GREEK SCULPTURE

FUNCTION, MATERIALS, AND TECHNIQUES IN THE ARCHAIC AND CLASSICAL PERIODS

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The fifth century B.C witnessed a revolution in sculptural styles and techniques that changed the course of Greek sculpture and left an indelible mark down the centuries. In the second half of the fifth century the great resources of the Athenian Empire were deployed in the production of grandiose public works that were embellished with vast numbers of sculptures on a grand scale. They were all created within a religious context. The dominant material for free-standing dedications in sanctuaries was bronze; architectural sculptures were chiefly in Parian marble, placed on temples built of Pentelic marble, while a new technique for bending and moulding ivory became available to the Athenians, enabling them to produce colossal cult statues in ivory and gold. Exotic materials like ivory became accessible through foreign trade (cf. Thuc. 2.38.2). Marble polychromy was achieved not only through the application of paint but also thanks to a combination of white marble with blue-black stone, mainly Eleusinian limestone. Grey marble from Mt. Hymettos (Colour pl. 1) went out of fashion only to return in the fourth century B.C. Metal attachments on marble sculpture were abundant, being made of lead, bronze, gilded bronze or even gold. Gold leaf was liberally applied to marble sculpture as well as architecture.

Athens acted as a magnet of talent from other Greek cities. Sculptors came in mainly from the islands. High quality marble carving is evident in all kinds of sculpture. However, many of the trade secrets are well-kept as there are no unfinished pieces abandoned in workshops or quarries from this period. No new tools can be detected but bold new designs were
employed to create ever larger pieces. The engineers of the Parthenon invented a revolutionary technique of structural iron in order to secure the heavy pedimental statues but found no followers as no architectural sculptures on a comparable scale were ever attempted again.

The break with the past came as a result of the Persian attacks on Athens in 490 and again a decade later. The Persians sacked Athens in 480/79 B.C. wreaking havoc not only on the town but also on the sanctuaries on the Akropolis, those on the road to Phaleron (which served as the main harbour of Athens at the time), and on the tombs in the Kerameikos cemetery. After the expulsion of the invaders in 479, the Akropolis sculptures damaged by the Persians were buried in random deposits over a number of years. These deposits were eventually contaminated with other material which fell victim to various rearrangements.

Sculptural production in Athens and Attica was gradually resumed on a small scale. Among the debris of the Archaic sacred buildings and sculptured dedications, the Athenians began to erect the first marble sculptures in the Classical Style, born of a newfound sense of freedom from foreign occupation. The Early Classical (or Severe) Style (ca. 480–445 B.C.) is primarily known for significant developments in bronze casting techniques. Early Classical monumental statuary in Athens was chiefly in bronze and is now lost.

Parian marble is carried over from the sixth century as the chief white stone for the production of both statues and reliefs. The high quality of works from this period springs from delicacy of workmanship combined with vigour and assertiveness. A small number of mainly under-life-size marble statues and a handful of reliefs were excavated in sanctuaries of Athena on the Akropolis and at Sounion, documenting continuity and change in form and function. Their modest size suggests that they were private dedications; their pristine state indicates that they only stood for a limited period of time before being removed to make way for the monuments of the Periklean building programme of the 440s. Several were probably athletic commemorations.

In the fifth century B.C. several statues of athletes, victors in the local Panathenaic Games or the Olympic Games, were dedicated on the Athenian Akropolis. None was a true portrait and they need not have been represented in action. The so-called Kritios Boy, the earliest known
male figure introducing the Classical ponderation, retains the Archaic fashion for inlaid eyes in marble sculpture. His identity remains a matter of controversy but his generic appearance and lack of military gear may point to an athlete rather than a hero. The so-called Blond Boy offers an early instance of the Early Classical braided hairstyle; his asymmetrical features and turn of the head indicate a figure in action, whether hero or mortal. Traces of yellow ochre remain on the hair, red on the lips and black in the pupils of the eyes. Another youthful male head wearing a headband, the pupils of his eyes retaining traces of paint, may well have belonged to the votive statue of an athlete. A figure in action is the warrior torso wearing a corselet and a transparent short chiton indicated only in paint. Textile patterns are still visible on what appears at first sight to be naked flesh. The right arm, extended forward, was made separately and attached by means of a tenon. A small statue of Athena wearing a peplos and aegis with holes for the insertion of metallic snakes, carrying a spear but no shield, has been associated with a column inscribed with the names of the donor (Angelitos) and sculptor (Euenor). The inscribed columnar base demonstrates continuity with Archaic practice. A couple of herm heads may be assigned to this period, one made of Parian marble, the other of Pentelic.

