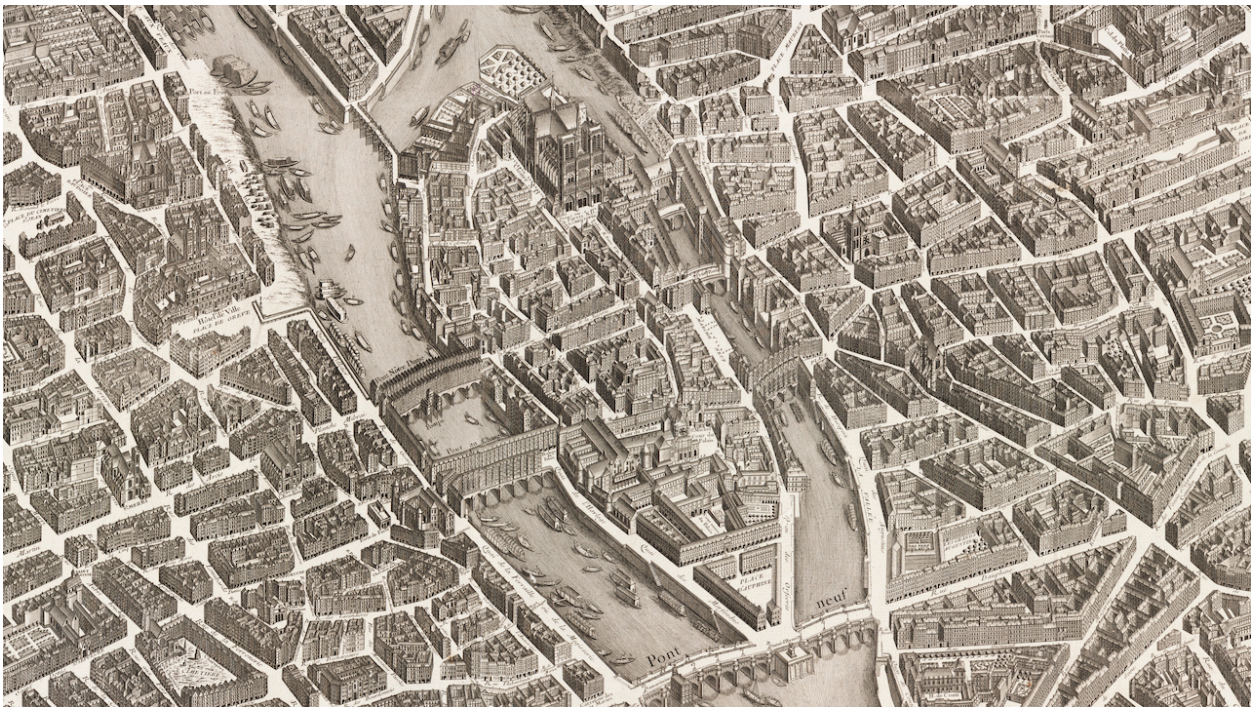
Guiding Lights: Three Grand Plans That Changed Urban Mapping Forever

The 18th century was a dramatic period in the history of cartography. Great explorers like Captain James Cook and Jean Francois le Perouse expanded European influence and knowledge to the farthest corners of the Earth. Ancient dynasties were destroyed, and new nations were born. And over the course of a decade in this tumultuous century, three great city maps were produced that forever altered European perspectives on the potential of urban mapping:

1. Michel-Étienne Turgot's grand plan of Paris (1739)
2. John Rocque's Plan of London, Westminster, and Southwark (1744)
3. Giambattista Nolli's New Topography of Rome (1748)

These maps transformed how people viewed these cities: if they could be captured systematically, they could be organized and managed systematically. While completely unrelated projects, they shared a similar motivation and heritage, with the many social changes and technological modernizations that grew out of the Enlightenment. Ultimately, they represent a slow but fundamental shift in the paradigms that guided urban development and growth during the 18th century.

