

AN INTERDISCIPLINARY SPATIAL HUMANITIES APPROACH TO STUDY THE TRANSFORMATIONS OF THE SOUTH FAÇADE OF THE SALA DEI CINQUECENTO OF PALAZZO VECCHIO IN FLORENCE.

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ABSTRACT:

Digital and spatial techniques, such as reality-based surveying and 3D modelling, have long been used in archaeology. However, in recent years the use of these techniques has gained importance also in the history of architecture, a discipline in which these data can help to interpret traditionally used, but often incomplete, written sources (Tucci et al. 2021; Fiorini et al. 2023).

This paper is about an aspect of the eighteenth-century renovations of Palazzo Vecchio. It focuses attention on a small terrace that runs alongside the exterior facade of the Sala dei Cinquecento and to which there is no entrance. The question this paper seeks to answer is: why during eighteenth-century renovations it was decided to exclude the existing entrance to the terrace from the accessible spaces? Using geomatics techniques, it has been possible to identify the location of the enclosed spaces in relation to other parts of the building (Tucci, 2017).

In accordance with the criteria of Spatial Humanities, the present research is characterized by an interdisciplinary approach based on the analysis and interpretation of data obtained from archival sources (Archivio Storico Comunale di Firenze, Fototeca Comunale di Firenze, Archivio Centrale di Stato di Roma, Archivio di Stato di Firenze, Gabinetto fotografico degli Uffizi, Catalogo Generale Beni Culturali, Biblioteca Nazionale), the consultation of relevant published iconographic sources in libraries, and the interpretation of 3D data and architectural elements discovered during the onsite survey of the area between the inner and outer southern façades of the Sala dei Cinquecento.

The first part of this essay focus on the southern façade of the Sala dei Cinquecento and aims to demonstrate to what extent the Carlo Falconieri's modification altered the general appearance of the façade. The second part, aims to clarify the architectural phases or aspects of the southern façade of the Sala dei Cinquecento before Falconieri's works.

1. INTRODUCTION

1.1 Palazzo Vecchio and the Sala dei Cinquecento

At the end of nineteenth-century Palazzo Vecchio underwent to profound transformation. During the period that Florence was capital of new Kingdom of Italy (1865-1871) the Chamber of Deputies was placed in Sala dei Cinquecento with a project of Carlo Falconieri (1806-1891) who was charged with the task of adjusting the entire building to the new functions. Falconieri made profound structural modifications, creating new opening (doors and windows), new passages, new rooms and new stairs. Furthermore, he had parts of Vasari's stairs removed as well as painted vault dating to the sixteenth-century (Cecchi and Allegri, 1980).

The Sala dei Cinquecento was also altered during this period of transformations. Both, northern and southern façade, were modified by Falconieri's interventions. In the northern façade Falconieri destroyed a preexisting outside corridor to create larger windows to improve the illumination of the Chamber of Deputy (Cecchi and Pacetti, 2008). On the southern façade Falconieri, to create a larger entrance in the Quarter of Eleonora and more comfortable walkway connecting the two sides of the Sala dei Cinquecento, sacrificed access to the small exterior terrace (Figure 1).



Figure 1. The terrace that runs alongside the exterior facade of the Sala dei Cinquecento, to which there is no entrance.

The beginning of the construction of the Sala dei Cinquecento goes back to 1495. It was designed by Simone del Pollaiuolo called Il Cronaca (1457-1508) during the leadership of Girolamo Savonarola (1452-1498) and was heavily modified by Giorgio Vasari (1511-1574) between 1563 to 1571, during the governance of Cosimo I de Medici (1519-1574) duke of Florence. (Cecchi and Allegri, 1980; Francini, 2006). The Sala dei Cinquecento has surface of more than 1200 square meters and an unusual trapezoid shape. The longitudinal walls (East and West) are parallel to each other in contrast with the short walls (North and South) that are strongly angled, affected by preexisting building's structures reused by Cronaca during the construction of the first hall (the North façade is facing via dei Gondi and South one is facing via della Ninna). Between 1563 to 1565 Giorgio Vasari demolished the original decoration made by Il Cronaca and keeping the original shape of the outside walls, raised the roof over 7 meters, add a new wood decorated ceiling and gigantic frescos in the longitudinal walls (1565 to 1571).

