation of their understanding of the world….

Architecture as ***Second Nature***

Recreating the shelter found in nature
using natural elements

The concept of the three "Ages"
(***Stone Age*** // ***Bronze Age*** // ***Iron Age***)
is actually a 19th century academic
historical concept

Stone Age: 500,000 BCE - 7000 BCE

Paleolithic (paleo means "old")

Mesolithic (meso means "middle")

Neolithic (neo means "new")

Chalcolithic (chalco means "copper")

Bronze Age: 3300 BCE - 1200 BCE

Iron Age: 1200 BCE - 500 BCE

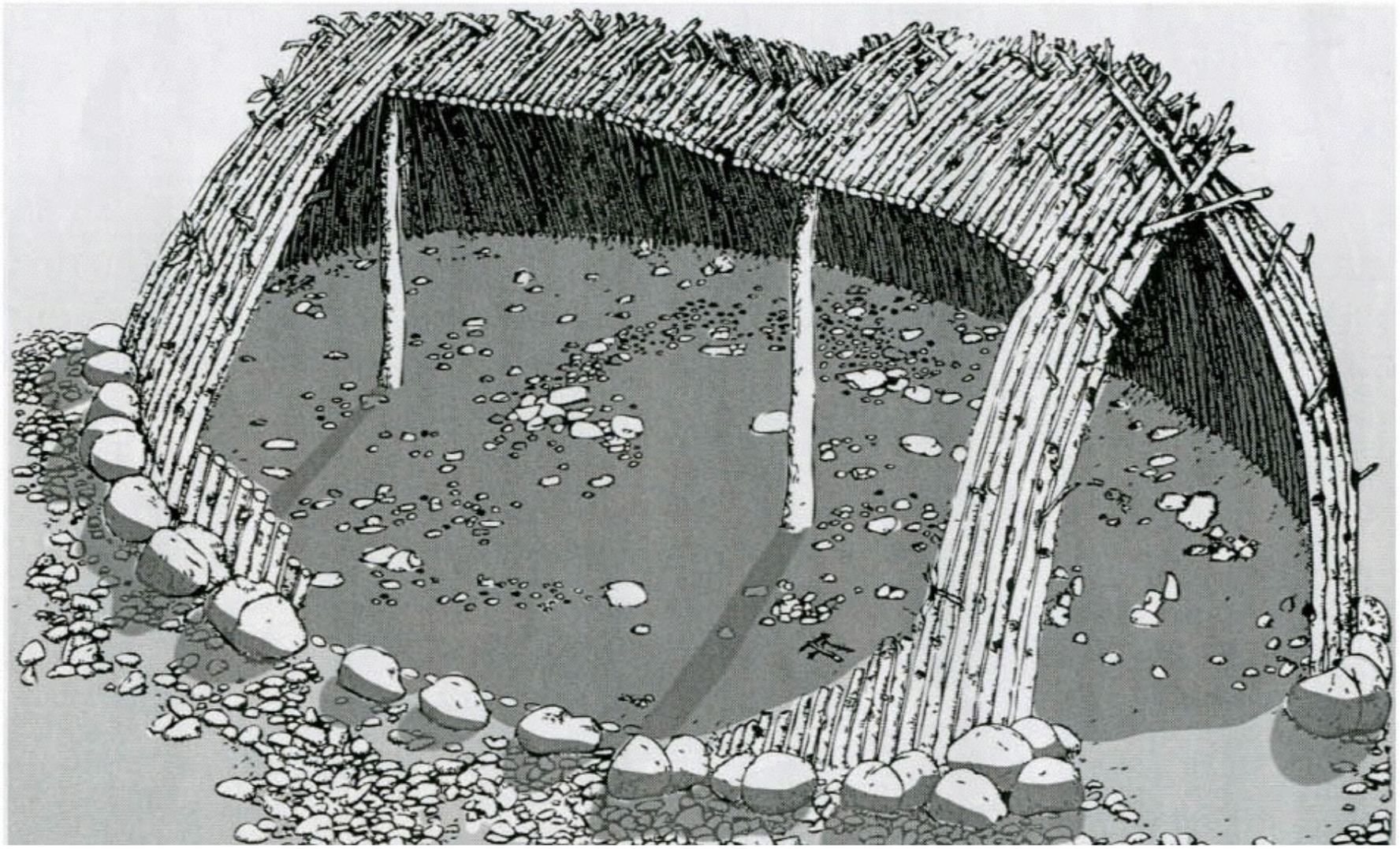
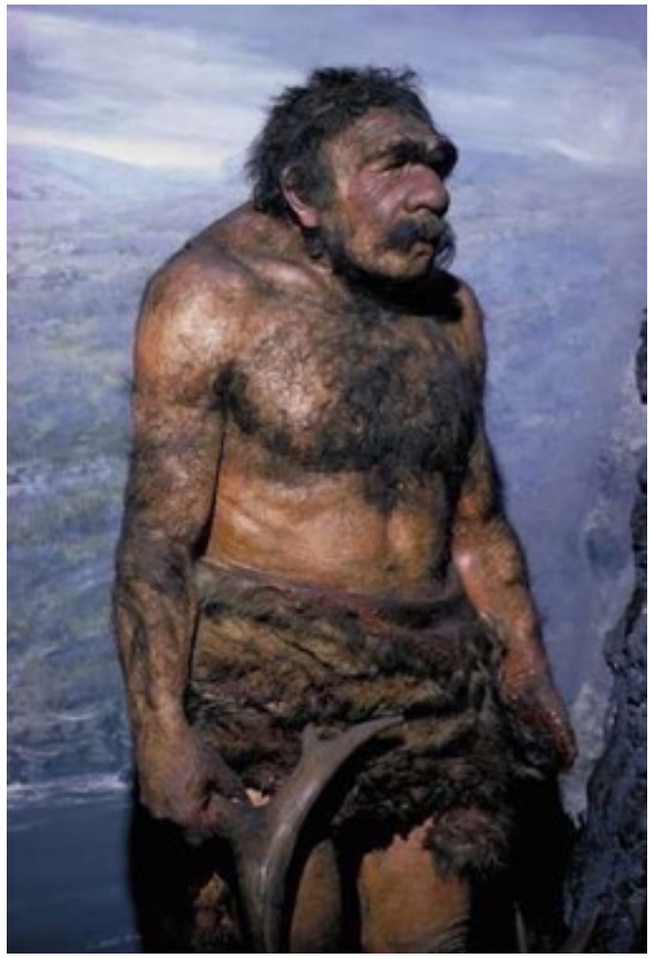


Figure 1.1-3 Terra Amata, France. Hypothetical reconstruction of the earliest known huts, ca. 380,000 BCE.

Terra Amata, France — 380,000 BCE



Neanderthal

Cro-Magnon

Cro-Magnon Man (modern Homo Sapien)
replaces **Neanderthal Man** (Archaic Man)
40,000 BCE

