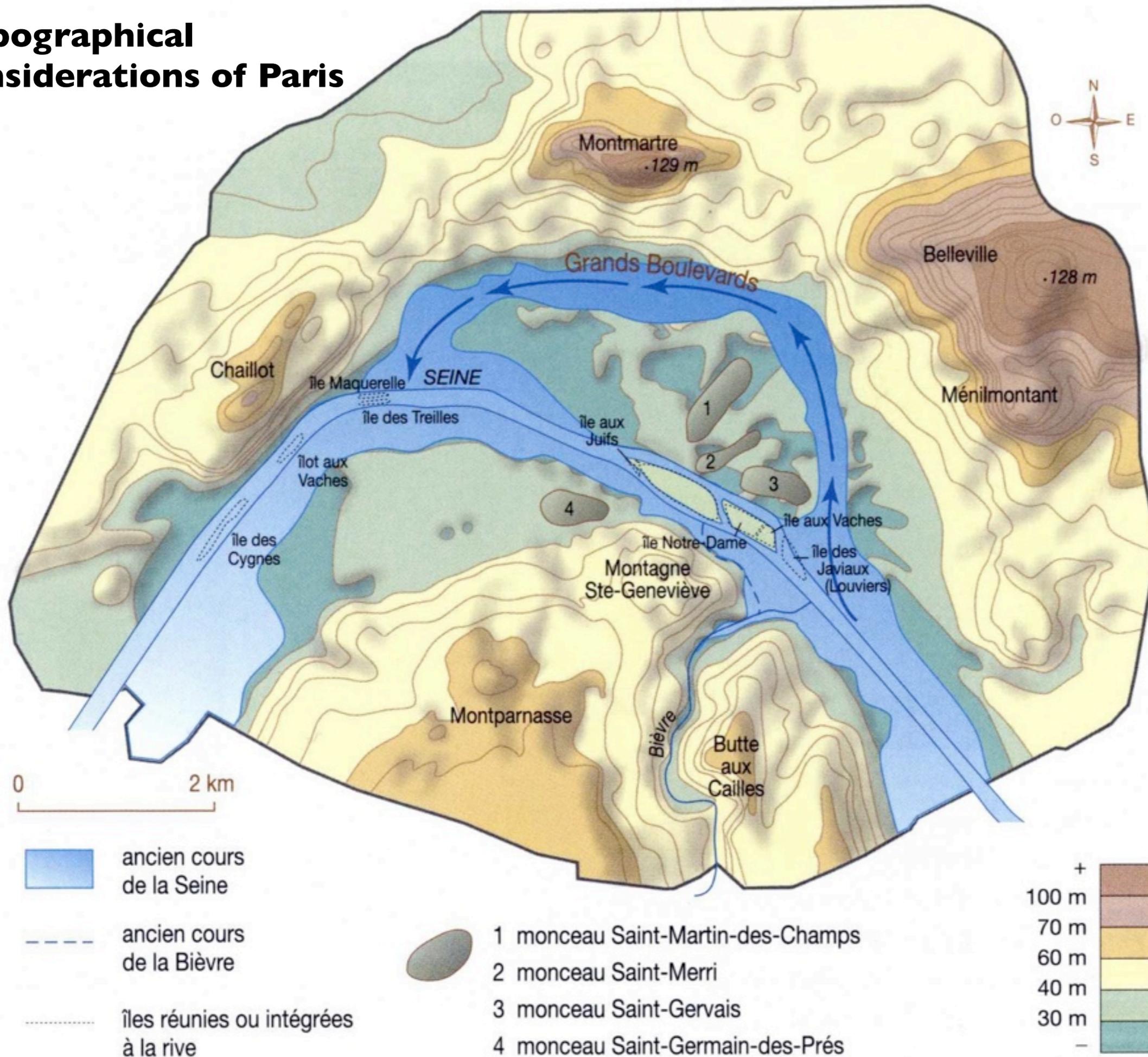
An aerial photograph of Paris, France, showing the city's urban layout. The Seine river flows through the city, and the dense grid of streets is visible. The title 'Paris' is overlaid in pink text at the top center.

# Paris

## **The Development of Roman and Medieval Urban Forms**

**The Roman and Medieval eras will produce lasting urban elements that become the organizing elements for the development of the city from the Renaissance through the 21st century.**

# Topographical considerations of Paris







Medieval reproduction of a 3rd century Roman map of the area around "Lutetia", present day Paris. The site on which the Romans settled Lutetia, was considered early on to be an ideal location for trade for defense.





**Lutetia, c. 250 CE. Note the strict ordering of urban form as a grid. Roman Paris had all the amenities of a prosperous Roman city: A Forum with temple and basilica (no longer extant); a theatre, the excavated site we will visit; two baths, one of which partially survives as the Baths of Cluny -- across from the McDonalds.....**



**Over lay of Roman Paris on current street map**



**Rue St. Jacques, the Roman cardo**

# Roman Paris

<http://www.paris.culture.fr/en/index.html>

## Laying out the City of Lutetia (Roman Paris)

### The basic unit of measurement

The discovery of ancient roads, the reconstruction of the boundaries of the main Early Roman monuments and the path of certain medieval roads have all contributed to the establishment of a theoretical, strictly orthogonal town grid. **The basic unit of this grid has been found everywhere in the central section of Lutetia.**

This unit corresponds to exactly 300 Roman feet, with occasional subdivisions of 150 feet. The choice of this unit proves that the urban plan of Lutetia was an **abstract procedure**, and that the planners did not have to consider previous settlements-or chose not to. This grid system seems also to have been partially used on the right bank, even in areas that were not completely urbanised. Thus, between the cardo maximus (rue Saint-Martin) and the cardo that is the present Rue Saint-Denis it is exactly 600 Roman feet.

