4-28-2023

The Curia Julia: Its History, Materials, Use, and Preservation through the Centuries

Katharine Bogen

THE CURIA JULIA

ITS HISTORY, MATERIALS, USE, AND PRESERVATION THROUGH THE CENTURIES

A THESIS BY

KATHARINE M. BOGEN

SUBMITTED ON APRIL 19, 2023

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR DEPARTMENTAL HONORS IN CLASSICS

Liane Houghtalin	Angela Pitts	Joseph Romero

Abstract

The Curia Julia has one of the most fascinating histories out of all the buildings in Rome. Julius Caesar began its construction in 44 BCE in the Forum Romanum as the meeting place for the Roman Senate, and it continued to serve as such until the eventual fall of the Roman Empire. Today, the building stands almost completely intact, a feat that is not common for other structures of the same period. The reason why it has remained standing for so many centuries is due to its history of use: it was transformed into a church in the 7th century where its appearance was altered, and in the 1930s it was completely restored to its appearance from the era of the Roman Empire. These restorations completely removed all traces of the Medieval and Renaissance periods, and instead restored the Curia to what it would have looked like under the emperor Diocletian, who repaired the Curia after a fire. However, the story of the Curia moving into today's world offers some complications in preservation. Rising automobile emissions and air pollution threaten the materials the Curia is constructed from, so this thesis will examine these construction materials in order to determine the best ways to preserve the Curia Julia for future generations to come.

On my honor I have not given nor received unauthorized help on this work.

-Katharine Bogen

Table of Contents

Introduction

The Curia Julia has perhaps one of the most fascinating histories out of all the buildings in Rome. Today, the building stands almost completely intact, something which cannot be said for its neighboring structures of the same period: most of them have disappeared entirely or are left in ruins. This feat of preservation can be attributed to the building's usage through time, from its origins in the Roman Republic to its adaptations by the Church to its restorations in the 1930s. The Curia Julia started out as the meeting house in the Roman Forum for the Roman Senate commissioned by Julius Caesar in 44 BCE, and so it remained until the eventual fall of the Roman Empire. It went through a few changes and restorations under different emperors when needed, most notably under Diocletian who restored it in the 4th century after a fire. It was most likely left abandoned until the 7th century CE, when it was transformed into a church: the Roman Catholic church of St. Adriano del Foro. It was because of this transformation of use and structure that the Curia was able to survive intact to the present day. Eventually, the Curia was restored to its ancient form under Alfonso Bartoli in the 1930s (using archaeological techniques that would be called into question today), and this is the structure that is seen today in the Roman Forum. Additionally, the Curia's building materials allowed for this whole process to be able to take place: its main construction materials, brick and concrete, are extremely durable and can last for a long time. Under an order by the Italian government in 1930, the additions made by the church were removed, and the Curia was restored to its 4th century form by replacing much of the material on the surface

with new bricks. By studying the building's construction materials, one can learn about the issues surrounding its preservation and how best to preserve it. Overall, the Curia Julia's rich history can be seen through its appearance today. In its preservation as a church and subsequent restoration to its 4th century form, the Curia stands today as a rare, nearly intact building worthy of special attention for continued preservation. An understanding of its history and basic construction materials will allow recommendations for how best to preserve the Curia Julia for future generations to appreciate.

Review of Scholarship

Since the Curia Julia is a building that has survived over the course of multiple centuries, writings and documentation featuring it have also spanned that length of time. In 13 CE, Augustus briefly wrote on the construction of the Curia Julia. Augustus, in his *Res Gestae Divi Augusti*, wrote that he built the Curia Julia using his own funds, which gives information as to the building's origin.[1] Augustus paints himself as a benevolent and selfless leader in his texts, and his construction of the new Senate house would reinforce that.

A coin of Augustus (fig. 2) from around 29-27 BCE is a showcase of how the Curia looked back in antiquity. Even though this is an artifact and not a written document, this coin still acts as a document for the history of the Curia Julia because it shows what the Curia looked like when it was first built. The coin is a silver denarius with a portrait of Octavian on the obverse, and an image of the Curia Julia on the reverse. The reverse shows only the front façade, but it includes a number of clues as to its details. There is a colonnaded porch around the door, as well as

decorations on the gable and a statue representing Victory on a globe in the center. There are two other statues on either side of the Victory statue, both of which are warriors holding staffs.[2]

Moving away from the Classical period, Richard Krautheimer writes in his book *Rome: Profile of a City, 312-1308* (1980) about the Christianization of Rome during the latter part of the Roman Empire and the fall of the Empire in 476 CE.[3] The Curia's fate to be turned into a church is a part of this time in Roman history. As for the Curia itself, Alfonso Bartoli gives a history of the Curia in his book *Curia Senatus: lo Scavo e il Restauro* (1963). He discusses the restorations under Diocletian along with the changes made by the church in later years and how it was discovered that the Curia lay beneath the façade of the church of St. Adriano. Bartoli also documents his own work on the building in the 1930s, which rounds out the history of the Curia.[4] His restorations took place when he was ordered by the Italian Council of Antiquities to remove all modifications done by the church and restore the Curia to its ancient form. Because of his complete summary and history of the Curia and its works, Bartoli's book is perhaps the most complete publication on the Curia Julia thus far.

Leading into the modern period, besides Bartoli, the authors Morselli and Tortorici talk about the excavation history of the Curia Julia, along with excavations of the surrounding Forum Iulium and Forum Transitorium. In their book *Curia, Forum Iulium, Forum Transitorium* (1980), Chiara Morselli and Edoardo Tortorici discuss the history of archaeological excavations at and around the Curia Julia.[5] They also put together the final pieces of the Curia's story throughout history, which

includes the building's restoration to its original form under Diocletian. Morselli and Tortorici also include diagrams and photographs from the excavations and restorations of Bartoli's time. The diagrams show the front and back elevations of the Curia and note what parts of the façade were original material, and what parts were not. Photographs of the Curia after Bartoli's renovations compared with a photograph of the structure before Bartoli's time clearly show the changes that were made. The variations in the shade of the bricks indicate where pieces of the façade were altered, and overall can help point to the changes that the Curia went through over time.

Samuel Platner and Thomas Ashby's book *A Topographical Dictionary of Ancient Rome* (1926) is one of the most comprehensive resources on the topic of Rome's historic built environment. Their book has information on most of Rome's famous historic structures, including the Curia Julia. Their pages on the Curia Julia include a brief history of the building along with referencing other authors who also wrote about the Curia before its restoration.[6] By including these references, Platner and Ashby's book acts as an invaluable reference for studying ancient Rome, and their book helps to place the Curia Julia in context with the city of Rome as a whole. Looking at this work as a whole emphasizes how rare it is that there exists a building today that was built so long ago yet is still standing. However, while this book is comprehensive in terms of the variety of historic structures it discusses, its section on the Curia Julia does not include the later restorations of the 1930s due to when the book was published.

Lawrence Richardson continued Platner and Ashby's work in his book *A New Topographical Dictionary of Ancient Rome* (1992).[7] Richardson includes more up-to-

date information on Rome's historic monuments and buildings, including the Curia Julia—in it, he talks about the deconsecration of the church of St. Adriano and the building's restoration to its 4th century form. Following this, Eva Margareta Steinby builds further on these two works in her work *Lexicon Topographicum Urbis Romae* (1993).[8] This work is a multi-volume work on the topography of Rome, and like the previous two dictionaries, includes the history of the Curia Julia.