**Early Classical votive reliefs** are mainly dedicated to Athena. They follow no established patterns. The relief of the so-called Mourning Athena on the Akropolis, showing the goddess leaning on her spear in front of a pillar, is probably a victor's dedication from the Panathenaic Games. The lack of aegis and the hand resting on the hip are usual in this period. A fragmentary relief of Athena, also on the Akropolis, receiving the offering of a man seated in front of a round work table may be related to the Athenian mint or it may be the private dedication of a jeweller. The relief of a boy athlete crowning himself from the sanctuary of Athena at Sounion, made of Pentelic marble, retains traces of blue in the background. His hair, smooth at the top, would have been covered by a metallic, perhaps golden, wreath of leaves inserted into a hole before his forehead. A row of holes underneath his headband would have held bronze locks falling over the rough surface of the marble. The metal attachments on this votive relief anticipate High Classical practice. We do not know if it commemorated a victory in the Panathenaic Games or some local event. Another relief in Pentelic marble dating from around
the mid-fifth century comes from the sanctuary of Nemesis at Rhamnous and shows a reclining Herakles holding kantharos and cornucopia.

The virtual lack of funerary sculptures in Athens and Attica between the Persian Wars (480/79 B.C.) and the inception of the Peloponnesian War (431 B.C.) may be due to sumptuary measures though its true cause remains a matter of speculation. Grave statues went out of use in the late Archaic period and did not return until the second half of the fourth century B.C., when they were placed within naiskoi. The Severe Style head that once belonged to a life-size grave statue of a youth from the Kerameikos cemetery, may be the exception that proves the rule. His features recall the Kritios Boy, while his skull is pitted, possibly for the application of a bronze helmet, and framed by rows of curls, similar to the hairstyles of both the late Archaic Aristodikos and the Severe Style Motya Youth.

The transition to the High Classical Style (445–400 B.C.) is marked by Pheidias' colossal gold and ivory cult statue of Athena Parthenos in the Parthenon, which was created in 446–438 B.C. according to the literary and epigraphical testimonia. All that survives from the statue are six marble blocks from the base and a socket cut into the Parthenon floor for the vertical timber supporting the wooden armature. Pliny (NH 36.18) gives the height of the statue as 26 cubits (11.544 m) but it is not clear whether this includes the base. Ancient sources tended to call the Athena “the gold statue in the Hekatompedon” even though the epithet “Parthenos” was given to Athena on the Akropolis from the sixth century B.C. on. Pheidias may have suggested to the Athenians to use marble, which was cheaper and retained its lustre longer, but they chose the more costly and luxurious material. The Parthenos started a revolution in the use of the chryselephantine technique which had been hitherto employed in under life-size figures. No ivory and gold statue as high as the Parthenos had been produced before, whereas the Naxians had attempted marble colossi in the sixth century. At least one of the Naxian colossi was an outdoor statue (the other, being abandoned in the quarry, has no known destination), and so was Pheidias' bronze Athena Promachos, which stood on the Akropolis, rising to a height of ca. 8–9 m. The only colossus within a temple prior to the Athena Parthenos was Pheidias’ own acrolithic cult statue of Athena Areia at Plataiai, said to be slightly smaller than the Promachos. Sadly, no evidence of the acrolithic
technique, popular in Magna Graecia at the time, survives from fifth-century Athens.\textsuperscript{35}

After the completion of the Athena Parthenos in 438 B.C., Pheidias moved on to Olympia where he produced a second chryselephantine colossus, the cult statue of Zeus.\textsuperscript{36} Pheidias' chryselephantine colossi required not only about eight years to build but also teams of helpers and studios the size of the cellas destined to house the statues. The workshop of the Athena Parthenos was built of reused material to the south of the Parthenon,\textsuperscript{37} actually lying under the premises of the current Parthenon restoration project. Pheidias' workshop at Olympia, on the other hand, had a long and interesting afterlife. It was preserved as a place of worship (Pausanias [5.15.1] reports an altar within, dedicated to all the gods) and was eventually turned into a Christian basilica. The excavations recovered quantities of clay moulds, tools, and raw materials for the production of chryselephantine statues.\textsuperscript{38} These scraps provide important evidence on the use of glass and coloured stone inlays in Zeus' throne. The use of ivory and stone inlays in furniture found in Athens is documented from the sixth century B.C. on.\textsuperscript{39} Kolotes, Pheidias' associate in the production of the Zeus, made a gold and ivory table with relief friezes for the presentation of the wreaths of Olympic victors.\textsuperscript{40} It may well have been created in Pheidias' workshop.

