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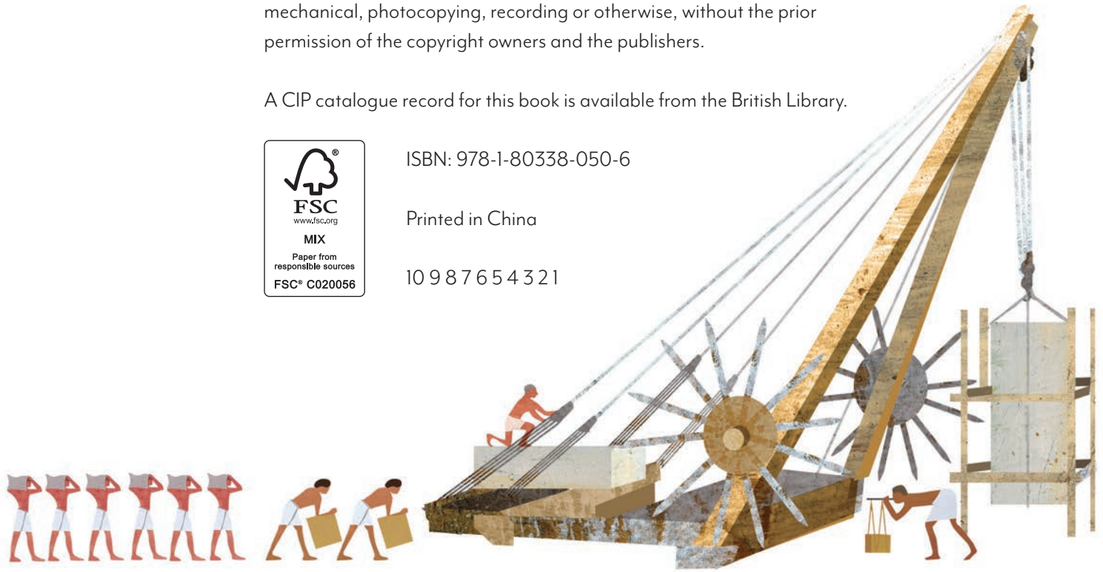
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AROUND the WORLD in 80 BUILDINGS

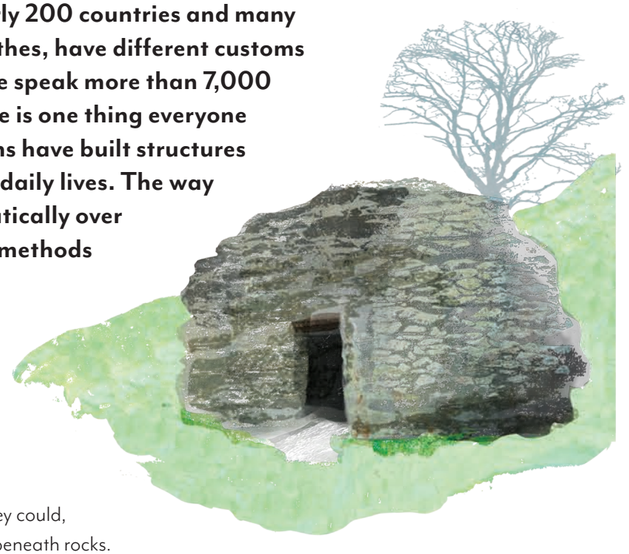
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WELBECK
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A world of builds

The world is huge and diverse, with nearly 200 countries and many different cultures. We wear different clothes, have different customs and religions and eat different foods. We speak more than 7,000 different languages between us but there is one thing everyone has in common. For centuries, we humans have built structures to live and work in, and to help us in our daily lives. The way these buildings look has changed dramatically over time, and so have the materials and the methods used to build them.



The first buildings

In prehistoric times families found shelter wherever they could, often in caves that had formed naturally in cliffs and beneath rocks. Caves protected them from predators and bad weather until around 400,000 years ago when our ancestors started building shelters of their own. These first ones were simple, usually circular, huts built using whatever people found around them, such as boulders, branches and reeds. Often the huts were built close to each other in small groups, which is how villages and then towns began to form.