### Laying out the grid

To implement this grid system, the surveyors probably established a straight line that would become the principal axis of the settlement, the cardo maximus. We can imagine **the initial location of the groma** would have been **the highest point** on this axis, one that offered a very clear view of the island and the right bank. This "zero point" was probably located at the southwest corner of the forum, which corresponds to nos. 172 and 174 of Rue Saint-Jacques: **the highest point on the Saint-Geneviève hill.**

### The main streets

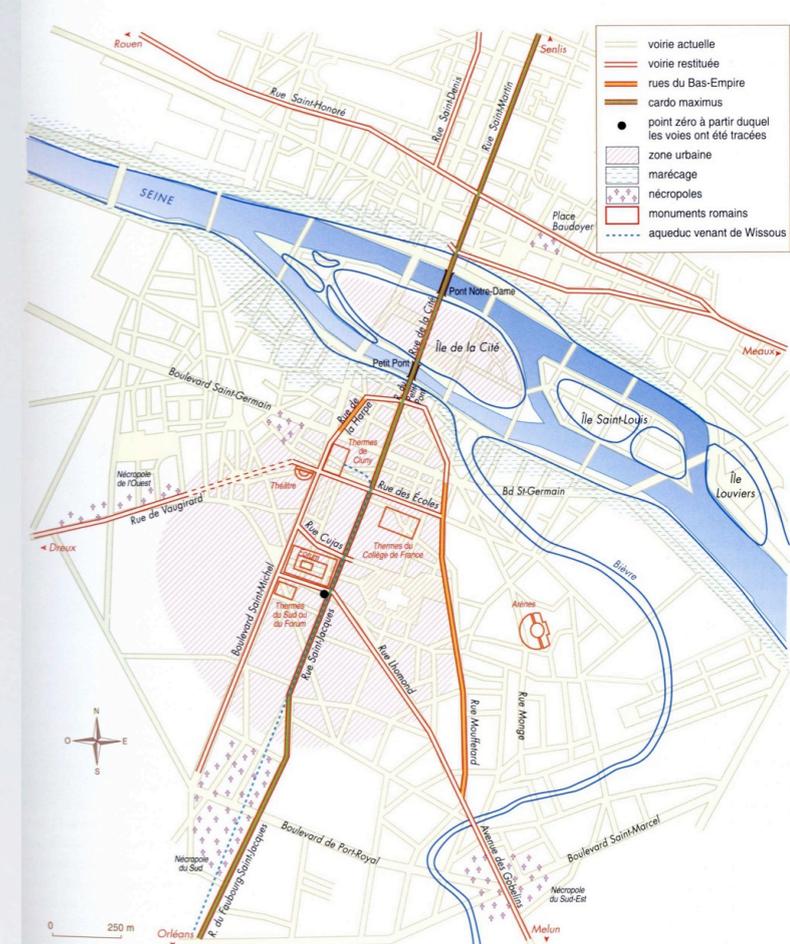
**Some of Lutetia's principal roads still exist today.** These are primarily cardines such as the cardo maximus rue Saint-Jacques, the cardo **Boulevard Saint-Michel** and the cardo **rue Valette**. On the right banks, there is the cardo maximus **rue Saint-Martin** and another cardo **rue Saint-Denis**.

**The decumani have been almost completely erased from the present-day topography** of Paris. Some of them did not exactly follow the lines of the initial grid, which shows that the Roman town planners adapted the layout of the city when necessary. Thus, the **l'Ecole des Mines decumanus** is roughly ten metres south of where it should be. To the north, the distance between the decumanus that is thought to have run alongside the Cluny baths, parallel to the **Boulevard Saint-Germain** and the decumanus of the **Rue des Ecoles** is not 300 but 400 Roman feet.

### Adaptations of the grid system

There are also streets that run diagonal to the grid system, but that are nevertheless part of the urban plan. For example, the road formed by the **Rue de la Sorbonne** and the **Rue Victor-Cousin** ran along the eastern side of the Cluny baths-which was 300 Roman feet long-and ended at the entrance to the forum. However, the entrance was in relation to the long side of the monument, and the road was adapted to this.

Another example of this is the via transversa that started from the city's zero point and joined the Melun road. The **line of this road** is a perfect diagonal of a rectangle measuring two and a half units by three units. This road-most likely an important one, since it linked the capital of the Parisii with Italy via Melun and Lyon-had thus been anticipated from the beginning of the construction of the Roman city.



## Aqueducts

### A channel set directly in the ground

A channel was used to **keep the water cool and clear** by eliminating as much contamination as possible, and to **reduce water loss to a minimum**. It was flat-sided, made of concrete, and **set directly in the ground**. It was built of small-stone and pebble masonry set in a very hard cement that gave it great stability. The interior was lined with two coats (one thick, one thin) of very smooth hydraulic mortar with a high tile fragment content. This coating ensured that the channel was waterproof and that the water flowed easily. The channel was hermetically closed with limestone slabs that were sealed with a glaze; the cover could be removed to allow maintenance work.