As for the materials, Marion Blake writes about Roman building materials in her book *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus* (1952). Building on the work of her mentor, Dr. Esther van Deman, Blake gives an overview of the types of materials the Romans used and their applications on various structures and archaeological sites around Rome.[9] This includes the makeup of the construction materials used for the Curia Julia. Blake's book was the first to offer a complete reference for many Roman building materials.

The discussion of Roman construction materials is continued by Frank Sear in his book *Roman Architecture* (second edition, 2020).[10] Similar to Blake, the author discusses the variety of different Roman construction materials, along with their methods and applications. Specifically about the materials of the Curia, this book talks about the methods of producing brick and concrete within a more modern understanding of that production. Sear discusses the chemical processes that go into the formation of Roman mortar, which was a lime-based mortar. Examining these processes and materials can point to their remarkable properties that allow for preservation over a long period of time.

On the other hand, the discussion of materials can also point to complications with issues of preservation today, notably the increase in pollution and close proximity of automobile exhausts. This leads into the discussion of the preservation of materials today: by studying the issues surrounding the preservation of brick and concrete, one can apply those issues to the Curia Julia, and subsequently their solutions. Many studies and news articles on the subject have been published in recent years, including a newscast by PBS on November 8, 2015, that reported on monuments in many European cities, including Rome, that are being damaged by pollution and acid rain. The article of the newscast talks about how many of Rome's famous statues such as the statue of Emperor Trajan and Bernini's Four Rivers are turning black as a result of the pollution in the city.[11] This newscast is one of many that have reported on issues surrounding air pollution and its effects on historic monuments. The issues discussed in this article can point to solutions that can help with the deterioration of Rome's historic structures, including the Curia Julia.

History of the Curia Julia

The Curia Julia is located in the north part of the Forum Romanum east of the Lapis Niger. Its back faces the Forum Iulium, and its right side is along the Forum Transitorium.[12] This placement at the heart of the ancient city represented the importance of this building to the workings of Rome, along with the goals of the man who built it.

The Curia Julia was not the first Senate house to be built in Rome. It was preceded by two others: the Curia Cornelia and the Curia Hostilia. Dio Cassius recounts the history of the Curiae in his multi-volume work on Roman history: he

says that the Curia Julia was built on the same location as the previous Curia Cornelia, which was destroyed as a result of no one wanting the Curia to bear the name of Sulla.[13] In 80 BCE Sulla had repaired the previous Curia Hostilia, which dated back to the Roman monarchy and was located on the same area of land that the Curia Julia would eventually be built on. It was twenty-eight years later when it was burned down, only to be repaired by Sulla's son Faustus and be renamed in their honor. Since Julius Caesar did not want the Curia to bear the name Cornelius, he obtained the commission to rebuild it under his own name.[14]

Commissioned by Julius Caesar in 44 BCE, the Curia Julia was only constructed after Caesar's death in the same year by Augustus, who finished the work in 29 BCE. Under Augustus, the Curia received an addition in the form of a chalcidicum, or colonnaded porch. A reconstructive drawing by Giovanni Ioppolo (fig. 1) gives an interpretation as to what the Curia's façade would have looked like in the time of Augustus. The building's basic shape and structure were identical to what is seen today in the Roman Forum: a one-story, massed plan building with one front door, three windows, and a front gabled roof with a pediment. However, in antiquity, the Curia was faced with ashlar masonry instead of brick, and, most notably, an addition of the colonnaded porch. The porch would have spanned the length of the front façade and beyond, transforming the area into a longer walkway. The porch's tile roof would have extended to underneath the three windows, which were located horizontally in the middle of the wall. These windows were rectangular with an arched top. Additionally, its image in the early Principate can be seen on a coin of Augustus (fig. 2). Although the coin only shows the façade of the Curia, its

appearance affirms Ioppolo's drawing in that it is consistent with his interpretation of the structure. However, the coin also depicts the Curia as having a crowned gable along with a statue of Victory on top of the roof.

Later in his life, Augustus recounts his various undertakings and the construction projects that he commissioned using his own funds for the good of the people of Rome, according to his *Res Gestae*. The Curia Julia was one of these such buildings. Augustus says:

> "…bella ubi civilia extinxeram per consensum universorum potitus rerum omnium, rem publicam ex mea potestate in senatus populique Romani arbitritum transtuli. Quo pro merito meo senatus consulto Augustus appellatus sum et…clupeusque aureus in curia Iulia positus…"

> "…when I had extinguished the flames of civil war, after receiving by universal consent the absolute control of affairs, I transferred the republic from my own control to the will of the senate and the Roman people. For this service on my part I was given the title Augustus by decree of the senate, and… a golden shield was placed in the Curia Julia…"[15]

Augustus' recount of the events shows that many of the Curia's decorations were placed in the building to honor him and his deeds. Not only was there the golden shield that testified that Augustus received that recognition of valor, but there was also the statue of Victory placed atop the Curia's roof. These bronze statues depicted the goddess Victory standing on a globe, holding a crown in her right hand and a palm leaf in her left. Eventually, the Curia Julia was dedicated on August 28, 29 BCE in Victory's name.[16] This close association of Augustus and Victory reinforced the

image that the eventual emperor wanted himself to have: someone of great honor who would lead the Roman people to victory and prosperity. This was also reinforced by the fact that he paid for the construction of the Curia himself, further cementing himself as a man who provided not only for the common people, but for Rome's governing bodies as well.

After Augustus, the Curia suffered some damage from the Fire of Nero, which happened in 64 CE. Although the building did not sustain enough damage to completely destroy it, it would have likely needed many repairs. The emperor Domitian conducted these repairs in 94 CE,[17] but the specifics of what he did is unknown. Bartoli says that it is reasonable to assume that Domitian removed the chalcidicum, because after Augustus, there is no further mention of it in ancient texts.[18]

However, the most important and relevant restoration of the Curia Julia took place under Diocletian in the 4th century CE. After the fire under Carinus in 283 CE, Diocletian completely changed the material that constructed the Curia: he replaced the Augustan-era ashlar masonry with bricks. The walls were then covered in a protective layer of marble. The cornice and pediment were decorated with bas reliefs depicting Tritons playing music on horns.[19] The Curia Julia's appearance under the restoration of Diocletian would become the goal of the restoration in the 1930s.[20]

After the fall of the Western Roman Empire in 476 CE, many of Rome's buildings fell abandoned, and by the 6th century, most of Imperial Rome's structures were in shambles. That did not mean the same for the spirit of the city, as people still visited the Forum and traveled the roads. The buildings were damaged, but still

intact.[21] This era in Roman history brought about great changes for the entirety of Rome as a city: at this point, Christianization of the city was widespread, and the Church was emerging as the leading power of Rome. As a part of this, the Church was taking charge as the main leader in preservation of Rome's old buildings. So, with the responsibility of maintenance falling to the Church, many of the old public buildings were converted into places of worship. In fact, most of the new churches were founded around the old heart of Imperial Rome, the Imperial Fora. This was because the area was not densely populated due to all the decrepit administrative buildings that, since the Roman Empire was gone, were not occupied anymore.[22]

This fate was what happened to the Curia Julia: it fell abandoned after the fall of the Empire. It remained in this state until Pope Honorius I transformed the building into the church of St. Adriano del Foro between 625 and 638 CE. This act allowed the building to be maintained and preserved over time. As a part of this, the building and surrounding area underwent many changes and received additions over the centuries, in the form of architectural additions, topographic changes, and religious artworks.