Ivory was employed for the face, hands and feet\textsuperscript{41} of both the Athena Parthenos and the Nike in her right hand, as well as for the gorgoneion on the goddess' aegis.\textsuperscript{42} Athena's eyes were made of ivory, their pupils of coloured stone.\textsuperscript{43} Her drapery was fashioned of detachable gold sheets.\textsuperscript{44} The scales of the snake at her side were probably also gold.\textsuperscript{45} According to the fourth-century B.C. inventories of the treasures held in the Parthenon, Nike was crowned with a gold olive wreath\textsuperscript{46} and Athena's shield was made of precious metal, gold or silver.\textsuperscript{47} The central crest of her helmet rested on a bronze sphinx.\textsuperscript{48} The Parthenon inventories additionally provide evidence that the figures on the Parthenos base were worked in the chryselephantine technique.\textsuperscript{49}

Six blocks of Pentelic marble from the core of the Parthenos base are preserved because they were reused in the apse of the Byzantine church of the Parthenon. The blocks were recut in the Byzantine period. The anathyrosis on their sides and the dowel cuttings and pry holes in their tops indicate that they belonged to the bottom course of the base.\textsuperscript{50}
This rested on a foundation made of Piraeus limestone. A large socket in the centre of this foundation held a vertical timber that served as the backbone of the wooden armature of the statue. One of the blocks of the base has a cutting indicating that it was adjacent to the central beam. As the figures on the base were very likely made of gold and ivory, it has been suggested that they were attached to a background made of dark Eleusinian limestone rather than white marble. The hypothesis that the Parthenos base was of Pentelic marble faced with blue-black limestone is supported by the Eleusinian limestone fragments of the base of Pheidias’ Zeus at Olympia, which is known to have carried golden figures.

The employment of Eleusinian limestone in High Classical cult-statue bases is considered a special trait of the Pheidian School. Eleusinian limestone bases were nevertheless not introduced by Pheidias. The earliest example known in Athens carried an Archaic chariot, erected on the Akropolis by the new Athenian democracy as a thank-offering for its victory against the Boeotians and Chalcidians in 507/6 B.C. An Eleusinian limestone base with a bedding for the plinth of a marble cult statue was found in an early fifth-century naïskos in the sanctuary of Athena at Sounion.

Several fragments of a crowning moulding in Eleusinian limestone, found embedded in the Herulian wall of the Athenian Agora, very likely belonged to a cult-statue base of the second half of the fifth century though its original provenance is unknown. It formed part of a cornice, smooth on top, with a projecting plain fascia flaring outwards. One corner survives, and the anathyrosis on one of the other fragments indicates that the crown consisted of more than one block. The underside of the fascia is rough picked and carries dowels at regular intervals for the attachment of an additional moulding in another material, perhaps bronze or gilded wood.

A similar technique was employed in the base of the cult statue of Nemesis by Agorakritos in Rhamnous, dating from ca. 430 (Colour pl. 4). Nemesis’ base consists of two blocks of white Dionysos marble decorated with a relief frieze that extended to the sides. It is topped by a crown in Eleusinian limestone, assembled of four blocks, with a central cavity for the insertion of the plinth of the cult statue. The cap projected above the relief frieze and was decorated with a moulding in another material, attached by means of dowels similar to those in the
Agora crown. The statue itself was in Parian marble. Rising to a height of ca. 3.55 m, it is the largest High Classical marble statue that has come down to us, albeit in fragments, and it too was pieced like its base.\(^5\) The similarity between the Rhamnous base and the fragments of the base in the Agora may be due to similar workshop practices. Agorakritos, sculptor of the Nemesis, also made the Mother of the Gods, which was housed in the Agora Metroon.\(^6\) Nothing remains of the Mother of the Gods but perhaps fragments of its base were incorporated into the Herulian wall and are now in the Agora storerooms.