### A bridge-canal

Sometimes, the path of an aqueduct crosses features of the terrain that are impossible to circumvent. **Thus, for the aqueduct to cross the Bièvre Valley at Arcueil, it was necessary to build a bridge**. This kept the water flowing down along a gentle, continuous slope. This bridge-canal, whose *opus vittatum mixtum* supports are still visible today, is well documented in historical paintings and drawings. The structure's arches are the source of the toponym Arcueil.

### Multiple water sources

**The water brought by the aqueduct to Lutetia came from several springs**. These were located in the hydrographic network in the present-day communities of Chilly-Mazarin, Morangis, Wissous and Paray-Vieille-Poste, all of them in the department of Essonne. These springs were directed into three channels that **emptied into a rectangular reservoir** that fed the Lutetia aqueduct. The aqueduct's flow rate, estimated at 2,000 cubic meters a day, does not allow us to estimate the city's population. This is because **the use of the water supply for recreational purposes outstripped more utilitarian requirements**.

### A path that followed the contours of the land

From Wissous to the rue Thomire, where it entered Paris-16 kilometres as the crow flies-the aqueduct traced a 26-kilometre path through the present-day towns of Fresnes, Hay-les-Roses, Arcueil and Gentilly. The additional length is due to the fact that **structures like aqueducts had to be built with an eye on costs**. Thus, the engineers followed the contours of the land, avoiding abrupt changes in the terrain. The one unavoidable obstacle was the Bièvre Valley, which required the construction of [a bridge at Arcueil](#).

### The aqueduct in the city

A number of sections of the aqueduct have been discovered in various parts of Paris, allowing us to trace its path as it arrived in the ancient city. However, **we cannot precisely determine how water was supplied to the community's three baths**, as well as the fountains and other water structures that served the Roman city.

**Another large aqueduct of completely different design** was discovered beneath the Curie Institute. It could be a deviation from the Arcueil aqueduct, or a system that specifically supplied water to [the Collège de France baths](#).



## Wood House Construction

The Roman city's first houses were built during the Augustan period. Usually built of wood and clay, they were of a standard design. This **indigenous** type of construction also presents similarities with the architecture of Roman military camps.

The walls rested on **wall plates** laid on **stone plinths** that were more or less aligned. On this base, a system of notches held vertical stanchions in place, to which were fastened horizontal laths. A **vertical system of wattling** composed of supple rods was then attached to this substructure, and the entire wall was given a coat of clay.

Despite the use of seemingly rudimentary materials, this type of construction was actually quite sophisticated. The walls could be given very smooth coats of plaster and carefully painted murals. In addition, **the rich and abundant furnishings** found during excavations **are clear indications of the lifestyle of the residents** of certain *insulae* in the city centre.

The thinness of the walls indicates that **these houses did not rise above ground level.**

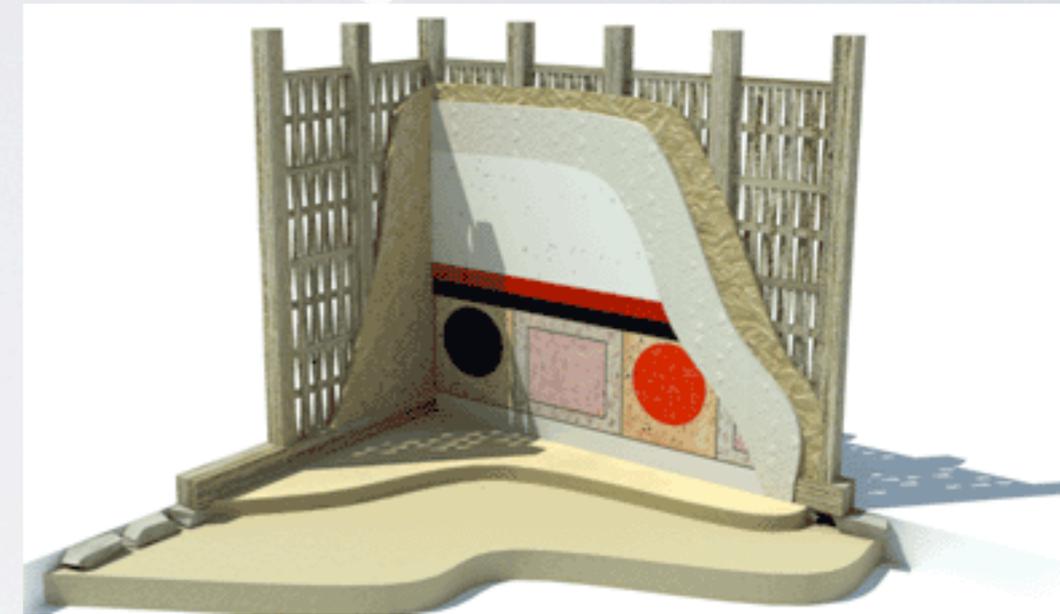
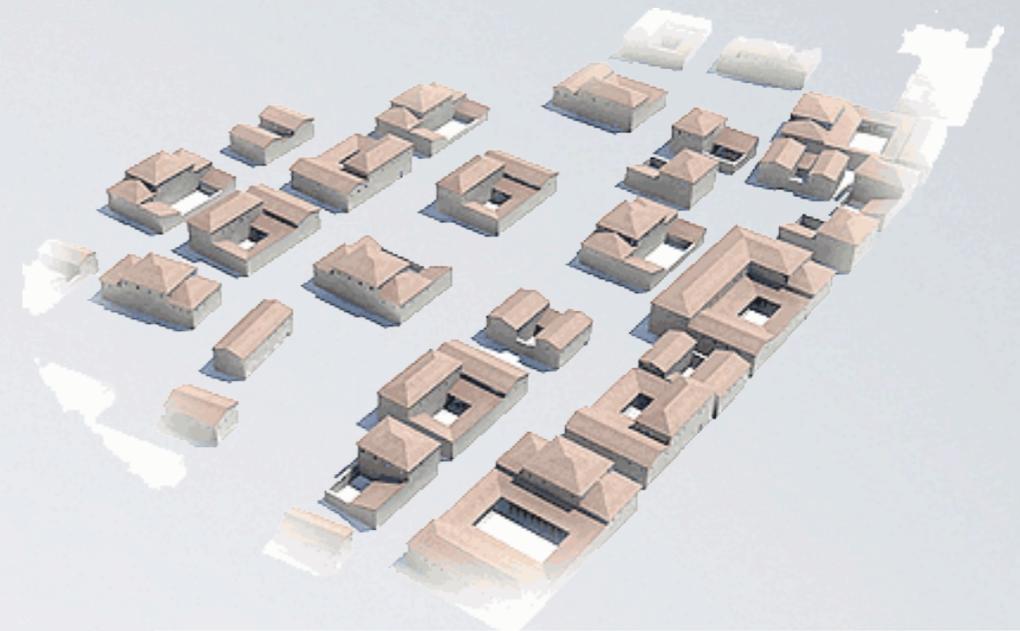
**Roofs** were also made of perishable materials-**thatch or wooden planks**-since no roof tiles have been discovered in destruction layers.