1.2 The Southern façade

The structural differences between the North and South walls of the Sala dei Cinquecento are easily identifiable by observation (and confirmed by the official floor plans of the building kindly made available to us by the Fabbrica di Palazzo Vecchio.) The norther façade is made of a single structure wall (oblique to the longitudinal walls) that increase in thickness from the North-West corner to the North-East one. Instead, the southern façade is a combination of two walls; one interior (perpendicular to the long walls) and one exterior (following the inclination of the street). In between those two walls there is a triangular shape volume the run from the level of the Sala dei Cinquecento until the floor of the walkway that connects the Quarter of Elementi and the Quarter of Eleonora (currently part of Palazzo Vecchio's museum). Part of this volume is occupied by an empty central niche (historically reshaped by Emilio De Fabris (1807-1883) to include the sculptured portraits of *Savonarola* in 1882 and in 1921 by Alfredo Lensi (1871-195) to accommodate the sculpture of Michelangelo's *Victory*), an elevator (South-West corner) and a few small rooms accessible from the floor of the Sala dei Cinquecento (Figure 2).

The walkway at the top floor has a triangular shape and the dimensions in length range from 4.20 meters (South-East corner) to 1,75 meters (South-West corner), were it ends in a S-shaped passage of 0.90 meters wide, constructed within the wall (just before entering in Quarter of Eleonora). This walkway offers a wonderful and unique view of the Sala dei Cinquecento.



Figure 2. Interior southern façade.

2. THE SOUTHERN FAÇADE

2.1 Chamber of Deputy in the Sala dei Cinquecento

During the time Florence was capitol of the new Kingdom of Italy (1865-1871), Palazzo Vecchio was one of the buildings selected to accommodate offices and ministries. On the first floor were placed: the Chamber of Deputy (Sala dei Cinquecento); the deputies waiting room (Sala dei Duecento); offices for the deputies (Cosimo's apartment) and the Minister of Foreign Affairs (Leone X's rooms and rooms around the third courtyard). At the second floor were placed: the library (Quarter of Eleonora, rooms of Gigli, Udienza and Geographic maps) and offices (Quarter of the Elementi) both sections at use by the Chamber of Deputy.

Carlo Falconieri (1806-1891) inspector of the Genio Civile (government office with the task of controlling, monitoring and supervising public works) was one of the architects appointed to adapt public Florentine state buildings to the new functions imposed by the transfer of the capitol of Italy to Florence. Falconieri worked on the transformation of the Uffizi (Senato), part of Santa Maria Novella's convent (Corte di Cassazione), San Pancrazio's convent (Tribunale) and in Palazzo Vecchio.

Floor plans made by Carlo Falconieri in 1866, march 12, kept at the Archivio Centrale di Stato in Roma¹, show the preexisting states of the building before his modifications and the new structural solution he proposed marked in red (a survey of Palazzo Vecchio before the installation of the Chamber of Deputy (Quinterio, Tesi, Borsi, Salotti, 1991).

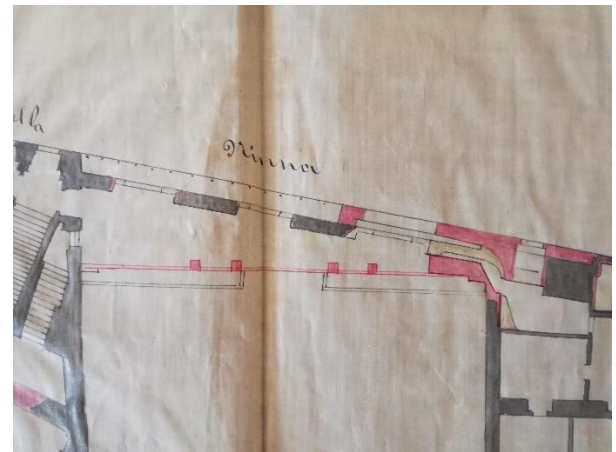


Figure 3. Detail of the southern façade of the Sala dei Cinquecento. Floor plan of the second floor of Palazzo Vecchio. Carlo Falconieri, march 12, 1866 (ACS)

