Fig. 1 External view of the *Pàntheon*, 27 BC then later rebuilt in 118-128.

The Monument's History

The *Pàntheon* was a temple devoted to all the gods (from the Greek, *pan*, meaning 'all' and *theos*, meaning 'deity') or else, perhaps, to the seven gods associated with the planets of our solar system.
On the site of the present building there once stood a temple begun by Marco Vipsanio Agrippa in 27 BC but severely damaged by fire in 80 AD. This allowed the construction, from the foundations upwards, of the *Pàntheon* which might have been designed by **Apollodorus of Damascus** on **commission from the emperor Hadrian**.
Erected between 118 and 128 AD the *Pàntheon* has survived down to today in excellent condition. This is undoubtedly because the building has been in constant use since its construction.
In 608-610 it was consecrated as a Christian church devoted to Santa Maria ad Martires.
For the most part the flooring, the columns, the lower order's marble facings, as well as the aedicule are intact. Features that have not survived include the dome's internal decoration – which was probably composed of gilt metal roses and stucco ornaments originally – and the facing of the upper order which was replaced in the mid 18th century by Pope Benedict XIV.

A Grandiose Design Project

The *Pàntheon* is considered **Ancient Rome's most representative building**. On the one hand its excellent state of preservation reinforces awareness of the amazing skill of Roman builders, who were able to erect the largest dome in antiquity. On the other hand it begins and exemplifies the monument typology of the **round temple**.
Its formally independent component parts – the cylindrical body, the dome, the parallelepiped fore part, the pronaos – work together to add qualitys of purity and harmony to the overall architecture. In its stylistic aspects the building shows the classical formation and pro-Hellenism of the emperor Hadrian who undoubtedly participated in its design.
In antiquity the most salient feature of the *Pàntheon* was especially tied to the visual strength of the **pronaos**, an homage to Greek temple architecture. The tympanum, architraves and columns of the pronaos are all elements derived from the Hellenistic tradition, even if they had become conventions within the Roman architectural vocabulary and were used according to the latter's consolidated principles. The pronaos arose majestically against the background of a long, narrow city square with portico sides, similar to the *Temple of Mars Ultor* ('avenger') located in the *Forum of Augustus*.
By contrast **the dome** seems to have a squat appearance when it is seen from the outside; this depended on the statics-based need to rest the cupola's great weight on the drum's sturdy side walls. However the top of the dome could not be seen when facing the building from the city square, which extended on an even lower ground level than the one we see today.

An Innovative Construction Technique

The *Pàntheon* demonstrates how deeply rooted was the idea, even as early as the second century AD, of an **architecture based on the static principle of the vault and the use of concrete**. The mix of cement was pushed to the limits of its resistance, guaranteeing its efficacy starting from the very solid foundations. Indeed during Hadrian's reign many preceding buildings were renovated since their structures were severely compromised. An example can be seen in the architecture by Rabirius built on the Palatine Hill during the time of the emperor Domition.
The cylindrical body of the *Pàntheon* was formed by a ring of

concrete about 6 metres high and 7,30 metres thick at the base. This was further reinforced by a concentric ring added externally.
An important technique experimented here consisted of **adjusting the quality of construction materials according to the weight** of various parts of the building. Used exclusively in the foundations, travertine was alternated with tufa, a much lighter material, to erect the lower drum. Tufa was also used for the upper drum as well as the two lowest rows of ceiling coffers. Brick and pumice (an extremely lightweight, porous stone) were used for the third row and thereafter the construction continued upwards with tufa and pumice.
The *Pàntheon*'s stability was ensured by the reduction of the body walls' specific weight as well as by the thinning of the walls from almost 6 meters at the dome's drum to just 1.5 metres at the oculus. Another interesting feature is how cavities have been inserted around the level of the drum. These allowed the concrete to dry in a uniform way but also, and especially, they work – with the help of the relieving arches – to lighten the walls' superfluous weight. This solution made it possible to create the initial entrance space as well as some of the large niches around the cylinder.