The publication of these three maps within only nine years meant that from then on, all urban mapping projects were held to an entirely new standard. In the following, we will explore these three great maps by delving into some of their many details and expounding their influence and impact on the cartographic craft. In outlining the criteria by which each map achieved its deserved recognition and fame, we will also attempt to offer some comparative observations and suggest methodological progression within their ranks. Among the aspects that will be explored are the criteria for each map's commission, the methodologies by which it came to be, and the impact of the final result on mapmaking circles.



Michel-Étienne Turgot's grand plan of Paris (1739)

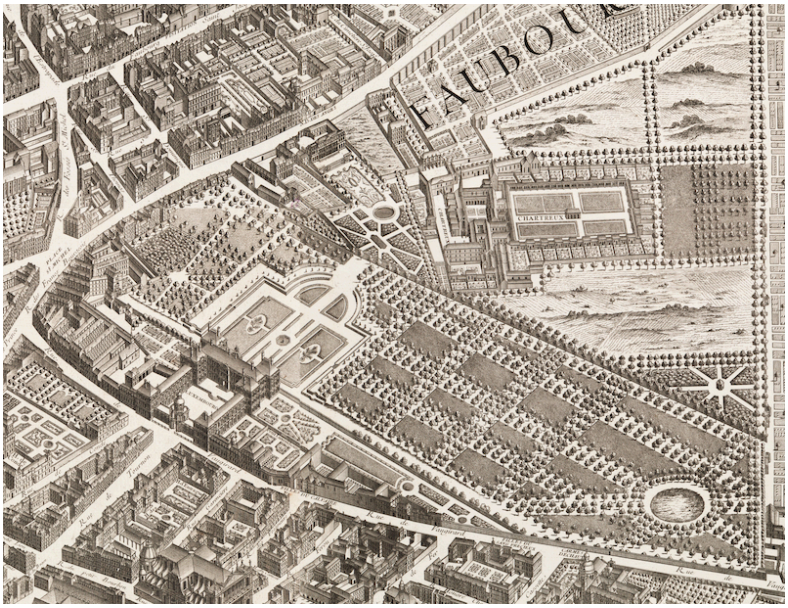
Published during the reign of Louis XV, Turgot's famous plan of the French capital was printed on twenty folio sheets that joined to form a plan measuring more than 2.5 square meters. Michel-Étienne Turgot was the Prevost of Paris merchants and the de facto chief of the Paris Municipality. While he is most commonly associated with this map, Turgot was, in reality, only its patron. All the work - the surveying, drafting, and compiling of the plan - was done by Louis Bretez, an esteemed architectural designer and engraver and the professor of perspective at the Académie de peinture et de sculpture de Saint-Luc in Paris.

The contract between Turgot and Bretez specified that he was commissioned to compile a Paris map of great accuracy. To achieve this, Bretez was formally granted access to all buildings within the city - including private property - which is why Luxembourg and other great gardens of the elites have been rendered in such impeccable detail. Bretez spent two years surveying enormous tracts of the city and another two years drafting the final product.

In addition to survey and compilation, Bretez also made important stylistic choices. It was he who opted for the 'prospettiva dei cavalieri' (i.e. as seen from horseback). Bretez's skill and experience as an architectural draughtsman allowed him to create a perspective plan in which all of the architecture was rendered at a uniform scale. Sadly, Bretez never got to see his work published, as he died during the engraving of the plates.

Turgot's goal in commissioning the plan was mainly promotional. He wanted to use it to promote Paris' greatness in the minds of countrymen and foreigners alike. The map has survived in relatively large numbers because the city of Paris used it as a favorite when formal gifts from the city had to be bestowed on foreign dignitaries. Hundreds of beautifully bound copies were given away as gifts over the next century. When Paris administrators or merchants wanted to initiate a new mercantile or diplomatic relationship, overtures usually started with gifting Turgot's monumental map. A copy was even sent to the Imperial Court in China.

The plan's success was built on three basic principles: accuracy, detail, and monumentality. It not only provided the viewer with an extraordinary overview and easy access to the many architectural pearls of Paris but allowed for even the most minor features to be fully incorporated into the whole. The perspective and level of detail applied by Bretez meant that in addition to the grand landmarks for which Paris is famous, we are also treated to some of the urban features that have not survived.