Looking at the floor plans one notices a striking ease with which Falconieri made fundamental structural modifications throughout the entire building, eliminating walls, opening doors and windows, adding staircases that runs for several floors. In addition to producing floor plans, Falconieri wrote several reports of projects he was involved as architect. An article published in 1865 (Falconieri, 1865) and a summary project report completed in 1866, at the end of his works (Falconieri, 1866; Ferretti, 2011a).

¹ ACS, LL.PP., TCTF, b, fsc3.

Regarding the southern façade, Falconieri wrote that until 1865 it was left incomplete and irregular: "while on one side the wall touched the extreme corner, on the other side it widened for six meters". Falconieri also notice that it was possible (but not easy) to go from Quarter of the Elementi coming from Quarter of Eleonora passing by the Sala dei Cinquecento using a "filthy walkway that offered a spectacle in the Salon". This "small walkway" (*piccolo terrazzino*), "did not allowed that one could pass from the Quarter of Eleonora to the Quarter of the Elementi that connects with the opposite side of the building" (Falconieri, 1866).

The solution found by Falconieri was to enlarge the thickness of the wall on the outside, enough to create the odd entrance that today allows people to enter in Quarter of Eleonora. This solution was possible, "taking advantage of an external resemblance of the outer wall on via della Ninna (the terrace at the mezzanine floor that today doesn't have an entrance) could have been obtained a sufficient thickness to construct the passage". With this solution it was possible, according to Falconieri, also to "regularize the wall at the bottom" and complete the façade left unfinished mirroring the composition and decoration of the North one: "we reported the existing entablature of the opposite site with composite columns placed at right angled with the longitudinal sides of the room and the space of the intercolumniation are covered by glasses" (Falconieri, 1866).

An original drawing (here published for the first time. Gabinetto Fotografico degli Uffizi) made by the painter and set designer Agostino Lessi (1821-1899), between 1865 to 1871, thus before De Fabris intervention (Figure 4), shows the South interior facade designed by Falconieri. The ornament is simple, with two pilasters in the corners and four "composite columns" above a pedestal in the central area, joined with a balustrade. The four columns are aligned with four pilasters as a simple ornament of the frieze. As Falconieri pointed out, the walkway between Quarter of Eleonora and Quarter of Elementi, is "covered by glasses".

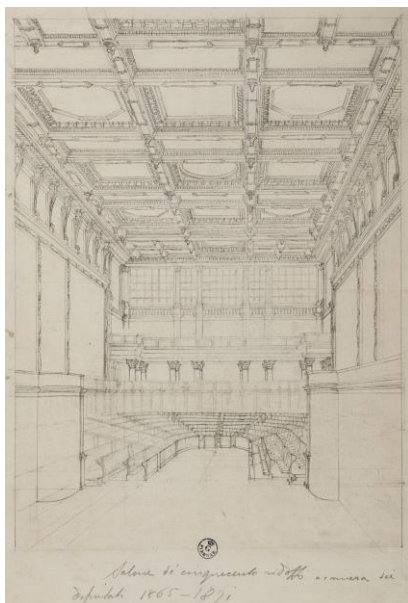


Figure 4. Agostino Lessi Salone dei Cinquecento ridotto a Camera dei deputati 1865-1871.

² In 1911 the first elevator was already installed. (*Regolamento per l'esercizio dell'ascensore dei quartieri monumentali*).

Most biographers (Lensi 1929, Cecchi and Allegrì 1980, Francini 2000, Ferretti 2011) accept Emilio De Fabris (1807-1883) as the author of the existing configuration of the South interior façade (1874), with alterations of it made by Alfredo Lenzi (1871-1952) in 1921. Dating to 1874 is the resolution of the municipality to complete the southern façade that according to Lenzi and others was still the wooden one made by Falconieri (Lensi, 1929), or Bartolomeo Ammannati in 1588 (Cecchi and Allegrì, 1980), or by Taddeo Landini in 1591 (Heikamp, 1980).