A comparable technique is attested for the base of the bronze cult statues of Athena and Hephaistos, created by Alkamenes for the Hephaisteion. This group is documented by expenditure accounts, which date it to the period of the Peace of Nikias in 421–415 B.C.\(^6\) Two blocks of Eleusinian limestone were recovered from a modern wall inside the Hephaisteion and are now stored in its cella. They have anathyrosis on the sides showing that the base consisted of several blocks as is also attested by the accounts. The face of each block appears to have a raised lip, its rear having been cut down for the reception of a crowning moulding in a manner similar to the Rhamnous base. But the die of the Hephaisteion base is in blue-black limestone rather than white marble. One block is pierced with five dowel holes for the attachment of relief figures in marble, perhaps gilded in imitation of Pheidias' statue base of Zeus.\(^6\) At least another five figures, possibly more, can be reconstructed on the front of the base.\(^6\) Dinsmoor, who first attributed the dark limestone blocks to the Hephaisteion base, postulated a crowning moulding made of the same stone.\(^6\) The blend of stones in the Rhamnous base, however, indicates that the crown of the blue-black Hephaisteion base may well have been of white Pentelic marble.\(^6\)

The fact that the cult statue of Nemesis was made of marble is the exception rather than the rule in Athenian monumental statuary of the second half of the fifth century. Bronze was the dominant medium, and as a result nothing survives, for metal is readily recycled. Pheidias was master of all sculptural techniques: chryselephantine, acrolithic, bronze or marble, he tried them all.\(^6\) His two chief pupils in Athens, Agorakritos\(^6\) and Alkamenes\(^6\) worked in both marble and bronze. Alkamenes followed in his master's footsteps with the creation of the chryselephantine cult statue of Dionysos in Athens.\(^6\) Pheidias' two pupils in the Peloponnese
and associates in the creation of the gold and ivory Zeus at Olympia, Kolotes of Herakleia and Theokosmos of Megara, are known to have worked mainly in gold and ivory.\textsuperscript{70}

Only a handful of original \textbf{marble statues} of the High Classical period have come down to us. With the exception of the Nemesis, which is certainly a cult statue, the others are just over life-size or smaller and stood as dedications in sanctuaries. It is interesting that even statuettes could be pieced, the most striking example being a 0.30 m high torso of Athena in Pentelic marble, with a separately carved right arm.\textsuperscript{71} She is dependent on the Athena Velletri type, evidence of a current tendency to reproduce contemporary cult statues on a small scale.

Parian marble was normally used for high-quality works. But Pentelic became increasingly dominant towards the closing years of the fifth century. This was partly a result of the intensive exploitation of the Pentelic quarries during construction of the Parthenon in 447/6–433/2 B.C.\textsuperscript{72} An additional reason may be the defection of the Parians from the Athenian alliance during the last phase of the Peloponnesian War in 411 B.C.\textsuperscript{73} The scarcity of Parian marble in Athens in the final decade of the fifth century may thus be due to historical reasons. Parian marble in free-standing sculptures can be found in a life-size statue of Athena (?) from the Akropolis,\textsuperscript{74} the statuette of a local hero at Rhamnous standing on a tall pillar of Eleusinian limestone, dedicated to Nemesis by Lysikleides (Colour pl. 5),\textsuperscript{75} and a statuette of Kore from a sanctuary on the Mounichia peninsula in Piraeus.\textsuperscript{76} Her hands were made separately, probably holding torches. The statuettes from Rhamnous and Piraeus have been assigned to the circle of Agorakritos.\textsuperscript{77} Statues of heroic size in Parian marble are attested through fragments found on the Akropolis. Two belong to well-known types transmitted through Roman copies, the Barberini Suppliant\textsuperscript{78} and the Olympias Albani.\textsuperscript{79} The third fragment was erroneously attributed to the Parthenon pediments but must belong to a free-standing dedication on the Akropolis.\textsuperscript{80}

Among High Classical heroic-size statues in Pentelic marble we single out the Prokne and her son Itys, dedicated to Athena on the Akropolis by Alkamenes according to Pausanias (1.24.3), who does not name the sculptor.\textsuperscript{81} He probably read the information on the inscribed statue base: the assumption is that the artist created his own offering. The sober and erect Prokne is usually attributed to the artist's studio but
one must not underestimate the skilful carving of the entire group out of a single block. There are two nearly contemporary marble adaptations of the cult statue of Aphrodite in the Gardens by Alkamenes, one from the Akropolis, another from Daphni. A few over life-size statues in Pentelic marble from the Akropolis have been associated with the pediments of the Parthenon but may be free-standing dedications instead: the seated goddesses Akr. Mus. 6713 (with separately carved feet), 1363 and 888, and the torso of the nude warrior Akr. Mus. 880 were all tentatively assigned to the Parthenon but their position with regard to the pedimental compositions remains problematic.

