

IL DUOMO DI SIENA:
EXCAVATIONS AND POTTERY BELOW
SIENA CATHEDRAL

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This book is dedicated to Donatella and Renato

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Foreword

The missed opportunities of a town: Siena, excavations beneath the cathedral

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Surveys in Siena (Fig. I) – Modern investigations started in the city in 1979 with the research and exhibition presented in the book *Siena: le origini. Testimonianze e miti archeologici* edited by Mauro Cristofani, where he reinterprets the history of the town, subjecting it to critical review by surveying all the available sources. In the early 1980s the University of Siena began investigations into

the urban context and the first studies on the medieval pottery from Siena were analyzed and typologized in an archaeological perspective (in which the known materials, the modern urban recoveries (the complex of *S. Marta-Oratorio del Nicchio*), the excavations of the monumental complexes (Fonti di Follonica and Palazzo di *S. Galgano*), and some general reconnaissance of the area all merge)



FIG. I: EXCAVATIONS AND SURVEYS IN SIENA

and are being published. Future projects will include the digging of the wells in the *castellare degli Ugurgeri* in the *Contrada della Civetta*.

At the end of the decade an excavation began in the area in front of the hospital of *Santa Maria della Scala*, giving important clues to the reality of Siena in the transition between Late Antiquity and the Early Middle Ages: the interpretation of the façade of the hospital was the opportunity for Roberto Parenti to apply the methodological principles of the archaeology of architecture – already tested in the suburban context – highlighting the multidisciplinary nature progressively taken in these years in the use of different methods and sources. Among these, the mensiochronology and the openings' chrono-typology (the latter carried out in the following years by Fabio Gabrielli in his studies on the Siena civil buildings) are applied with interesting results. In the same period the urban context of Siena is the subject of the first important study based on the new methods and principles in the discipline and a survey on the wall facing the rear of the *Maestà* fresco by Simone Martini in the *Sala del Mappamondo* shortly followed. The emergency excavation of a pottery kiln, dated between the second half of the 15th and the early years of the 16th century in Via delle Sperandie was undertaken in the early 1980s. In the second half of the same decade the *Palazzo Pubblico* was the subject of the important restoration and consolidation of the façade and different teams, coordinated by Roberto Parenti, collaborated on the study of its material structures with investigations that ranged from the analysis of the walls, the chrono-typology of building materials, mortars and openings, chemical analyses of sampled materials, and new iconographical and historical researches. Since the late 1990s, during the recovery of the hospital complex of Santa Maria della Scala, urban archaeology in Siena experienced a new and exciting season of investigations with multi-disciplinary projects in a framework of cooperation between civic institutions and the *soprintendenze* which, from 2000, continued with excavations beneath the cathedral itself. We must add to these investigations the interventions of preventive archaeology conducted over recent years, for example the *Convento del Carmine*, the *Fonti di Follonica*, the *Ala dei Nove* in the *Palazzo Pubblico*, and the Renaissance bastion of the *Fortino delle Donne senesi*, coordinated with other research groups and conducted in accordance with the municipal administration.

The lack of a valorisation policy - Among the various interventions, in addition to the excavations carried out in the hospital of *Santa Maria della Scala*, the investigations beneath the choir of the Cathedral of Siena, started in August 2000 until the summer of 2003, in collaboration with the *Opera Metropolitana di Siena*, represent a higher level of research. In the beginning this research was aimed at the filling levels of earth and building materials identified in a compartment located beneath the choir of the cathedral, and then extended to include the walls and archaeological deposits found in the rooms adjacent to the *Oratorio di*

San Giovanni in Via dei Fusari. The research highlighted the first information about the stratification of the phases of occupation, from the late Etruscan period, that affected the area of the hill on which the cathedral was built. A mass of data and important remains were accumulated but, unfortunately, these did not receive the attention they merit. Although an extraordinary discovery of a cycle of medieval frescoes (which I will mention later) has been made accessible, nothing has been done for the mass of data and remains provided by the archaeological research. This desirable, but not realized, valorisation would have allowed the development of an additional popular understanding within the cultural resources of Siena, which, in conjunction with the findings of the hospital of *Santa Maria della Scala* (also undervalued), would have let the public directly experience the timelines of the city. For many reasons, Siena is a city in deep recession and has seen a decline in its image, manifested by the failure of the *Santa Maria della Scala* project (anticipated by the closure of the *Palazzo delle Papesse*, dedicated to modern and contemporary art).