Formal Organisation

The constituent parts of the Pàntheon are: **a semispherical dome, an ample cylindrical body, and a pronaos**. The latter is made up of 16 columns of Egyptian granite rising almost 12 metres in height (arranged in two rows of eight columns each), topped by a triangular tympanum.
The dome covering the cylindrical space is made of *opus caementicium* lightened with pumice stone. The external diameter of 43,21 metres is equal to the height of the building's interior. Inside the huge indoor room seven niches are carved into the cylindrical perimeter and they are alternately quadrangular or semicircular in shape. In turn, the dome is also 'carved' by five orders of ceiling coffers which number 28 for each row; they diminish in a perspectival way towards the centre until they reach the oculus, the opening that measures 9 metres in diameter.

The Building's Symbolic Importance

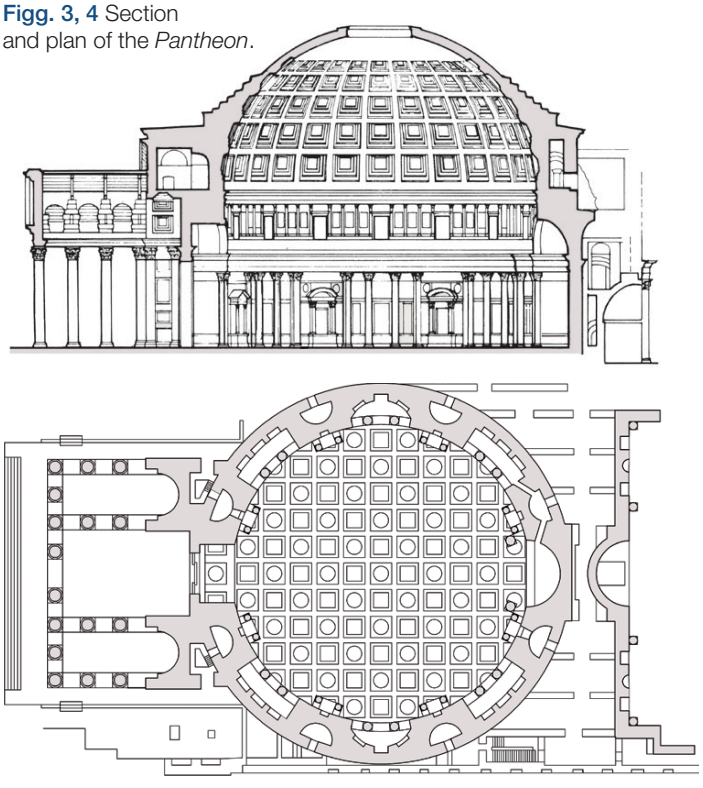
The apses, the dome and the visual vastness of the circular indoor room indicate the building's precise **ceremonial role**. We can consider *Domitian's Palace* on the Palatine, completed in 92 AD, as a forerunner because its vast room, carved out by deep niches, was where the emperor's court carried out its ceremonies.
In the *Pantheon* a new-found spatial importance is conferred to **cosmological symbolism** which is expressed, for instance, through the building's division into precise numeric relationships. The diameter of the cylinder equals the height of the building inside which, in turn, is ideally circumscribed by a sphere. The distance from the cornice of the lower order and the top of the dome is equal to the side of the square inscribed in the circle drawn by the dome's section.
Continuing to move around the room, it can be conceptually divided into eight sections marked by the entrance and by the seven niches.
Even Vitruvius himself, who had underscored the validity of design methods that used such precise rules of proportion, could not have imagined such a **rigorous study of multiples starting from a basic form**.

The Concept of Design under Hadrian

The *Pantheon* represents the definitive passage beyond a rigidly parallelepiped concept of temple design. The typology of the **round building, illuminated from above** via an opening in the domed roof, had already been experimented, albeit in more modest dimensions and ideas, in *Trajan's Baths* in Rome

Fig. 2 View of the *Pantheon* in Rome's current urban fabric.

