

Fig. 1: Plan of the Domus Tiberiana in the SITAR WebGIS

M. Serlorenzi, F. Coletti, L. Traini, G. Sterpa (SS-COL)*, S. Camporeale (Univ. Trento)**
 *Soprintendenza speciale per il Colosseo, il Museo Nazionale Romano e l'area archeologica di Roma - **Università degli Studi di Trento

THE DOMUS TIBERIANA PROJECT (ROME)

The supply of building materials for the Hadrianic works on the *Nova Via*

In 2013 the Soprintendenza Speciale per il Colosseo, il Museo Nazionale Romano e l'Area Archeologica di Roma started a new project for the study of the *Domus Tiberiana*, aiming at systematizing all previous documentation concerning this architectural complex inside the WebGIS SITAR (<http://sitar.archeomoma.beniculturali.it/>). Among the objectives of the project is the correct reconstruction of the phases of development of the whole north-western sector of the Palatine hill between the Republican period and the Middle Ages through critical re-examination of all components of the building as well as its stratigraphic sequences (mosaics, wall paintings, architectural decoration, statuary and finds discovered in past excavation campaigns). Restoration of the monument to public use is envisaged as well.

The main focus of the project is the stratigraphical analysis of wall structures and thus the comprehension of the economics and logistics of building works as well as the supply of stone and ceramic materials used in the building.

In 2014 the study of the western front of the *Domus Tiberiana* along the *Nova Via* was carried out and from 2015 it has continued in collaboration with the University of Trento.



Fig. 2: Front of the Domus Tiberiana along the Nova Via

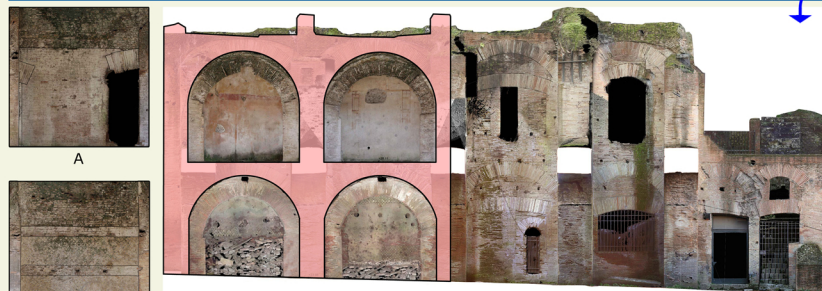


Fig. 3: Front of the Hadrianic building along the Nova Via with a view of the interior of four rooms

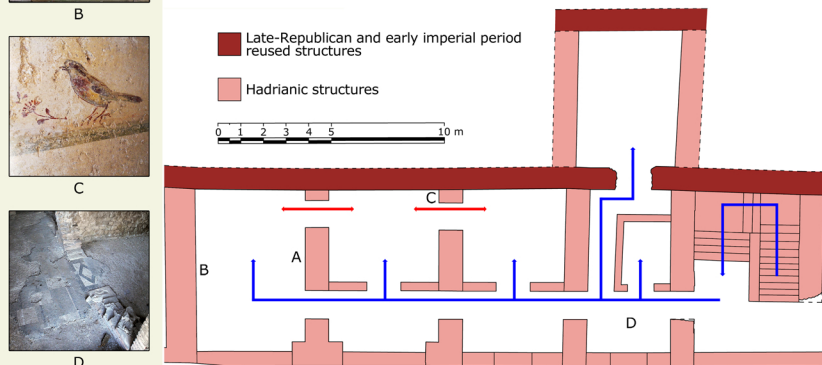


Fig. 4: Reconstructive and schematic plan of the building in the Hadrianic period (first floor)

THE CONSTRUCTION YARD ALONG THE NOVA VIA

The impressive mass of the northwestern corner of the *Domus Tiberiana* that now dominates the *Forum Romanum* is an addition probably built by Hadrian for regularising the aspect of the palace and increasing its monumental effect. Imposing construction works were organised in order to integrate older structures (Augustan to Flavian periods) into a new very monumental project. At the end of these works the new façade of the *Domus Tiberiana* was aligned with the *Nova Via*.

The *Domus* was organized on several levels including the *Clivus Capitolinus* and *Nova Via* (+22/+30 m), the so-called *Clivus Victoriae* (+33/+35 m) and the *Horti Farnesiani* (+50/+51 m). Our analysis of the complex started from the buildings along the *Clivus Capitolinus* and the *Nova Via*. In this area the construction works were divided into small units corresponding to groups of rooms with different constructional and organizational principles. The function of these buildings is not clear: they were either commercial or administrative areas. One building is analysed here, in order to highlight how the use of different building materials and techniques reflects the organization of the construction process.