Building to impress

Some of the world's most famous ancient buildings are much larger. They include the ruins of great temples, royal tombs and richly decorated palaces, which were built by entire communities rather than individual families. Each one could take many years to complete, and buildings like these often required hundreds or even thousands of people to work on their construction. Because they were so large, and built using solid blocks of carved stone, the ruins of some of them have survived for thousands of years. By studying these carefully, historians and archaeologists can learn a lot about ancient civilisations.



Moving from A to B

For most of history people rarely travelled very far from home, but today many of the largest and most expensive modern structures are ones that make it possible for us to travel long distances by road or railway. Deep tunnels burrow through mountains and under the sea, and in some parts of the world there are bridges that are long enough to link one country to another.

Harvesting energy

The threat of climate change has caused all sorts of new structures to be built in many countries of the world. These are ones designed to generate power sustainably, making electricity without burning fossil fuels or producing harmful emissions. The largest of these include gigantic wind farms constructed on land and out at sea, as well as vast areas of ground covered in solar panels to soak up energy from the sun.



Vanished civilisations

When an ancient civilisation dies out, its language and culture can be lost forever. Often all that remains from hundreds of years and millions of lives are the spectacular ruins of its buildings. These can look strange compared to modern buildings but they give us tantalising clues about the people who built them and the way they lived their lives.

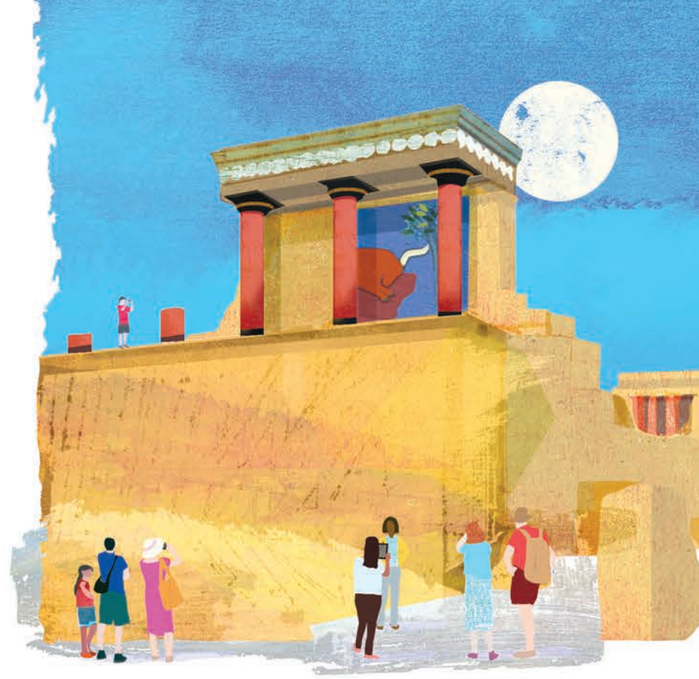
1. Jarlshof (Shetland, 2700 BCE)

This prehistoric settlement is situated by the sea on an island approximately 200 kilometres north of Scotland. The remains of houses dating from many different periods of history show the site was continuously occupied for more than 4,000 years. The earliest dwellings date from the Bronze Age and Iron Age, and later Viking families moved here from Scandinavia. The most recent structure is a grand 17th-century house but this is now ruined and there is no one living at Jarlshof today.



2. Knossos (Crete, 1900 BCE)

The great palace at Knossos was built by the Minoan people and was very luxurious for its time. As well as running water, baths and toilets (and Europe's oldest throne), it had a maze of cool underground rooms. These provided somewhere for the owners to escape from the scorching summer sun, although according to local legends they were once occupied by a mysterious beast called the Minotaur. The Minoans developed one of the first written languages and they grew rich by trading with other people living around the Mediterranean Sea. Unfortunately, their civilisation began to die out 3,500 years ago, possibly due to climate change caused by a massive volcanic eruption on the nearby island of Santorini.



3. Leptis Magna (Libya, 2nd century)

The Roman army established the ancient world's largest empire by conquering most of Europe as well as parts of Asia and Africa. The Empire lasted for more than 500 years and Emperor Septimius Severus was its first African ruler. He spent a fortune transforming his birthplace into one of Africa's most important cities, but the empire eventually grew too big to be ruled by one man. It began to break apart as invaders attacked and defeated the once unbeatable army. Today the ruins of his city, Leptis Magna, include some of the best-preserved Roman architecture anywhere on Earth.

The city contains an incredibly well preserved ancient Roman theatre.





