

Roman Engineering:

Arches, Concrete, and Roads

The Romans were great builders. Many things you see today have been inspired by ancient Rome. Even though they copied many things from the Greeks, the Romans had a lot of original ideas.

The Romans used arches extensively. An arch is a curved structure that can hold a lot of weight. Arches helped Roman architects a great deal. With arches, they could build over windows and doors. With arches, they could build huge structures called aqueducts. Aqueducts brought water to Roman cities from the hills over great distances.



The Romans invented concrete. Roman concrete came from a mixture of lime and water. A Roman builder would make a mushy paste. Then, he would add volcanic sand and pebbles. You would have to stir this mixture hard. It would turn into a big, messy blob of gray stuff with little lumps in it. Then, you would mold it into whatever shape you wanted. The concrete would dry. It would get hard. It would never get soft again, even in the rain. The Romans built an enormous structure called the Coliseum with concrete. The Coliseum was a massive arena that could hold 70,000 spectators. There, the Romans had chariot races and came to watch gladiators do battle and other events such as naval battles. The largest concrete dome ever built was also built by the Romans. After almost two-thousand years, the building known as the Roman Pantheon still stands in the heart of Rome today. It remains as testament to the advanced engineering skills possessed by the Romans.

Roman builders also made bricks out of baked clay. Bricks were used in many Roman structures. Each brick maker put his own special mark on his bricks. That would tell others who made the brick and where it came from.

Perhaps the greatest Roman achievement, however, was the extensive network of roads they built. The Romans built many roads over thousands of miles. These roads helped the army keep track of the vast Roman Empire. Trade goods also flowed freely and quickly throughout the Roman world. The roads were straight. Chariot wheels moved much more easily over paved roads than on muddy ruts. The Romans liked straight roads.

The Romans even tunneled through mountains so their roads could be straight. Many Roman roads are still in use today.

The Romans were great builders. Even fast-food restaurants use ideas from the Romans! From arches to concrete, our modern world has been influenced by the architects of ancient Rome.