In short, culture is not a decoration but the results of hard work and achievement. I should mention that the components of heritage (museums, parks, archaeological remains and monuments) are different and much more 'profitable' than a misguided mercantilist vision of culture; the advantages of a museum or park are also (and especially) to be seen in terms of cultural development, of improvement of wealth and quality of life. And, more generally, culture itself must be a driving force for the growth of any country. A society without a widespread cultural dimension is indeed a poor one. Only by learning from and developing our cultural heritage do we have the opportunity to aspire to be a great country. Money spent on culture is never wasted and is soon with interest. What is not known cannot be valued and made productive; knowledge is based on research and on its diffusion to the entire community. Behind prudent policies enforced in most parts of Italy there are steadily increasing numbers of visitors to exhibitions, museums and parks; despite the shocking crisis in this country, cultural consumption does not decrease. During the crisis, *il buon governo* (good governance) should therefore ensure investment in strategic sectors such as research, culture, heritage. There is still time to act. Siena deserves it, and archaeology, along with other disciplines, can be a vital, contributory factor.

The excavations below the cathedral (Fig. II) - The excavation beneath the *Duomo*, which Gabriele Castiglia here presents, is a clear example of the potential of Siena. Exceptional data for the diachrony of the city, interpreted by the author in the light of the most recent debate and the latest contributions on the formation of the post-classical city.

The intervention involved the excavation of the areas located below the cathedral choir (Rooms 1 and 18) and in some rooms adjacent to the oratory of San Giovanni Battista (Rooms 5, 6, 7, 17). In particular, the investigations



FIG. II: TOPOGRAPHIC IDENTIFICATION OF THE EXCAVATION AND THE SURVEYED ROOMS.

choir of the cathedral (Room 1), rectangular in shape with a surface of about 160 square meters, was entirely filled by two types of deposits dating from the beginning of the 15th century and the first half of the 18th century. The first deposit, the most recent, is formed by the resulting material and it fills the upper part of the room to a thickness of about 1.70 m, but starting from the top, i.e. the existing pavement of the cathedral. The fill is functional to the construction of several niches in brick, side by side in features of three to five elements, located in the north-west and south-west corners of the of the room. The niches, built entirely of brick, were equipped with a barrel vault with a square opening to allow burials directly from the floor of the cathedral. The burials excavated contained burial remains, some of which are preserved in a state of spontaneous mummification, due to the lack of oxygen in the atmosphere. This was the case, for example, with the first tomb, found against the northern wall of the *loculo*: the remains of seven burials were found, of which only one has been preserved in its entirety. Other niches were instead allocated for charnel use; some of the buried still retained vestiges of clothing in the form of tissue fragments. The niches can be dated to the first half of the 18th century thanks to the discovery of a coin dated 1718, even though some new interpretations tend to date them back to the 15th century.

The lower part of the room's fill was formed by a layer about 2.5 m thick, consisting predominantly of building material waste. To obliterate the room, in addition to

a large quantity of earth and stone of various kinds and sizes, numerous fragments of pottery with traces of painted plaster, squared blocks of travertine and parts of architectural elements were used. Near the apse of the baptistery, fill levels had a greater concentration of artifacts, including pottery fragments dating to the first half of the 15th century, iron objects and bronze coins. The anaerobic environment also allowed the preservation of remains of organic nature. The fill can be dated to the first half of the 15th century when the compartment, which had suffered the first drastic intervention phase during the second half of the 14th century with the construction of reinforcement structures for the baptistery and the new building of the cathedral choir, was finally abandoned. The construction of the apse of the baptistery, dating back to the early decades of the 15th century, is probably the last intervention conducted inside.