4. The Kingdom of Aksum
(Ethiopia, 1st–7th centuries)

The Aksumites traded with other great empires such as Egypt, Rome and India, which wanted the Africans' ivory, gold, rhinoceros horns and polished tortoiseshell and paid for them using fine silks and rare spices. Many Aksumites were skilled stone masons and carved highly elaborate towers called stelae – the largest is 33 metres tall and weighs more than 160 tonnes, but no one knows what it was for or why it was built. The Aksumites also constructed large terraces so that farmers could grow food crops on steep hillsides.

5. Great Zimbabwe
(Zimbabwe, 11th century)

This royal city is ringed by high walls and was once home to nearly 20,000 people, known as the Shona. The name Zimbabwe is a Shona word meaning 'stone houses' because these people were amazing builders. Thousands of stone blocks were expertly fitted together without any of the mortar or cement we see today. Some of the walls were 10 metres high and are still standing centuries later, even though no one has lived here or repaired them for more than 500 years.





6. Angkor Wat
(Cambodia, 12th century)

Angkor Wat covers more than two square kilometres, making it the largest religious structure anywhere in the world. It was constructed for a Hindu king – but when it was attacked by an invading army, a later ruler turned it into a Buddhist temple, thinking this would protect his people. Because of this, its complex, carved stonework depicts many gods and other symbols from both religions, which is highly unusual. Many modern visitors find the temple very spooky because parts of its are covered in the winding roots and branches of trees that have grown over the site since it was abandoned in the 15th century.



Pyramids

Pyramids are some of the world's largest and most mysterious ancient monuments. Their appearance and purpose varies from country to country but each one is built on a perfect, square base and has four triangular sides.



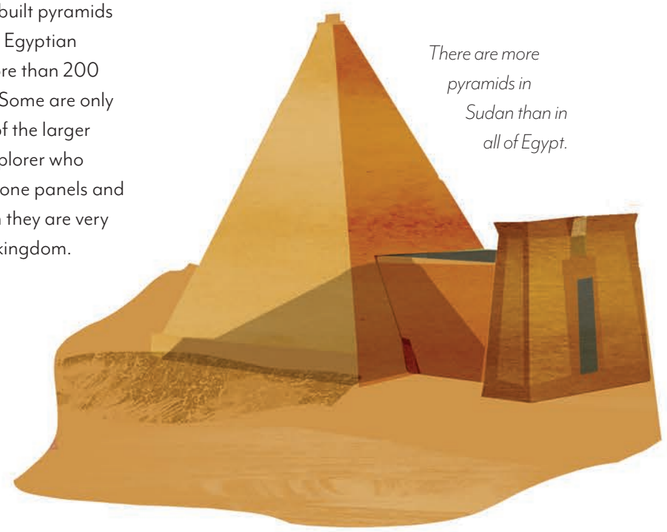
7. Khufu's Pyramid (Egypt, 2600 BCE)

The oldest and most famous pyramids were built as tombs for the pharaohs who ruled Egypt for more than 3,000 years. The largest was for Pharaoh Khufu and was built using approximately 2.3 million stone blocks weighing a total of six million tonnes – about the same as a thousand fully-grown African elephants! The building work is thought to have taken 20,000 to 30,000 workers nearly three decades. Some of the stone had to be transported by boat nearly a thousand kilometres to the site on the west bank of the River Nile and every single block then had to be cut and hauled into place by hand.

8. Pyramids of Meroë (Sudan, 3rd century BCE)

The kings and queens of neighbouring Nubia also built pyramids as tombs. These rulers less powerful than the great Egyptian pharaohs, so their tombs are much smaller, but more than 200 have survived in the deserts of what is now Sudan. Some are only 10 metres tall and unfortunately the tops of many of the larger ones were smashed off by a 19th-century Italian explorer who came looking for treasure. The pyramids' carved stone panels and examples of Meroitic writing in some of them mean they are very interesting to archaeologists studying this ancient kingdom.

