



Research Article

ICONARP
International Journal of Architecture & Planning
Received 04 Oct 2019; Accepted 23 Dec 2019
Volume 7, Special Issue, pp: 37-54/Published 26 December 2019
DOI: 10.15320/ICONARP.2019.80-E-ISSN: 2147-9380



ICONARP

The “Knotting” as a Morphological Phenomenon. An Interpretation of the Italian Chamber of Deputies Forming Process

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Abstract

The article proposes the study of the phenomenon of architectural and urban “knotting”, which the author considers one of the most interesting in the formation of the modern city.

It consists in the transformation of a special serial organism (consisting of units repeated and substitutable among themselves) in an organic structure, where the elements are linked together by a relationship of necessity, through the formation of a nodal space.

In Italy this phenomenon is quite evident in the formation of new building types for public services, as in the case of the large post offices obtained by transforming existing buildings and then designed ex novo with the knotting idea, giving rise to some of the most important architecture of modern Italian architecture

Keywords: Processual reading, morphological knotting, palaces for politics

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The phenomenon is particularly evident in the formation of the different palaces of the Chamber of Deputies in Turin, Florence and Rome.

The proposal by Carlo Fontana appears very important, indicating a new polarity in the urban fabric, a double knotting that links the public space with the architectural organism. The project will not be executed but will remain in the deep memory of the plan being formed. Ernesto Basile, author of the project that will be realized, in reality continues, stiffening it, the idea of Fontana to continue the internal corridors as routes of an urban fabric overturned inside, which is knotted in the central hall.

After three temporary experiments obtained in the existing spaces, Basile designed ex novo the large assembly hall in a virtual processual way, as in an existing space to be transformed, designing the structure of an organism organized around a central open space "subsequently" knotted from a light metal cover.

THE KNOTTING PROCESS

This article proposes the study of the Italian Chamber of Deputies transformation (from the first headquarters in Turin, then in Florence and finally in Rome) as a process that starts from the existing buildings and transforms them into a new architectural organism by "knotting". This term, which effectively indicates, in my opinion, one of the most interesting and fertile phenomena in the modern urban renovation, is not commonly used in urban morphology studies and needs some definition. I will try to clarify, first of all, what I mean by this word.

By "knotting" I mean, in general, the outcome of the constructive action of connecting different elements, or entire systems, to each other in order to shape a spatial node¹ within an architectural structure, often closing a space and tying it to the elements that surround it, usually consisting of a series of rooms. It is the passage, in other words, from a special serial organism to a nodal one through the formation of a central "nodal" space that "knots" the existing structures that become "collaborating" (Strappa, 2013,2).

Many types of modern buildings are formed by knotting, generated by the dialectic between enclosing and covering a space.

In the ancient world, clear forms of knotting developed with the transformations of the forum and the formation of basilicas.

But the knotting process is above all at the base of the formation of many modern building types characterized by the presence of a central dominant space, where the transition of the open space into a nodal one occurs through the reuse of existing buildings

¹ By node I mean a singular point of a continuum determined by the intersection of two continuous. The notion of "continuous" can be applied to the different scales, from the building to the territorial one: a "tectonic node" can be constituted by the intersection of two continuous walls; an "urban node" can be constituted by the intersection of two routes. Each component of a structure, connecting with the others, determines a nodality (knot quality) of different degree in relation to the congruence of the relationship established between the components and its scale (Caniggia, 1979; Strappa, 1995).

arranged, around courtyards or cloisters surrounded by arcades, as in convents or palaces (Strappa 2013,1).

The initial formation of the Italian palazzo, for this is most interesting here, takes place through recasting, renovations, integrations of pre-existing houses. The fundamental process is the overturning of the external routes inside, which transforms a part of the fabric in a building and that reconstructs within it the characters of the urban fabric.

The palazzo is, therefore, a building type predisposed, one could say, to the densification of its center, to the knotting. Note how the knotting process does not consist in the simple covering of spaces, but in a sort of "genetic mutation" that originates new forms of buildings. An obvious example is the formation of large postal buildings at the end of XIX century, through the knotting of serial spaces, reused for offices and services, around the counter hall, a large public hall that becomes a mediation space between city and building.

Many of the largest XIX century postal buildings are organized on layout based on the palazzo type, such as the German ones organized around a vast open Hof (so in Wroclaw, Potsdam) but also protected by a transparent cover, as in Berlin.

In Italy, even at the beginning of the XX century, the same manuals still recommended considering the counter hall as a "spacious courtyard all covered in glass" (Donghi 1905).

Perhaps the antecedent that more clearly shows the different process phases is the transformation of the Fondaco dei Tedeschi in Venice.

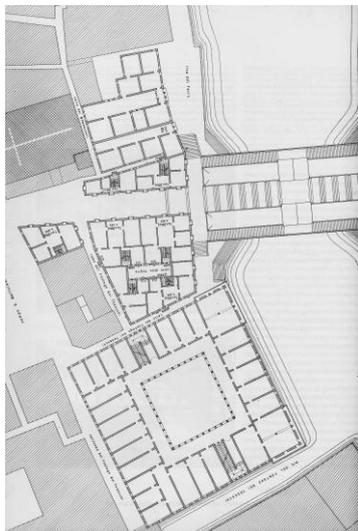


Figure 1. Plan of the Fondago dei Tedeschi in Venice

Figure 2. Covering of the central courtyard converted into the public counter hall of the new Post Office

