

Chapter 2

From Tomb to Temple

Geometric Space

Geometry is a tool by which cultures demarcate and organize space for those operations deemed significant in the life of the culture. Once a culture geometrically shapes a space it slips from the realm of nature and into that of culture. The space gains shape and meaning in terms of the cultural task it serves. Geometry was one of people's first tools employed in the visual expressions of their beliefs.

One of the earliest tasks served by geometrically defined space was the performance of ritual. The design of such a space followed from the religious and symbolic meanings enacted through the ritual. The most profound of these rituals dealt with death and with managing those beliefs surrounding death. The seriousness and importance ascribed to these beliefs is reflected in the earliest of architectural monuments; the stone and earth mausoleums of Neolithic societies

Early masterpieces of practical engineering, these communal graves also eloquently communicated the spiritual and social structure of their builders' world. They were simultaneously the purview of the priest, the chieftain and the architect, and give evidence of the simultaneous beginnings of geometry in sacred belief and practical building.

Cyst grave, Horwich Mesolithic village, England

Prior to the grand mausoleums of the Neolithic, tombs were simpler affairs. During the Mesolithic, or Middle Stone Age, burials of one or two individuals in stone-lined graves called cysts were common. Though simple the cyst grave marked an early formalizing of the burial space into a geometric container. Where the land was hard stone, cysts were built above ground and covered with cairns of mounded stone. This basic format eventually grew in scale to evolve into the chambered graves, or dolmens, of the Neolithic era.



Mesolithic hut, Horwich, England

Though made of earth and stone the dolmen reflected the form and general shape of the Mesolithic home. This is likely no accident. In the history of architecture many of the key monuments are enlarged and refined versions of the societies common domiciles. Greek temples for example were built as homes of the gods, but far grander and more permanent than ordinary homes. Part of that grandness was a sharper, more highly crafted and more geometric re-designing. The fluted stone pillars of ancient Greek temples were loftier versions of the tree trunks used to support a Greek house of the time.

Similarly the dolmen was the home of the dead, who were the society's link to the gods

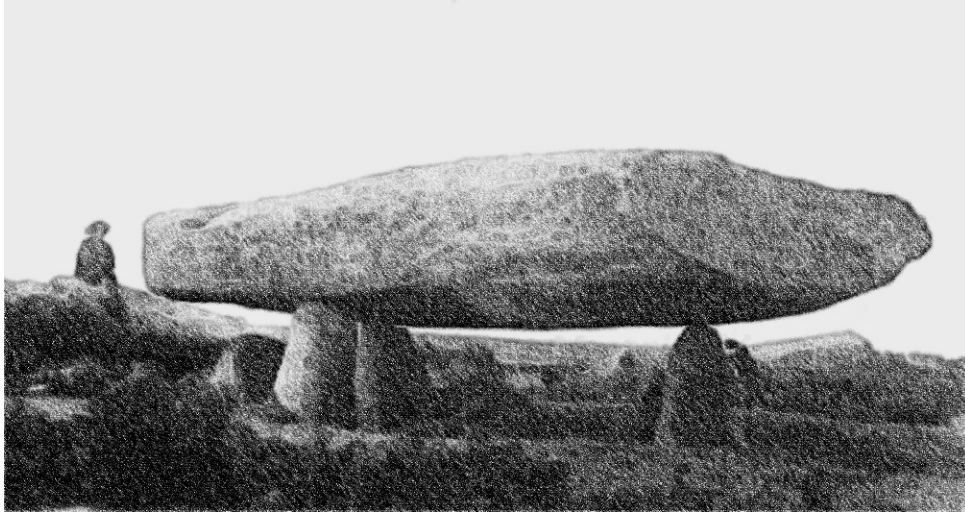


Grave Geometry

Serving both as a repository for the body as well as the launch point into the spirit's realm, early Neolithic tombs evolved from simple burials to memorial chambers ensconced in mounds and cairns. Many of the tombs housed burials for an entire community and accommodated funeral rituals in their design. By the late Neolithic in Europe these artificial hills of earth and stone housed chambers of increasingly refined layout and construction that melded the sacred geometry of the priest with the engineering geometry of the builder.

Such Neolithic mausoleums, dubbed dolmens, discovered near coastal Brittany mark the earliest large-scale architecture to be built of quarried and dressed stone. Erected between 5000 BCE and 4500 BCE, these tombs predate the pyramids of Egypt by about 2000 years. This tomb building continued with greater and greater refinement for 2500 years, spreading south to the Mediterranean, west to the British Isles, east into Germany and north to the Baltic Sea. Similar structures are cited in North Africa and in Asia from the Mideast through India and into China.

From the exterior a typical tomb from the late Neolithic, or Megalithic, period carried the loose look of a giant cairn with the exception that the stones were not randomly piled, but stacked in courses. Later tombs featured more precise, circular walls of stone, sometimes tiered, sometimes securing the perimeter of a grassy mound. At the center was a burial chamber tied to that perimeter by a passage fashioned from stones weighing up to 40 tons. Similarly huge stones, or megaliths, were also used to build large ceremonial circles, the best known of which is Stonehenge in the south of England.