Figg. 3, 4 Section and plan of the *Pantheon*.



and in the so-called *Temple of Mercury* in Baja.
The *Pantheon* expressed a new compositional scheme which above all calibrated the harmonious composition of geometric and formal elements. Hadrian's concept of architecture aims at finding the ideal form of the round temple while creating **a perfectly-balanced space**.
At the same time research into expression was directed at inspiring the viewer's amazement. For example, by walking through the narrow portico leading into the temple, the visitor could not help but be awed by the grandeur of the pronaos. The end of this walkway would have revealed a sudden view of the vast interior of the cylinder whose huge dimensions would have inspired feelings of disorientation.
Indoors the seven niches carved out of the wall are framed by architraved columns which create the illusion that they are bearing the dome's enormous weight. It seems clear that Hadrian's architecture did not just stop at a synthesis of the previous constructions of classical experience. Rather it aspired to highlight spatial principles while denying or concealing all evidence of the constructive logic. Thus in the *Pantheon* the bases' solidity is overwhelmed by the enormous visual strength of the dome.
Always playing close attention to perceptive elements, Hadrian period architecture understands the value of **light** as an element used to explore space. Here the stream of light that enters from the only opening of the oculus is modulated in a uniformly fading *chiaroscuro*. This confers the impression that the very form of the building is determined by a progressive expression of the degrees of light and shadow.

The Dome
The coffers are carved out of the dome's thickness with a regular line that decreases as it nears the top. They serve to lighten the structure's weight and, simultaneously, to accentuate the grandiosity and *chiaroscuro* of the indoor space.
On the outside the dome and the pronaos were originally faced with thin sheets of gilt bronze, dismantled in 663 AD by the Byzantine emperor Constant II. Some of this facing can still be seen around the oculus.

The Upper Order
In the strip under the dome there are alternating panels of marble and blind (or walled up) windows.
These are not datable to Roman times but rather to the mid-eighteenth century. The original decoration can be seen in the area bordered by the two smaller windows, recovered during a restoration in 1930.

The Lower Order
The lower order hosts deep niches, partially hidden by Corinthian columns alternating with extruding aedicolaea. A statue of a pagan god would have originally stood inside each one.

The Floor
Under Hadrian's rule the floor was realised in polychrome marble arranged in large geometric motifs (opus sectile), very similar to what we see today. The stones used include *pavonazzetto* and *giallo antico* marbles, porphyry, and granite.

Fig. 5 View of the *Pantheon* inside with the dome and oculus.

Read and Recognise

1 **For each sentence select the only WRONG answer.**

1. Considered Ancient Rome's most representative building, the *Pàntheon*

❍ **a.** was probably designed by Apollodorus of Damascus.

❍ **b.** was conceived as an early Christian church.

❍ **c.** is tied to the round temple typology.

2. Concerning the *Pantheon*'s structure its

❍ **a.** stability was guaranteed by the use of massive walls and a travertine roof.

❍ **b.** use of concrete and of the vault structure made the building particularly strong.

❍ **c.** construction materials varied according to the weight they had to support.

2 **Use the words below to complete the following sentences.**

• pumice • oculus • travertine • tufa • concrete • brick • pronaos • marble • travertine • niches • granite • opus sectile • coffers

1. The entrance to the *Pàntheon* is via the _____ which is characterised by sixteen columns of _____.

2. The pronaos leads into the temple's cylindrical main hall. Here the lowest order is faced with _____ and presents a series of deep _____. The floor is decorated with the _____ technique.

3. The cylindrical hall was erected on foundations made with _____ but needed to become lighter as it rose in height. To achieve this the ground floor, or lower drum, was built with an alternation of _____ and _____. The latter material was used by itself for the upper drum and the first two rows of ceiling _____. The next rows of coffers were lightened even more by combining _____ and the very lightweight _____ stone.

4. This constructive masterpiece culminates in the _____, or opening, at the very top.

Vocabulary

3 **The decoration of the *Pantheon* went through many stages and many tecniques and materials were adopted. Find the italian equivalent of the following ones and mark which that have been used in the *Pantheon*.**

❍ **1.** Porphyr _____

❍ **2.** Granite _____

❍ **3.** Marble _____

❍ **4.** Ceramic _____

❍ **5.** Gilt bronze _____

❍ **6.** Stucco _____

❍ **7.** Fresco _____

❍ **8.** Tarsia _____

4 **The Pantheon exemplifies a type of building introduced by Roman: the round temple. Can you recognise other building typology typical of the Roman period?**

____ **1.** Theatre

____ **2.** Amphiteatre

____ **3.** Bridge

____ **4.** Arch

____ **5.** Temple

____ **6.** House