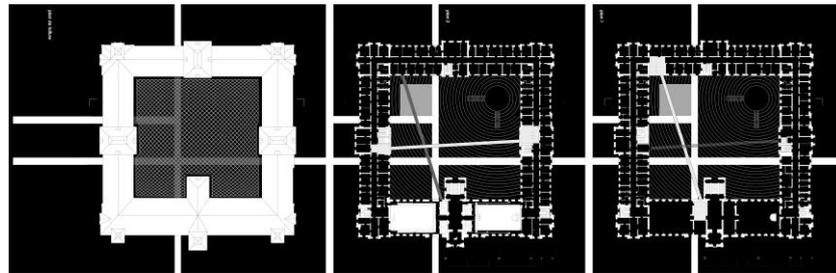
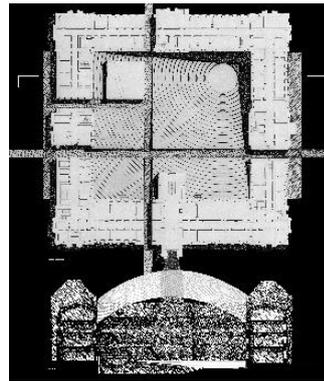


Figure 3-4. Proposal for the Quebec National Assembly knotting through the covering of the central courtyard, 2018 (G.Strappa, P.Carloti, V. Buongiorno, G.Emmi, C.Sammarco)

It takes place through the introduction, in the XVI century serial special building, of a large iron and glass structure covering the open courtyard. This intervention triggers a transformation process that involves all the building components.

The new central hall is, as in every nodal building, “served” as IN the distributive layout, , statically “brought” (its covering resting on the structures of the courtyard) and spatially “nodal” while the outer rooms are functionally “serving”, statically “bearing”, spatially “serial”.

A similar process can be identified in the large stock exchange structures, whose most widespread building type originated in the XVI century (see the Antwerp Stock Exchange) as large enclosed courtyards within the series of rooms for offices and warehouses, whose protection through a cover generates the sheltered space of the exchange (Halle au Blé in Paris, London Stock Exchange, Stock Exchange of St. Petersburg etc.). Often the need to light the central hall induces the formation of basilical type structures, where the function of the clerestory is carried out by iron and glass structures. A significant example of the beginning of this process is the Berlage’s “basilica” for the Amsterdam Stock Exchange completed in 1903, while a significant contemporary example can be identified in the DZ Bank built in 2000 by Frank O. Gehry in Berlin.

The formation of a large central public space through the cover of the open courtyard we proposed in 2018 for the National

Assembly Building in Quebec City (see figure) is an example of interpretation of the notion of knotting in contemporary terms.

Some urban knotting processes can also be recognized, starting from the XVIII century, in the new relationship between urban spaces and building interior spaces (routes becoming, from external and public, internal to the blocks as in the Parisian passages) also originating new commercial building types (Lemoine, 1990).

THE CHAMBER OF DEPUTIES AS A KNOTTING

The area on which the Chamber of Deputies in Rome was built is itself the result of a double, conflicting formation process. On the one hand the fabric formed by houses of medieval origin, clearly oriented according to the direction of the substratum of the ancient city, transformed over time by aggregation, into multi-family houses or palaces; on the other, the eruption of large institutional structures built by the Popes and inherited BY the new unitary state. These structures were formed by transformation of the existing fabric but then, gradually became autonomous.

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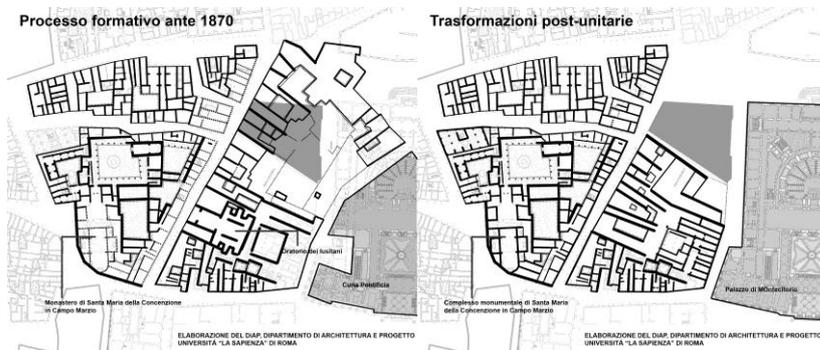


Figure 5-6. Urban fabric transformations in the area of Via di Campo Marzio, in Rome

The forming of governmental structures expresses a deep cultural change in the life of the city and a new way of relating political power to the existing fabric that seems to progress through unions of serial and collaborating elements. These structures are grouped around the node first formed by the courtyard, then by the assembly hall which reuses the open space with temporary roofs, ending up forming the stable and symbolic spatial center around which the internal routes of the organism wrap. A "small town" is formed in which the logic of the fabric (the aggregation of the rooms structured by a route) is overturned inside.

It is important to grasp in this process, more than the contingent and particular, the universality of the phenomenon. In fact, this is a general process that can be recognized as a central feature of the transition to modernity in European culture (Strappa, 1996,

2014) where many organisms are formed through the formation of a new, large central space constructively "carried" by the collaborating elements , and functionally "served" by existing perimetral structures.

The phenomenon is evident, in different forms, also in different political structures. See, among others, the opposite cases of the recent Berlin Reichstag, in which Norman Foster recently transformed the XIX century courtyard into the assembly hall, or the headquarters of the French Senate at the Palais du Luxembourg, where, instead, the node shape has, over time, led to a progressive increase in the role of the central space.

The history of spaces for the politics of the new Italian State, in the several capital cities that have succeeded one another, can be read as A forming process in which successive phases starting from the re-use of architectures of great symbolic value, where the node is recognized within the existing structure, to the subsequent experimentation of new nodes through temporary structures, until the knotting of routes to form an entirely new organism structured around an intentionally designed spatial center.

In the initial formative phase, these are sudden transformations (the first central hall of Palazzo Carignano was built in just three months). When the problem of shaping the new Parliament arises, there is no time to think about a new construction: not only is the existing heritage reused, but temporary spaces are built, provisional nodes erected under the urgency of providing a space for assemblies. It seems that, just when the problem of a national language in architecture is posed, the first space nodes are limited to a declaration of intent. They are temporary structures decorated with A explicitly precarious repertoire (the first hall built by the Engineer Paolo Comotto at Montecitorio will be unusable after only thirty years), almost independent of the noble pre-existences in which they are located (Griseri,1988; Cerri,1990).