Between the 9th and 12th centuries, the Imperial Fora, and by extension, the Curia Julia, underwent a major topographic change. The ground levels and plans of the buildings were raised up 3-4 meters in order to accommodate the vast amounts of rubble that were a result of collapsed monuments. As for the Curia Julia, at one point during the medieval period, a colonnaded portico was added onto the façade, but removed at a later date. Additionally, the interior of the hall was lined with Corinthian order columns. Then, during the time of Pope Pius IV (1559-1565), the architect Pirro Ligorio planned another construction, some parts of which were carried out. His

works involved adding the buttresses and sloped roof, and his plans included a front Classical-style portico that was never implemented. Ligorio also inserted a window above the front door, which, according to Bartoli when he started his restorations, offered a threshold which helped him in restoring the windows of the Curia.[23]

One feature that was added to the church before the medieval period was the addition of multiple paintings of religious scenes. These paintings can be dated back to the 10th century due to the typology of the inscriptions that accompanied them (fig. 3). The paintings that were discovered during the modern restorations depicted scenes featuring saints, Madonna and Child, and written inscriptions. They were located in niches that were themselves located along the walls of the church near the front door.[24] Although these paintings are not in good condition, the remains of some of them can still be seen today in the interior.

A print by Alò Giovannoli, dated 1615-1619 (fig. 4), shows what the church looked like before the Renaissance period. The same general shape of the Curia remains; however, the façade is a mismatch of different materials. A combination of ashlar masonry and bricks make up the wall, along with ghosting from the remains of the medieval portico. Remnants of the relieving arches from the old windows are visible, with new windows placed over the arched brickwork. At this point, the front door still contained the original bronze doors of the Curia, and a Classical-style pediment supported by Corinthian columns was placed around the door. The print also shows that a bell tower was placed on the east side of the roof at some point.

Eventually, the medieval church of St. Adriano was transformed into a full Baroque-style church. Under Pope Sixtus V (1585-1590), the church was given to the

Spanish Order of Mercy, the members of which were called the Mercedari. It was under their remodeling in 1654 that the church was transformed into the Baroque style, with the three naves inside divided by new columns. They brought the floor of the church up 6 meters above that of the old Curia and vaulted the ceilings. Additionally, the front doors of the church (i.e., the original bronze doors of the Curia) were removed and relocated in 1660 to the church of St. John Lateran. It was at this point where the character of the ancient building was gone, to the point where it was not obvious that there was once a Roman building occupying the site.[25]

The modern era brought about many new changes to the Curia Julia. Rodolfo Lanciani in 1883 was the first to postulate that the church of St. Adriano was once the seat of the Roman Senate. He based his research on some unpublished Renaissance drawings of the site by Antonio da Sangallo.[26] These findings ended the discussions of previous scholars on the location of the ancient Curia, which were speculations going back at least a few decades. For example, in 1858, Franz von Reber wrote his thesis on where the old Senate house could be located, titling it *Die Lage der Curia Hostilia und der Curia Julia.* In his introduction, he writes:

> "Therefore, although in the whole of Roman topography, there was no object of greater importance…it would be preferable to content oneself with the general designation of the Curia as lying at the Forum, rather than to…add a new investigation to the hefty hypothesis. It is not merely a question of determining the location of this single building, but the construction of the largest part of the Roman Forum is based on the decision of this question…"[27]

It is clear that there was a desire among scholars of the 19th century to locate the Curia Julia, and before Lanciani, there was no definitive location known for it, only

speculation. After Lanciani published his works, Giacomo Boni undertook an excavation a few years later in 1900.[28] Boni's work revealed the original façade of the Curia Julia, and the building remained, in a way, part Curia and part church until the 1930s. A photograph (fig. 5) shows the façade after Boni's excavations: remnants of the ancient Curia, along with the modifications made by the church, are visible. Relieving arches from the ancient Curia's fenestration are seen above and on either side of the door, along with the church's additions of a bell tower on the east side of the roof and later structural additions on the building's east elevation. A photograph from 1909 (fig. 6) shows what the structure looked like just before the church's deconsecration and eventual restoration to its ancient form.

Its modern-day restoration story begins on July 10, 1922, when the Italian Government purchased the building from the Spanish Academy in Rome.[29] Isolation and excavation of the Curia Julia began in 1930 and ended in 1938 under the direction of Alfonso Bartoli. He was instructed to restore the imperial floor levels and surrounding topographic levels, along with completely isolating the original Curia: this meant removing all modifications done by the church over the past hundreds of centuries. This radical method of restoration meant that Bartoli had to move massive amounts of the surrounding land, not to mention centuries' worth of the church's history. As a result of these undertakings, a vast quantity of information relating to stratigraphy and historic topographic levels were lost.[30]

Before restorations began, Bartoli presented the Italian Superior Council of Antiquities three different iterations of the project. One, a simple excavation below the floor of the church without any major demolitions; two, a restoration of the

ancient Curia without any additional restorations; or three, a complete demolition and subsequent reconstruction of the ancient Curia. The Council ordered him to proceed with the final option, and so the result of that project is what is seen today.[31]

The reason why these excavations would be called into question today is that there are now codes of ethics that all archaeologists must abide by when undergoing research or excavations. One example of this is the Society for American Archaeology's established code of ethics for excavations. By studying their code, one can argue that Bartoli's excavations are in violation of some of their principles. Their first principle states:

> "The archaeological record…is irreplaceable. It is the responsibility of all archaeologists to work for the long-term conservation and protection of the archaeological record by practicing and promoting stewardship of the archaeological record. Stewards are both caretakers and advocated for the archaeological record for the benefit of all people; as they investigate and interpret the record, they should use the specialized knowledge they gain to promote public understanding and support for its long-term preservation."[32]

Because of the radical nature of the Curia's excavations, a great deal of information about stratigraphy was lost. One of the methods that Bartoli used was the mass removal of large quantities of land in order to restore the Curia to its ancient appearance. Additionally, as a result of all of the Church's modifications being removed, over ten centuries' worth of history was completely disregarded. This action did not consider the views of people who might have studied the history of the Church in Rome, for example, and instead prioritized the story of the Roman Empire. Prioritizing one era of history while disregarding another does not abide by what the

SAA states as "…[advocating] for the archaeological record for the benefit of all people." It instead shows a conscious bias toward one period of history over another.

Whether or not Bartoli made the right decision to restore the Curia to its ancient form is something that can be debated based on one's perspective, but it cannot be denied that some of his methods would not be called ethical today. Despite this, it is important to remember that in his time, there were different standards for work and to completely judge his actions based on today's standards would be unfair. This comparison to today's ethics is a way to show how standards of practice have changed over time, and that such a radical restoration of a building might not have been approved had it been proposed in today's time. Overall, the excavations and restorations performed by Bartoli are now a permanent part of the Curia's history, and so it is important to study them in order to understand the building's history and how best to preserve the building based on what is standing today.