Cro-Magnon Man spans

40,000 - 10,000 BCE

Late Paleolithic - Stone Tools

Scale of Time

Scale of Time

400,000 BCE

Year 0

Scale of Time

Neolithic Age

Bronze Age

Iron Age

Year 0

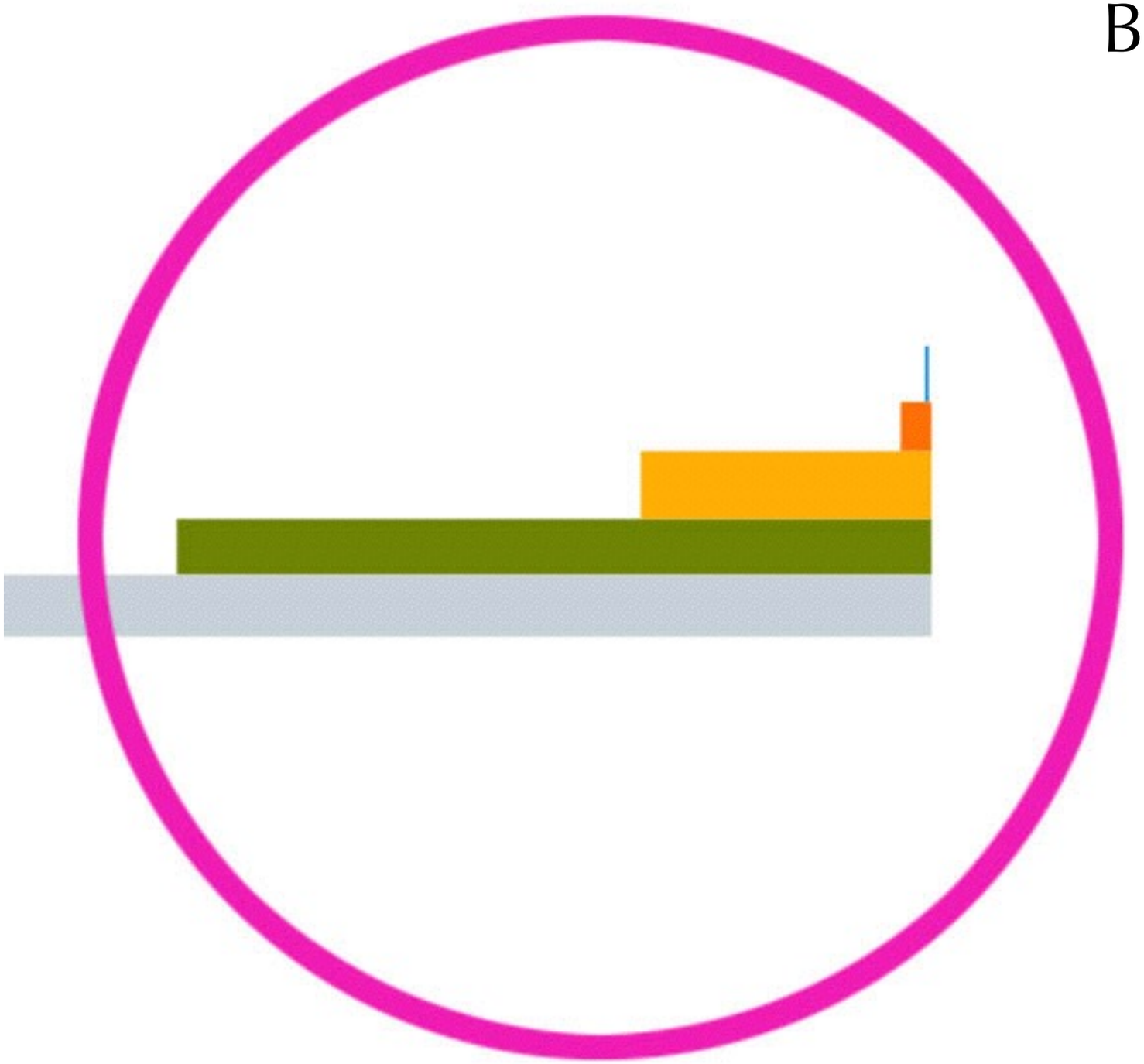
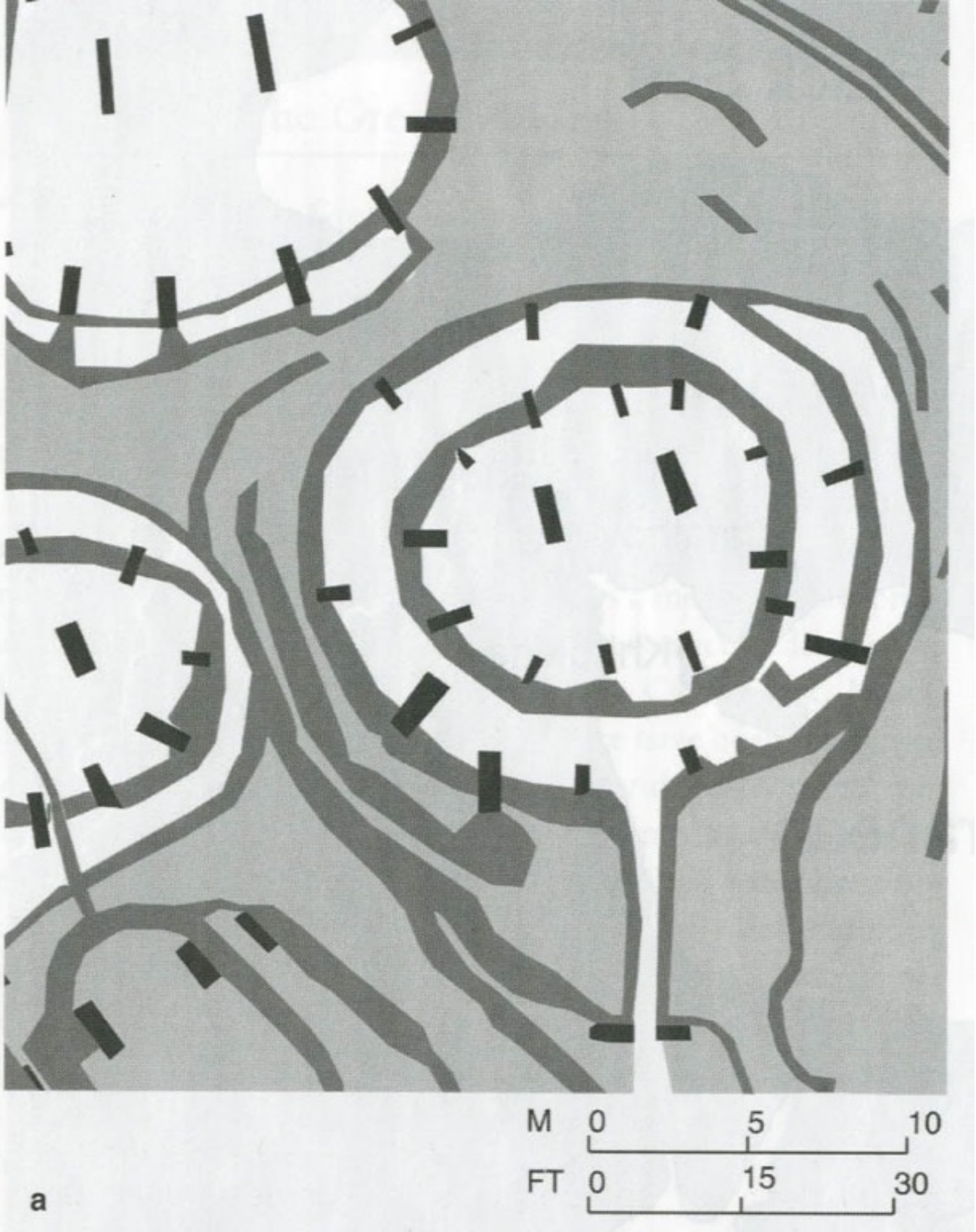


Figure 1.1-4 Dordogne, southwest France. Lascaux Caves, 17,000 BCE. The three chambers are covered with over 600 polychrome paintings and line drawings, executed by hunter-gatherers over many centuries during the last Ice Age.



Gobekli Tepe
Turkey

11,000 - 8000 BCE

Beginnings of
Symbolic Relevance

Figure 1.1-7 Göbekli Tepe, southeastern Turkey. (a) Reconstruction of oval temples built by a preagricultural society, ca. twelfth millennium BCE. (b) Archaeological site showing an oval space with decorated pillars; roof was probably corbelled.