At the heart of the city, we find the Tuileries Palace, which burned down in the late 19th century but in the mid-18th century, still loomed large over the public gardens along the Seine. Further east is the Louvre, built as a Renaissance palace in the 16th century and had already become a repository for the King's impressive collections by Turgot's time. At its core, the Old Louvre refers to remnants of the original 12th-century river fortress from which the palace was originally converted.

Turgot's map was celebrated throughout Europe as an outstanding achievement. However, this attention would not last, and ironically, the man who would undo French supremacy was a Frenchman himself. During the reign of Louis XV, French Protestant Huguenots were heavily persecuted for their religious beliefs and forced to relocate in large numbers throughout Protestant Europe. One of the primary magnets for fleeing Huguenots was Europe's other great capital, London, where at about the same time that Turgot was conceiving his grand plan, a young French surveyor settled with his family and soon began offering his services.

John Rocque's Plan of London, Westminster, and Southwark (1744 & 1746)

John Rocque fled with his family to England in the early 1730s and found work using his skills as a surveyor to produce plans of the landed gentry's estates around the capital (e.g. in Kensington, Kew, and the Hamptons). In 1737 - the same year that Bretez died - Rocque took on the enormous task of surveying the entire area of greater London, including the royal quarters at Westminster and parts south of London Bridge known as Southwark. It took him no less than nine years to complete.

The outcome - which John Pine engraved - was even more monumental than Turgot's map. Printed on 24 folio sheets measuring roughly 2 by 4 meters, the plan sported the same elongated layout as Georgian London. At the city's heart was the Thames, but Rocque did not allow the river to define the map's orientation like Bretez. He also moved away from the cavalieri perspective, instead portraying London as a great architectural plan drawing from above. As with the Turgot, the critical elements to this map's success were accuracy, detail, and monumental scale. Nevertheless, Rocque added other innovations, which in some ways elevated his map above that of Bretez/Turgot. Rocque's map has so many peculiar and distinct characteristics of London that one understands what the city was like in the mid-18th century.

The map was accompanied by an extensive street index to help orient the viewer. This index included a list of 610 distinct alleys within the city. Seeing some of these names in print would undoubtedly have inspired both indignation and smiles, as the

toponyms can reveal the activities there. Among the more colorful designations, we find names like Pissing Alley, The Whores' Nest, and Naked Boys' Court. Other street names belie more respectable activities and reflect some of the surges in demography that London was experiencing.

Rocque introduced several new elements that would not have made much sense prior to creating large-scale maps such as these. Two elements, in particular, stand out in Rocque's plan and reveal his training as a surveyor rather than a mapmaker. The most crucial element is using hachure and other etched markings to indicate a specific form of space. In doing so, he quickly separated streets from buildings and public from private. The attribution of characteristics through shading or texture was also used in spaces beyond the urban sprawl, including in gardens, fields, and the woodlands surrounding Greater London. Rocque also dabbled at using nuance to indicate functionality. Thus, he left all private buildings hatched in a brick outline, while most public buildings and churches were delineated by thicker lines than the other buildings but left blank inside.

By the end of the 17th century, France and England were gripped by revolution. For France, it was domestic, spawning one of the bloodiest periods in her history and laying the foundations for the First Republic. For Britain, the revolution came in a different guise when the American colonies banded together to throw off the shackles of colonialism and create the first democratic republic in history. These events were still decades off when our maps were published, and rather than seeing them as manifestations of national pride and power, they should be viewed as magnificent outgrowths of the Enlightenment. No city plan reinforces this idea more than our final one: Giambattista Nolli's topographic plan of Rome.