During the restorations, much of the Curia's front and back elevations were completely replaced. Since the goal was to restore the structure to its Diocletian-era appearance, that meant restoring the entire Curia with bricks. In a sketch by Giovanni Ioppolo (fig. 7), the material makeup of the front elevation of the Curia is differentiated according to which areas are made of original material and which ones are made of modern material. The sketch represents the original material as thin horizontal lines and modern material as both crosshatched lines and thicker horizontal lines. While much of the original material is extant, the entire tympanum and much of the material above and around the windows and door are modern. Additionally, the

entire roof is reconstructed, since the old roof was changed as a modification by the church.

What is most fascinating about the appearance of the Curia Julia today is the physical reminders of its various appearances throughout history. Its story can be read simply by looking at it because of the obvious differences in color between the ancient bricks and modern ones, along with the brick arches that are inlaid in the walls. A comparison between a photograph of the Curia's façade directly after Boni's excavations (fig. 5) and a photograph of the Curia today after Bartoli's restoration (fig. 8) clearly shows this history.

After Boni's isolation of the Curia's façade, it appeared similar to the façade of the medieval period before it was transformed into a Baroque style church. The photograph (fig. 5) and Giovannoli's print (fig. 4) show striking similarities in the Curia's appearance. After Boni, the Curia's façade was a mixture of different materials from different time periods. On the tympanum and below the cornice were rectangular pieces of ashlar masonry, while the rest of the façade was made of varying shades of bricks. The relieving arches that once made up the windows of the ancient Curia were visible, but the five modern windows cut through them at different places. The four smaller modern windows were rectangular, stacked vertically on the façade, and were located on either side of the door. The larger modern window was located above the door, in a semicircle shape not dissimilar to the top of a Palladian window that would be seen in later architectural styles. Additionally, there were two other smaller doors that were located on either side of the main door, both of which were parallel to the two modern windows above them. Overall, the most prominent

thing about the results of Boni's isolation is the visibility of the different materials that made up the Curia's façade and how the varying shades of bricks showcased the changes that the building went through.

Bartoli's restorations aimed to return the Curia to its 4th century form, which meant removing all additions made by the church and replacing the walls' materials with brick. That meant that the once mismatched façade was restored with bricks all across it, and a photograph after the restorations were complete (fig. 8) shows that. The relieving arches once again are a part of the windows and are no longer covered up by the addition of the modern windows. In fact, almost all traces of the church-era windows and doors are gone, with the exception of some ghosting where they once occupied space. Bartoli used bricks of the same color as the ancient ones whenever possible.[33]

Materials of the Curia Julia

When the Curia was first constructed under Augustus in 29 BCE, the materials differed from those of the restorations under Diocletian. During the time of Augustus, the building's foundations were made of concrete, its walls were faced with ashlar masonry laid in concrete, and its roof was made of tile. This was how it remained until the fire of Carinus, after which Diocletian restored the building by replacing its wall cladding materials with bricks. Even though these bricks were changed and covered up at various points by the Catholic Church when they converted the building into a church, many of them were still intact until Bartoli uncovered them in 1930.

The way that the Romans constructed brick buildings differed from how brick buildings are constructed today, whether that be on buildings with a brick veneer today, or a house from the 18th century whose structural walls are made of brick. The Romans used concrete, called *opus caementicium*, as a core and inset the bricks into the concrete. This created a wall that was essentially structurally concrete, but with a brick veneer. This is different from brick-veneered buildings today in that today's buildings would already be constructed of a different structural material, such as wood or metal framing, and the bricks would only be applied to the outside as decoration.

There were three main types of masonry facings*: opus incertum*, *opus reticulatum,* and *opus testaceum*. Each of these were classified based on the types and shapes of materials that were used in them. *Opus incertum*, which was most prominent starting in the second century BCE, consisted of small stones inlaid irregularly into the concrete. This type of facing could be compared in appearance to uncoursed rubble masonry used today. *Opus reticulatum,* which was most prominent in the late 1st century BCE to the 1st century CE, was neater than *opus reticulatum*: this facing was made of small pyramidal-shaped stones laid diagonally. Finally, *opus testaceum*, which was most prominent in the 1st century CE and onwards, was faced with brick or tile. Each of these works became more detailed as building technology evolved in Rome, with the transitional periods featuring what appears to be mixtures of two works.[34]

Roman concrete itself has puzzled scholars for centuries based on its mysterious properties and great durability. It consists of three basic ingredients: lime,

sand or pozzolana, and aggregate.[35] It was assumed that the key ingredient for making this concrete so much more durable than any concrete produced today was the addition of pozzolana, or volcanic ash, into the mixture: Ulrich states that "The key to the advanced development was the discovery that volcanic ash (pozzolana), when substituted for inert sand and mixed with lime and water, produced a much stronger mortar that could harden under water."[36]

However, a recent study published by MIT revealed that pozzolana was not the key factor in the durability of Roman concrete.[37] Instead, the secret of Roman concrete's durability was its lime clasts. Before this study, it was assumed that the Romans' lime process was the same as what is used today to make concrete and mortar. This process is as follows: stones containing calcium carbonate ($CaCO_3$) are burned at high temperatures around 1,000 degrees Celsius[38] to release carbon dioxide (CO_2) and turn the stones into calcium oxide (CaO), which is commonly called quicklime. This material is more highly reactive than slaked lime, which was what was assumed to have been used by the Romans to create their concrete. Lime is slaked when CaO is mixed with water to create calcium hydroxide ($Ca(OH)_2$), which is a paste-like material that allows for cohesion between it and the other materials.[39]

It turns out that the Romans did not use slaked lime in their concrete recipe, instead they used quicklime. The researchers at MIT came to this conclusion by reexamining the lime clasts that were present in Roman concrete, which were originally assumed to be imperfections in the mixture. They found that they were created due to extreme temperatures, which was consistent with the exothermic reaction produced by using quicklime instead of slaked lime in the concrete mixture.

The resulting concrete made with this process is very durable and even self-repairing.[40]

The Curia Julia was constructed from this ultra-durable concrete. Some of its concrete foundations were uncovered and documented by Dr. Van Deman in the early 1900s but were unfortunately destroyed during Bartoli's restorations.[41] Blake says that the concrete of the foundations was similar to that of the nearby Rostra Julia, which she describes:

> "The mortar, which is ashy gray, is composed of lime mixed with an inferior kind of pozzolana, in which very little red appears. It is extremely friable, crumbling easily into ashlike dust. The aggregate consists mainly of pieces, differing greatly in size, of cappellaccio, light grayish-yellow tufa, and peperino, with only a small amount of reddish-brown tufa and even less of travertine, marble, pottery, or brick."[42]

Blake's description of the concrete shows how varied the appearance of ancient concrete could be. Even though the basic ingredients were the same, there could be a lot of variety in the aggregate and sand or pozzolanic material.

The walls of the Curia were also composed of concrete at their core, which meant that the bricks that were added during Diocletian's restoration were faced on the concrete. This meant that the Curia at this time would have been constructed similarly to *opus testaceum*: this is the final product that Bartoli aimed to reconstruct during his restorations.