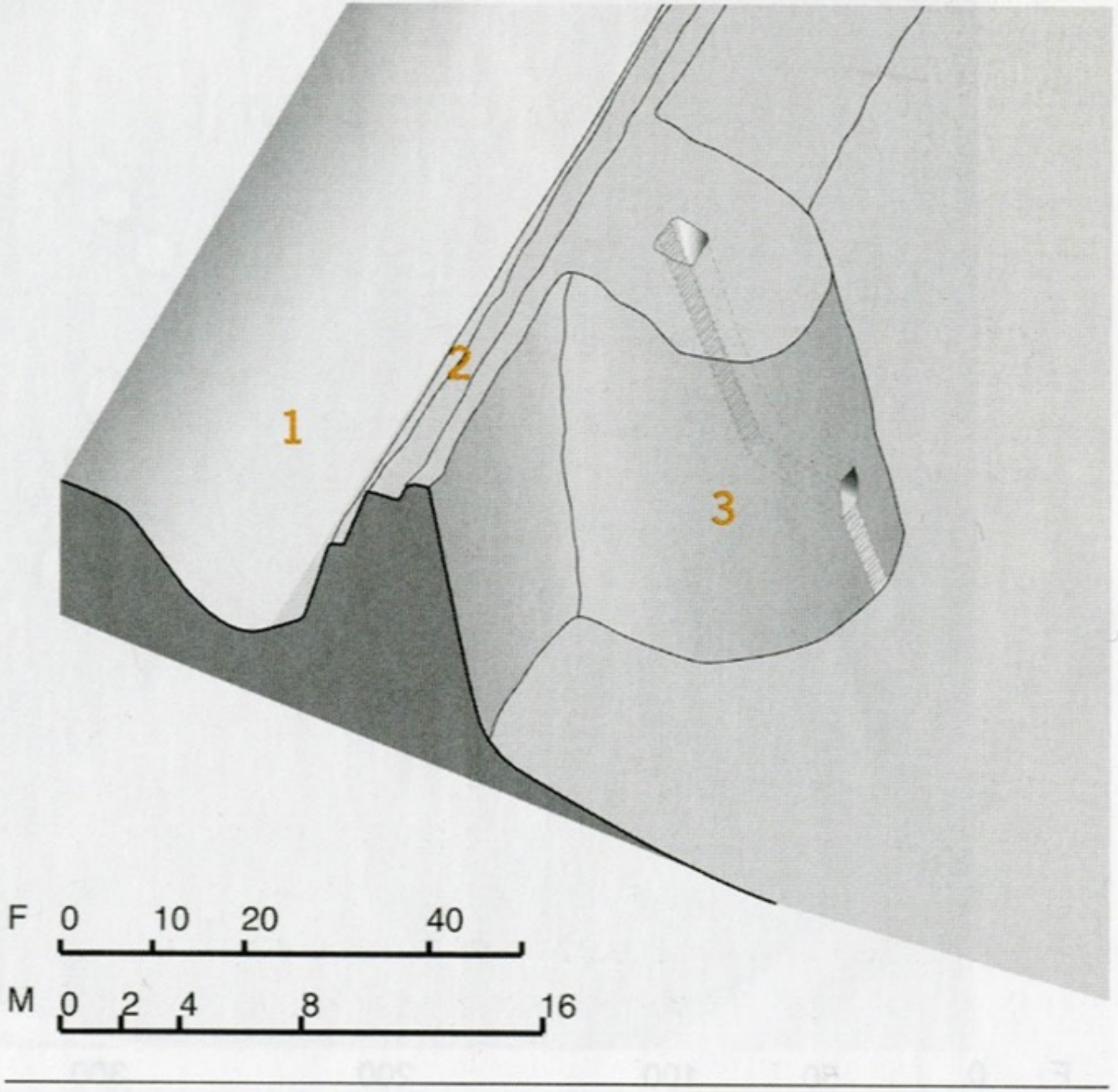


Figure 1.1-8 Jericho, ancient Palestine. (1) Ditch; (2) wall; (3) round tower with stair. Seventh millennium BCE.

Jericho

Palestine Territories

Oldest city in the world c. **7500 BCE**

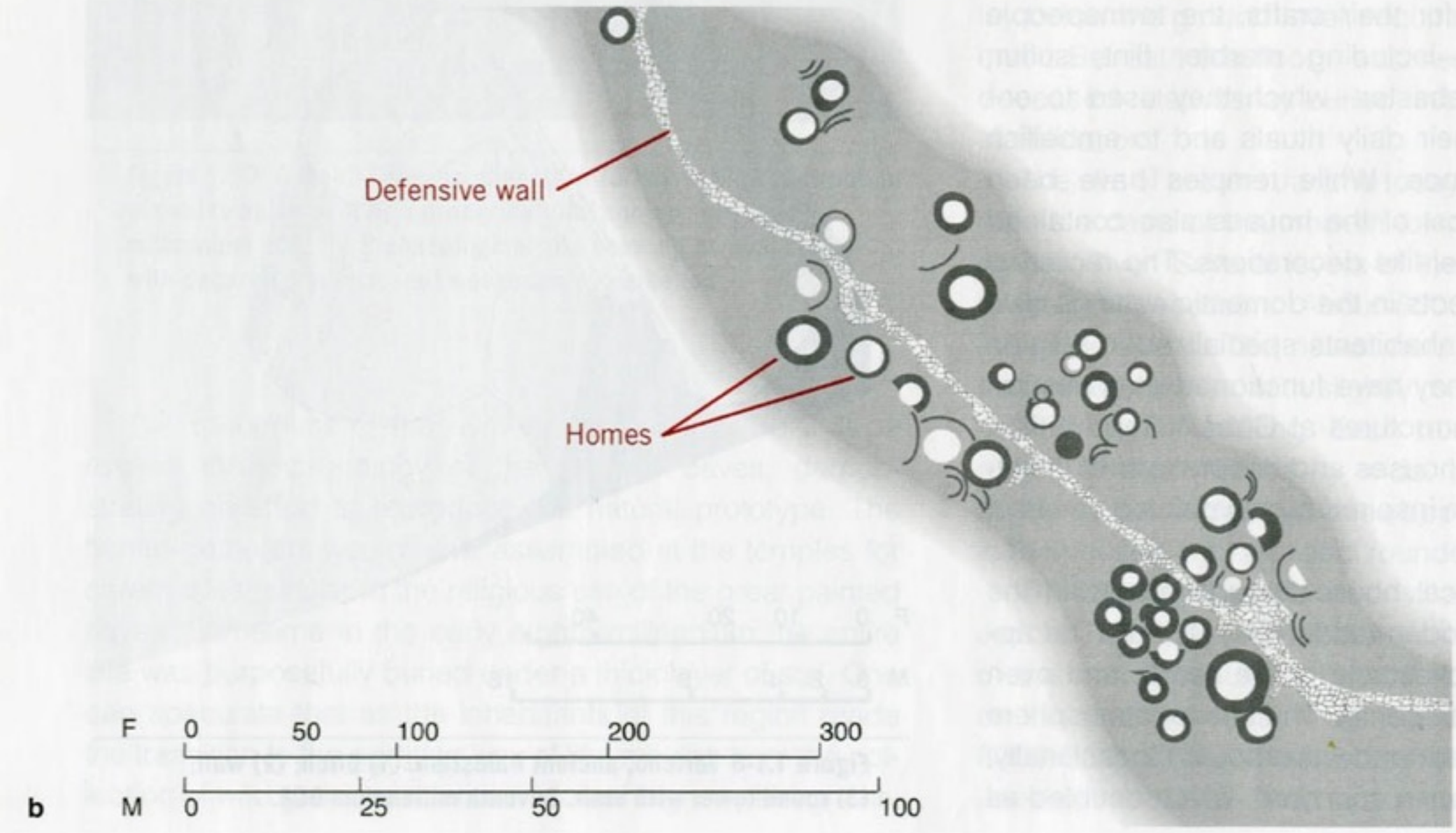
Neolithic Age

Round houses inside walls

Figure 1.1-9
Khirokitia, Cyprus.
(a) Street formed on top of old defensive wall, sixth millennium BCE. (b) Plan.