In a phase of transition and uncertainty, the true architectural choice is the selection itself of the monument that will house the new Parliament. As the program is explicitly intended to ensure the durability of the institutions and their symbols, the transformations should, indeed, alter the monuments of the past as little as possible.

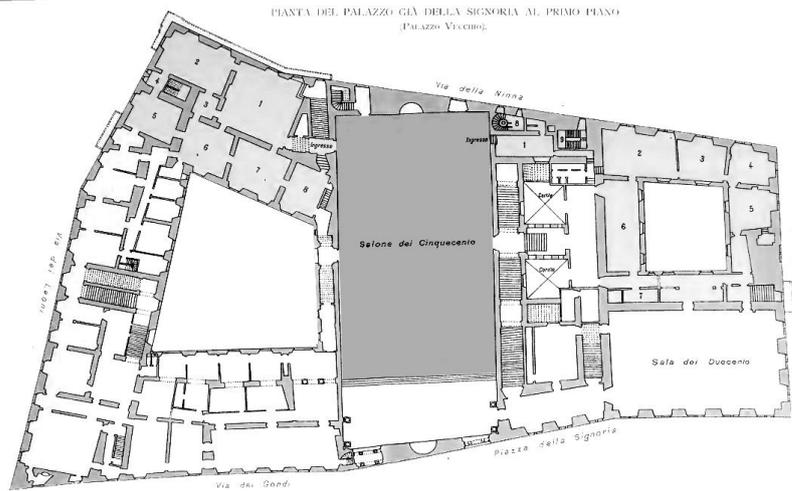


Figure 7. Formation of the parliamentary hall (in gray) in the Sala dei 500 in Palazzo Vecchio (Florence)

In the construction of the second chamber of the Italian Parliament at Palazzo Vecchio in Florence, the project of the engineer Mariano Falcini was much praised by the technical commission because of the discreet intervention in Vasari's Salone dei Cinquecento, where great attention was paid to the conservation of the works "which constitute the entire magnificence of Palazzo Vecchio."²

In a second phase these tentative structures undergo a process of “solidification”. See the transformation of the first Italian Parliament in Turin in Palazzo Carignano, where the spatial node is identified, in a first phase, with the restructuring of the Guarinian hall inaugurated in 1848, after the reforms of the Albertine Statute. The indication, which will be followed in the future, of choosing symbolic nodes as a unitary State shared heritage is evident.

The architect Carlo Sada only arranges the benches for the 204 deputies of the Subalpine Parliament following the elliptical configuration of the large central room originally intended for receptions.

². *Report of the Commission, 27 January 1865, State Archives of Florence.*

**Parliamentary chamber formation through the re-use of the Guarino Guarini central hall*

Figure 8. Re-use of the original structures

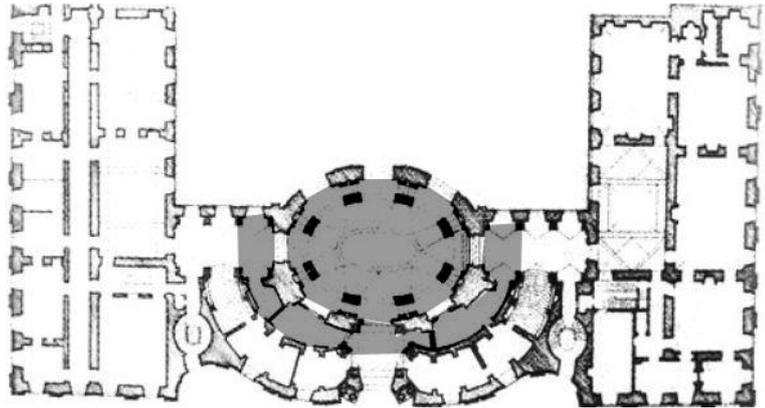


Figure 9. Formation of the second temporary hall in the gardens of Palazzo Carignano.

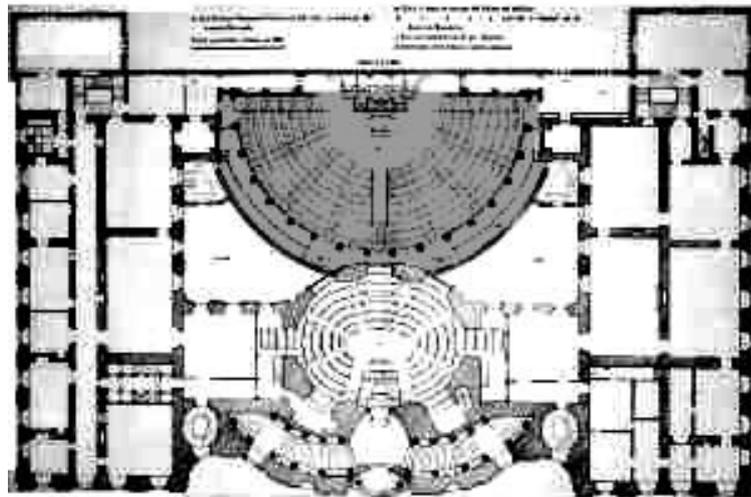
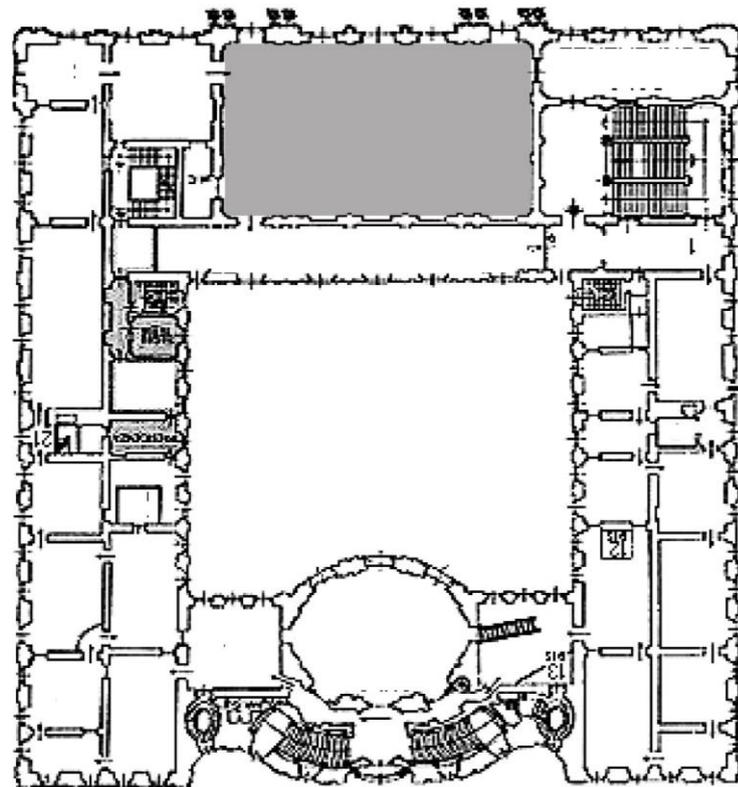