Giambattista Nolli's New Topography of Rome (1748)

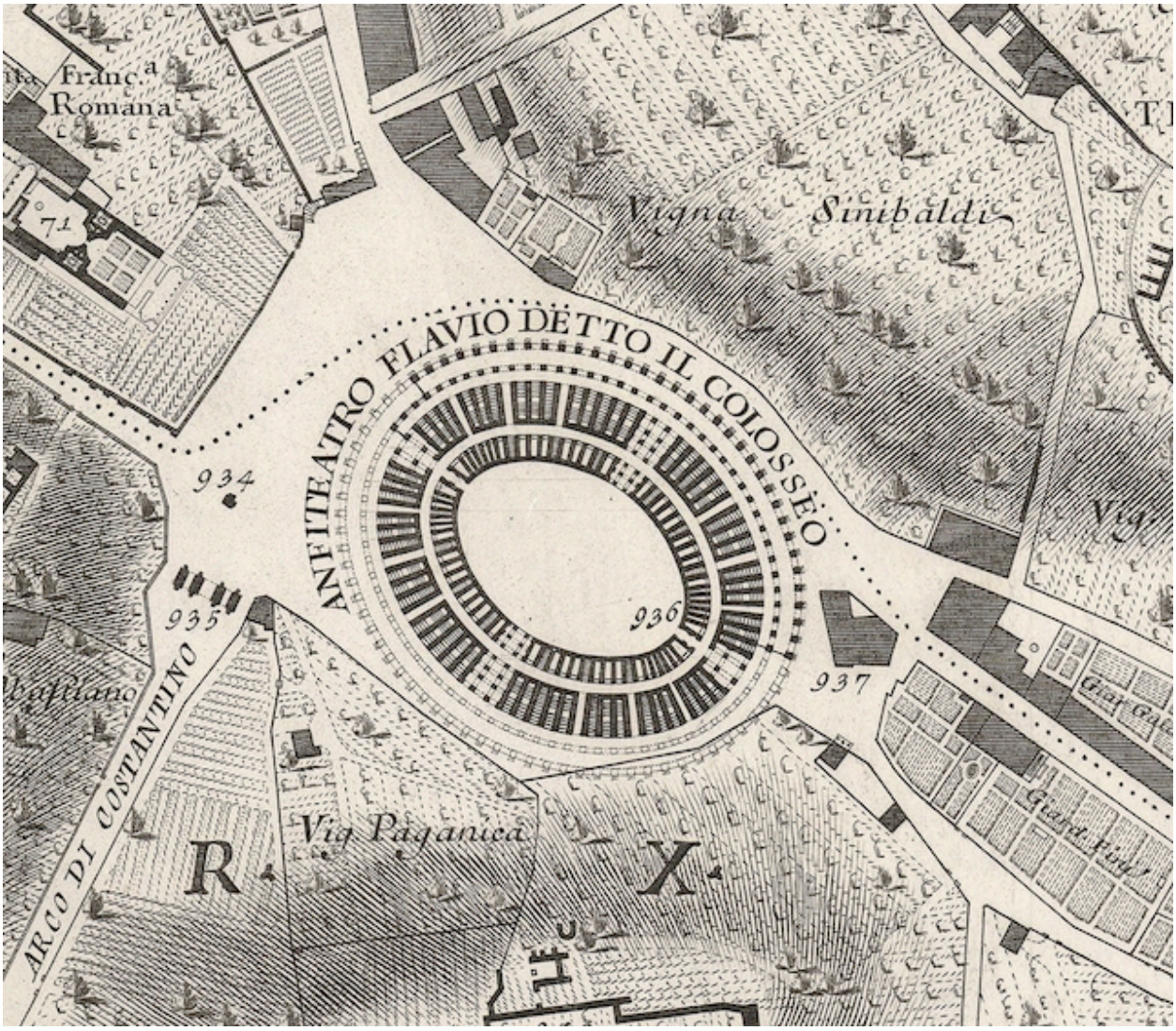
Of the three cities discussed in this article, there can be little doubt that Rome was the least important at this time. Of course, it had been the capital of the ancient world and a great Renaissance city; its bishop was the pontiff of the Roman Catholic Church, and within it was found the Vatican itself. But Rome was secondary in size and importance compared to Paris or London. Nevertheless, the city's iconic status and the critical role played by Italians in the history of cartography ensured that Rome remained a consistent subject in 16th and 17th-century cartography.

It was in line with a long tradition when a group of scholars and antiquarians, supported by Pope Benedict XIV himself, commissioned Giambattista Nolli to create a new map of Rome in 1736. An architect and surveyor by training, Nolli decided that the entire city needed to be surveyed. He worked tirelessly on this exhaustive task for over a decade before even starting to bring the data together. When he did, it was one of the most beautiful and precise renditions of urban space ever created, so fine, in fact, that it remained the go-to source for all municipal mapping projects in Rome until the 1970s.