Khirokitia, Cyprus - 6000 BCE

First public space // First paved street



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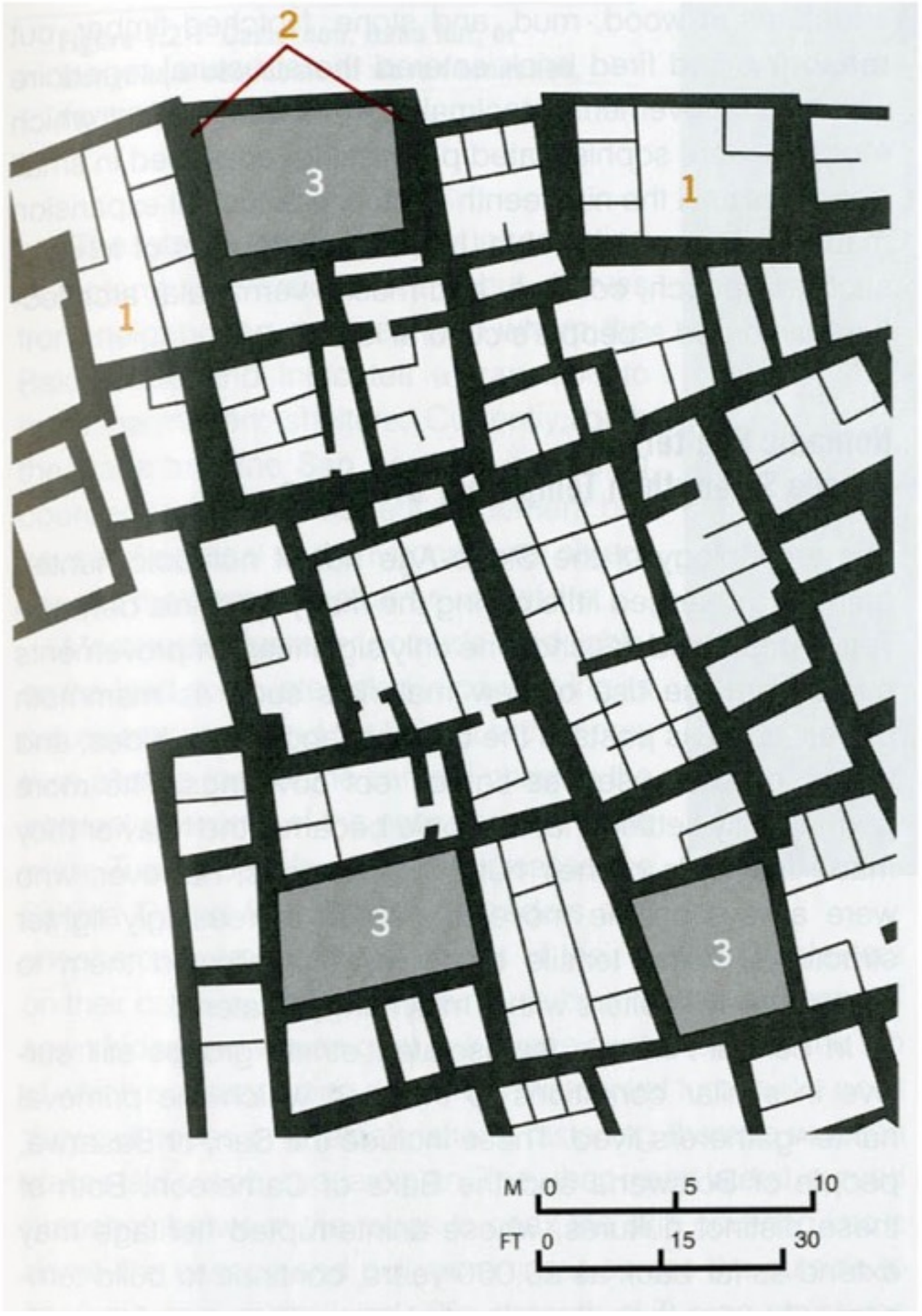


Catalhoyuk, Turkey

(sha-TAL-hyuk)

6500 BCE

Figure 1.1-10 Çatalhöyük, southern Turkey. Plan of a district of the city, seventh millennium BCE, showing (1) individual cellular units with platforms and internal parapets, (2) party walls connecting individual units (there were no doors in these walls; inhabitants entered through the roofs), and (3) courtyards between units.

Figure 1.1-11 Çatalhöyük, southern Turkey. Reconstruction of a dwelling, seventh millennium BCE. Ankara, Museum of Anatolian Civilizations.

Catalhoyuk

Catalhoyuk

The development or beginnings of *selfconsciousness*

Types of **Primitive Huts**

semi-permanent

versus

permanent structure

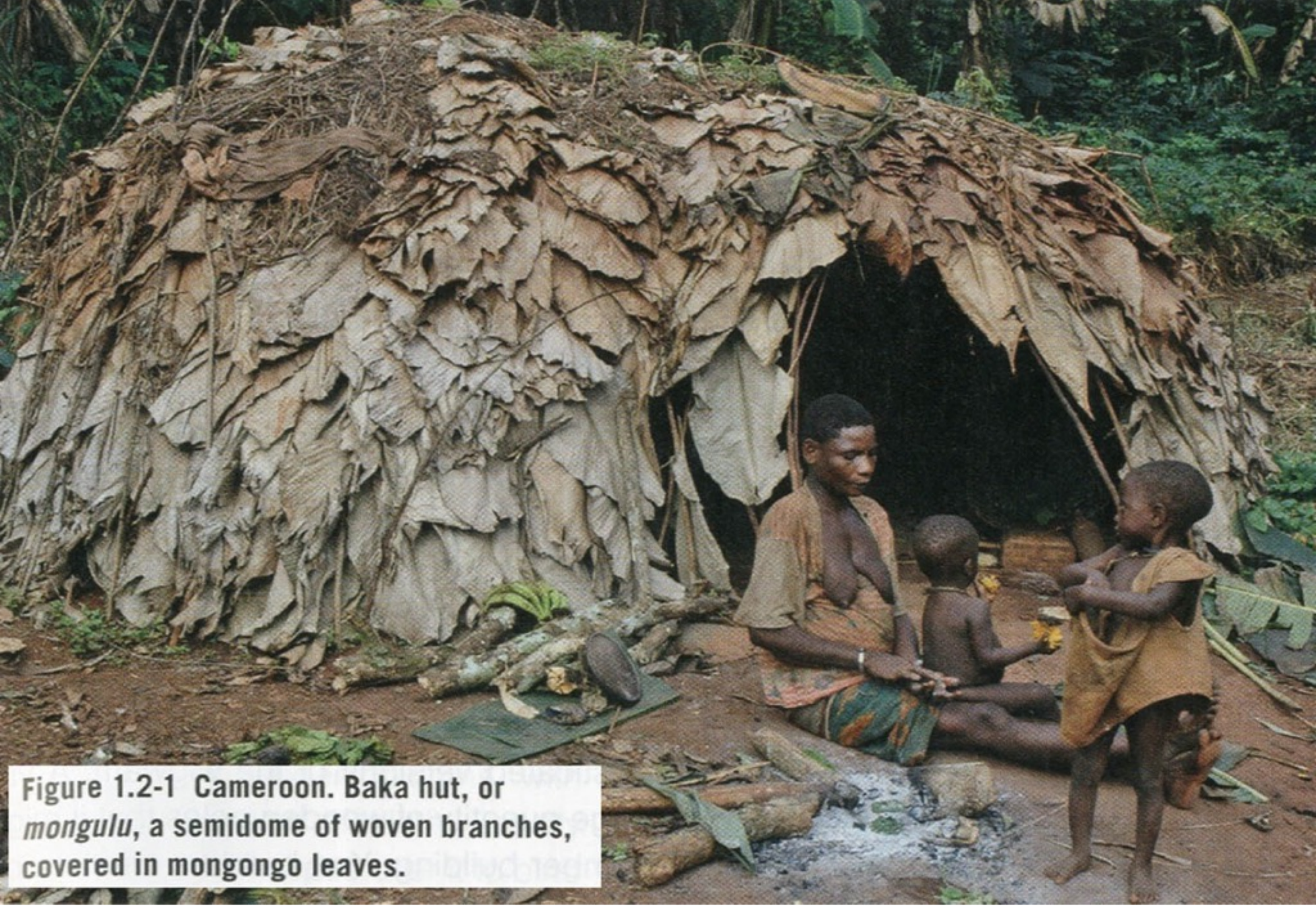


Figure 1.2-1 Cameroon. Baka hut, or *mongulu*, a semidome of woven branches, covered in mongongo leaves.