Similar to how historic bricks were made in the modern era, such as the 19th century, Roman bricks were handmade. The clay was mixed with some kind of tempering material, such as sand or pozzolana, in order to help protect against

cracking or shrinking. The clay was then molded into brick shape via wooden frames: these bricks were much thinner than modern bricks, with thicknesses between 2.5-4.9 cm. After being put into the mold, the bricks would then be left out in the sun to dry for 3-4 weeks. Once they were dried, the bricks were then fired in a kiln at around temperature of 800 degrees Celsius. Some Roman bricks even had stamps on them that showed where they were made.[43] The end result was a brick that could be laid into a core of *opus caementicium* to create a brick-faced structure.

Preserving the Curia Julia

The Curia Julia's remarkable state of preservation today is a result of when the Church transformed it into a church during the 7th century. Since they decided to modify and change the building instead of completely tearing it down when they acquired it, the material of antiquity remained, albeit hidden from view. This allowed for the complete restoration of the Curia's appearance from antiquity to occur using what remained as a guide. During the restorations, Bartoli aimed to keep the character of the ancient Curia intact however possible. That meant using bricks that were the same color as the ancient ones.

As mentioned, Roman concrete was, and still is, extremely durable due to its special utilization of lime and pozzolanic material. However, no material is perfect, and that includes Roman concrete. Problems with modern concrete include cracking from multiple freeze-thaw cycles and deformity of the material due to internal compressive and tensile forces. Cracking occurs when water seeps into the minute cracks inherent to concrete and, over the course of the seasons when the water freezes (expands) and eventually melts (contracts), the concrete breaks apart.[44] This is due to

the concrete being put under repetitive tensile force, which it is not as resistant to compared to compressive force. Eventually, as this process compounds over the course of multiple years and even centuries, with more cracks appearing resulting in more water being allowed in, the material will begin to crack, warp, and even fall apart completely.

One form of preservation that has been tried on concrete structures is iron rebar. This may alleviate the tensile forces in the short term, but in the long term, the addition of iron into concrete does more harm than good. As iron oxidizes in the presence of moisture, the rust itself expands and creates more tensile forces upon the concrete.[45]

Additionally, one of the greatest threats concrete faces, just as any other material does, is the elements. While Roman concrete has survived over the course of thousands of years, that does not mean it remains in the same condition as it did all those centuries ago. Exposure to precipitation and wind will degrade structures over time, the process of which is slow moving but still inevitable. Despite Roman concrete's self-repairing properties, there is no way to definitively say how to preserve it well for another thousand years.

Bricks face similar deterioration issues as concrete. Water seeping into the pores of bricks can cause cracking and, over the course of multiple freeze-thaw cycles over time, can lead to more severe damage. Additionally, if that water contains salt or even if salt makes its way into the cracks and pores of bricks, it can lead to spalling.[46]

One of the newest problems that ancient structures are facing today is the large amounts of air pollution in major cities. A newscast from PBS in 2015 reported that many monuments in Rome are facing deterioration issues due to rising levels of smog from vehicle emissions.[47] This threat extends to the Curia Julia as well, especially since it is located at the heart of Rome, bordering on the busy Via dei Fori Imperiali. Since the Curia's exterior materials are bricks, that means they are what is most at risk from pollution.

When bricks come into contact with carbon dioxide (CO_2), one of the main compounds in vehicle emissions and occasionally acid rain, the surface can begin to deteriorate.[48] Even though this process can take a long time to begin to be noticeable, the constant traffic of motor vehicles in today's world can only accelerate that process. This danger is especially pertinent to the Curia Julia because its outside surface is made of bricks with no protective cover. In fact, the Curia did once have a cover for its brick walls in the form of a plastered imitation of marble[49] that was likely removed during Boni's excavations.

However, the Curia is not doomed by any means: the city of Rome has enacted various restrictions on the operation of motor vehicles in recent years. A news article published in February 2023 reported that Rome recently enacted bans on cars in the city's center on Sundays. The so-called "ecological Sundays" began in February 2023 and came to an end on March 26, 2023, but many people were calling for the bans to be enacted for every Sunday. The goal of this was to reduce emissions from motor vehicles and protect Rome's historic monuments from deterioration.[50]

Perhaps the most monumental action taken to protect Rome's historic built environment was the announcement that all diesel vehicles would be banned in the city's historic center starting in 2024. A news article published by Electrek in 2018 announced that this ban would be taking place in order to help protect Rome's history and combat climate change.[51] This ban seems on track to be enacted and abided by since Rome has already been doing some limitations on vehicles, as mentioned above.

These restrictions on motor vehicles can only do good for the historic structures of Rome, including the Curia Julia. However, specifically pertaining to the Curia, other measures could be taken in order to ensure its continued survival. Regular inspections of the building's walls to check for any signs of cracking bricks would allow for any issues to be spotted right away and dealt with accordingly. Proper documentation of any issues and how they were treated can allow for future conservators to fully understand what methods were used. This can allow them to repeat, modify, or even reverse the processes in whatever way would be best for the materials.

Preservation of historic structures is important because it allows people today to learn from them and even experience history firsthand. The city of Rome has a rich history that spans thousands of years, and by preserving features of the built environment, its history will not be forgotten easily. Additionally, by preserving structures so important to history, it ensures that future generations of people will have the ability to learn from them and connect to them just as people today do. The act of preserving is as much a service to people in the future as it is important for remembering those who lived in the past.

Conclusion

The story of the Curia Julia is one of intent, adaptation, and preservation. Its first use was as the seat of the Roman Senate during the early Roman Principate, and when Augustus built and dedicated it in 29 BCE, he boasted about it because he viewed himself as someone who would put the needs of the people before his own. The Curia was used in this way as the administrative heart of Imperial Rome during the next few hundred years, and it underwent maintenance and changes over the course of its history. The emperor Diocletian changed the material of the building to brick, and this material is what remains today. After the fall of the Western Roman Empire, the Church acquired the building and transformed it into a church of St. Adriano del Foro. This act was what allowed the Curia to be preserved, even if it was used in a manner different from what it was originally built to serve as.

Eventually, after many modifications in the medieval and Renaissance periods, the church was once again acquired by the Italian government, and restorations took place. The goal of these works was to restore the original appearance of the building as the Curia Julia, which is how it appears today. The Curia's main construction materials, brick and concrete, allowed for it to be effectively restored due to their durable properties. Roman concrete in particular has incredible durability that puzzled scholars for decades before modern studies came out about the secret of its durability. However, there are still some issues that could bring harm to the building, including damage from pollution and deterioration. The city of Rome today has enacted restrictions and vehicle bans that will help to combat this and ensure that the Curia Julia can be enjoyed for years to come.

In combination with reduction of automobile traffic around the Curia Julia, the addition of a regular survey of the building's materials would help ensure its preservation. This would allow conservators to become aware of any possible issues that could arise in the brick facing, for example, and as a result be able to act accordingly to protect it. The fact that the Curia has remained standing and part of human history for over two thousand years warrants special attention to its continued preservation. Understanding its history of construction and preservation as well as the nature of its core building materials will allow it to be preserved for another two thousand years and more.