As for floors, they consisted of beaten earth or hard-packed yellow clay.

## Masonry House Construction

At the end of the 1st century CE, the fabric of the city became denser. As unbuilt spaces were divided into lots and Lutetia's first public monuments appeared, **timber-framed houses were progressively replaced by ones made of stone.** Nevertheless, the two types of houses continued to coexist. This architectural shift from earth to stone can be characterised in several ways. Stone house construction respected at least two factors imposed by previous constructions. First, they kept the general orientation of the house, although they tended towards a more systematic use of the north-south axis. Second, they respected the limits of the parcel of land.

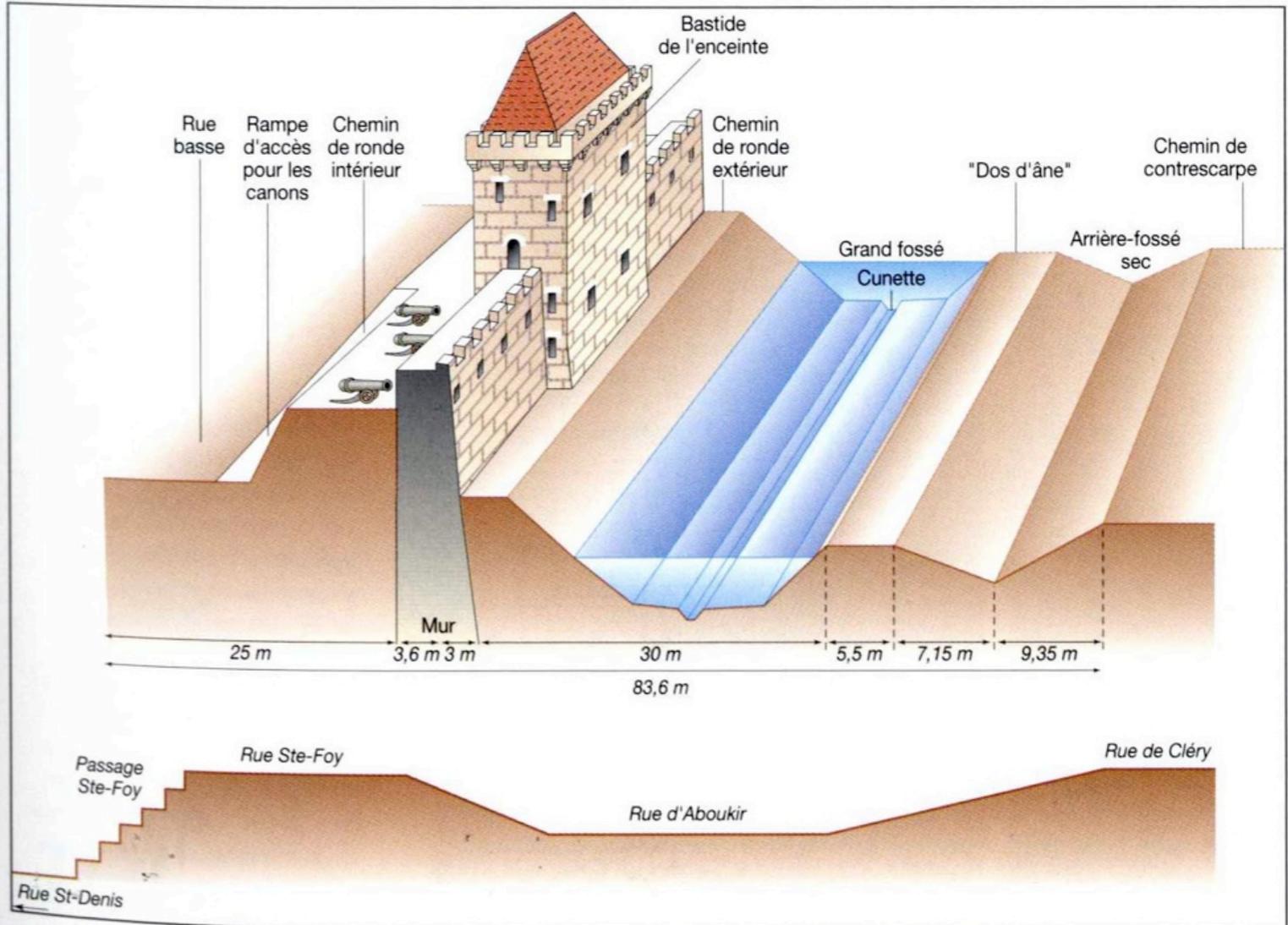
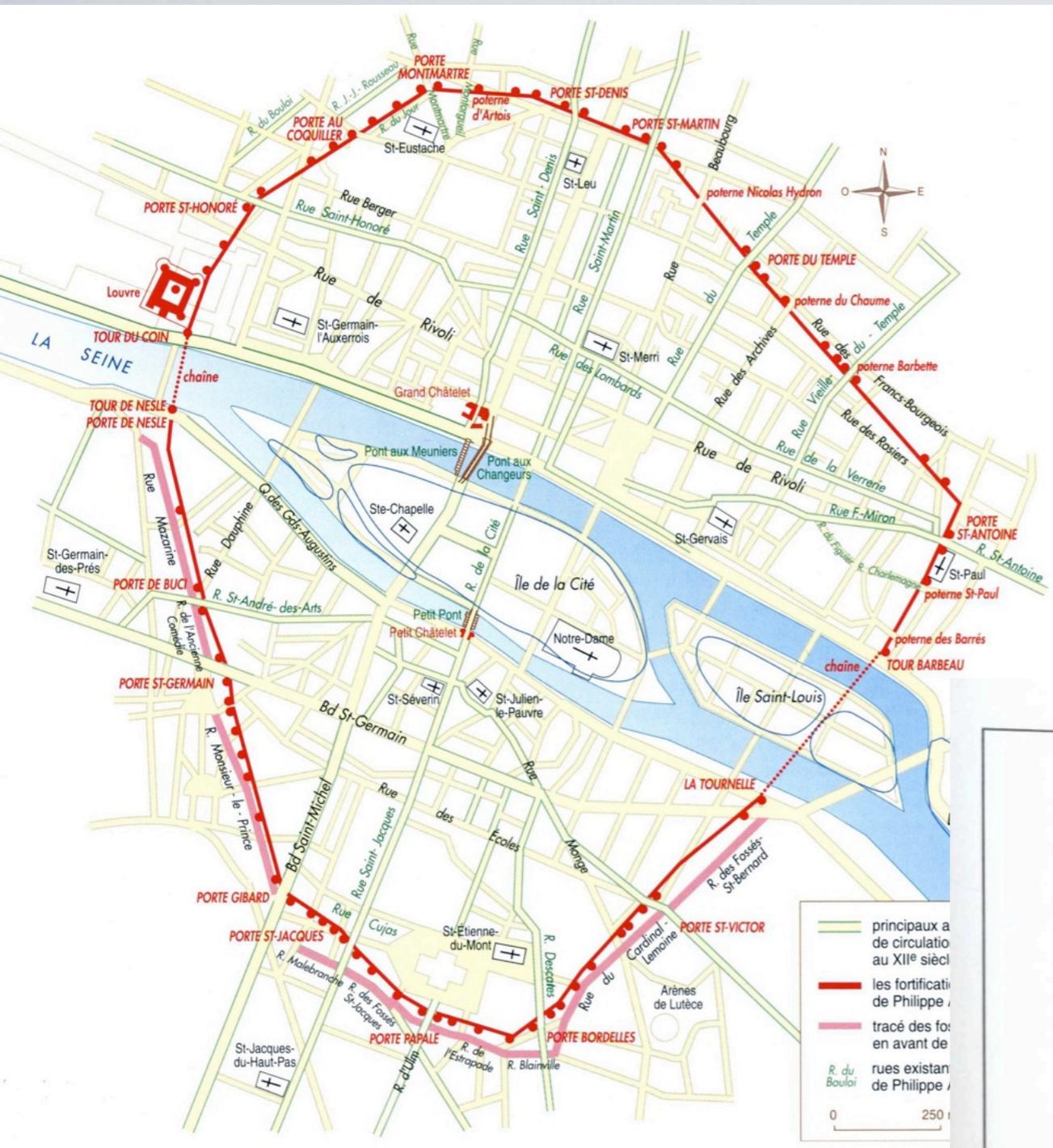
As is common in Roman construction, the walls were made of **a double layer of small limestone blocks**, held together by a lime mortar and completed with a filler of small stones. These walls were systematically dismantled and the stones reused. However, the existence of walls made entirely of masonry has been shown by the discovery of several intact sections and fragments of wall paintings in which the imprint of stones can be seen. The thickness of the walls suggests that **these houses could have had an additional level.**