Ukrainian bone hut, ca. 15,000 BCE.

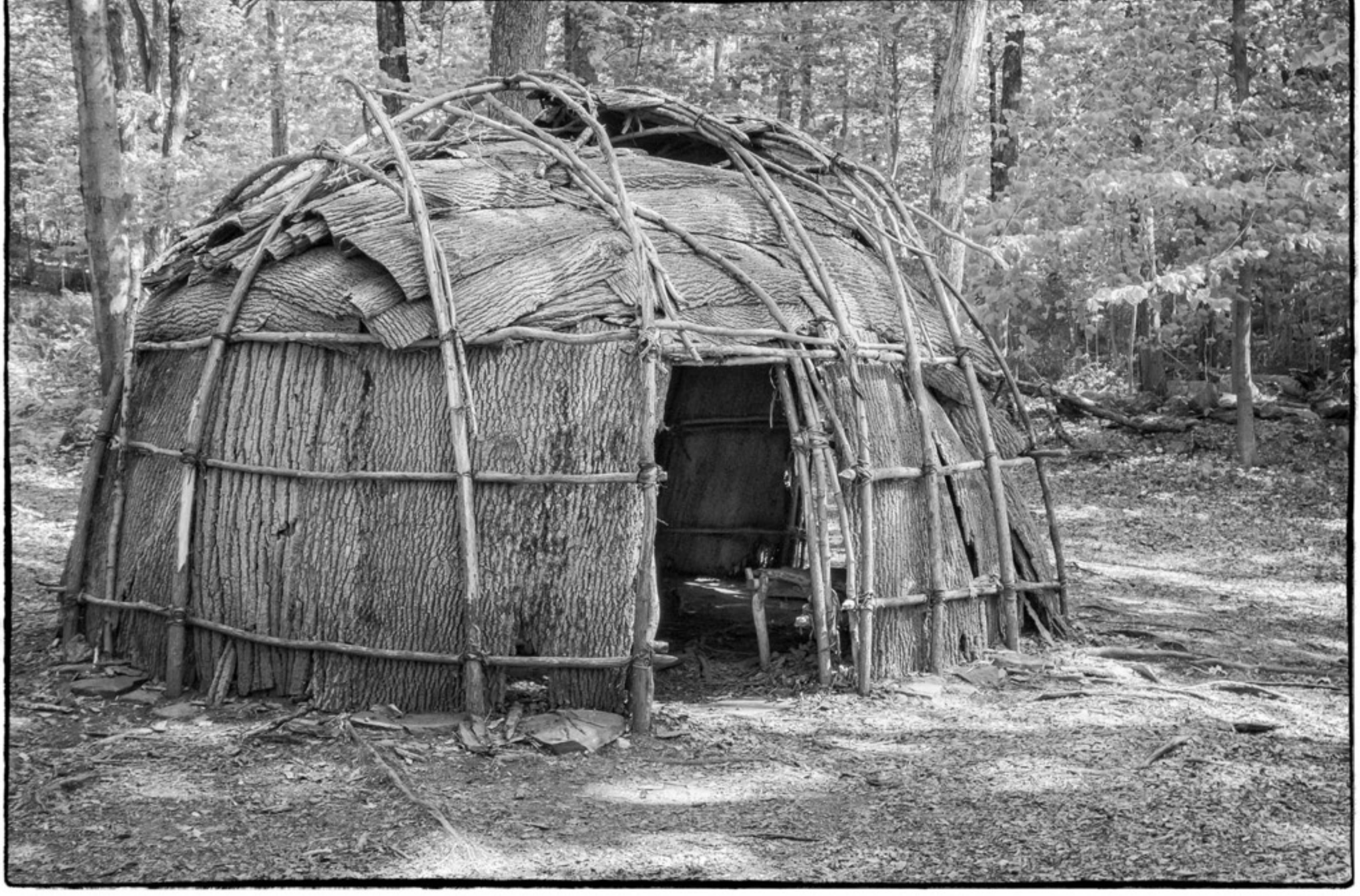
Figure 1.2-2 Pine Ridge reservation, Dakota territories. Sioux tipi photographed by John Grabill in 1891, showing canvas flaps for chimney and entry.

Tipi

Western Plains U.S.

Iroqouis Longhouse - 16th century

(This is a reconstruction)



Wigwam - Eastern Woodlands U.S.