Two of the original three storeys of the building are still well preserved, as well as a staircase. Both at ground and first floor is a series of four barrel-vaulted rooms, three of which are further subdivided by means of thinner walls; at the first floor one more chamber was excavated into the hill. Two series of smaller and larger doors allow circulation between the rooms and this is probably to be related to different uses of these areas. The back walls of the rooms are still decorated with fresco paintings and the floors with geometrical black-and-white mosaics.

The building was constructed using different materials and techniques. The internal walls are of reticulate masonry panels made of small tufa blocks within a brick framework (a technique typically called *opus mixtum*). The dividing walls with the two doors as well as the central wall of the staircase are entirely of brick (*opus testaceum*). The thinner internal dividing walls are made of brick on one face while the other is of small irregular pieces of stone.

The dark-red bricks used in all internal structures are identical in nature. Different yellow-orange bricks were used for the façade which was probably added only after the main internal walls were completed. Finally a kind of bright orange brick was used for the window sills that were added at the end of construction; these are also the poorest quality bricks.

BUILDING MATERIALS

During the first year of the project, alongside with wall stratigraphy, an examination of building techniques and materials was carried out. In particular an analysis of brick measures aided the differentiation of techniques as is showed by the example of the red and yellow-orange bricks we described above. The length and thickness of both kinds of bricks were sampled (see graphs: samples of 50 bricks).

Thickness. The thickness of the red bricks ranges from 2.9 to 4 cm and 32% are 3.5 cm thick (maximum size); some bricks are thicker (4.1 and 4.3 cm). The thickness of the yellow-orange bricks ranges from 3.1 to 3.7 cm and a higher percentage (44%) are 3.5 cm thick (maximum size). Some bricks are 3.9 cm thick.

The fact that the dimensions of the yellow-orange bricks are more regular suggests that a higher degree of control was exercised on the dimensions of these bricks during the production phase in the *figlinae*.

Length. The red bricks range from 19 to 25 cm and 22% are 22 cm long (maximum size). The length of the yellow-orange bricks ranges from 22 to 29 cm and 22% are 27 cm long (maximum size).

This probably demonstrates that a *sesquipedalis* was cut into 16 triangles (diagonal of 22.2 cm) for obtaining most of red bricks and into 8 triangles (diagonal of 31.4) for obtaining most of the yellow-orange bricks. Alternatively a *bipedalis* could be cut in 18 triangles with a diagonal of 27.8 cm.

The analysis of the brick dimensions shows that they were used according to a different rationale. For internal walls the more irregular red bricks were cut into smaller pieces, so that a greater quantity of mortar was necessary. For the façade, the more regular yellow-orange bricks were used and they were cut into larger pieces. In this latter case the use of a larger percentage of bricks was probably intended to give greater strength to the wall structure.

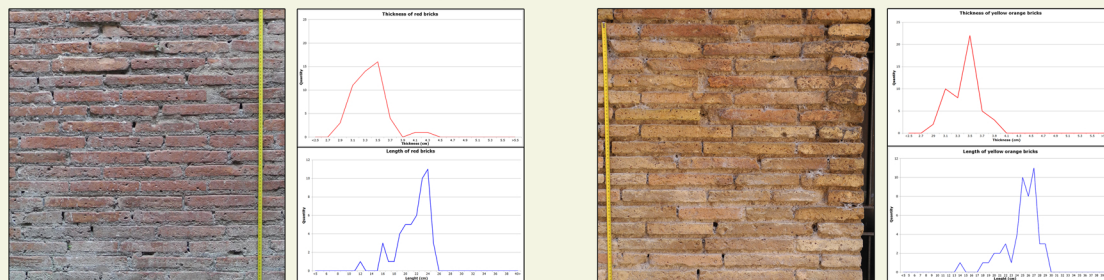


Fig. 5: Samples and graphs with the dimensions of the red and yellow-orange bricks

QUESTIONS

A deeper analysis of building materials and of the rationale of their supply to the construction yard allow different questions on the construction economics of Roman building industry to be raised that will guide the development of our project in future years.

Do the different brick types depend on the supply of materials from diverse *figlinae* in the phases of the construction process? Or were the bricks used also according to their varying quality and the structural function of walls?

Is the analysis of the intrinsic characteristics and quality of building materials (colour, texture, hardness, measures, etc.) useful in identifying different productions? And consequently, are we able to identify the *figlinae* for each production and their distances from the building yard, as well as all the actors involved (patrons, contractors, transporters, etc.), that is the whole rationale of the supply of building materials?

What is the economic rationale of *opus mixtum* and *opus testaceum*? In which portions of the building are they used and why?

Why is the *opus mixtum* intensely used in the *Domus Tiberiana* during the Hadrianic period and not so in other parts of the Palatine and in other periods? How can this be related to the building industry of Rome in general and in this same period?