With the Demeter (or Kore) from the sanctuary of Demeter and Kore at Eleusis we are back to pieced statuary as her right foot was made separately, perhaps as a result of a marble flaw. The himation, lifted over her left side and now sadly broken off, would have been a tour de force. Two Pentelic marble originals from the Athenian Agora, the torso of Athena S 654 and the now headless Aphrodite S 1882, belong to the closing years of the fifth century. A few herm heads in Pentelic marble from this period have also survived, all being under life-size, for example Agora S 2452, and Athens, National Museum 468 (if a Classical original).

High Classical temples in Athens and Attica were particularly rich in architectural sculptures, which provide the best-dated evidence for styles and techniques in this period. In addition, the roof of the Stoa of Zeus in the Agora carried figural marble akroteria. The Parthenon is the earliest and largest temple, as well as the only one entirely built in Pentelic marble. The exclusive use of Pentelic marble was probably politically motivated; the lavish sculptured decoration is unprecedented. Doric and Ionic elements were harmoniously blended both in the architecture and the sculptured decoration. Sculptures and mouldings were painted in bright colours. Observations made in the nineteenth century and scientific analysis of pigments alongside special photography carried out in recent years, attest the use of red, blue, green, black, white, and ochre, as well as of gilding. On present evidence the draperies appear to have been monochrome, enhanced with black shadow-lines. Great controversy attaches to the origin of the orange-brown coating evident on some of the best-preserved surfaces of the sculptures (Fig. 83). It seems to have sealed off original tool-marks and pigments, and its
removal results in damage to the surface. But as the broken surfaces of the east metopes are also covered in the same coating, its artificial nature remains in doubt.

All 92 exterior metopes are decorated with high-relief figures, which were carved on the ground. Each metope consists of a rather thin slab, about 0.125 \( m \) thick, inserted into slots on the edges of the triglyphs. All metopes are the same height (1.35 m) but vary in width from 1.22 to about 1.33 m. This irregularity is due to a gradation allowing wider metopes at the centre of each side in order to create a perspective illusion. This is particularly noticeable on the east façade, the centre of which carries the widest metopes.

The background of the metopes was painted red. Some figures were pieced, projecting limbs or tails being added separately, and laden with bronze or lead attachments such as weapons or locks of hair. Metal additions were fastened with pins, marble ones dowelled on or attached by means of tenons. Lead and stucco sealed the joints. The centauromachy metopes on the south side are modelled in higher relief than the rest, probably in order to achieve greater visibility since this side overlooked the slope. The Lapith on south metope 5 was nearly in the round and is now lost. The Lapiths’ weapons were mostly added in metal and are now missing. Spears thrust into the centaurs’ groins or flanks were pinned into holes, e.g. south metopes 1 and 26. A dowel hole in the fallen Lapith’s hand on south metope 28 indicates a missing sword, perhaps exceptionally modelled in marble. In some cases Lapiths had inset marble penises, e.g. south metopes 2, 3 and 26; centaurs’ tails, nipples or forearms could also be carved separately and attached by means of dowels or tenons, for example south metopes 1, 26 and 31. All of these have fallen out. The himation pendent from the left arm of the Lapith on south 26 was partly modelled in relief and partly made of metal and nailed into a hole in his arm. One assumes that the difference in material would have been disguised by the application of colour. An old-fashioned technique of hair locks added in lead was applied in a pair of heads, probably from the same metope, Akr. Mus. 720 (centaur) and 722 (Lapith).

On the north metopes with the Fall of Troy Selene’s head with the neck on metope 29 was carved separately and inserted into a cavity (Fig. 37). This unusual arrangement is found again in west pediment Athena (L)
The east metopes with the battle of gods and giants were embellished with metal additions now attested by cuttings, for example a snake coiling around a giant's leg on metope 2, a foreshortened shield on 3, the snakes in Athena's aegis on 4 and the wheel of Helios' chariot on 14. Some details were indicated only in paint, e.g. Nike's wings on metope 4 and the waves under Helios' horses on 14. Helios was almost entirely free-standing and is now lost.

An Ionic frieze representing the Panathenaic procession ran around the top of the exterior wall of the cella. Oddly enough, the slabs over the porches display the regulae and guttae normally found under Doric triglyphs. M. Korres has postulated a second frieze running
around the interior walls of the east porch because of the existence of a top moulding usually found on Classical friezes. The frieze of the Panathenaic procession is carved in low relief though the upper parts of the figures exhibit a slight projection. It was executed on the building as attested by the slabs which are too thick to allow transport once the sculptures were carved. An additional indication is the groove (scamillus) left by the carvers’ tools at the top and bottom of each figure. The height of the frieze slabs is 1.017 m, their thickness ranges from 0.52 to 0.535 m but their width varies considerably. The largest slab at the centre of the east frieze is ca. 4.42 m long. Considering the great length of the frieze (about 160 m), it is remarkable that only a small portion was left unfinished (e.g. horses’ manes and knights’ hair in south VI-X).