The choice of Falconieri to enlarge the thickness of the external wall suggests works of a structural nature rather than works made out of wood. According to Falconieri the new wall built over the preexisting terrace needed "solid iron T-shaped armor" (Falconieri, 1866). The configuration of the southern façade imitated the northern façade. In 1874 De Fabris changed the rhythm of the composition adding two more columns, shaped the frieze and build a bigger niche to place *Savonarola's* sculpture. Unfortunately, the documentation regarding the works of De Fabris previously kept at the Archivio Storico del Comune di Firenze, is now lost (Ferretti 2011a).

2.2 The outside terrace with not entrance

In the drawing made by Falconieri in 1865/1866 the four central columns and the balustrade of the walkway over the Sala dei Cinquecento are marked in red (color used by Falconieri to mark the reforms over the preexisting condition of the building). Prior to Falconieri's intervention, the outside terrace was accessible from the mezzanine floor (West) and from the Sala dei Cinquecento's level using a staircase placed on the East corner (today the locations of the elevator). A survey of the exterior South façade of the building, made by Bernardo Fallani (1739-1806) in 1791 (Dezzi Bardeschi, 1981. Figure 5), shows the terrace running from the mezzanine to the East corner of the Sala dei Cinquecento. The terrace is also visible (with visitors) in painting made in 1800 by Giuseppe Gherardi (1733-1828) (Galleria Palatina, Firenze).

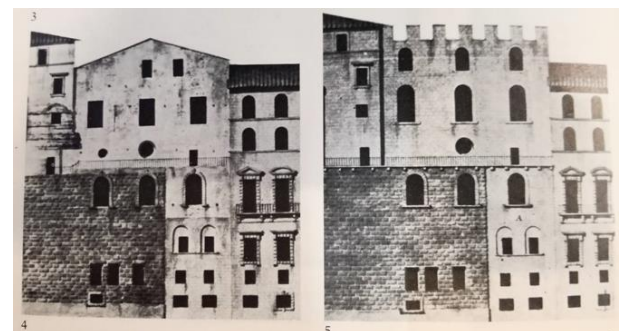


Figure 5. Bernardo Fallani, 1791, survey of the southern façade.

With the mezzanine entrance (West) closed by Falconieri's solution until 1910 it was still possible to reach the terrace through a staircase placed in the South-East corner of the Sala dei Cinquecento. Following the opening of the Museum of Palazzo Vecchio at the beginning of twentieth-century, the staircase was demolished to construct the first elevator (ASC)². At this point the terrace was excluded completely from the regular access.

Archivio Comunale Repertorio degli affari dell'Ufficio belle arti Palazzo Vecchio 200/462).

2.3 The Survey

The former spaces between the Sala dei Cinquecento and the external façade are currently accessible only through trapdoors and have therefore not been included in previous surveys (Figure 6. Figure 7.). With the kind assistance of the Fabbrica di Palazzo Vecchio, it has been possible to identify the openings for access to the terrace and to survey the area in between the internal and external façade. The rooms were surveyed using a terrestrial laser scanner, but the challenge was to link them to the rest of the building. From the "point clouds" it was possible to create a 3D model that filled in the gaps of previous surveys of this part of the building and allowed a more accurate interpretation of archival documents.



Figure 6. Figure 7. The odd access to the hidden space in the southern façade.

Up to the present study no three-dimensional model of these spaces were ever made. The actual floor plan used by the Fabbrica di Palazzo Vecchio, does not include the spaces discovered. The spaces here surveyed were first identified in a floor plan (two triangular shape rooms) dated September 14, 1970 (ASC)³. With the help of laser scanner technology, it has now been possible to recreate a complete 3D model of the space, connected with the outside and the inside façades.