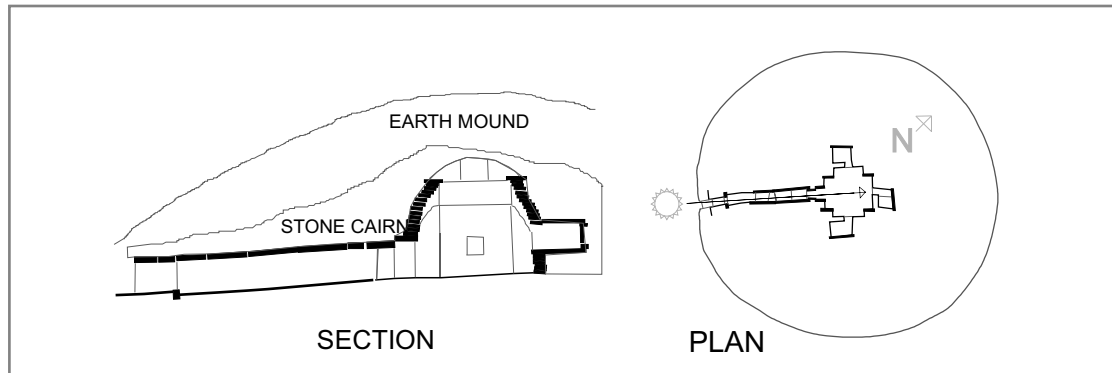
Le Table was, until recently, all that remained of an impressive tomb. Originally it framed the inner chamber of the tomb, the exterior cairn and shoring walls were long ago appropriated by later residents to build their homes and barns.

Below: Now restored, *Le Table des Marchands* powerfully typifies the walled cairns of the early stone dolmens built in Brittany.

Opposite is an inside view looking out from the restored inner chamber into the stone hallway that connects the chamber to the outside. Ancient Bretons had lined the interior of their dolmens with painted and incised geometric emblems, some of which still appear on the ceiling stone.



Arguably the best crafted and most geometrically elegant of these passage graves is Maes Howe in the Lewis islands of Scotland. Its chamber is bigger than average with a high vaulted ceiling, smoothly finished stones, pillared corners and curious side chambers projecting out from each wall. Most dramatic is the alignment of its passage with the rising of the sun at the winter solstice. During the week prior to Christmas visitors can witness the sun break the horizon and cast its light through the passage and onto the back wall of the tomb.



At the winter solstice the rising sun beams down a stone corridor to light the inner chamber of Maes Howe. On three remaining sides small square openings provide access to stone "cupboards", repositories for the cremated bones of ancestors. Most dolmens were ossuaries, burial chambers for bones rather than the body of the deceased.



Cemetery Rings

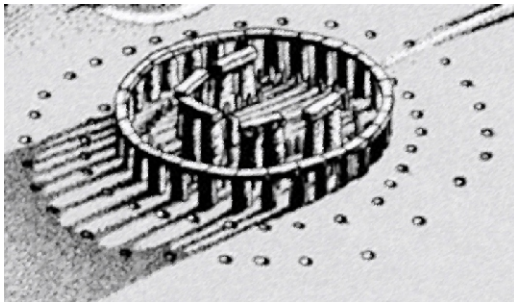
By the late Neolithic in Europe (about 2000 BCE) the basic form of the dolmen had evolved in any number of directions. Elaborate stone rings, for example, echoed the geometric plan of the dolmen, but were no longer burial chambers. Instead many served as temples surrounded by burial mounds.

This is the case with Stonehenge. Set atop a hillock on the Salisbury plains in the south of England, it was surrounded by an earthen henge and approached by a long wide entry road. Populating the low, rolling terrain of the surrounding plain were dozens of mounds where actual burials took place. Its outer stones correspond to the kurb stones that often shored the walls of earlier dolmens and the central elliptical ring mimics the inner chambers of the dolmens.

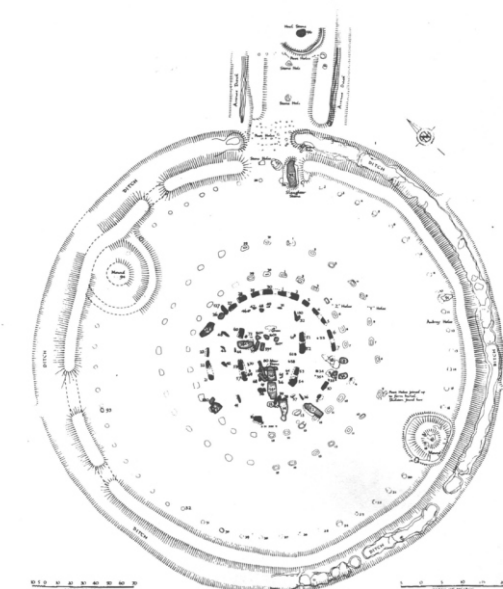
Like Maes Howe and many other neolithic sites Stonehenge incorporates the geometry of the heavens: It aligns to the rising sun at the summer solstice.

Maes Howe and henge

Like most great monuments Maes Howe is sited in a dramatic and beautiful setting. It is also part of a larger complex with other nearby rings of standing stones. Encircling Maes Howe is a henge, an large ditch rimmed by the earth thrown up from its excavation. Such henges served to demarcated the ceremonial space and to provide a transition into the larger environment. In other locations henges functioned as fortifications for settlements.



Refinement over time would account for part of the ceremonial form of Stonehenge, but politics played a role as well. Stonehenge serviced the ceremonial needs of a much larger populace than did the early dolmens, and it has the massiveness to show it. Some estimates set the local citizenry at 60,000. It represents a consolidation of power and organization that enabled the marshaling of labor required to build it.



The notion of power shifted as Europe entered the Bronze Age. The amassing of wealth in the form of jewelry and precious artifacts overtook the ability to carry out projects like Stonehenge as the emblem of status in this new technology. The era of Megalithic building ended by about 1500BCE and tombs returned to the earlier cysts. Now instead of the geometry of grand stones embracing them, individuals of wealth and status were buried huddled with their artifacts of gold and silver.

At one end of the elliptical inner ring of Stonehenge is an altar from which an observer can sight through two trilithons (stone gateways) and onto a distant stone. At the start of summer at that observer can add the rising sun to this alignment.