A cornice with painted mouldings (Lesbian cyma, double meander and hawk’s beak) rested on top of the frieze; the background of the frieze was painted blue like the sky. Scored lines detected at either side of the central scene of the east frieze (slab V 31–35) are thought to denote a different-coloured background, presumably an interior. Other details were also painted, as attested by incomplete gestures or empty hands. There are several examples on the east frieze: Dionysos’ thyrsos and the shaft of Ares’ spear on slab IV, Nike’s ribbon and the tip of Zeus’ sceptre on V. Pupils of eyes were painted, as attested by Apollo on VI. The wreaths once painted on knights’ heads (e.g. north XLII 130 and XXXI 97) entail victories in equestrian events at the Panathenaic Games. Ropes and ribbons on cows of the north and south friezes were also picked out in paint. Further festive ribbons and other details like helmet crests and armour inlays were tinted and are now lost.

There was a wealth of additions in bronze and/or lead, horses’ reins in particular. A metal staff was inserted into the right hand of marshal east III 18. The metallic top of a rod-like object held by knight west XII 23 was fastened into a pair of holes in his left arm, while the bottom was secured into two holes in his chiton. The nature of this object eludes us. Holes in Apollo’s hair (VI 39) held a laurel wreath in gold or gilded bronze, while Artemis’ (VI 40) bow was inserted into a hole in her right hand. Athena’s (V 36) spear was also added in metal.

Marble piecing is attested by rectangular cuttings for the insertion of tenons or dowels and by large holes (not pin holes), e.g. the cuirass
of apobates north XII 47 was decorated with a marble gorgoneion; a hole by the hand of kore east III 13 served for the insertion of an incense burner, the splaying foot of which is modelled in relief; a hole in the side of the helmet of knight west VI 11 held a crest. More controversial are the two missing marble objects, one pegged to the arm of girl V 31, another to the background between her and girl 32 (Fig. 39). The latter was additionally secured by a lead strip, which left a rectangular weathermark on the surface of the marble. This suggests that it was not free of the background as is sometimes assumed. The current
reconstruction of the missing objects as stool legs, first suggested by A. Michaelis in 1871, was recently challenged by B. Wesenberg, who did not, however, offer an alternative interpretation. Further study of the technical aspects of the attachments may shed light on the problem, which is key to the interpretation of the peplos scene on the east frieze.

The pediments of the Parthenon are documented by expenditure accounts and by the testimony of Pausanias (1.24.5), who says that the pediment above the entrance showed the birth of Athena, while the rear represented the strife of Athena and Poseidon over the land of Attica. According to the accounts, they were carved in workshops on the Akropolis between 438 and 432 B.C. Quarrying on Mt Pentelikon began in 439 B.C. and continued annually until the completion of the project. New quarries were opened in search of high-quality marble and new roads were built in order to cart the blocks to the Akropolis. In 434/3 B.C. the sculptors' fees amounted to 16,392 drachmai, an astronomical rate, which is, however, justified by the colossal size of the sculptures, the high degree of finish in the round and the fact that piecing was kept to a minimum.
These pediments are the largest in the Greek world. The estimated height of the statue on the pediment axis is about 3.20-3.40 m; estimates of its weight range from 2.30 to 5 tons.\(^{139}\) The depth of the pediment floor is 0.90 m, 0.70 m of which projected into space. Some statues projected another 0.30 m beyond the front edge of the cornice shelf or overlapped the raking cornice.\(^{140}\) Several were dowelled to the tympanon (Fig. 40) or the horizontal cornice; others were anchored by cramps to the floor.\(^{141}\) The plinth of east pediment G was exceptionally secured into a sunken bedding in order to balance her unsteady pose.\(^{142}\)

The masters of the Parthenon invented a groundbreaking technique of structural iron in order to support the heaviest figures at the centre and sides of the overhanging cornice.\(^{143}\) In each pediment five L-shaped iron bars were inserted into the horizontal cornice and the tympanon above. The bars projected into the statues’ plinths, transmitting the weight of the statues to the back of the pediment floor. It has been suggested that the iron bars were insulated by means of pieces of sheet bronze inserted

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40. Head of Hera (?) from the east pediment of the Parthenon. Athens, Akropolis Museum 2381. Photo German Archaeological Institute, Athens, 81.635.
between them and the plinths, as well as under the tympanon slabs. Most bars were set obliquely along the floor in order to utilize holes cut into the tympanon orthostates before the statues were hoisted into position. The beddings for the bars were of uneven depth so that the bars would be slightly suspended above their bottoms in order to sustain earthquake effects. The heaviest statues in each pediment were supported by pairs of bars.