The removal of the fill levels revealed the astonishing cycle of frescoes which covers the walls of the room, dating from around the end of the 13th century. There are scenes from the Old Testament, juxtaposed with those of the New Testament, more widely exposed on the surface below. Starting from the left area of the room, there are episodes of the Earthly Paradise, the stories of the Virgin Mary and the infant Christ, then those of Cain and Abel, Isaac and Esau. Further scenes depict the public life of Christ and the drama of the Passion, represented on the back wall of the room by the three great scenes of the Crucifixion, the Deposition from the cross and the Deposition in the tomb. The final panels allude to the Resurrection and ultimate salvation. These works, still under study but relate clearly to the *senese* school of the generation previous to Duccio di Buoninsegna. Many of the figures of the crypt adhere to the iconographic schemes of Byzantine culture and seem attributable to artists until today known especially for small narrative scenes painted on wood, such as Guido da Siena, Dietisalvi of Speme and Guido di Graziano. The name of Duccio is instead evoked by scholars for later remakes of the fresco cycle, in particular for the preparation of one of the figures of the Saints.

The interior space was marked by two large octagonal pillars of the choir, also painted, and two smaller columns, of which only the stone foundations were preserved, one of which has been reused as building material, part of the stem of a Roman column in granite. The connection to the upper cathedral was insured by a staircase located in the northwestern corner of the room, paved with bricks. The access to the room, covered with ribbed vaults, was through three entrances opened into the rear facade of the cathedral, facing east. In the 13th century the three portals were commonly called *maior ianua* (central), *ianua Domum Guidi Traiani* (southern) and *ianua versus pontem* (northern), probably facing the current thoroughfare of the Diacceto.

With the removal of the floor, a stratigraphic succession between the Hellenistic period and the first Early Middle

Ages came to light. In the Hellenistic Age the north-eastern slope of the hill (on which the Duomo stands), was subject to the accumulation of sandy deposits from the top. In the area to the north-west and south-east of the room there was a concentration of Roman materials, mainly *sigillata italica* pottery fragments, scraps of glass and fragments of worked marble and plaster fragments decorated with paintings, probably relevant to a late republican/first imperial *domus*. These finds suggest a higher level of activity at the site during the imperial age. During Late Antiquity the north-western part of the room was affected by the dumping of various materials (coal, brick fragments, remains of painted plaster), coming perhaps from the Roman buildings no longer in use. Within these levels, fragments of jars relevant to the 6th-7th centuries were found. The area was later used as a burial ground: there were four tombs found in earth graves. At a short distance from the burials, digging revealed the presence of a circular cut (3.5 m diameter and 2 m deep). The structure, probably a sunken featured building (*grübenhaus*) with earth and wattle elevations, was probably used at the same period when the area was taken over for burials and it is dated between the late 5th and 6th century. The floor, made of wooden boards, whose housings are visible, rested on a framework top (a circular frame of about 50 cm) formed in the soil while the space below was probably used as a cellar. During the excavation of a *scannafosso* (Room 18) behind the western perimeter painted wall of the room, a stratigraphic deposit appeared dated between the Roman period and Late Antiquity. A semicircular structure found in the central part of the trench, formed by limestone rocks, can be attributed to the Roman age. Its functions are not yet clear. In medieval times it was reused as a foundation of an elevated masonry feature, preserved for only three rows and only partially visible, with squared blocks of limestone. In the proximity of this structure a number of burials attributable to a cemetery dating to Late Antiquity, located within the town of Roman times and now in decay, were identified. The construction of the pillars of the hexagon dome, completed in 1263 AD, and the construction of the western wall, a little later, have largely removed the deposit in this area, which still retains evidence dating from between the Roman period and Late Antiquity.

In parallel with the recovery of the areas located under the choir of the cathedral, the archaeological investigation has extended to the rooms adjacent to the oratory of San Giovanni (Rooms 5, 6, 7 and 17), revealing the presence of occupation along the north-western part of the hill from the Hellenistic period. This period was also responsible for the large cutting that affects the geological layers of the north-western side of the hill, artificially increasing the slope and creating a road that went back to the upper side (Room 17). Inside the compartment, part of a *bottino* was identified, probably traced in the Pliocene sands of the hill in the Hellenistic age. It develops in a north-south direction and has an interior space with a width of about 1 m and a height of about 2 m. On two of the four walls there were some *pedarole*, small cavities carved into the tuffa walls, worked to drop inside the internal structure

and to house the oil lamps that were arranged in pairs at regular intervals. In the first century AD, as witnessed by the pottery found in the lower level of the soil fill, the function of the water system failed and the pipe began to accumulate deposits of silt which filled 75% of the cavity.