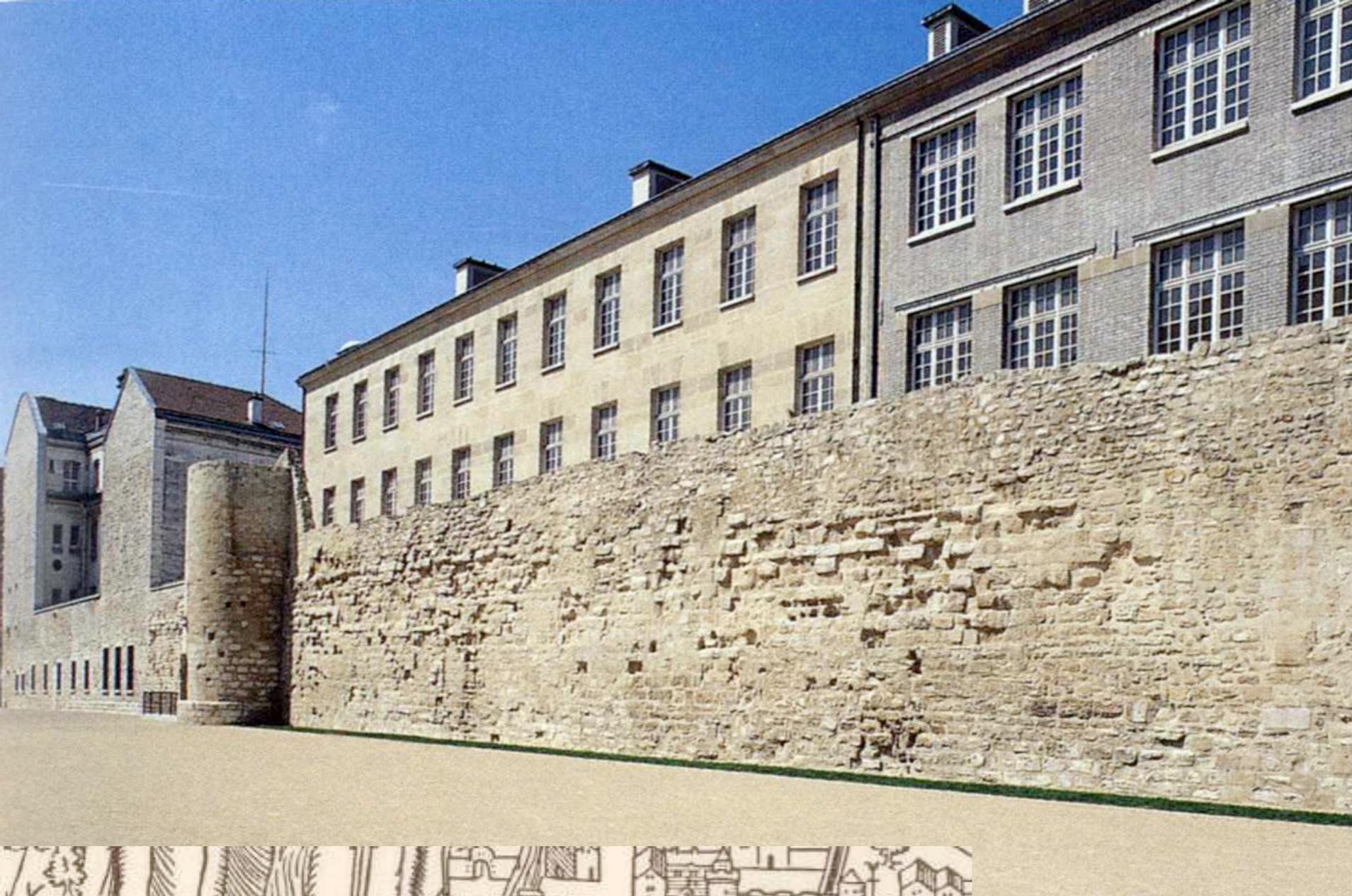


# The Wall of Philip Augustus 1190-1215

Just as the Roman *cardo* became an organizing element that is still present in the urban fabric, the Wall of Philip Augustus will become one of the first organizing elements from the Medieval period as Paris develops during the early Renaissance, in the 1500s.

The wall will be dismantled in the 1500s and will become the path for the **Grands Boulevards of Henry IV** around 1590, which we will see.