Figure 10. Formation of the definitive hall of the Italian Parliament in the enlargement of the Carignano Palace



In a subsequent transformation phase, the placement of a new, still temporary hall is tried. The layout of the Guarini plan, in fact, is ill-suited to the new functional needs. The hall is not, in fact, the nucleus that generates a structure of routes on which to base the formation of a true parliamentary citadel. At the end the extension of the construction will take place around the open courtyard space obtained by the extension of the two short wings designed by Guarini (see figures).

The temporary solution in light materials realized by Ing. Amedeo Peyron seemed, however, to have influenced some subsequent projects. A solution is found where the central node unifies the building, which is also peremptorily envisaged by the unrealized proposal that Alessandro Antonelli submitted in 1860, where the hall for joint sessions, in the middle between the spaces for the two branches of Parliament, would have constituted a transparent and light space in the heart of the architectural organism, virtually open and public.

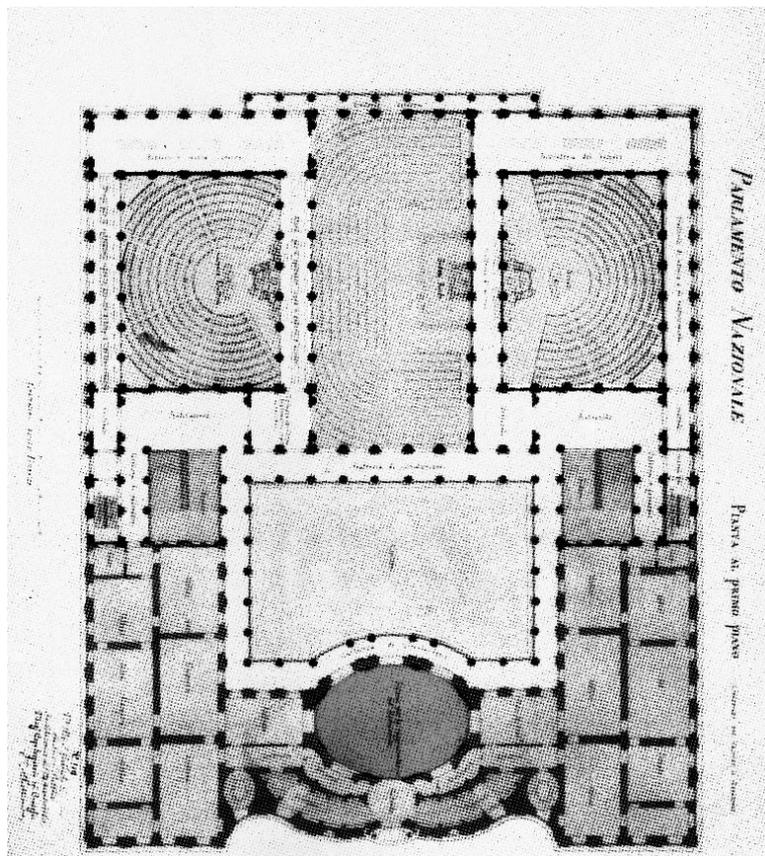


Figure 11. Alessandro Antonelli, Project for the new National Parliament in the gardens area of Palazzo Carignano, 1860.

The final phase of development of the new Parliament in Turin will free up, in fact, the space occupied by the Peyron roof, which will be demolished to form a central courtyard, while a new, more capable assembly hall will be built in the new building on Piazza Carlo Alberto generating a strange organism, formed by

successive, almost autonomous additions, rather than by congruent developments. An expression of this multiple character is the doubling of the façade on Piazza Carlo Alberto, anticipating what will happen for the Montecitorio Parliament, when the Capital will be transferred to Rome. The new organism will therefore end up having a dynamic and vital facade on Piazza Carignano, and another on Piazza Carlo Alberto, with the nodal space expressed by the rigid stone volumes intended to give the idea of the duration of the institutions.

The phenomenon of an organism that increases due to progressive knotting becomes particularly evident precisely in the formation of the Palace of the Chamber of Deputies in Rome. It began with the transformation of the Curia Innocenziana (a structure destined for the justice administration) built by Carlo Fontana transforming the pre-existing Bernini's Palazzo Ludovisi, in turn derived from the transformation of the fabric between Piazza Colonna and Via degli Uffici del Vicario.

The form of the building derives from the progressively more evident awareness of a common, transmissible general order that emerges over time.