The space consists of two rooms. The floor is situated at 7.80 meter from the Sala dei Cinquecento's level. The interior height measures 3.90 meters. The first room measures about 15 square meters. The second one measures about 5 square meters. The interior walls are regular, plastered and painted in white (except a 20 centimeter dark line on the bottom). One of the walls has a small internal step that correspond to one of the frame of the decoration of the interior façade of the Sala dei Cinquecento. The floor is made out of wooden planks⁴. The ceiling is also made out of wooden beams and wooden planks covered with old fabric. With the 3D model it is possible to visualize the actual states of the South exterior façade and the preexisting situation prior to Falconieri's solution (Figure 8.)

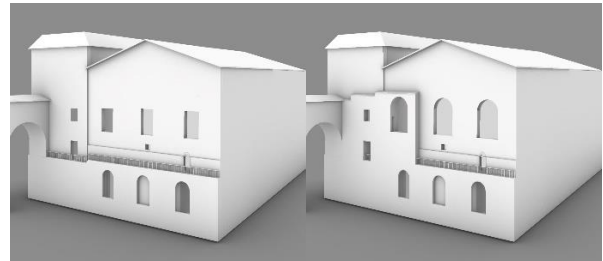


Figure 8. Southern exterior façade of the Sala dei Cinquecento before and after Falconieri's solution.

2.4 Before Falconieri

Peculiar elements were discovered during the survey; three overhanging arches toward the interior attached to the outside wall (the arches are overhanging 1,25 meters) supported by two corbels. In between the arches, presumably added in a second time, a series of wooden beams connecting the interior and exterior walls. Both of those elements are supporting the current walkway of the Sala dei Cinquecento (between the Quarter of the Elementi and Quarter of Eleonora).

Thanks to the 3D model it was possible to conjecture about the form and original function of the overhanging arches to better understand the extant visual records. Falconieri reported that even before his works on the South façade, a "weird" walkway between the two parts of the Sala dei Cinquecento was already there. Additional sources (written before 1865) reveals that this passage was not so practical and not often used. Not many people used to cross it and no one reported the magnificent view over the Sala dei Cinquecento until 1865. Also the famous Alinari's photo of the Chamber of Deputy taken from the walkway (1868). It was not until 1868 when this view was first photographed as shown by the famous Alinari photo of the Chamber of Deputy taken from the walkway (Figure 9). The glasses over the walkway added by Falconieri, were probably removed during this time, when the engineer Ulisse Arnaud made some adjustment to improve illuminations and acoustics of the hall (Quinterio, Tesi, Borsi, Salotti, 1991).

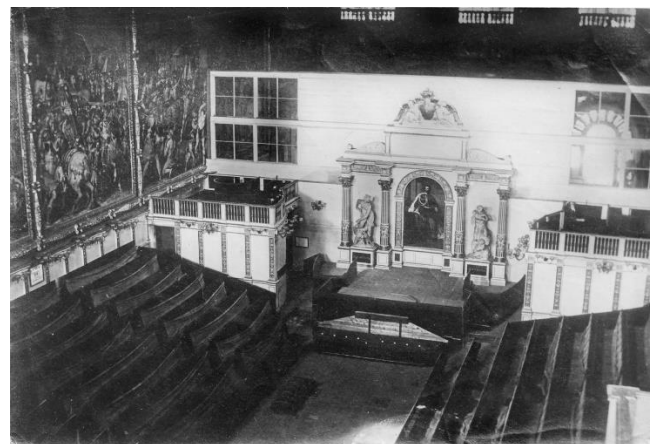


Figure 9. The Chamber of deputy in the Sala dei Cinquecento. 1868. Archivio Alinari.

³ Historic floor plans made before twentieth-century extant, show the space always in a partial and incomplete way.

⁴ During the present study another empty space, the function which is unknown, was discovered. With the 3D scanner it

has been possible to survey this space through a hole in the wooden floor. It has a surface of 3.40 square meters and the height of 3.80 meters.