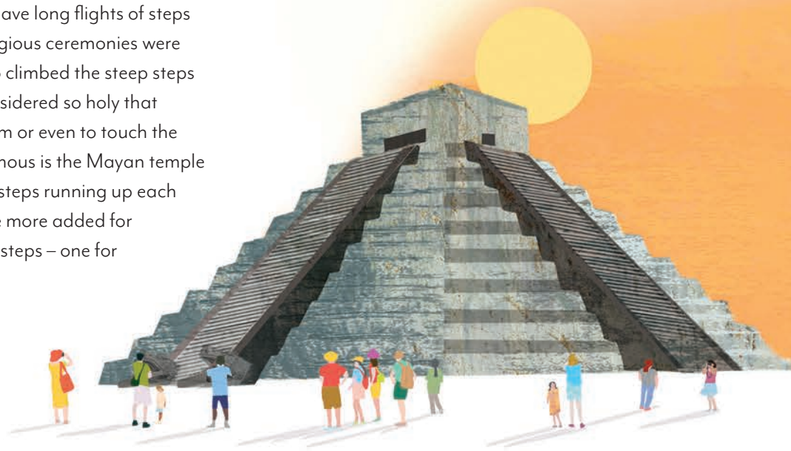




There are more pyramids in Sudan than in all of Egypt.

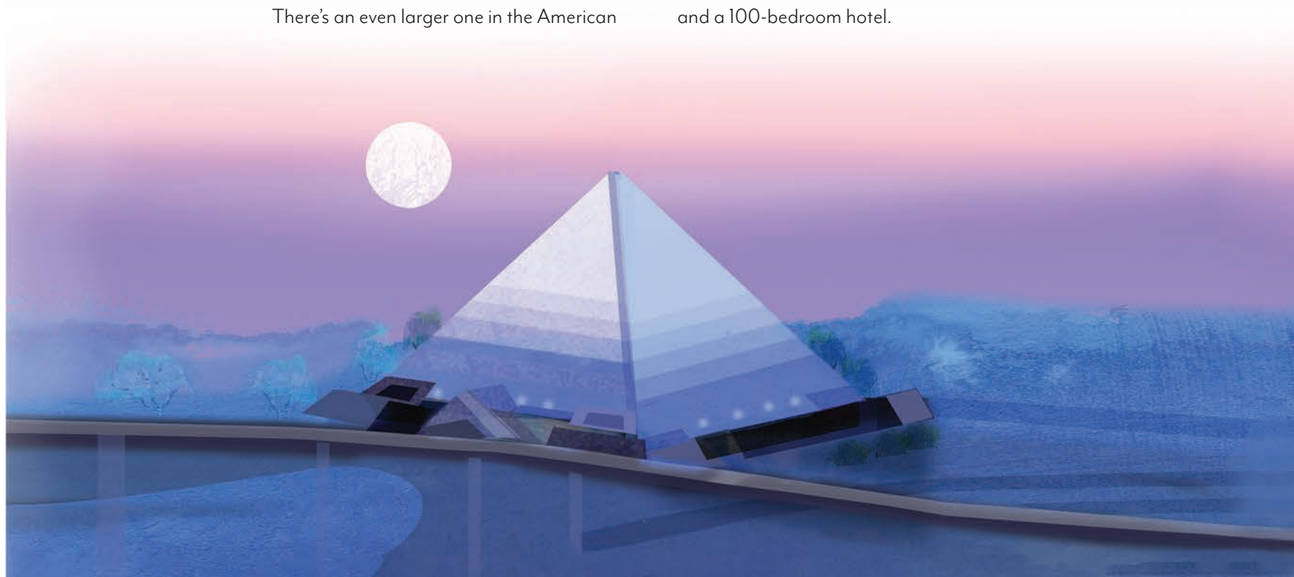
9. Temple of Kukulcán (Mexico, 10th century)

The Mayan, Olmec, Inca and Aztec people built so many pyramids in Mexico and South America that ruined ones are still being discovered. Most were temples rather than tombs and, unlike the smooth sides of Egyptian pyramids, they have long flights of steps going up to a flat platform at the top. Religious ceremonies were performed at some of them by priests who climbed the steep steps to reach these platforms. Others were considered so holy that no human being was allowed to climb them or even to touch the delicately carved stonework. The most famous is the Mayan temple of Kukulcán at Chichén-Itzá which has 91 steps running up each side. If all four sides are added up and one more added for the stone platform it makes a total of 365 steps – one for every day of the year.



10. Memphis Pyramid (USA, 1991)

The fascination with pyramids has never gone away and modern architects sometimes build them too. A famous French one forms part of the Louvre in Paris which gets more visitors than any museum or art gallery in the world. There's an even larger one in the American city of Memphis which was named after the pharaohs' ancient capital. This is a striking glass structure on the banks of the Mississippi River. It's as tall as a 32-storey building and contains a shopping centre, sports facilities and a 100-bedroom hotel.