The interpretation that Carlo Fontana gives of the modern urban role of the new architectural organism appears relevant in this regard. One of his unrealized proposals proposed two different ways of forming the node of the Curia Innocenziana. A first version included the extension of the architectural node on an urban scale: the expansion of the internal paths to the external routes of Via della Missione, Via dell'Impresa and of what will become Piazza Montecitorio. The courtyard is therefore indicated, virtually, as a true part of the city, proposing a spatial revolution that will not be completed. The external square will in fact be settled in a conventional way.

In a second drawing, Fontana proposes a great innovation on an urban scale, indicating a new polarity in the fabric, a double knotting that would have gathered and unified the internal space around a central courtyard, and the external one formed by a new group of houses arranged in an exedra, a large urban courtyard around which a serial fabric would be gathered in a monumental way. Both were urban-scale designs, the result of a forming process which indicated the link between public space and the inner life of the architectural organism.³

³Fontana communicated his projects in a "procedural" way, presenting a new design as a natural conclusion of transformations that took place over time. Consider, for example, the powerful volume on the Vatican Temple

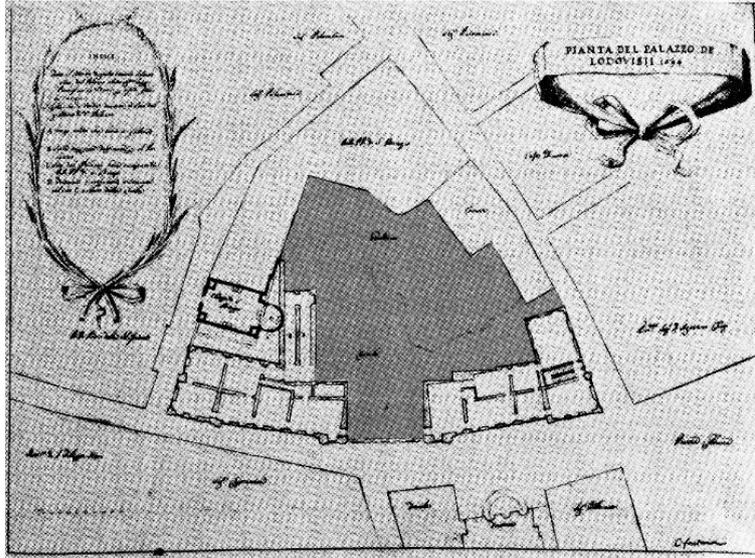


Figure 12. Carlo Fontana, survey of the Palazzo Ludovisi area in 1694, before the works of transformation in the Curia Innocenziana. The space of the court is the residual area of the perimetral building fabric (author's elaboration on the original drawing).

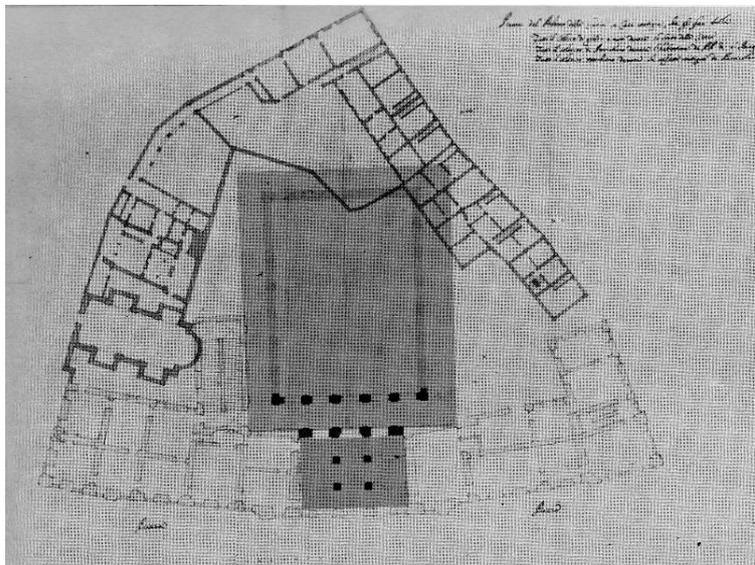


Figure 13. Carlo Fontana, first transformation hypothesis of Palazzo Ludovisi in the Curia Innocenziana with the introduction of a regular courtyard (author's elaboration on the original drawing).

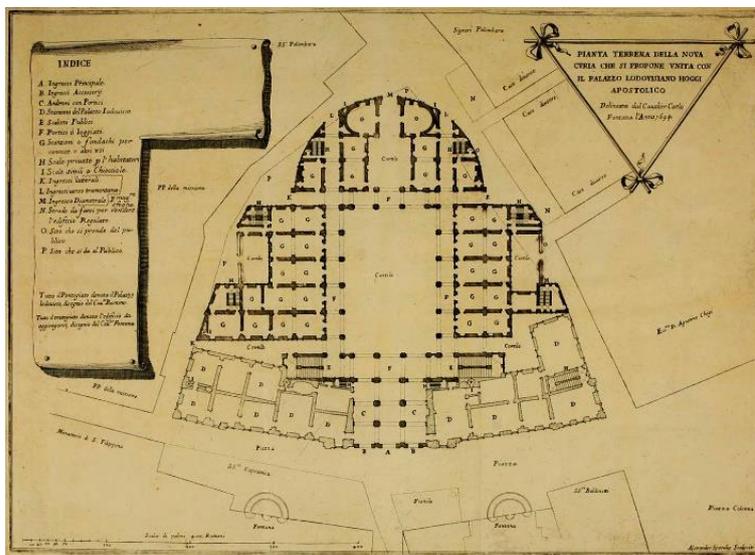


Figure 14. Carlo Fontana, hypothesis of transformation of Palazzo Ludovisi around a central courtyard.