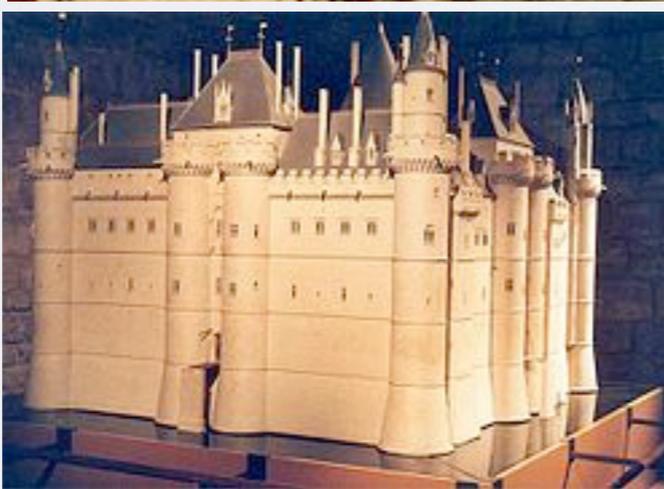
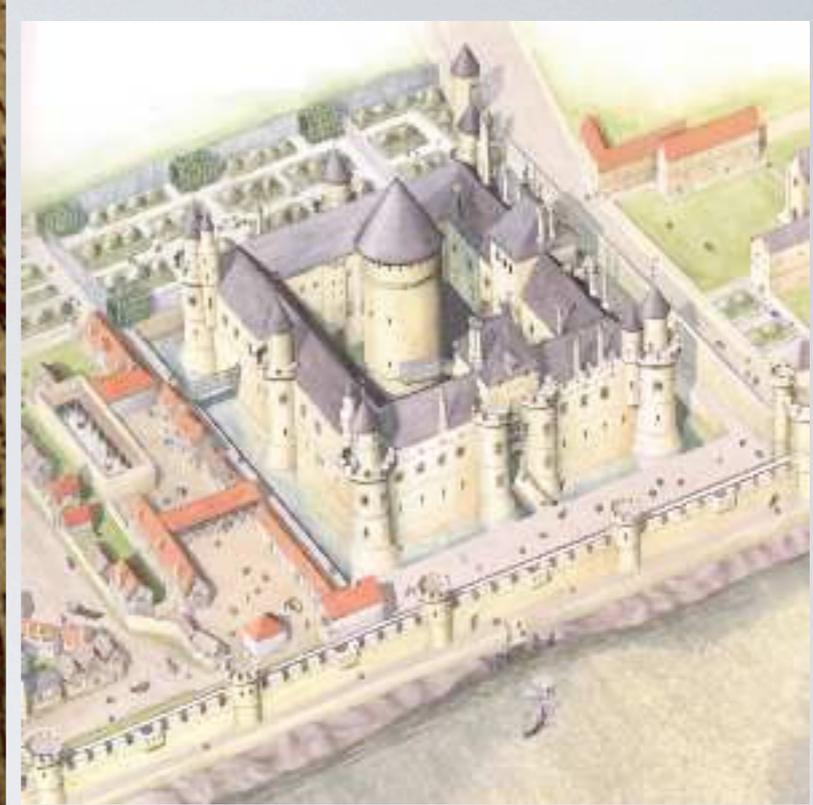


**Remnants of the Wall of Philip Augustus (1190 - 1215), north of the old Porte St. Martin and near the church of St. Martin Deschans.**

## The Wall of Philip Augustus

The wall was built in the context of the struggles between [Philip II of France](#) and the Anglo-Norman [House of Plantagenet](#). In order to protect Paris, the french king, before leaving for the [Third Crusade](#), ordered to build a stone wall in order to protect the capital of France during his absence.

The walls of Philip Augustus enclosed an area of 253 hectares and its length was 2500 meters on the left bank and 2600 on the Right Bank. On the west side was the weakest point of the defense against the Norman threat. Near the river Seine, Philip Augustus built [Fortress of the Louvre](#) in 1190 with a fortified [donjon](#) and ten defensive towers surrounded by a moat. The construction cost was a little more than 14000 [livres](#) during the 20 years of the construction: 12 percent of annual revenues to the king in the 1200's





Site of the Old Louvre

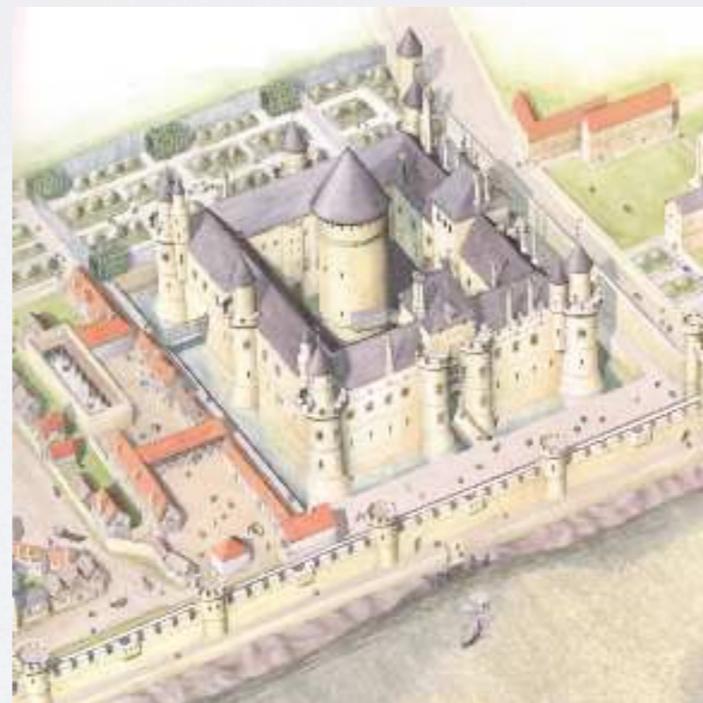


Old Louvre

**Origins of the Louvre, the focus of the Grand Axis that will be developed from 1500 to the present.**

**The name “Louvre” comes from a Frankish word “leovar,” which means a fortified place.**

**Philip Augustus begins building the castle in 1190 (right). This castle is razed by Francis 1st in 1546 and replaced by Lescot’s remarkable Renaissance palace, which itself becomes the building around which later additions are organized.**