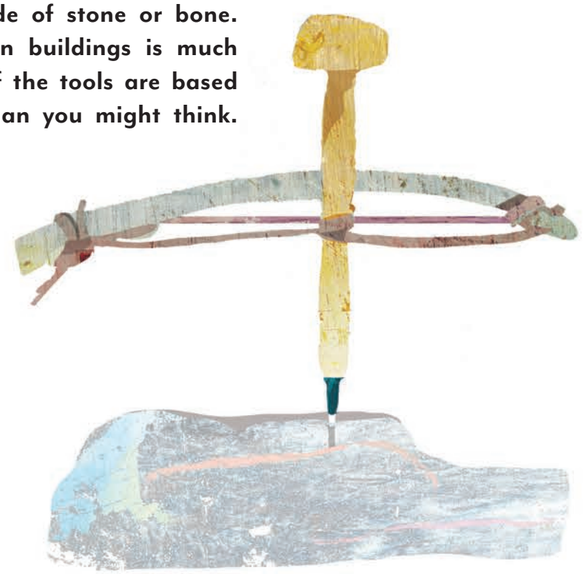


Tools and technology

The equipment used in construction has changed as much over the centuries as the structures themselves. The very first tools were very simple ones made of stone or bone. The technology used to build modern buildings is much more sophisticated, although many of the tools are based on inventions that are much older than you might think.

Drill

Archaeologists digging at a site called Mehrgarh in what is now Pakistan have found evidence that people were using hand-operated tools called bow-drills nearly 9,000 years ago. One of their discoveries was a sharp tip made of an extremely hard stone called green jasper. This could drill holes in solid rock and even through human teeth.

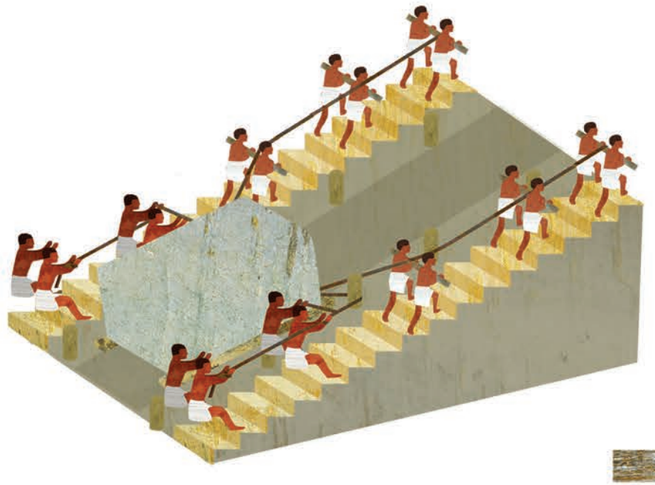




Metal saw

When pharaohs and other rich Egyptians died, they were buried with all the food, clothing and other things their families thought they would need in the afterlife. One 5,000-year-old tomb contained several razor-sharp saw blades made of polished copper. Paintings in other tombs show images of carpenters using similar tools to cut wood for building.





Pulleys

The Greek mathematician, astronomer and engineer, Archimedes, described a complicated pulley system in the 3rd century BCE, although the invention could be at least a thousand years older than this. Wooden pulleys and ropes make it possible for a person to lift much heavier weights than normal and some historians think Egyptian workers probably used them to move heavy stone blocks into place while building the pyramids.

Crane

The ancient Greeks were the first people to use cranes on building sites. More than 2,500 years ago these were operated by people and donkeys and could lift a block of stone weighing up to 450 kilogrammes. The technology was later improved by Roman military engineers who built a much larger version called the Polyspastos. This could lift several tonnes and required three ropes, five pulleys and four men to operate it.





Architectural plans

Switzerland's Plan of Saint Gall is the oldest known architectural drawing on parchment, a type of writing material made from animal skin. It is approximately 1,200 years old and shows a series of medieval monastery buildings with over 300 handwritten inscriptions. The plan includes various chapels, houses, stables, kitchens, workshops, a hospital and even a brewery for making beer. These would have been large enough to accommodate nearly 400 people but unfortunately nothing was ever built.