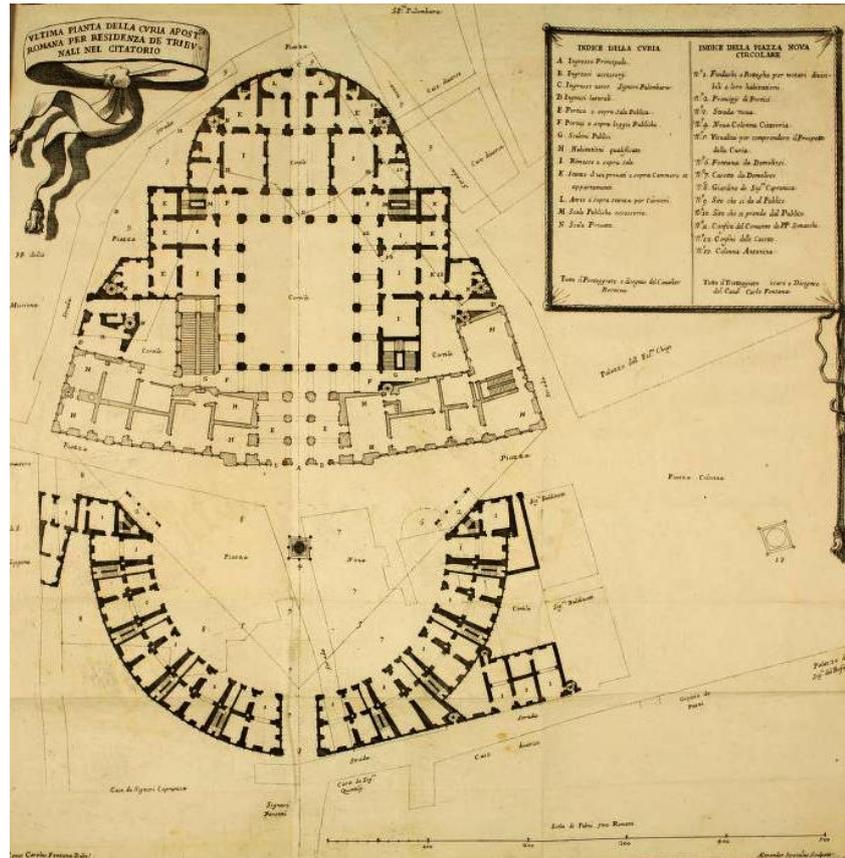


Figure 15. Carlo Fontana, hypothesis of transformation of Palazzo Ludovisi with the formation of an urban pole

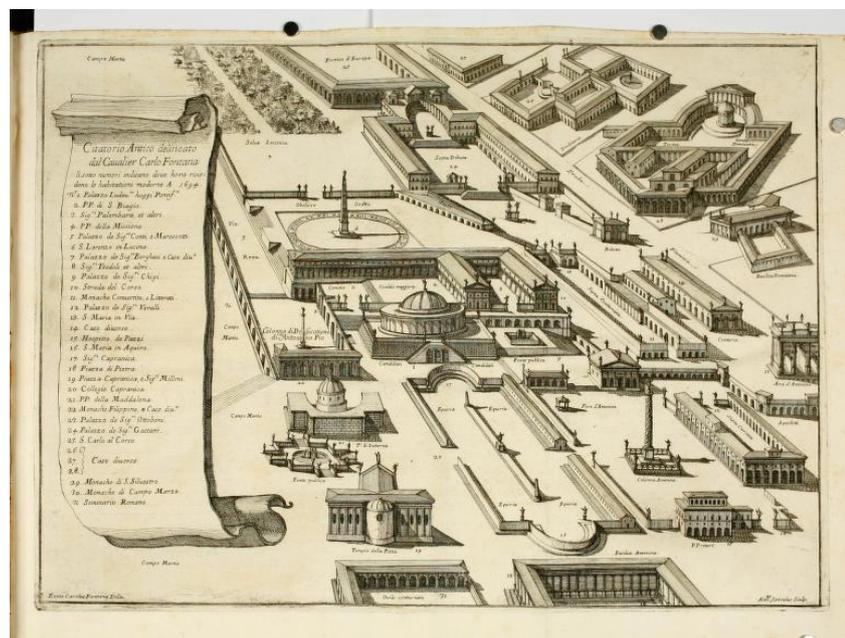


Figure 16. Carlo Fontana, ideal reconstruction of the area of Monte Citatorio (Montecitorio) in the imperial age

Fontana's proposal will not be realised, but his project will remain in the deep memory of the future layout, ending up acquiring almost a meaning in itself, a "pre-formative" value, one would say, that contains a finalized interpretation of the previous structures bent to the instances of the new needs. His proposals are themselves, in fact, the place of a generative process that originates from an imaginary substratum, an ideal ancient Monte

Citatorio. Fontana describes it through a singular perspective of ancient monuments (Fontana,1694) organized according to only two orthogonal directions. Monuments translated into a language that seems to anticipate neoclassicism, carefully placed within a peremptory regularity where each building is a monad, each construction a microcosm whose external forms allow one to imagine a segregated and cryptic life.

THE KNOTTING PROCESS CONCLUSION

Fontana's vision is also the prelude to a long demolition period that includes those carried out by Ernesto Basile before starting construction work on the new Chamber in 1908.