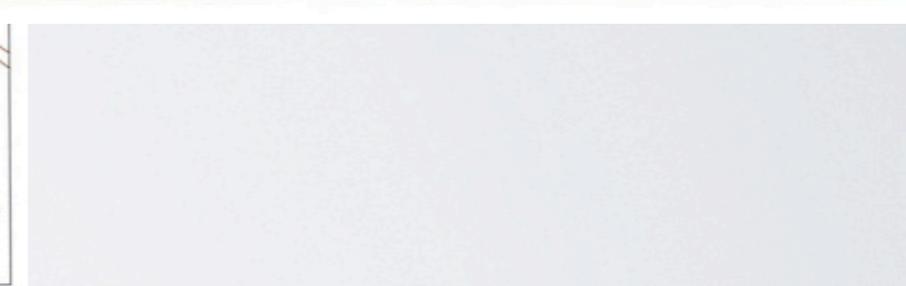
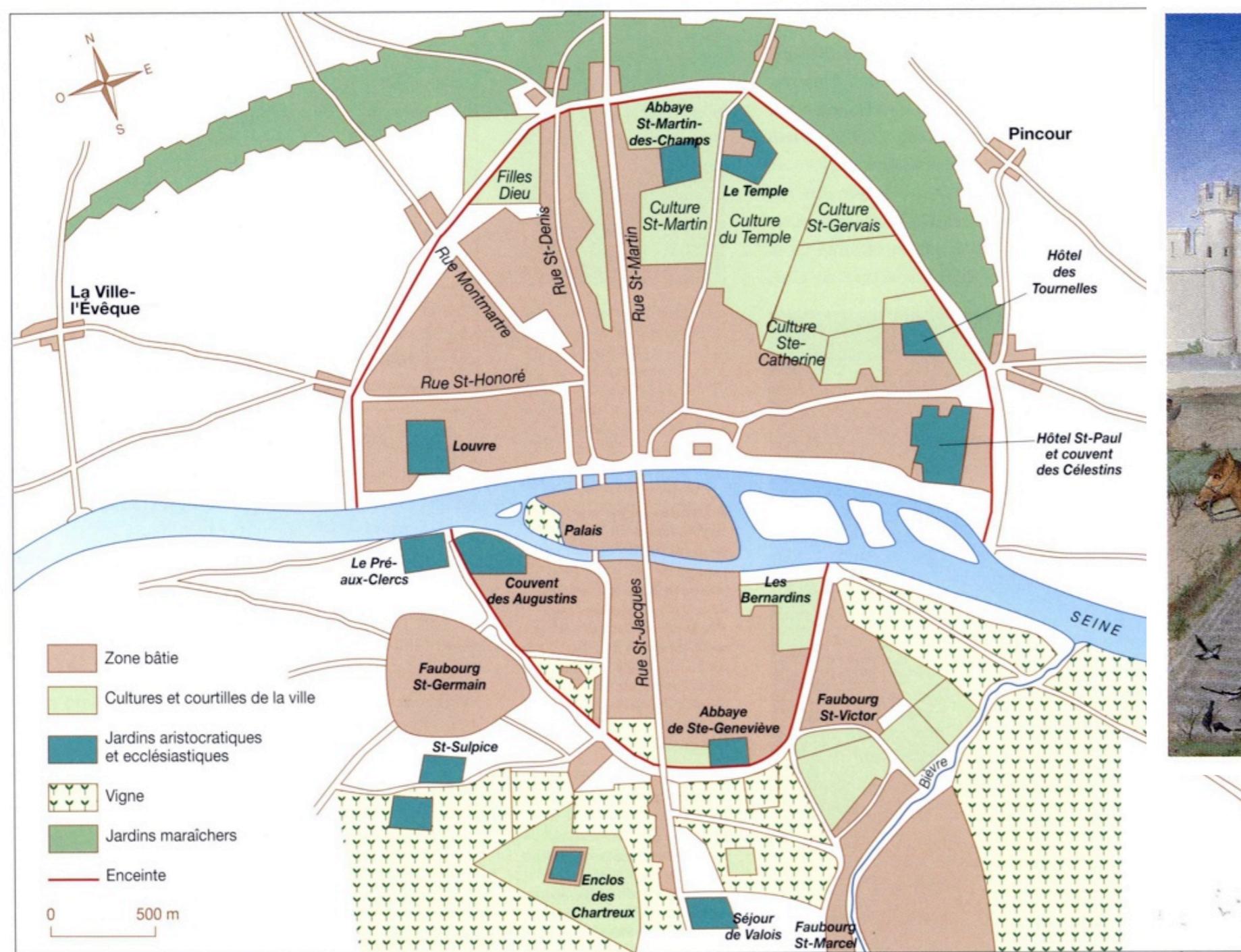




**A depiction of the Pont Notre Dame in the 1500s, before buildings were forbidden on this and other bridges crossing the Seine.**



**All areas in color show the parts of this map of medieval Paris that were occupied by buildings, or gardens. The wall of Philip Auguste on the south bank remains in tact. To the north, the wall was expanded by his successor, Charles V. Note that half of the land in Paris is controlled by the Crown (black as well as white areas), the Church (red), the Aristocracy (orange), and the Colleges (yellow), which themselves were funded by the first three institutions. The control of these lands means that future development is will be determined by these three institutions, not by the city's representative councils.**



**Although the medieval city was indeed crowded and dirty for the vast majority of its residents, there were nevertheless a substantial amount of green space within the city. The Monarch, Church, and Aristocracy had large gardens (dark green). There was also space within the city walls devoted to agriculture (light green), and to vineyards. This land, although off limits to most of the population, provided some of the food produce for city residents (buy by no means all), and more importantly, this land constituted a considerable area open for future expansion, which later Monarchs would exploit.**