Cave House
Loess Plateau
China

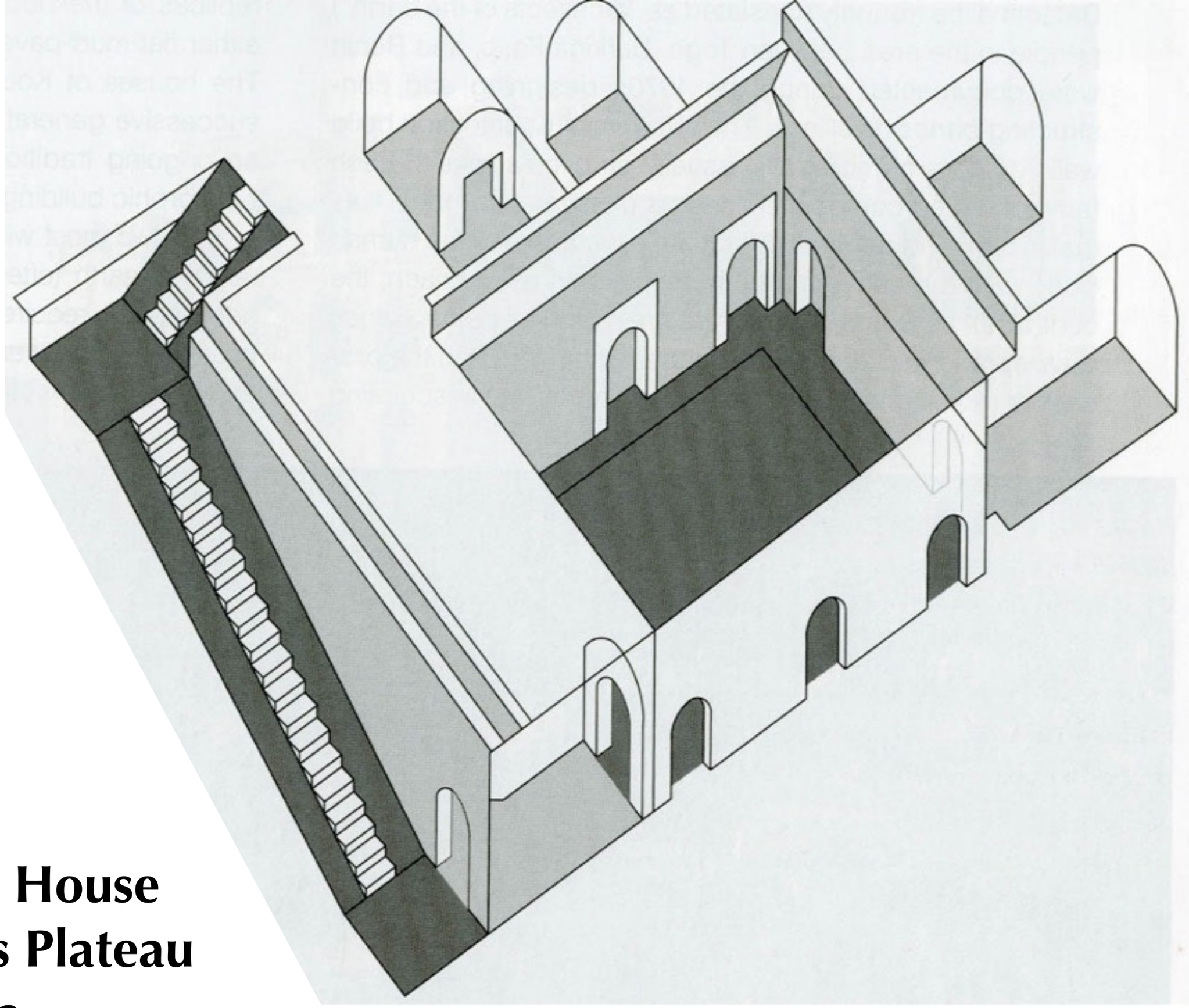
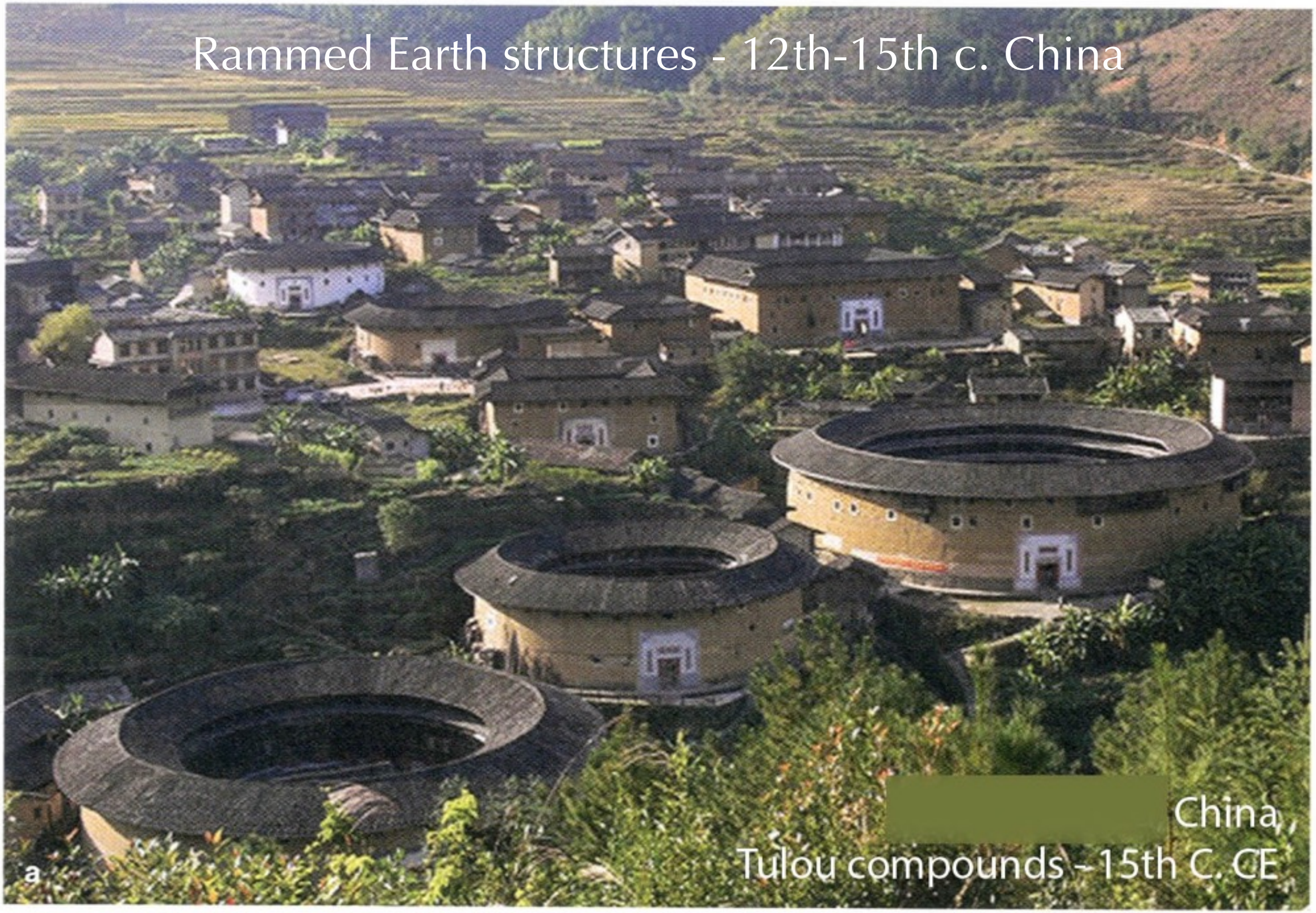


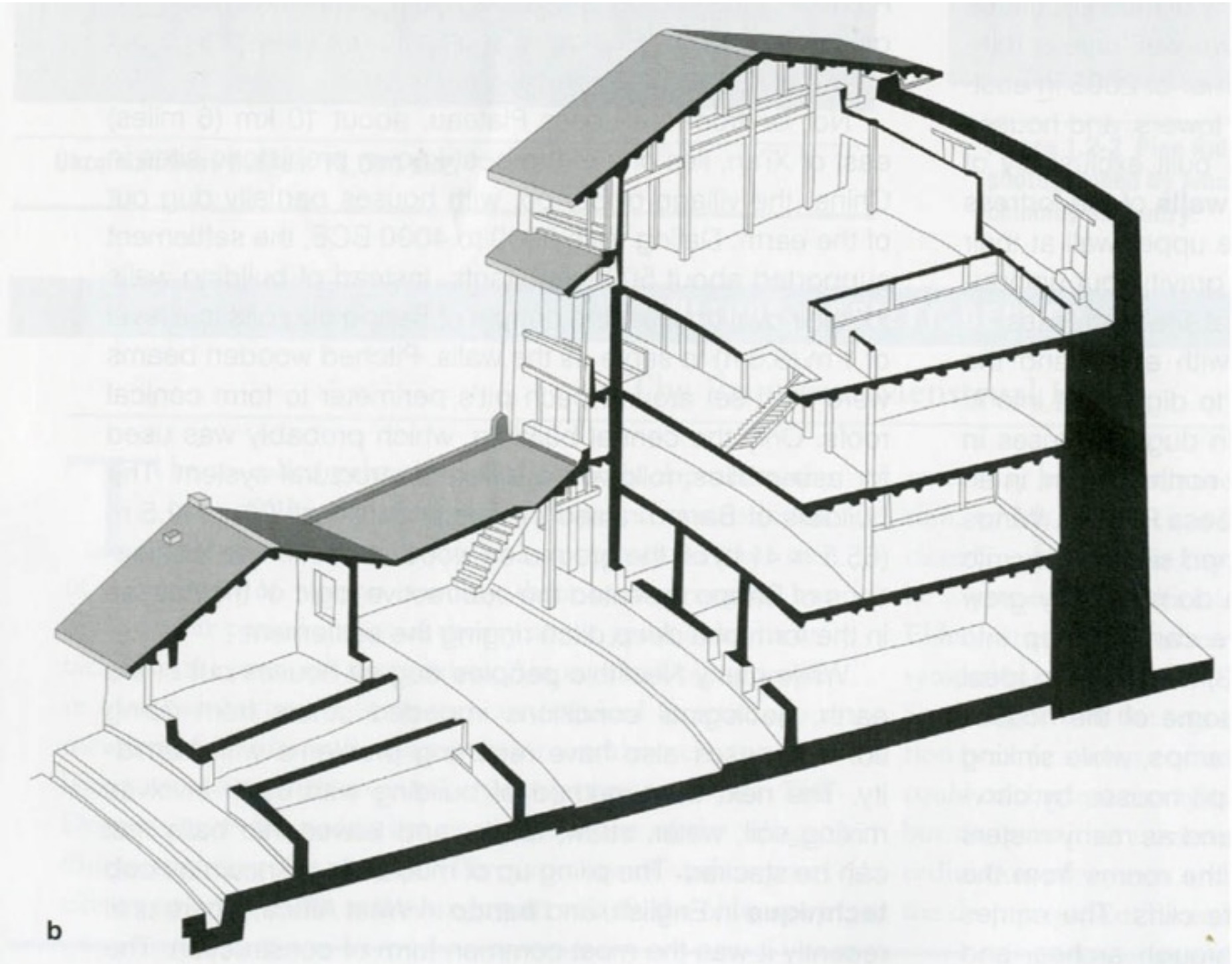
Figure 1.2-3 Loess Plateau, central China. Plan of cave house, or *yaodong*, dug into the dense soil. This typical earth dwelling has been used since the first millennium BCE.