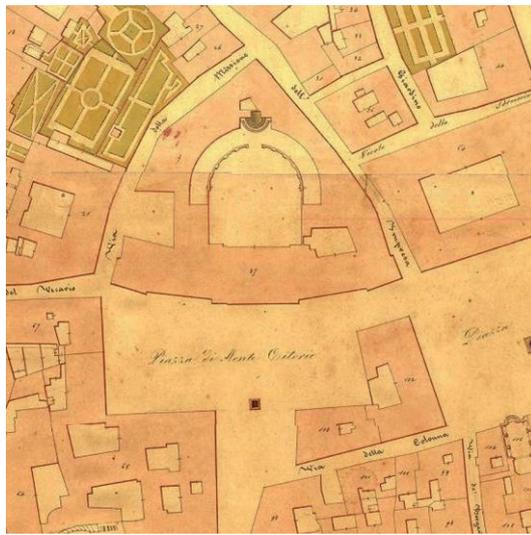


Figure 17. Gregorian Cadastre map in the Montecitorio area

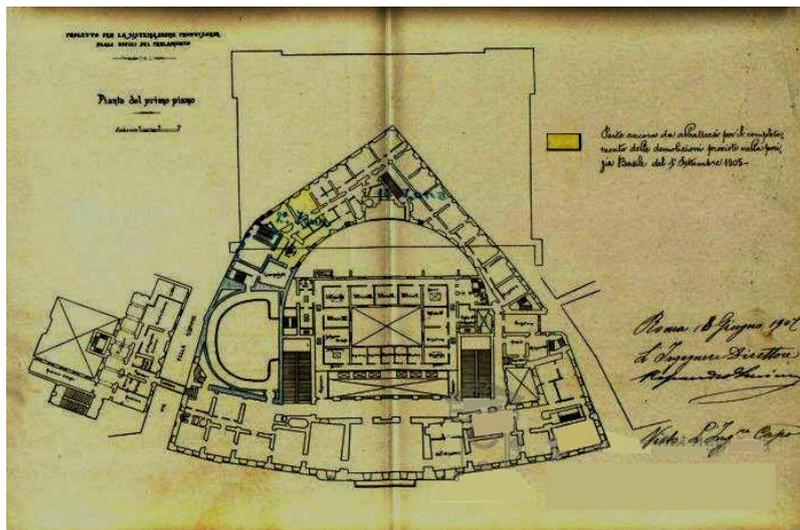


Figure 18. Project for the temporary placement of the parliamentary hall on Via della Missione

Figure 19. Formation of the first the parliamentary hall node in the Italian Chamber of Deputies, 1888 (Arch. Chamber of Deputies)

Figure 20. Parliamentary hall displacement hypothesis in the Italian Chamber of Deputies, 1888 (Arch. Chamber of Deputies).

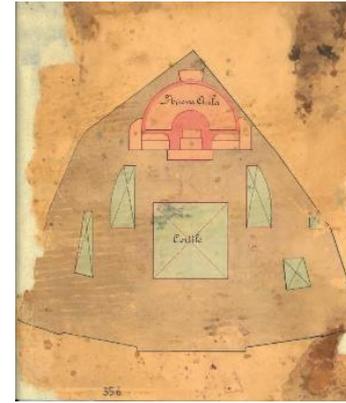


Figure 21. Provisional construction of the parliamentary hall in the Italian Chamber of Deputies, 1907 (Arch. Chamber of Deputies).

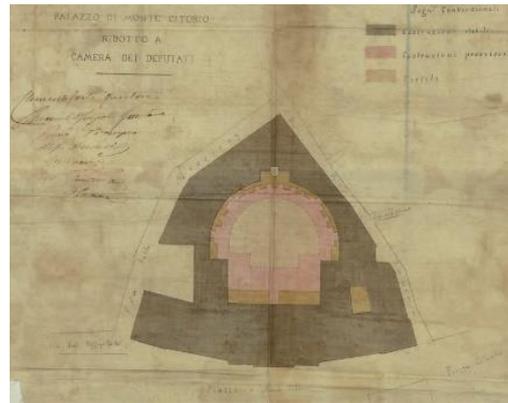
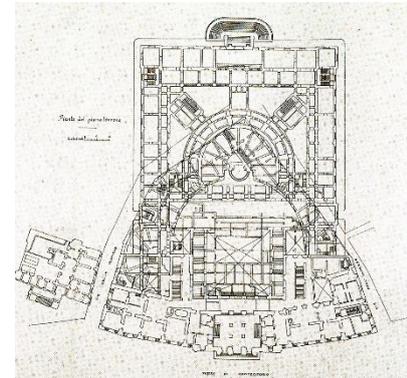
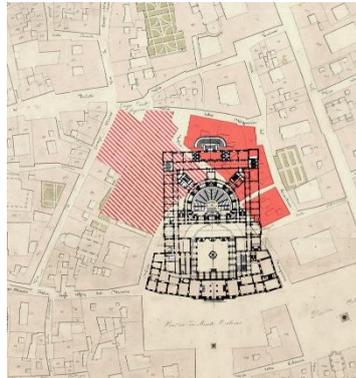


Figure 22. Demolitions carried out for the construction of the new Chamber of Deputies indicated on the Gregorian Cadastre.

Figure 23. Overlap of the new Chamber of Deputies project to the pre-existing structures.



The layout on which Basile's project is based clearly expresses the limits and perspectives of the urban culture of the time, the need to establish a clear, immediately legible order. Basile actually continues, strengthening Fontana's idea of continuing the interior corridors as routes of an introverted city, organizing a true urban fabric reversed inside.

By removing the exedra from the existing courtyard, four new interior routes knot the space of a second courtyard, this time covered. As was the case for many public spaces, the architect thought of the new central space of the assembly hall as an existing space to be transformed "successively", closing it with a light cover.



It is no coincidence that the first room inaugurated in 1871 by engineer Paolo Comotto, is the temporary and fragile closure of a void. It takes explicitly, in the drawing and in the method, the shapes of the hall designed by Peyron for Palazzo Carignano.

As for the new façade composition on Piazza del Parlamento, the Sicilian Ernesto Basile uses an extravagant and new language, a hybrid outcome of opposite instances: on the one hand the need for a shared language originating in the forms of the XVI century Roman palace, with the usual architectural structuring layers (base, elevation, unification, conclusion), on the other hand, the need to consider the question of an architectural national language also formed by the local dialect contribution to the solid core of the classical legacy. All in the climate of the demand for modernity that the rhetoric of the young nation was proposing (Picone, 2011, Strappa, 2018).

The theme of a new architecture for the Capital appears after the Second World War, when some fundamental questions, remained unresolved for fifty years, were posed: the representation of a new relationship between city and politics; the old problem of the new interventions in the old city; the search for a specific character of contemporary Italian architecture. The competition announced in '67 for the enlargement of the Chamber of Deputies was therefore a historical event.