Standing pedimental statues on the Parthenon tend to have plinths, while seated ones do not. The undersides of plinths can be either rough picked or smoothed with a claw chisel. Piecing is random and was probably often dictated by accidents like marble flaws or by attempts at marble polychromy. Whereas pairs of statues and their seats could be carved out of a single block, for example Demeter and Kore (east pediment E and F) or Aphrodite and her companion (east pediment L and M), single figures could be worked separately from their seats, for example Oreithyia (west pediment Q). A handful of heads, feet, and lower legs were added separately. It has been suggested that Iris’ wings (west pediment N), inserted into a pair of large rectangular cuttings at her back (Fig. 41), were made of grey Hymettian marble. The crest of the mane of Selene’s horse (east pediment O), perhaps also made of different coloured marble, was fastened into a row of ten holes.

Metal attachments are attested by holes or the remains of pins. A hole above Dionysos’ (east pediment D) left foot may have held an anklet, Hermes’ (west pediment H) chlamys was fastened by a brooch pinned between his collar bones, and Iris held a lead ribbon nailed to her left thigh. The goddesses in the two pediments wore gold or gilded jewellery, for example the bracelets of Kore (east pediment E) and Aphrodite (east pediment M). The figures at the centres of the pediments were lavishly decorated with gleaming metal. The head Akr. Mus. 2381 (Fig. 40), attributed to Hera in the east pediment, is pierced with four rows of holes of various sizes for the attachment of ornaments, flowers and leaves, and has a meniskos hole on top. Athena’s (L) bronze armour and other attachments are attested by a large number of cuttings (Fig. 38). Her helmet carried three bronze crests and a bronze neck guard. The crests probably overlapped the raking cornice. She wore golden or gilded earrings, while her aegis was framed by metallic snakes and had a golden (?) gorgoneion in the middle. One would expect Poseidon (west pediment M) to be comparably equipped in bronze but the pinholes in his shoulders are not
easily explained, particularly as Hermes (H) has a similar hole above his left clavicle.\textsuperscript{154}

Evidence of polish on the nude parts of the pedimental statues is preserved on the nape of Helios' neck (east pediment A) (Fig. 83), as well as the rear and left lower leg of the reclining river god (A) in the
west pediment. All traces of paint on the pedimental statues have disappeared but for a black brushstroke on the back of the chests of Kore and Demeter (east pediment E and F). The artist here presumably tested a paint mixture before applying it elsewhere since the rears of the statues were not painted. Scientific analysis has shown that the pigment is lead white (hydrated lead carbonate).

Several fragments of the floral central akroteria of the Parthenon survive in the Akropolis Museum and the British Museum, whereas the corner akroteria have vanished. On the evidence of their bases, which are still on the temple, they are reconstructed as flying Nikai held in place by cramps.

The Doric temples of Poseidon at Sounion and of Hephaistos on Kolonos Agoraios, begun in the mid-440s, just after or at the same time as the Parthenon, were inspired by it to introduce Ionic friezes. The temple of Poseidon is made of local Agrileza marble, while its architectural sculptures, attributed to island workshops, are in Parian marble. An interior Ionic frieze either decorated the front wall of the cella in both porches or ran around the four walls of its east porch: the arrangement is uncertain. The pediments carried statues and floral akroteria. All architectural sculptures are heavily weathered on account of exposure to sea air. The frieze is thought to have represented a gigantomachy, a centauromachy and the deeds of Theseus. Its stylistic date falls within the 440s, that of the pediments in the 430s. A similar chronological discrepancy in the stylistic dates of architectural sculptures in a single temple is equally noticeable not only in the Parthenon but also the Hephaisteion, evidence that the temples took decades to complete. A helmeted head in Parian marble, attributed to the pediments of the temple of Poseidon, is pierced with holes for metal additions, probably a frontlet, cheekpieces, and locks of hair (Fig. 42).

