

Renaissance Theories: Palladio's Harmonic Proportions

Origin



Portrait of Andrea Palladio

Andrea Palladio (1508-1580) was an Italian architect who flourished in the second half of the Renaissance. He is considered the most influential architect of the Italian Renaissance and the most copied architect in the world.

Some of Palladio's most famous architectural works include Villa La Rotonda in Vicenza and San Giorgio Maggiore in Venice. Villa La Rotonda is a perfect example of a Palladian villa with a symmetrical quartet plan.

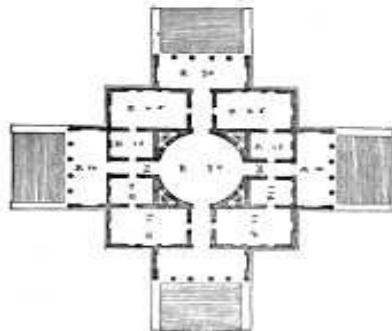


Thomas Jefferson's *Monticello* was based on Palladian motifs.



Palladio started off as a stonemason and was only introduced to the realm of architecture in his 30's by Count Trissino, an influential writer whom Palladio was appointed to work for at the time.

Trissino immediately assumed the role of Andrea's mentor and introduced him to the principles of classical architecture and the other disciplines of the Renaissance education.



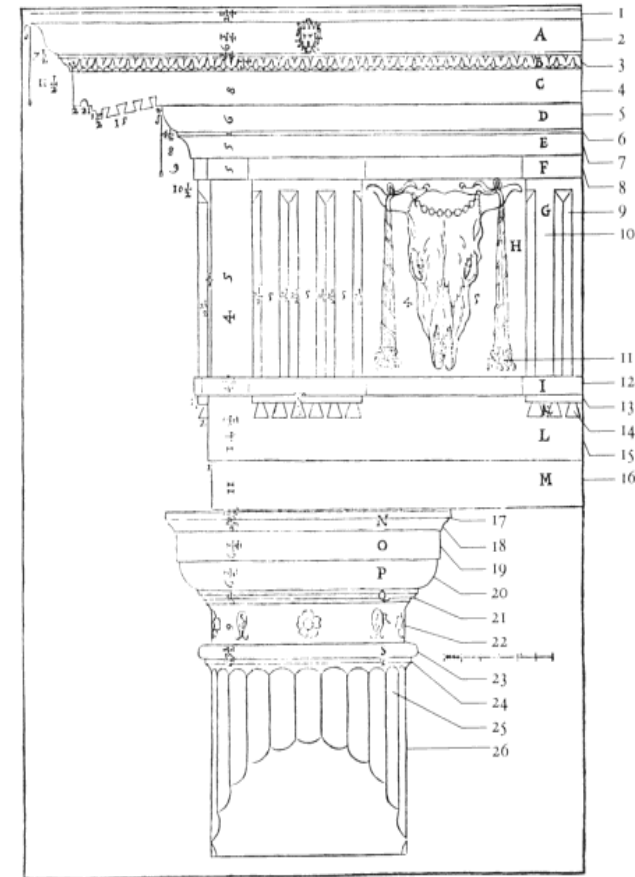
Section and plan of Villa La Rotonda illustrating clear and even room proportions.

Palladio's architectural education was enriched by his five trips to Rome. He was drawn to the romansque buildings which He recorded his observations in a treatise, *Quatro Libre Dell' Atchitettura* (The four books on architecture).

Quatro Libre Dell' Architettura contains in-depth descriptions as well as detailed illustrations of ancient buildings as well as those of his own designs making palladianism easily accessible to the public. His treatise set out to become the most widely published architectural treatise.



Palladio's treatise *Quatro Libre* / The four books on Architecture



An example of the attention to detail present in Palladio's illustrations in his treatise *Quatro Libre*

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Pythagoras studying the relation of musical harmony with the Pythagoras theory using a Monochord.

Historical Development

Pythagoras

Pythagoras discovered that musical intervals which are recognized as concordant are related by small integer ratios, an idea he may have acquired from Babylon. He concluded that the consonances of the Greek musical system could be expressed by the simple numerical progression 1,2,3,4 and their ratios 1:2, 1:3, 2:3, 3:4.