In the years of fascism , an intense activity of demolition and reconstruction in large areas of historical Rome had been carried out. They had often led to disastrous experiences in terms of results, but had also raised the theme of the relationship between modern architecture and historical context. (Strappa, 1996). In those years over 90 competitions had been banned, many in contact with ancient monuments, starting from the Council Chamber project in the ancient Palazzo Senatorio in 1924, up to that of the 1940s for the Ministry of Foreign Affairs in the Passeggiata Archeologica area (Strappa, 1989).. But since then no major initiative had been undertaken.

The new building design was therefore an opportunity to make a vital break with the practice of major interventions pursued by the unification of the Italian State until the end of the Fascist period. With the first major urban redesign of the center of the Capital, the new architecture seemed called, in disciplinary terms, to propose an alternative to the practice of isolating special buildings, in particular those with greater symbolic value, from the urban context. It was also the occasion, for the political class,

to demonstrate its competence to take shared decisions on the major issues that contemporary culture was posing.

In line with the new urban role that was asked OF public interventions, the construction of the enlargement of the Deputy Chamber could have been put in organic relationship with the historic fabric of the Via della Missione and the huge space of Piazza del Parlamento, proposing an authentically contemporary building born from the city life.

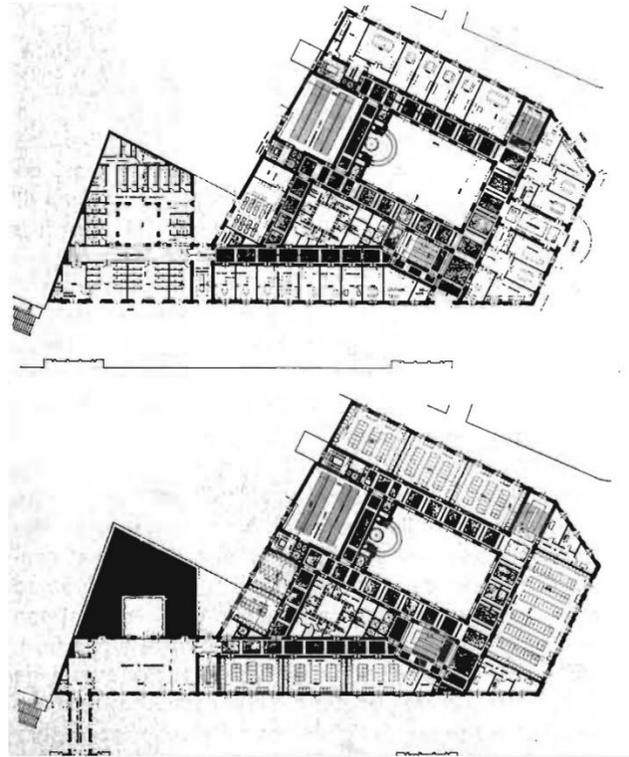


Figure 23. G. Caniggia proposal for the expansion of the Deputies Chamber (1967)

In fact, most of the '67 projects seem to interpret (with very few exceptions among which a remarkable one by Gianfranco Caniggia,) the image that Tafuri will explain with great clarity to consider the site of the new construction as an “empty area and to take it into account as a “pause to be exploited” (Tafuri, 1968). A choice that perhaps today would find motivated criticism, but which few then questioned. In the search for the exceptional form, the formative process of the Deputy Chamber and the complementary role of the new offices did not take into account the existing structures.

It really concluded the great Roman architectural period in which Borromini, in composing the extraordinary facade of his Oratorio dei Filippini (The new monastery of the Filippini Congregation) adjacent to the existing Santa Maria in Valicella, modestly stated that he had thought of it "as the daughter of the church's façade,

that is, smaller, less ornate, and of inferior matter" managing, however, whilst understanding the formative process of the city, to contribute to a radical updating of the architectural forms.

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Resume

Prof. Giuseppe Strappa is senior professor (Professore di Alta Qualificazione) at School of Architecture – Università "La Sapienza" - in Rome. He taught Architectural and Urban Design and Urban Morphology since 1980 in "La Sapienza" in Rome, in Bari Polytechnic and in other universities in Italy and abroad. Since 2002

to 2016 he was full professor in Bari Politecnic and “La Sapienza” in Rome. In the current 2017/2018 academic year he held a semester course of Morphologie et syntaxe des milieu bâtis at the Laval University, Quebec City, Canada, a semester course in Urban Morphology at the Rome Sapienza University , lessons for PhD students and lectures in Italy and abroad. He is President of the scientific association of Urban Morphology Isufitaly and committee member of Isuf International. He is Director of the U + D (Urban form and Design) magazine published by Erma, Rome, and member of the Urban Morphology editorial board. He is director of the series “Lettura e Progetto” of the Franco Angeli publisher, Milan. He is member of the advisory board of “The Urban Book Series” of the Springer publisher, Berlin. He was Director of the “Quaderni di architettura e Costuzione” book series in Dipartimento ArCos della Sapienza, Università di Roma. He has been Director of Department of Architectural and Civil Engineering Science in the Polytechnic of Bari He has been member of the University Rectoral Commission for the Doctorates and coordinator of the Draco PhD school and at Università “La Sapienza” in Rome. He is currently member of the Scientific Board of ISUF (International Seminar for Urban Studies), He was member of the Scientific Board of Casa dell’Architettura (a public foundation devoted to architecture in Rome), scientific adviser to Italia Nostra (a public association for protection of landscape, architectural and cultural heritage in Italy). As architectural designers he obtained awards in many International competitions (piazza Cairoli in Rome, piazze di Ponza and Ventotene, piazza Mastai a Roma, New Cimitero of Terni and Laurentino in Rome, piazza in Castel di Sangro, piazza Oberdan IN Sabaudia, park of Aguzzano in Rome, Carezzano center etc.).