Endnotes

[1] Augustus, *Res Gestae Divi Augusti*, trans. Frederick W. Shipley, Loeb Classical Library (Loeb Classical Library, 1924), section 19.
[2] C.H.V. Sutherland, *The Roman Imperial Coinage* vol I (London: Spink & Son, 1984), p. 60 no. 266.
[3] Richard Krautheimer, *Rome: Profile of a City, 312-1308*, (Princeton: Princeton University Press, 1980.
[4] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963).
[5] Chiara Morselli and Edoardo Tortorici, *Curia, Forum Iulium, Forum Transitorium*, (Rome: Archaeological Soprintendenza of Rome, 1989).
[6] Samuel Platner and Thomas Ashby, A Topographical Dictionary of Ancient Rome, (Oxford: Oxford University Press, 1926), 143-145.
[7] Lawrence Richardson, *A New Topographical Dictionary of Ancient Rome*, (Baltimore: Johns Hopkins University Press, 1992), 103.
[8] Eva Margareta Steinby, *Lexicon Topographicum Urbis Romae (*Rome: Edizioni Quasar, 1993), 332.
[9] Marion Elizabeth Blake, *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus*, (Washington, DC: Carnegie Institution, 1947).
[10] Frank Sear, *Roman Architecture*, (London: Routledge, 2002).
[11] PBS NewsHour, "Monuments at Risk: European City Sites Are Being Damaged by Pollution, Rain," https://www.pbs.org/newshour/show/air-pollution-ruining-europes-ancient-monuments.
[12] Roldofo Lanciani, *The Ruins and Excavations of Ancient Rome* (Boston and New York: Houghton, Mifflin, and co., 1897), 262.
[13] Dio Cassius, *Roman History*, trans. Earnest Cary and Herbert B. Foster, Loeb Classical Library, 1914.
[14] Roldofo Lanciani, *The Ruins and Excavations of Ancient* Rome, (Boston and New York: Houghton, Mifflin, and co., 1897), 262-265.
[15] Augustus, *Res Gestae Divi Augusti*, trans. Frederick W. Shipley, Loeb Classical Library, (Loeb Classical Library, 1924), section 34.
[16] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963) 6.
[17] Samuel Platner and Thomas Ashby, A Topographical Dictionary of Ancient Rome (Oxford: Oxford University Press, 1926), 144.
[18] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963) 7.
[19] Roldofo Lanciani, *The Ruins and Excavations of Ancient Rome*, (Boston and New York: Houghton, Mifflin, and co., 1897), 265.
[20] Alfonso Bartoli, Curia Senatus: lo Scavo e il Restauro, (Rome: Institute of Roman Studies, 1963) 8.
[21] Richard Krautheimer, *Rome: Profile of a City, 312-1308*, (Princeton: Princeton University Press, 1980), 67.
[22] Richard Krautheimer, *Rome: Profile of a City, 312-1308*, (Princeton: Princeton University Press, 1980), 75.
[23] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963), 11.
[24] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963), 74.
[25] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963), 12-13.
[26] Chiara Morselli and Edoardo Tortorici, *Curia, Forum Iulium, Forum Transitorium*, (Rome: Archaeological Soprintendenza of Rome, 1989), 13-28.
[27] Franz Reber, *Die Lage der Curia Hostilia und der Curia Julia*, (Munich 1858), 1.
[28] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963), 13.
[29] *The New York Times*. "Roman Senate House Sold." July 11, 1922.
[30] Chiara Morselli and Edoardo Tortorici, *Curia, Forum Iulium, Forum Transitorium*, (Rome: Archaeological Soprintendenza of Rome, 1989), 18.

[31] Chiara Morselli and Edoardo Tortorici, *Curia, Forum Iulium, Forum Transitorium*, (Rome: Archaeological Soprintendenza of Rome, 1989), 24.
[32] Society for American Archaeology, "Ethics in Professional Archaeology," Accessed April 19, 2023. https://www.saa.org/career-practice/ethics-in-professional-archaeology.
[33] Alfonso Bartoli, *Curia Senatus: lo Scavo e il Restauro*, (Rome: Institute of Roman Studies, 1963), 23.
[34] Frank Sear, *Roman Architecture*, (London: Routledge, 2002), 76-78.
[35] Roger Ulrich, *A Companion to Roman Architecture*, (Oxford: John Wiley & Sons, Incorporated, 2013), 172.
[36] Roger Ulrich, *A Companion to Roman Architecture*, (Oxford: John Wiley & Sons, Incorporated, 2013), 172.
[37] David Chandler, "Riddle Solved: Why Was Roman Concrete So Durable?" *Tech Xplore - Technology and Engineering News.* January 6, 2023. https://techxplore.com/news/2023-01-riddle-roman-concrete-durable.html?utm_source=nwletter&utm_medium=email&utm_campaign=daily-nwletter.
[38] Roger Ulrich, *A Companion to Roman Architecture*, (Oxford: John Wiley & Sons, Incorporated, 2013), 173.
[39] David Chandler, "Riddle Solved: Why Was Roman Concrete So Durable?" *Tech Xplore - Technology and Engineering News*, January 6, 2023. https://techxplore.com/news/2023-01-riddle-roman-concrete-durable.html?utm_source=nwletter&utm_medium=email&utm_campaign=daily-nwletter.
[40] David Chandler, "Riddle Solved: Why Was Roman Concrete So Durable?" *Tech Xplore - Technology and Engineering News*, January 6, 2023. https://techxplore.com/news/2023-01-riddle-roman-concrete-durable.html?utm_source=nwletter&utm_medium=email&utm_campaign=daily-nwletter.
[41] Marion Elizabeth Blake, *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus*, (Washington, DC: Carnegie Institution, 1947), 153.
[42] Marion Elizabeth Blake, *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus*, (Washington, DC: Carnegie Institution, 1947), 332.
[43] Roger Ulrich, *A Companion to Roman Architecture*, (Oxford: John Wiley & Sons, Incorporated, 2013), 170-171.
[44] David Taylor, "Comparison of the Longevities of Roman and Modern Construction Projects," (thesis, Oregon State University, 2012), 4.
[45] David Taylor, "Comparison of the Longevities of Roman and Modern Construction Projects," (thesis, Oregon State University, 2012), 4.
[46] John Warren, *Conservation of Brick*, (Oxford: Butterworth and Heineman, 1999), 118.
[47] PBS NewsHour, "Monuments at Risk: European City Sites Are Being Damaged by Pollution, Rain," https://www.pbs.org/newshour/show/air-pollution-ruining-europes-ancient-monuments.
[48] John Warren, *Conservation of Brick*, (Oxford: Butterworth and Heineman, 1999), 151.
[49] Roldofo Lanciani, *The Ruins and Excavations of Ancient Rome*, (Boston and New York: Houghton, Mifflin, and co., 1897), 265.
[50] Hermione Kitson, "Sunday car ban to combat smog-'Good for Romans and tourists'," CGTN.
[51] Jameson Dow, "Rome Latest City to Announce Car Ban, Will Ban Diesel Cars from Historical Center Starting 2024," Electrek. https://electrek.co/2018/02/28/rome-bans-diesel-cars-2024/.

Bibliography

Augustus. *Res Gestae Divi Augusti*. Translated by Frederick W. Shipley. Loeb Classical Library, 1924.