Rammed Earth structures - 12th-15th c. China



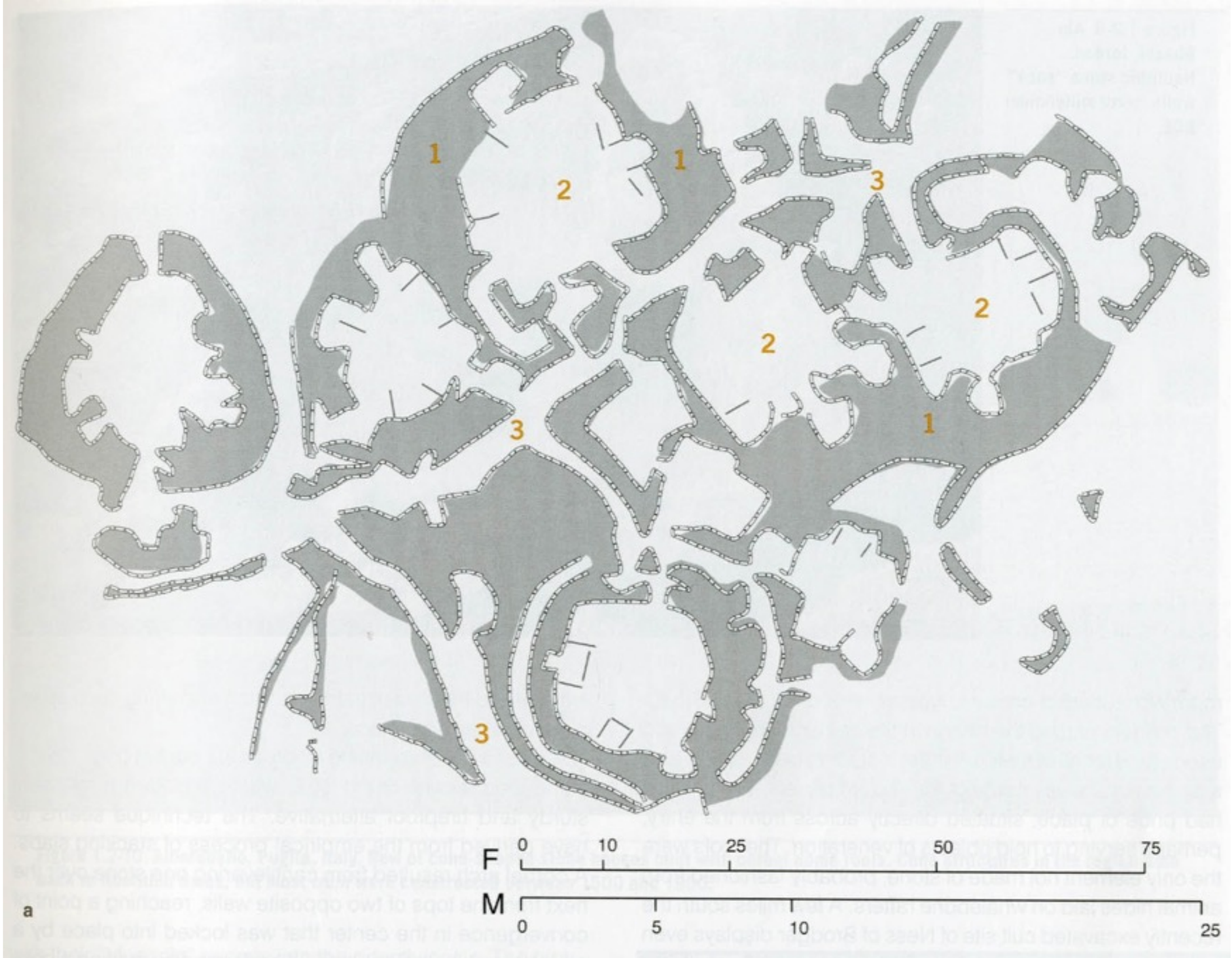
China,
Tulou compounds ~15th C. CE

a



b

Figure 1.2-4 Chuxi, Fujian Province, China. (a) Hakka people's fortress houses, or *tulou*, made of rammed earth and dating as far back as the twelfth century. (b) Section.



Skara Brae, Scotland - drylaid stone - **3000 BCE**

Figure 1.2-8 Orkney Islands, Scotland. Skara Brae, ca. 3000 BCE. (a) Plan, showing (1) thick walls built of dry-wall masonry, (2) individual lodgings featuring built-in furnishings made from stone slabs, and (3) narrow paths connecting the dwellings as a community. (b) Dry-wall masonry from brick-sized stones.

Skara Brae, Scotland - drylaid stone - 3000 BCE

drylaid stone - 2010 CE

Sack walls - Jordan - 6000 BCE

Figure 1.2-10 Alberobello, Puglia, Italy. Row of cone-shaped stone houses built with corbel dome roofs. Cone structures in the region date back to Neolithic times, but most *trulli* were constructed between 1500 and 1900.

