

# The influence of roman engineering and architecture

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The ingeniousness and beauty of Roman architecture has not been lost on us in the 2000 years since it was built. Even today, we still marvel at what incredible builders the Romans were, and at the sheer scale and integrity of many of their projects. It is hard to argue that today's architecture will maintain the same lasting grandeur as that which the Romans built. If we can still respect and admire the grandeur of Rome as it was in its day, one can only imagine how much of an influence people of the time felt, due to the incredible innovations that the Romans brought to the new regions of their empire.

In fact, it is because of the superior engineering skills and architectural ideas possessed by the Romans, and respected by others, that allowed them to conquer, influence and rule such a vast area of the world, for such an extended period of time. Citizens of regions conquered by Rome were the beneficiaries of Roman innovations such as a (public) fresh water supply, bridges over previously impassable rivers, roads linking all parts of the empire (especially to the capital) and incredible public buildings like the forums and baths.

They were more easily persuaded into acceptance once the Romans arrived when they saw or heard of these innovations which they realized could have such a huge and beneficial impact on their lifestyles. The first thing the Romans did upon entering a new region, after winning the war that gained them their new territory, was construct roads and bridges. This was the best way to “Romanize” the new areas, as it permitted easier communication between the colony and the mother country.

The roads all led to the capital, which solidified its position as the centre of power, and also allowed the rulers easier and faster access to the colonies when necessary. It has been said that at the peak of Rome's power, one could travel from the English Channel all the way to Rome without ever fording a stream, simply because the Romans had built so many bridges to link its colonies. As the Romans were the first to master bridge building on such a large scale, they had a huge influence on the people in even the most remote regions. Places that had been impassible could suddenly be crossed by bridge.

The bridges were a commanding presence on the landscape as well, easily conveying the sense of who was in power and influencing the people of the region. The Puente Alcantara in Spain can perhaps best show the expansive influence that the Romans held through their bridges, (Images 1 and 2). Built in AD100 and still standing today, Puente Alcantara reaches 164 feet at its highest point, is 600 feet long and has ps of 92 to 98 feet wide. Such an example of architecture so far from the centre of power is a lasting monument to the influential power once held by the Romans.

People were drawn into conformity when they saw the superior skills of the Romans, who also perfected pile driving for the construction of bridges and built each bridge arch as self-supporting to avoid damage to the entire structure if only one portion was damaged. The Roman use of the arch itself, which had never been used to such a great extent before, is itself the main reason they were able to build the huge and influential structures that they

were. The use of the arch was of course not limited to bridges; it was common in all Roman architecture of the time.

The next major use for it in the new colonies, however, was in the construction of a water supply system—the system of Roman aqueducts. Rome already had an extensive system of aqueducts to supply the city with fresh water, and the Romans used the same system in other regions to civilize the “barbarian” tribes they had just subdued. Such a system was unheard of in other civilizations. The Romans were a very sanitary and hygienic people to whom fresh water was very important. The new colonies had never been concerned about such sanitation.

The Romans, however, were able to bring fresh water to the towns from long distances away by carrying it through tunnels and over valleys with their towering aqueducts. This water was then used for the public baths and toilets, besides the expected drinking water. The fact that this water was for the public, and not reserved for private use, pleased people in the new colonies even more, and made them even more accepting of Roman control. The actual aqueducts themselves, built by the Romans to carry the water, were perhaps even more influential.

Aqueducts like Pont du Gard at Nimes (Images 3 and 4), or Segovia in Spain (Image 5), the latter of which still carries water today, were monumental landmarks in the colonies where they were built and still are today. That the Romans would build such magnificent and monumental structures for the sole purpose of supplying water to its colonies was likely overwhelming to those benefiting from it. So the Romans supplied the towns with water, and

made travel between towns easier. But what about improving life within the town itself?

It is in the public buildings such as the bath, the forum and the amphitheater, which people used and experienced daily, where Rome was able to exert its greatest influence. The fact that these buildings were open to all and not reserved for an elitist group of society only increased their significance. It is arguable that the grandness of the baths has yet to be surpassed in any public building since. These were huge, lavishly ornamented structures where citizens would go not only to bathe, but also for sports, club-life and exhibitions of art.

The baths acted as a community centre, uniting citizens in the towns in which they were located. There was also the Roman invention of the forum, today's equivalent of which would be city hall, the law courts, a marketplace and a church all combined in a single structure. It was a novel idea that one could go to a single building at the centre of town and find everything they needed. People were also allowed open discussion here and were able to publicly voice their opinions and socialize with fellow citizens.

However, the forum's accessibility and openness should not hide the fact that it was used by the Romans as a control centre, where legislative duties for the town were carried out, giving Rome further influence over the citizens. The amphitheaters cannot be forgotten, as they were used by the Romans to please and placate people through the presentation of spectacles. Their architectural grandeur was also influential, however, as

they were usually four stories tall, could be covered by a canopy, and were the size of two theatres put together.

The Romans didn't build the public buildings just for their own good, they were used to show "who's boss" and keep people appeased. These buildings were superior to anything else that had been or was being built, which helped Rome keep the territory it had conquered. It is still difficult to comprehend that the Romans were able to create an empire as vast and as powerful as they did. Lasting several centuries and covering Europe, Asia Minor and Northern Africa and even overtaking their historical enemies the Greeks, their empire was of a magnitude that has been unsurpassed but often dreamed. When we look back at how they achieved such widespread influence there is no doubt that the principal factor in their achievements was due to their superior skills in architecture and engineering of the day. They brought fresh clean water to the towns and cities they conquered using the aqueducts which are still inspiring and influential monuments today. We can only imagine the significance they held 2000 years ago. As Frontinus said of the aqueducts, they are "...a signal testimony to the greatness of the Roman Empire." The water brought by the aqueducts was then distributed to the public and used in even more magnificent structures like the baths.

How could people not be influenced by such great inventions as these and the forum and the amphitheater, which were used by the Romans not only to please the people but also to help maintain power? The Romans built bridges and roads to link their new colonies and built them so they were a lasting and powerful presence. These bridges were not just a show of power in their

grandeur, but were also used by the Romans as quick access to the colonies they needed to keep under control. People of the world were not nearly as advanced in terms of the engineering ability of the Romans, and were persuaded to accept Roman rule.

They respected and admired the Roman's superior abilities and innovations and were therefore easier to conquer and less likely to revolt, allowing the Romans to expand their empire and maintain their influence for such a long time. The Romans no doubt improved their quality of life upon conquering them, and it is hard not to accept a new ruling class if such improvements are occurring. The greatness of the Roman Empire as it was is a direct result of the fact that they were such superior engineers and architects.