Dio Cassius. *Roman History*. Translated by Earnest Cary and Herbert B. Foster. Loeb Classical Library, 1914.

Bartoli, Alfonso. *Curia Senatus: lo Scavo e il Restauro*. Rome: Institute of Roman Studies, 1963.

Blake, Marion E. *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus*. Washington, DC: Carnegie Institution, 1947.

Chandler, David. "Riddle Solved: Why Was Roman Concrete So Durable?" *Tech Xplore - Technology and Engineering News.* Last modified January 6, 2023. https://techxplore.com/news/2023-01-riddle-roman-concrete-durable.html?utm_source=nwletter&utm_medium=email&utm_campaign=daily-nwletter.

Dow, Jameson. "Rome Latest City to Announce Car Ban, Will Ban Diesel Cars from Historical Center Starting 2024." Electrek. Last modified February 28, 2018. https://electrek.co/2018/02/28/rome-bans-diesel-cars-2024/.

Kitson, Hermione. "Sunday car ban to combat smog-'Good for Romans and tourists'." CGTN. Last modified February 19, 2023. https://newseu.cgtn.com/news/2023-02-19/Sunday-car-ban-to-combat-smog-Good-for-Romans-and-tourists--1hx20VdxDRC/index.html#:~:text=Cars%20have%20been%20banned%20in,adhere%20to%20European%20emission%20standards.

Krautheimer, Richard. *Rome, Profile of a City, 312-1308*. Princeton: Princeton University Press, 1980.

Lanciani, Rodolfo. *The Ruins and Excavations of Ancient Rome*. Boston: Houghton, Mifflin, and co., 1897.

"Monuments at Risk: European City Sites Are Being Damaged by Pollution, Rain." PBS NewsHour. Last modified November 8, 2015. https://www.pbs.org/newshour/show/air-pollution-ruining-europes-ancient-monuments.

Morselli, Chiara, and Edoardo Tortorici. *Curia, Forum Iulium, Forum Transitorium*. Rome: Archaeological Soprintendenza of Rome, 1989.

Platner, Samuel, and Thomas Ashby. *A Topographical Dictionary of Ancient Rome.* Oxford: Oxford University Press, 1926.

The New York Times. "Roman Senate House Sold." July 11, 1922.

Reber, Franz. *Die Lage der Curia Hostilia und der Curia Julia*. Munich 1858.

Richardson, Lawrence. *A New Topographical Dictionary of Ancient Rome.* Baltimore: Johns Hopkins University Press, 1992.

Sear, Frank. *Roman Architecture*, 2nd ed. London: Routledge, 2002. doi.org/10.4324/9781351006187.

Society for American Archaeology. “Ethics in Professional Archaeology.” Accessed April 19, 2023. https://www.saa.org/career-practice/ethics-in-professional-archaeology

Steinby, Eva Margareta. *Lexicon Topographicum Urbis Romae* vol I. Rome: Edizioni Quasar, 1993.

Sutherland, C.H.V. *The Roman Imperial Coinage* vol I. London: Spink & Son, 1987.

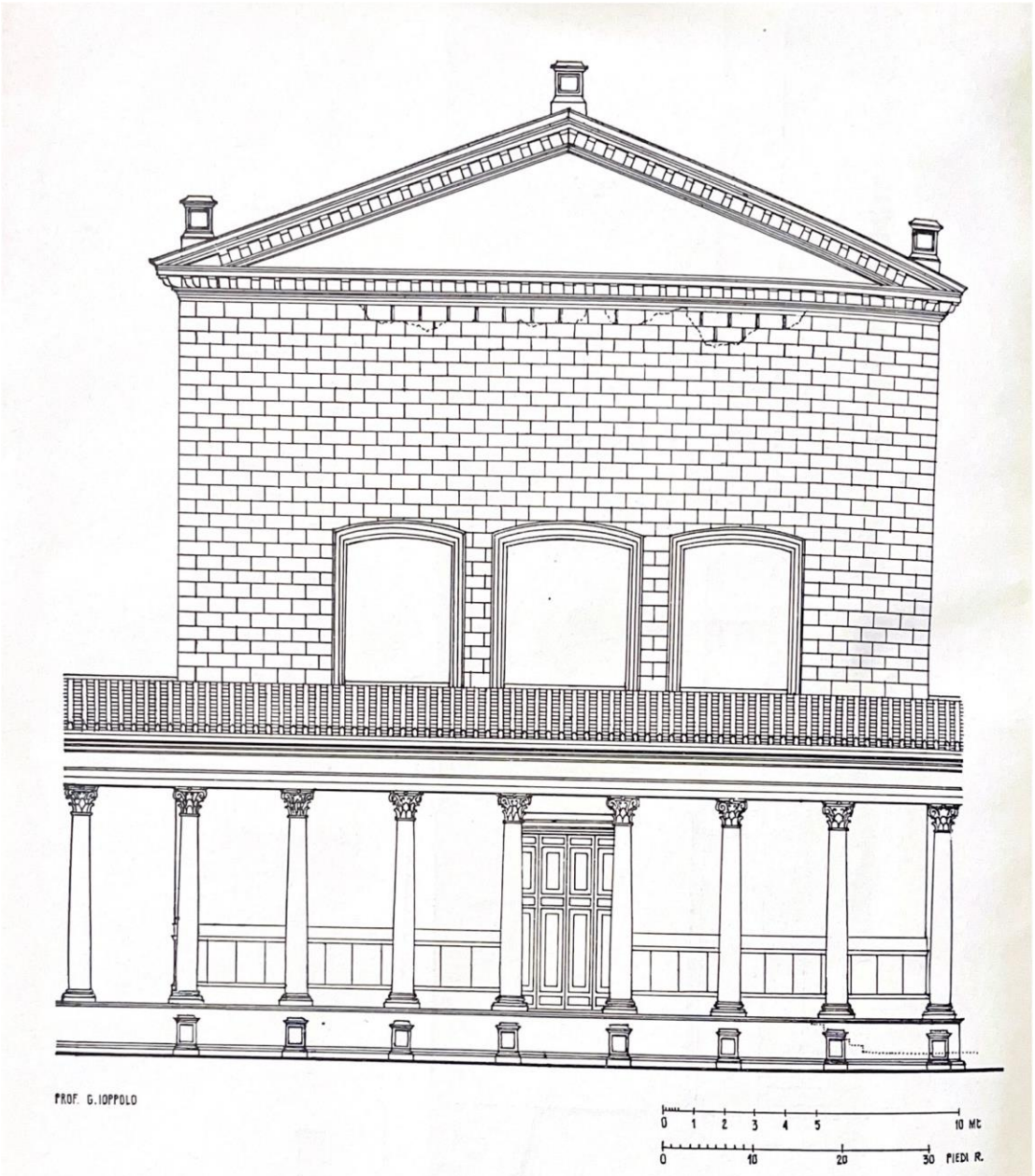
Taylor, David D. "Comparison of the Longevities of Roman and Modern Construction Projects." thesis, Oregon State University, 2012.

Ulrich, Roger B., and Caroline K. Quenemoen. *A Companion to Roman Architecture*. Oxford: John Wiley & Sons, Incorporated, 2013.

Warren, John. *Conservation of Brick*. Oxford: Butterworth and Heineman, 1999.