Trulli Houses - Puglia - **Neolithic** *corbeling* 1000 BCE

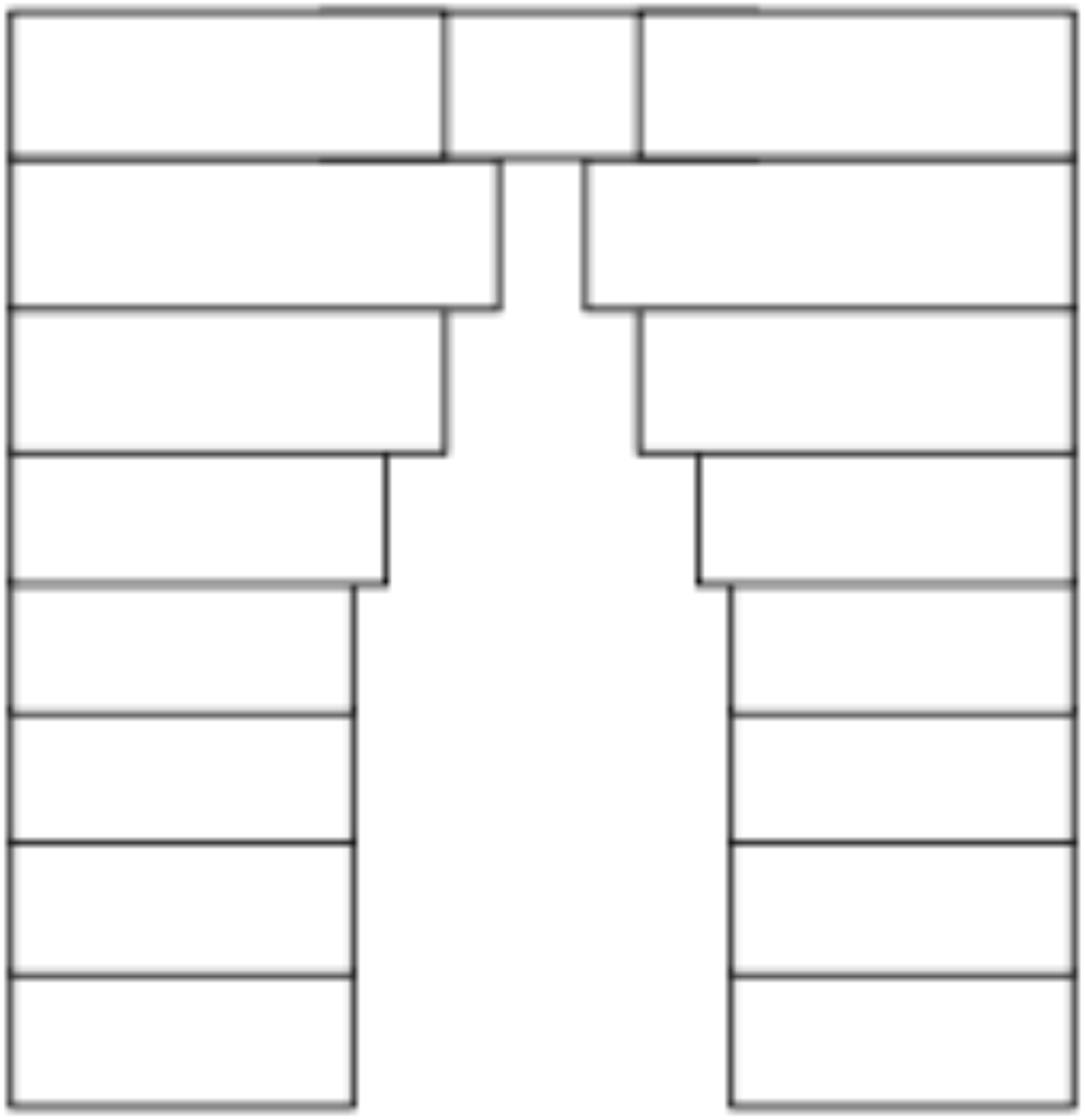
(built as late as 1500-1900)

Important structural systems evolving during prehistoric era:

Columns holding up a large beam or lintel (**post & beam** or **post & lintel**)

Wall w/ large arched openings and columns (posts) and lintels applied to it

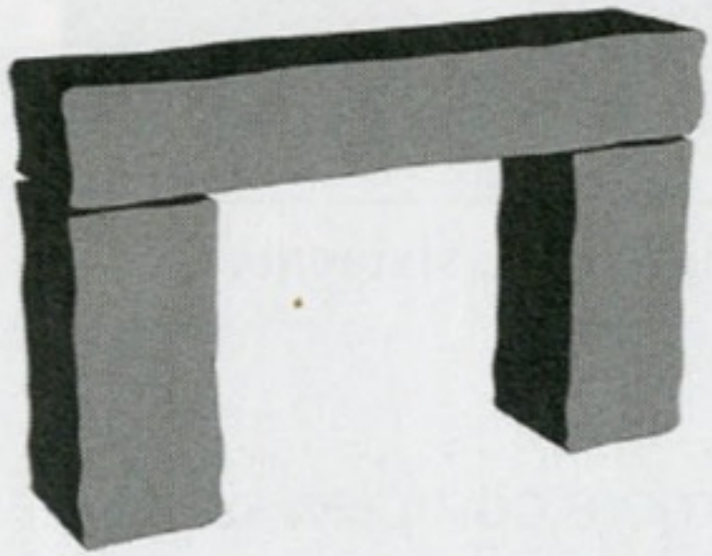
As architecture developed, it grew to be supported by **walls**, **columns**, or a combination of both. The **arch** grew from this.



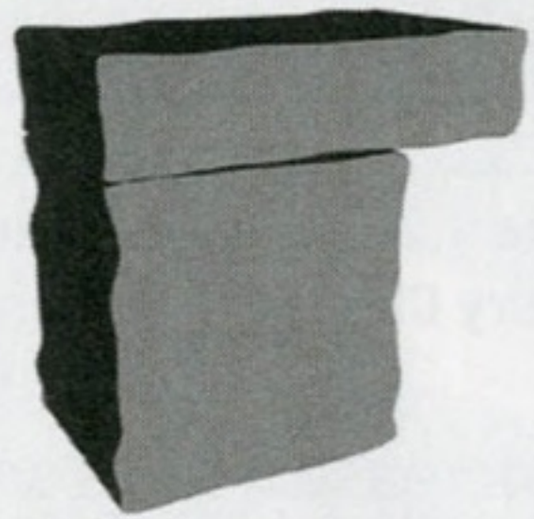
corbeling or corbels (including primitive roofing)

A **cruck** - large curving vertical beams
that transfer forces to the ground, similar to an arch

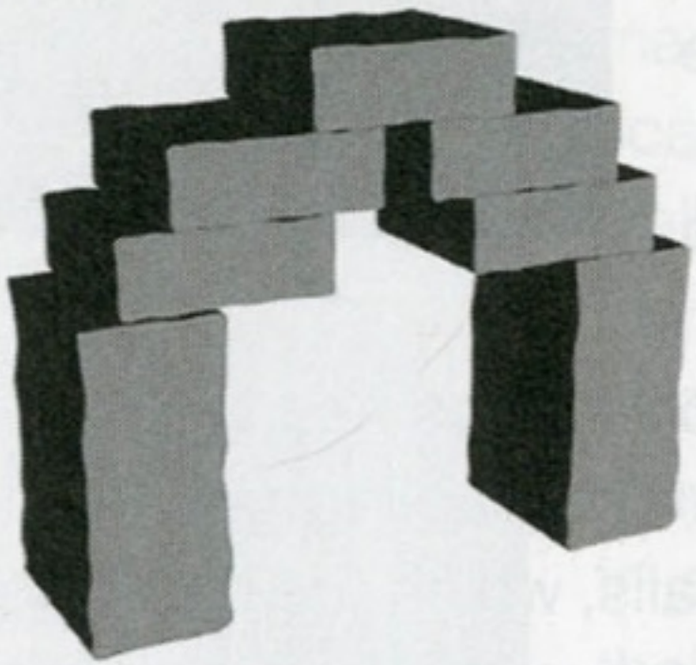
a modern version of a cruck



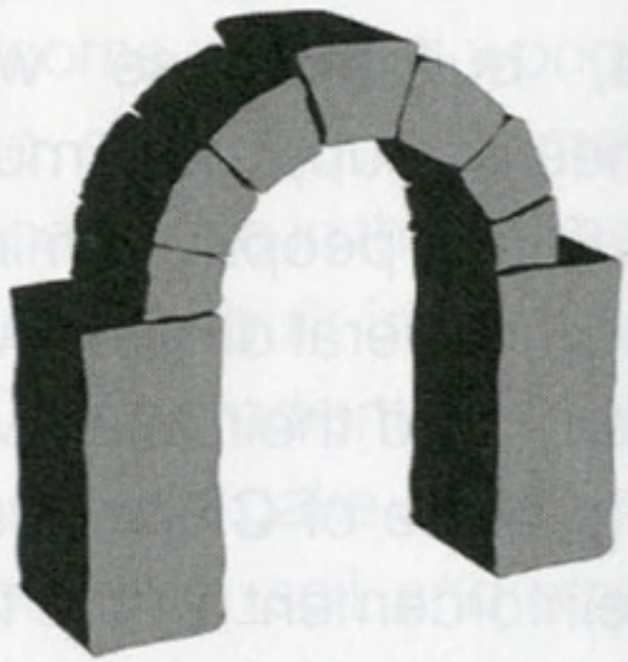
post & lintel or
post & beam



cantilever



corbelled arch



true arch

end