Roman activity on this side of the hill instead is indicated by the presence of a well (Room 5). The squared structure still preserves the holes for the accommodation of four corner posts designed to support a wooden roof, probably a sort of roofing. The walls, dug into the tuffa stone, were probably lined with axes. The higher levels of filling of the well, in addition to the *sigillata italica* and a canine mandible made of clay (perhaps a votive offer), osteological remains referable to three dogs (two of them lying on their sides and slaughtered in three parts along the trunk before deposition) and the head and chest of a horse. The findings are attributable to the rite connected to the foundation of the walls and the city gates: the work of the urban perimeter in fact was sanctified by the sacrifice of dogs and associated burial ritual. The well seems in this case connected to the constitution, in the Augustan age, of the military colony of *Saena Iulia* and to the existence of a circuit wall, not preserved, passing along Via dei Fusari. During the 14th century, with the enlargement of the transept of the cathedral, a pit and silo were dug in the room, with a vaulted roof made of bricks: the first was filled with coarse ware and *maiolica arcaica* dating to the second half of the 14th century, and the second had a depth of about 6 m and was filled with layers of earth mixed with stones and bricks. Subsequently the area was used as a cemetery and occupied by a series of single burials cut into the tuffa of the hill and, in modern times, from a mass grave. The archaeological survey conducted in Room 6, preliminary to the excavation of a large trench for the accommodation of refrigeration systems, has revealed the presence of a large circular pit dug in the geological sediments of the hill, filled with layers of modern rubbles. The excavation of the pit has allowed us to detect the presence of a geological fault (south-west/north-east) that cut into parts of the layers of the hill. Inside a large room, built simultaneously with the construction of the baptistery and adjacent to it (Room 7), it has been possible to trace the diachronical phases of an area outside the 12th-century cathedral. In particular the remains of some sort of accompanying service rooms, two silos and two cellars, dug into the tuffa, were brought to light. The silos, circular in shape, have been preserved to a depth of 4 m and were intended for the storage of grain. They can be dated to a time before the building of the cathedral in the 12th century, while the levels of use identified seem to testify to their use throughout the 13th century. In the north-eastern part of the room three graves, containing two children and an adult, partially removed in the modern era, were found, dating to a period prior to the 12th century.

The analysis of the cathedral architecture – At the same time as the excavations we also continued the study of the evolution of the cathedral. Direct analysis of the architecture and its materials has led to the identification

of the main construction phases in the spaces below the choir and transept of the cathedral, with a time span ranging from the 12th century to the first half of the 18th. The evolution of the cathedral complex between the 12th and 14th centuries also documents the use of medieval technical skills and artistic understanding. The building plans for cathedrals, in fact, channelled the technological, economic and political forces of the time: they were public sites for experimentation and innovation which favoured not only the cathedral itself but which had also repercussions for the surrounding urban fabric. The survey on the preserved walls allowed the identification of six major stages in the evolution of the rear of the cathedral. By recognizing the same value to all the products contributing to the process of formation of the deposit, the investigation started with the observation of the general morphological characteristics of masonry and mortars. The identification of walls stratigraphic units (USM) allowed on one hand the registration of their characteristics and on the other the characterization of existing building techniques (types). The studies promoted by the Kunsthistorisches Institut in Florence have been a constant point of reference, providing, in addition to the photogrammetric survey of the cathedral, the reconstruction of the historical building, largely based on the investigation of written documentation.

Phase I (12th century) – This phase is relevant to the structures forming the transition zone between the transept and the choir of the cathedral built in the 12th century and consecrated, according to tradition, in 1179 AD. It is characterized by walls built entirely of blocks of cavernous limestone roughly squared and levelled in the exposed face with a bladed instrument (probably a small axe), mounted on parallel horizontal rows. The discovery inside the *scannafosso* (a cavity) in Room 18, made behind the perimeter wall of the west room (Room 1), of a curvilinear wall, set on a semicircular structure pertinent to Roman times, which, although still with an uncertain dating, is currently the only preserved evidence of the existence of an older church's terminating apse, quite possibly the 11th-century feature. During the 12th century, the first major expansion was realized with the new construction of the entire eastern part of the cathedral, with a transept and choir. The discovery of this apse leads us to hypothesize a possible location of the crypt attested in 1215 AD within the walls of the semicircular apse, and not in the rooms painted with frescoes from the late 13th century (Room 1). The identification of this frescoed room with the *confessio* recognized by Benvoglianti, punctuated by fifteen columns with three orders, and identified by him as below the 'wheel in the middle of the floor', remains in any case still a doubtful one.