List of Illustrations

Figure 1:



Curia: ricostruzione ipotetica della facciata anteriore con il portico (G. Ioppolo).

Figure 2:

Figure 3:

Fig. 1 - *S. Adriano: interno. Pitture entro la nicchia centrale della parete sinistra.*

Figure 4:

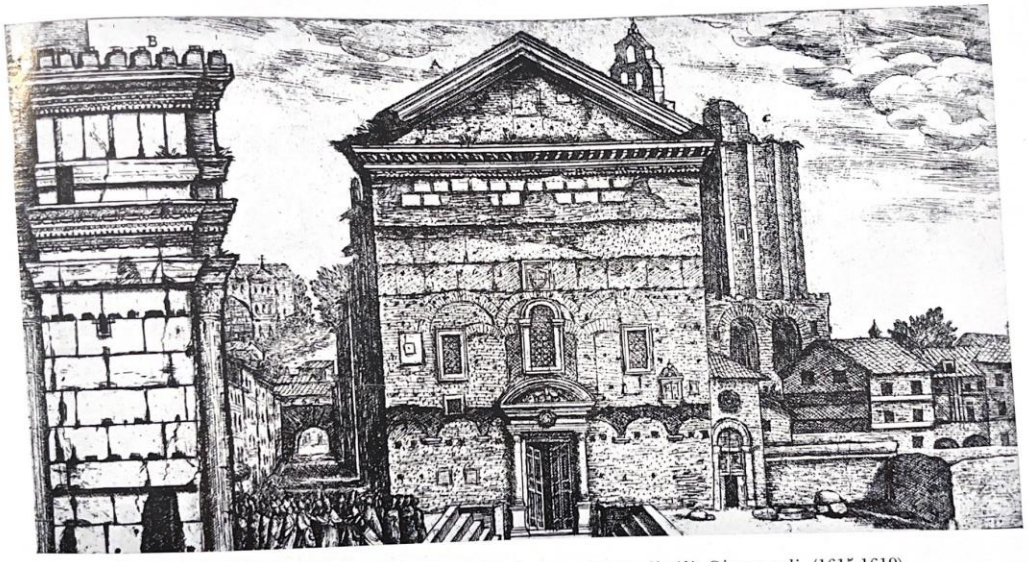


Fig. 2 - *S. Adriano e la zona circostante in una stampa di Alò Giovannoli* (1615-1619).

Figure 5:

Figure 6:

Figure 7:

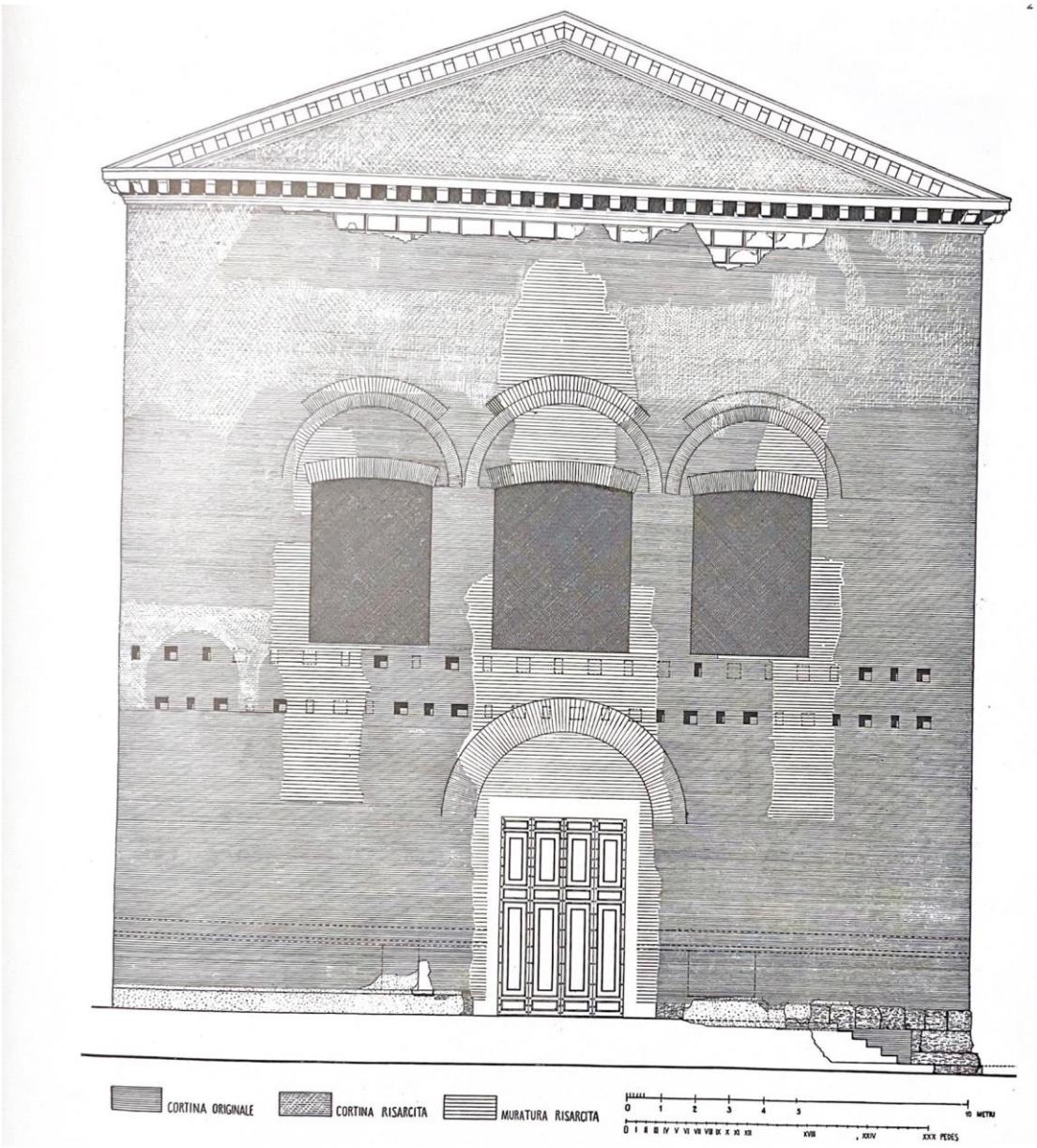

CORTINA ORIGINALE
CORTINA RISARCITA
MURATURA RISARCITA
0 1 2 3 4 5
10 METRI
0 I II III IV V VI VII VIII IX X XI XII
XVIII
XXIV
XXX PEDES

Figure 8:

Autobiography

I, Katharine Bogen, am a Historic Preservation and Classical Archaeology double-major at the University of Mary Washington, and I am going to be graduating in May 2023. I am a member of Eta Sigma Phi and was inducted in 2020. I was also the recipient of the Gen. Albert J. Bowley scholarship for the 2021-2022 school year, along with the Annie Fleming Smith scholarship for the 2022-2023 school year. During my final year at UMW, I was happy to be elected Co-President of the UMW Classics Club, along with Treasurer and Ghostwalk Costume Chair of the UMW Historic Preservation Club. My time at UMW has fostered academic interest in many different subjects, such as architectural history, archaeology, museum studies, music, and many more.