According to written sources, a new design for the south interior façade of the Sala dei Cinquecento was planned during Vasari's time. Against the interior façade a fountain designed by Bartolomeo Ammannati (1511-1592) was planned but the fountain was never placed. The project was abandoned in 1566 for unknown reasons. At the behest of Francesco I, heir of Cosimo I, the sculptures of the Ammannati fountain were removed and taken to the villa in Pratolino (Ferretti 2011b; Pieraccini 2023).

In 1574 the interior South façade was still incomplete. For the funeral of Cosimo I de Medici (died in 1574), Bernardo Buontalenti proposed to cover completely the South interior façade with black fabric (Archivio Fotografico degli Uffizi). Some years later, 1589, masonry works for the South facade are documented. During this time the central niche and the lateral one were created (Cecchi and Allegrì 1980). The niches were used to display decoration during the banquets for the wedding of Ferdinando I with Cristina di Lorena (1592) and for the banquets of the wedding of Cosimo II with Maddalena d'Austria (1608). This last event, punctually described and depicted in an etching (Ferretti 2011b) suggests that the central niche was already done like the four lateral niches and at the second floor was a balcony. According to Heikamp, in 1710, 10 September, the central niche was occupied by the sculptor of *Adam and Eve* made by Baccio Bandinelli and between 1780 and 1788 also the four roman sculptures still *in situ*, were placed in the small niches (Heikamp 1980).

Since the beginning of seventeenth-century the lower part of the South façade was completed until the level of the second frame⁵. Above the niches the façade was left incomplete until end of nineteenth-century. The walkway connecting the two sections of the building was already present. Almost all the historical maps and representation known until today, show a walkway.

In the *Piante di Praga*, floor plans from eighteenth-century (1778-1781 ASF) the walkway is represented with two thin lines perpendicular to the longitudinal walls (possibly symbolizing a wood structure), completely different from the first floor where the niche is represented. A small door is visible in the South-West corner as entrance to Quarter of Eleonora. The same solution is visible in a floor plan of the Sala dei Cinquecento present in the *Manoscritto Panciatichi* from 1640 (BN). In this case the walkway is marked as "andito" synonym of passage or corridor. Instead in the representation of the banquets of Cosimo II's wedding in the Sala dei Cinquecento (1607), the southern interior façade shows two cantilever walkway on the inside crossing the big hall from side to side. (Figure 10, Figure 11, Figure 12)

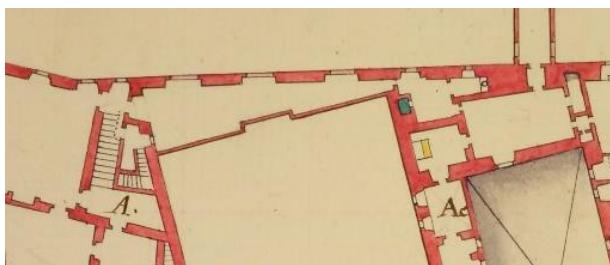


Figure 10. *Piante di Praga*, detail of the southern façade (ASF)



Figure 11. *Manoscritto Panciatichi*, detail of the southern façade (BN).

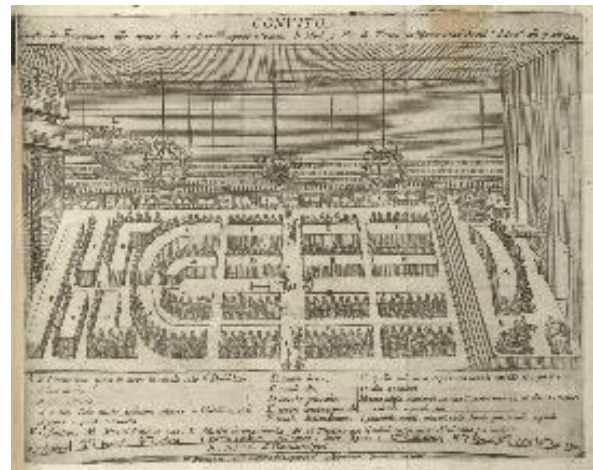


Figure 12. Banquets for the wedding of Cosimo II with Maddalena d'Austria (1608)