Phase II (beginning of the 13th century-1263 AD) – The interventions indicated by 13th-century's documents, which ended with the building of the dome in 1263 AD and led to a general widening of the 12th-century *ecclesia maior*, are to be linked to this phase. All the western section of the church was elevated with brick walls, which, based directly on the choir and the transept of the older building,

followed its perimeter. As can be readily witnessed in the rooms along Via de' Fusari, nearly all the walls have a break in their elevation at different points. The widening of the church, attested by the construction of a room (external to the 12th-century cathedral), closed the space between the choir and the northern sector of the transept. The room located under the choir (Room 1), probably since the last decades of the 12th century furnished with a façade looking east, was in part transformed in the first years of the 13th century: the stone walls of the 12th century dome were worked in order to create an homogeneous visual aspect. In this phase, the internal part of the choir's perimeter walling differs from the external one. This can be seen in the better attention given to the building technique and for the exclusive use, both in the internal zone of the walls and the cross-shaped pillars (with two columns) located in the corners between the choir and the transept, of bricks finished with oblique etchings, made up with a bladed tool of some kind. The back façade of the cathedral, furnished with three entrances, was lined with courses of limestone blocks, perfectly squared and smoothed with a *martellina dentata* (a small pronged hammer), decorated with a small ribbon design worked with a chisel. Still to be studied, this kind of technique has an important parallel on the walls of the San Galgano abbey, built by the third decade of the 13th century. This is the first example of the use of the *martellina dentata* in Siena. This tool was in widespread use for medieval European architecture, including 14th-century Tuscany. Documented in this region for the first time in Pisa (first half of the 11th century), it made its appearance in the regions of Pisa, Volterra and Valdelsa between the 12th and 13th centuries.

Phase III (1263 AD–beginning of the 14th century) – After the first half of the 13th century a general arrangement of the cathedral choir began. After the construction of the columns supporting the dome in the middle of the 13th century the floor level of the room beneath the choir was lowered about 1.9 m. In particular, the northern pillars' foundations reveal clearly, below the frescoes, the transformation that occurred: the quadrangular basement, visible after the lowering of the flooring, was chiselled out to prolong the octagonal trunk of the pillar. Similarly, the side entrance's jambs show a cutting between the lower and the upper portions of the walls, a consequence, also, of the lowering of the floor inside the room. Divided into three naves by the octagonal pillars of the choir, the room was defined, in the western part, by a brick wall on which two half-decorated capitals were placed, in order to support the new covering of the room, which, in this way, assumed the function of a vestibule to access the eastern part of the upper cathedral: the link was augmented by internal passages; the traces of one of these have been identified in the north-western part of the ambient, made of a brick pavement built on a preparatory layer of sand and mortar. At the end of the 13th century, the perimeter walls and the two octagonal pillars were painted with frescoes: the study of the building technique (still visible where the frescoes are damaged) revealed that, under the *appareil* of the etched bricks related to the previous phase,

the perimeter walls, previously chiselled out to lower the floor, were later lined with simple bricks: all this confirms that the etching process was planned to remain visible and not simply linked to the fresco painting process. A further confirmation of this is the fact that the only perimeter wall showing bricks with no etching is the western one, contemporary to the painting of the frescoes. During the first years of the 15th century, the north-western corner of the room was transformed: the stairs leading to the cathedral were substituted by a brick wall. In this period the only entrance to the frescoed area was by the openings in the façade. Only at a later time, probably when the construction of the baptistery had already started (1317 AD), a small secondary door was opened into the northern wall of the room, creating a link to the other one. An initial widening of the northern part of the transept is connected to this phase, as can be seen in the perimeter walls of the rooms adjacent to the San Giovannino oratory. They are characterized by a building technique utilizing alternate brick and stone courses (squared limestone blocks), which can be dated between the last decades of the 13th century and the beginning of the 14th, a period a little antecedent to the extension works of the cathedral towards Vallepiazza.