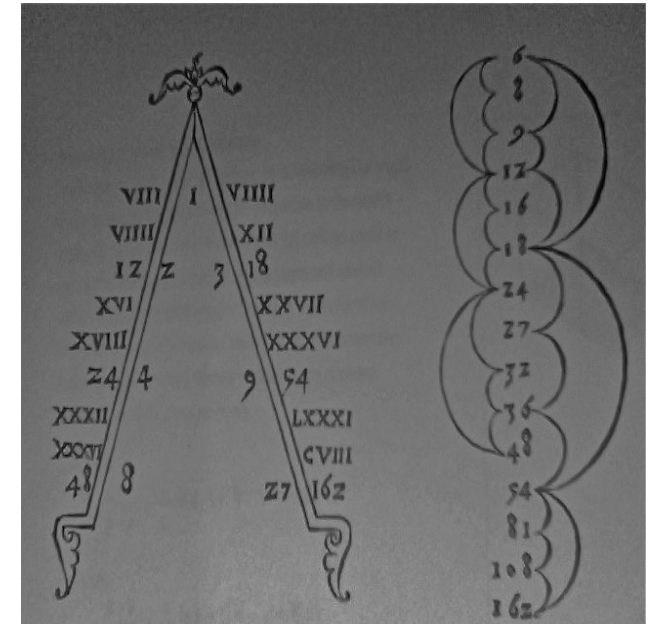
Plato

Plato claimed that the harmony of the world was contained in seven numbers (1,2,3,4,8,9,27) which were derived from musical consonances and could be broken down into two sets (1,2,4,8) and (1,3,9,27).

These numbers and ratios became the basis for the proportions used by Palladio.



Plato



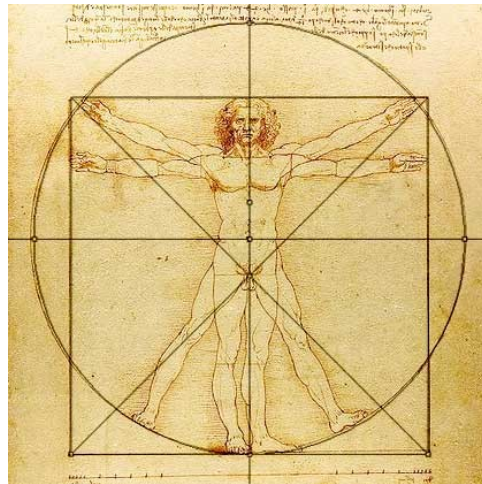
This diagram illustrates the series of interlocking ratios that results from applying Pythagoras' theory of means to the intervals of the Greek musical scale

Architects in the renaissance believing that their buildings had to belong to a higher order, returned to the Greek Mathematical system of proportions.

Renaissance architects believed that architecture was mathematics translated into spatial units.

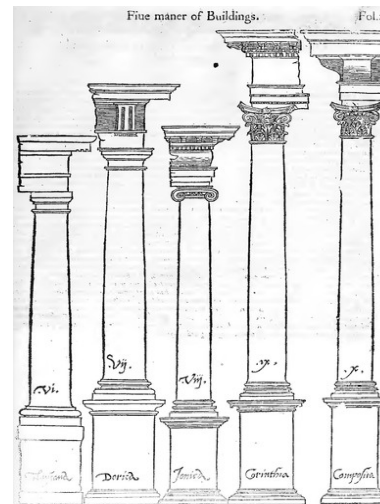
Applying Pythagoras' theory of means to the ratios of the intervals of the Greek musical scale, they developed an unbroken progression of ratios that formed the basis for the proportions of architecture.

Vitruvius



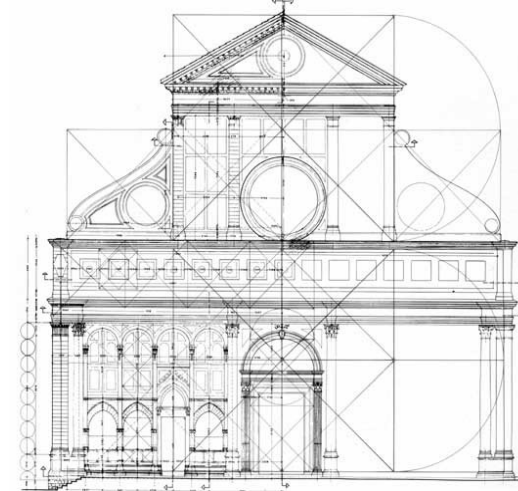
Vitruvius described the human figure as being the principal source of proportion among the Classical orders of architecture.

Serlio



Serlio's Canon of the five orders of Architecture

Alberti



Alberti's use of scale on the Santa Maria Novella was heavily influenced by the ideals of humanist architecture, proportion and classical architecture to create a sense of architectural harmony.

Palladio's study of Vitruvius, Sebastiano Serlio and Leon Battista Alberti led him to rediscover proportional ratios based on fractions with musical values. Palladio reinvented the architectural language of antiquity so effectively as to go beyond the ancient style and create one of his own. This became known as Palladianism.

Resources

Library Publications

- Palladio, Andrea. The Four Books on Architecture
Translated by Robert Tavernor and Richard Schofield. MIT Press, 1997
- Blomfield, Sir Reginald Theodore . Six Architects Books
for Libraries Press Freeport, New York, 1969 reprint
- Ching, Francis D.K. Architecture: Form, Space and Order
Wiley, third edition, 2007

Online Resources

- <http://go.owu.edu/~jwbiehl/architects.htm>
- <http://www.aboutscotland.com/harmony/prop6.html>
- <http://www.jstor.org/pss/989675>