La Nuova Topografia di Roma is one of the great milestones in the history of mapping. It is a monumental wall-map like its predecessors, consisting of twelve large sheets and measuring an imposing 1.75 by 2 meters. It is not just an important historical documentation of Rome but a fundamental paradigm shift in the methodology of representing complex cityscapes. The map was released in 1748 after more than twelve years of intensive surveying and engraving. Two indices identify 1320 distinct places on the map, making it as comprehensive an

overview of the city as any public record or municipal office could offer. Beyond the urban sprawl of the old city, Nolli carefully delineated the many Renaissance villas found within the Aurelian walls (275 CE), including their field systems, orchards, parks, and gardens.

It would be no exaggeration to describe Nolli's map as overwhelming in its detail, depicting everything from the vestiges of antiquity to the most recently constructed palazzos. In between is a cornucopia of churches, streets, fountains, parks, aqueducts, and the plethora of cultural landmarks for which the city is so rightfully famous. Thousands of buildings have been carefully surveyed and plotted into this grand vision, with each building's ground floor delineated in a frenzied drive toward complete exposure.



Accuracy is indeed the foremost trait that continues to drive interest in the Nolli map. Scholars from the University of Oregon have created the interactive Nolli Map website and an associated app, which overlays the plan with modern satellite imagery. Nolli had been trained in Milan and relied on simple triangulation for most measurements. What set him apart was, to a large degree, his employment of new tools, like fixed-length chains for measurements and a technical compass for angles and orientation. This reliance on the compass manifested itself in the map, which, unlike Brezet or Rocque, was oriented to magnetic north rather than astronomical north.

Drafting the plan in this manner was one among several innovations that would prove hugely influential. Another was the systematic coding of space through variegated shading and the incorporation of precision symbolism to topography and specific urban features. While such considerations were largely omitted by Brezet, who focussed more on perspective than defining the types of space shown, it was clear that Rocque and Nolli had similar ideas about how different spaces could be defined visually, but Nolli went all it. Before contours and elevations were illustrated, Nolli used hatching and S-curves to denote physiographic contours. Moreover, he developed a system for visually defining space within the densely inhabited urban core.

By his own admission, Nolli built his masterpiece on a much older map by Leonardo Bufalini from 1551. This plan also used the contrast between darkness and light to distinguish buildings and open spaces, but the visuality of the Bufalini map was binary and simplistic. Even so, Nolli was inspired and consciously elevated the idea he saw in Bufalini’s map to an entirely new level. He applied different kinds of shading to distinguish between different types of space. While some buildings would be densely shaded to indicate private ownership, others were clearly outlined but left blank inside, designating them as public spaces (e.g. the Pantheon). Open public spaces such as Piazza Navona or Piazza di Espagna were not outlined per se but delineated by the many buildings surrounding them. Churches and historical sites stand out in particular because of their thick black outline and striking internal features.

In a stroke of artistic genius, Nolli added a further layer to the map by contrasting the deep black outlines of standing monuments with thick white outlines denoting ancient monuments that exist only in memory or ruin (e.g. parts of the Palatine Hill). Visuality - that is, the meaningful use of color, depth, contrast, and texture - is indeed vital to understanding and appreciating what Nolli was trying to do with his grand project.

As with the other two great plans, Nolli's map hinged on three central characteristics: accuracy, detail, and monumentality. Nevertheless, how he achieved these characteristics gave Nolli map its most enduring legacy. While the Turbot and Rocque maps achieved wide acclaim and continue to stand as icons in the great pantheon of cartography, this status was partly due to the broader importance of their subject. From kings and captains to merchants and manufacturers, all were interested in the world's most influential and wealthy cities. Rome was more of an acquired taste, elite, and intellectual, with a much-reduced audience for maps. Nolli's map finds its place alongside its French and British counterparts for its sheer methodological impact. The careful application of nuance and texture to define the nature of a space set new standards for city plans and underscored how visuality and accuracy would henceforth walk hand in hand.