Phase IV (1317 AD to second half of the 15th century) – In 1317 AD the construction of the new baptistery and the extension towards Vallepiazza began. This prolonged the choir with two new spans and added a new span to the transept. Already, by the end of the previous century, it has been decided to demolish and replace the old baptistery, placed in front of the cathedral, by following a project which should have been realized by Giovanni Pisano, master builder of the *Opera*. The project to widen the choir towards Vallepiazza was a difficult one, making it necessary to raise the central part of the cathedral. This venture led to great works of excavation and stabilization, caused by the void left by the soil removed behind the cathedral choir. Construction progressed relatively quickly. In 1326 AD the vaults were closed and in 1333 it was decided to quicken the works by postponing the marble cladding of the walls. The new structure, joined to the cathedral, closed its oriental façade and the frescoed room was probably used in the following decades as a working area for the new choir and saw the progressive neglect of its structures. The façade's entrance system was not abandoned completely: the two 13th-century doors were replaced with three similar openings which permitted the passage from the working area to the frescoed room. The works had an interruption between 1339 AD and 1355 AD, once the project to build the *duomo nuovo* ('the new cathedral') was left aside and the widening of the choir took precedence. In this period the building activities that included the erection of the new pillars for the choir took place, once the earlier 12th-century ones were demolished and the brick foundations were built in the fresco room, linking them to the older painted pillars that luckily still survive. The new buildings were, moreover, equipped with arches which gave more stability.

Phase V (15th century) – This phase led to the definitive filling of the room below the choir of the cathedral: in fact, during the 15th century the openings of the façade, which remained in use probably for the duration of all the works, were closed and the room filled with material deposits dating to the 15th century. By the second decade of the century the last intervention inside the room took place. This consisted of building the baptistery apse, associated with the new baptismal font and the destruction of part of the 13th-century façade. At the same time, to prevent damage to the apse vault, a new stone and brick structure buttressed to the frescoed walls was built. This action closed the area to the western side, and the remaining part (known as *Cripta delle Statue*) was used as a deposit for wooden building materials in the 18th century.

Phase VI (end of the 17th century – first half of the 18th century) – By the end of the 17th century and beginning of the 18th century, part of the room fill was removed to allow for a certain number of niches (*loculi*): a quadrangular trapdoor, located in the final part of the vault and making it possible to use the area for burials. The atmosphere, lacking in oxygen, resulted in a natural process of mummification for these burials. In this period some new structures in bricks were built, probably to be related to the moving of Nicola Pisano's pulpit, which was originally placed under the dome, and was only in modern times restored to its original position.

The sad epilogue – The results of the excavations have considerably broadened our knowledge. It was subsequently proposed to the local administration to open a larger excavation of the 'acropolis' of the town, in the areas of the unfinished *duomo nuovo*. Such a definitive understanding of the building phases of the cathedral, and also the reconstruction of the settlement dynamics of the Duomo precincts would make an extraordinary contribution to the history of the city, completing the story which had been started with the excavations already done in front of and beneath the *Santa Maria della Scala* and, of course, beneath the *Duomo* itself. In this perspective, it would have been important also to program another intervention of excavation in the square of Jacopo della Quercia square (the open space in front of the *Duomo*). This would not only have revealed complex archaeological deposits, but would also have uncovered traces of the building activities of the so-called *duomo nuovo*, the topographical position contemporary with the 14th-century cathedral and the buildings preceding it. The finds would have enriched the cultural and monumental heritage of Siena. A long period of intervention and research was foreseen; one that would have involved archaeologists and other specialists such as numismatists, archaeozoologists, anthropologists, historians, architects and geologists. The entire operation would bring together the widespread use of new technologies that would be of huge benefit to the wider community – including infrastructural assets. These excavations were projected as being undertaken beneath a large dome with viewing areas for the public and would have created enormous interest and involvement; the

whole project, if realized, would have been unique for the city and would have let archaeology definitively enter into the dynamics of intervention and management of the town.

The project was not even considered.....

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