3. CONCLUSION

3.1 Vasari's walkway

It is common to believe that the entire solution of the southern façade prior to Falconieri, can be credited to Bartolomeo Ammannati, even the "precarious cantilever passage on the hall." (Ferretti, 2011a). Using visual 3D models in concert written and visual sources, the present study presents a hypothesis that was developed based on a technical analysis of the structural transformations of the building: the cantilever arches found in the hidden space are probably the remain of the passages that use to connect the two sections of the building, passage that is probably related with payment from 1564 to 1565, that testify the construction of railings (*parapetti*) and corbels (*becatagli*) for the "two balcony that are in on the Great hall" (Cecchi and Allegrì, 1980) both designed by Giorgio Vasari. In the "life of Cronaca" Vasari (Vasari, 1568) reported the intention to build a "corridore" (walkway) above both short facades (North and South).

The arches were built to support a walkway, completely detached from the lower part of the façade (originally the location for Ammannati's fountain) to connect the two parts of the Sala dei Cinquecento after the raising of the ceiling (as Vasari did in the exterior North façade).

3.2 Virtual reconstruction

Virtually extending the sequence of arches for the entire width of the exterior wall, is it possible to visualize the Vasari's

the inside wall. It is possible to assume that this was the limit of the bottom section of the façade.

⁵ The 3D model revealed an original correlation between one of the frame of the interior facade and a step found in one of

walkway. The arches cantilever for 1,30 meter. If one keeps the arches with the same dimension, the cantilever walkway would create an odd angle with the ceiling done by Vasari in 1565 and would hit the painting in the South-West corner. The painting, made of slate sheets, was added in between 1597 to 1599 by Domenico Cresti called il Passignano (Cecchi and Allegri, 1980). The cantilever walkway had a different configuration.

Thanks to the present survey, it was possible to establish that the width of the arches changes in dimensions according to the angles of the walls (diminishing to a max of 10 centimeters). Also in the survey made by Falconieri (1865) it is clear that even before his structural transformations the wall on the South-West corner was shaped to create a small door, fit for access to the walkway. Even before Falconieri's interventions, the wall was already of varying thickness. This is also visible in the survey of the exterior façade made by Bernardo Fallani (1791) where the architect added a shadow line in correspondence of the South-East corner of the Sala dei Cinquecento to show the difference of thickness of the walls.

According to the conformation of the wall and tapering the arches related to the dimension of the preexisting door (it is not inconceivable that also Falconieri was influenced by the dimensions of the preexisting entrance door of Quarter of Eleonora) it was possible to recreate a walkway with an overhanging that range from 1,30 meters to 0,50 meters. In this case the walkway follows the profile of Vasari's ceiling and would not hit the painting in the corner⁶ (Figure 13).



Figure 13. A hypothetical solution for the walkway on the southern façade.

This solution remains in use, probably until the beginning of the seventeenth century. Above the walkway were located the musicians during the banquet for Cosimo II's wedding in 1608. Since 1630 (Manoscritto Panciatichi) wooden beams were already added to extend the walkway. At the same time, to connect and support the wooden beams, also a temporary wood scenic backdrop was built. The walkway disappears behind a temporary wooden facade that was hiding the walkway and the "small terrace that previously deformed the Hall" as Falconieri pointed (Falconieri, 1866; Ferretti, 2011a). Even Falconieri decided to make the new walkway "covered by glasses" to keep light going through but at the same time to hide the passage of the deputy and officer.

The use of a new methodology for more accurate interpretations of documents is of central importance and well known by the academic community. The survey technology and virtual representation is already part of the method used by many scholars, though still more scholars would need to incorporate it in their work and research. It is necessary to

⁶ Even taking into account the possible rounded edge of the walls the passage is rather narrow. One can also consider the

possibility that the painting made over slate slabs was disassembled and moved, which has not yet been verified.

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Abbreviations:

ACS: Archivio Centrale di Stato di Roma.

ASC: Archivio Storico del Comune di Firenze

ASF: Archivio di Stato di Firenze

GFDU: Gabinetto Fotografico degli Uffizi

BN: Biblioteca Nazionale di Firenze