

**Ancient History Rome if You Want To, The Pantheon (EP2) - Drive Thru History**  
[https://www.youtube.com/watch?v=X5b\\_ifTU0ko](https://www.youtube.com/watch?v=X5b_ifTU0ko)  
**transcript: dontveter.com/ec/pantheon.pdf**

Ah, so many gods and so little time.

How do you worship and appease all of them, and where?

The answer to that question leads us up to the massive bronze doors of Rome's oldest building a temple whose design has been admired and studied for over eighteen hundred years the Pantheon.

I'm here at one of the most remarkable engineering marvels in all of ancient Rome, the Pantheon.

But before we go any further, let's get a little terminology straight.

In Athens, there's a famous temple on top of the Acropolis, the very symbol of Athens, called the Parthenon.

But the building we're looking at today, perhaps the most well-preserved ancient building in the world is called the Pantheon.

Though they sound similar in name, their meanings are not similar at all.

Parthenos is Greek for virgin hence the temple dedicated to the perpetual virgin goddess Athena, was called the Parthenon.

The Pantheon, on the other hand, was named by combining the Greek word for all or every, "pan" with the word for God "theos".

Therefore, the Pantheon was originally dedicated to every God.

The original builder of the pantheistic temple on this site was a guy named Marcus Agrippa who built the temple in honor of the great Julius Caesar and the patron gods of his family along with the gods Venus and Mars and the deified Julius Caesar himself.

That temple was destroyed by fire in 80 AD leaving, presumably, only the facade with the inscription of the original builder which says Marcus Agrippa, son of Lucius 3rd consul.

The final form of the temple we see today was the work of Emperor Hadrian, who had the Pantheon rebuilt in 120 AD making the pantheon the only building from the Greco-Roman world which is completely intact, and which has been in continuous use throughout its history.

Unlike so many ancient buildings in Rome, Athens or any other ancient city, the Pantheon is not a reconstruction and it's really not even a restoration, it's the real deal.

It's a Roman building and it stands today just as it did after it was completed over 1,800 years ago, although it looks pretty simple from the outside, it is among the most complex buildings that has survived to this day.

In simple terms, it is a structure built around the perfectly circular interior chamber approximately 143 feet in diameter, topped by a dome that is the same 143 feet high.

In other words, it is one giant room that could conceivably hold a perfect sphere or globe 143 feet across.

At the apex of the dome is a circular opening, or oculus that seems to defy the structural integrity but actually prevents the dome from collapsing.

The outside height of the circular walls is 104 feet and it's all set off by a covered entrance or a portico, consisting of 16 granite columns that support a gabled roof, all of which lead to massive bronze double doors, 25 feet high.

It's an aesthetic marvel that Michelangelo once said was of angelic and not human design.

It still elicits that kind of awe - even today.

It's an architectural and engineering masterpiece that's left experts scratching their head for centuries.

Now the first thing you'll notice walking into the pantheon, aside from how cool the temperature is even in the heat of summer is the set of massive bronze double doors.

Aside from their imposing 25 feet height. they weigh a whopping 20 tons each.

Yeah, that's right, one door is 20 tons.

That's about the weight of six H2 Hummers, which is, like triple what I can benchpress.

Okay, so it's pretty heavy.

Now this door along with the hole on top of the dome, that we'll look at later, are the Pantheon's only sources of light.

After walking through the doorway you find yourself in a massive circular chamber.

The most prominent features of this chamber are eight very large niches equally spaced around the interior.

The walls of these niches actually serve as buttresses supporting the dome above them.

They've also served throughout the centuries as privileged burial chambers for some of the great names of Italy.

Have you ever heard of the world-famous Italian artist, Raphael?

He's buried right here.

Also the archways above the niches are more than just decorative embellishments, they actually serve as relieving arches that distribute the load of the structure above them.

**1a:** a [recess](#) in a wall especially for a statue

**b:** something (such as a sheltered or private space) that resembles a recess in a wall

**2a:** a place, employment, status, or activity for which a person or thing is best fitted [finally found her niche](#)

**b:** a [habitat](#) supplying the factors necessary for the existence of an organism or species

**c:** the ecological role of an organism in a community especially in regard to food consumption

**d:** a specialized market

These huge marble walls of the Pantheon might actually be the most remarkable feature in here.

The architectural technique used in building the walls is best seen from the outside.

It's a technique that shows just how advanced the ancient Roman builders actually were.

A close inspection of the walls of the Pantheon, seen best here on the outside, show that as the wall climbs in height, it actually diminishes in thickness, employing what design engineers consider to be a modern design concept called gradation.

Gradation basically means using less building materials the higher you go to save time and money in the construction process.

Something else that the engineers noticed about the foundation of the Pantheon was that it was mixed with Roman concrete and mortar of lime mixed with concrete and it resulted in a chemical reaction that turned the entire mass as hard as rock and left modern experts wondering if the Romans could have anticipated such a sophisticated chemical effect.

The chemical affected my skin melting off my body and the July Italian heat was about to take place so I figured it was time to get back inside as soon as possible.

Action figure due out later this year with spring-loaded arm and your own little sweat towel.

And now, the dome, this dome, was the largest on earth until the Florence cathedral was built in the early 1400s.

We know what the dome is made of.

It's concrete, that's now almost 2,000 years old but no one knows exactly how it was made.

Some say it was poured in one piece on the ground and then lifted into position but modern engineers are still baffled as to how this would have been accomplished.

And what about that big hole in the middle?

This is the oculus, the eye of the Pantheon.

The oculus has been shown to be a structural factor in its own right.

Engineers tell us it's not just a hole, it's a compression ring that effectively distributes the compression forces that normally stress a dome at its apex, allowing the dome of the Pantheon to outlast dozens of other ancient domes.

This oculus is 27 feet across allowing enough sunlight to pour in to reflect off the marble surfaces to light up the whole interior here.

27 feet across, that's wider than you think.

You could actually fit five mini coopers through the oculus, if mini coopers could fly.

Never mind. The very fact that the stone still exists is one of its most amazing features.

Keep in mind this is made entirely of concrete without one ounce of reinforcing steel rods.

Nothing like this would ever be approved for building today especially with a diameter of 143 feet.

It's amazing, given how much the Pantheon had going against it structurally, that it has survived to become Rome's oldest, and for many its most cherished building.

Then, when you remember how often Rome has been invaded, it's even more remarkable that the Pantheon is still standing.

How did it survive Rome's decline in the fourth and fifth centuries and its years of religious upheaval?

When Rome fell, it was a Byzantine Emperor that saved the Pantheon from destruction.

He then donated it to the Pope and it was converted into a church.

Bell towers were added briefly during the baroque era but they looked so ridiculous that they were torn down in 1883.

In other words, this is a building that simply couldn't be improved upon and it stands today as a testimony to the engineering genius of the Romans