The temple of Hephaistos above the Athenian Agora is made of Pentelic marble. But its metopes, friezes and akroteria, as well as several blocks of the ceiling coffers and cornice, are of Parian marble. Sunken beddings for the insertion of plinths and dowel cuttings for fastening figures to the pediment floors indicate the existence of pedimental statues, presumably made of Parian marble, but the attribution of figures here is controversial. The stylistic dates of the metopes and friezes are at least a decade apart, as the metopes belong to the earliest phase of construction.
in the mid-440s or earlier. Only the external metopes of the east façade and the four easternmost metopes of the north and south flanks were sculptured. In the east porch an Ionic frieze runs from the southern to the northern peristyle, while in the west porch the frieze extends merely from anta to anta. These friezes, unlike that of the Parthenon, have Ionic mouldings. The west frieze represents a centauromachy, while the subject of the east frieze is obscure. Traces of colour on the latter indicate that the background was painted blue; there are also remnants of green and red. Marble and metal attachment techniques recall the Parthenon metopes. Projecting parts of figures were carved separately, for example, penises, arms, hands, and shield rims. Metal arms and armour were pinned on the marble. Athena (Fig. 43) on the east frieze is a veritable inventory of piecing and metal attachments. Her left hand holding
her helmet was probably made in one piece with Hera's extended right arm, which was secured by means of a tenon in a cavity formed by her sleeve. Athena's peplos was held by a metallic brooch pinned on her right shoulder. A metallic gorgoneion was nailed on her chest, while her aegis was decorated with metallic snakes. A cluster of holes at the bottom of the rock on which she sits probably held a bronze snake. A hole further up the same rock served for the attachment of the spear held in her right hand.

The twin Ionic temples of Athena Nike on the Akropolis and of (?) Artemis Agrotera on the banks of the Ilissos River are dated to the early years of the Peloponnesian War, shortly after 430 B.C. A number of small Ionic temples was scattered all over Athens and Attica as attested by a few architectural members. Fragments of a relief frieze from an unknown Ionic temple of similar dimensions were recently identified on the south slope of the Akropolis. The temple on the Ilissos was measured and drawn by James Stuart and Nicholas Revett in 1751–3 before being dismantled by the Ottomans in 1778. Its fabric was of Pentelic marble. A frieze in Parian marble ran around the exterior of the building. It was formed of slim slabs, reinforced by corner blocks for structural reasons. Out of the estimated thirty-four slabs of the frieze, four were taken to Venice by Morosini's men in 1688 and are now divided between Vienna and Berlin, while a corner block and a slab fragment were excavated in the 1890s and are now in the Athens National Museum. Two slabs represent rapes of women and children, while two others and a fragment show men sitting on rocks or standing around. The figures are widely spaced, their limbs occasionally heavily undercut. The empty background behind the figures seated on rocks may have been embellished with painted landscape elements, trees or reeds for example, to suggest a riverbank. The figures on the slabs in Vienna and Berlin are littered with iron pins and drill holes, remnants of seventeenth-century restorations, which were removed in the early twentieth century.

The Ionic temple of Athena Nike on the Athenian Akropolis was completed ca. 424/3 B.C. on the evidence of a decree regulating the priestess' salary. Albeit small, it is remarkable for its abundant sculptured decoration, practically serving as a showcase for sculpture. It is built of
Pentelic marble except for the pedimental sculptures and the akroteria, which were of Parian marble and gilded bronze respectively. Drill holes, remnants of bronze pins and cavities for the insertion of plinths in the horizontal cornice betray the existence of pedimental statues. The torso of a warrior in Parian marble (Fig. 44) must belong to one of the pediments because he was nailed to the floor by means of bronze...
pins. A pin remains in his left lower leg, and there is a pin hole under his left knee. The underside of this knee is flat. A hole in the nape of his neck held the crest of a bronze helmet, now lost. A helmeted head in Parian marble may also belong to the same pediment. Other fragments attributed to these pediments seem to be of Pentelic marble, their pertinence is therefore questionable.

The gilded bronze akroteria must have been voluminous judging by the cuttings in their bases. The lateral akroteria were probably Nikai, whereas the central akroteria may have carried a large tripod or a pair of Nikai erecting a trophy. The four friezes on the exterior of the building and the parapet along the north, west and south side of the bastion are of Pentelic marble. The parapet shows Nikai erecting trophies and leading sacrificial animals in the presence of Athena. The east
frieze represents a divine assembly; the rest of the friezes are decorated with battle scenes. The composition of the east frieze, characterized by lack of narrative action, is probably inspired by the statue bases of the Pheidian School as exemplified by the Nemesis base (Colour pl. 4). Some parts of the figures on the frieze were free-standing and are now broken off, for example the front legs of Zeus’ throne on the east. The best part of the figures on north h was presumably free-standing and is now missing, rendering the scene unreadable. Projecting limbs or shield rims could be made separately as on slab west k. The lost object once pegged to the hole above the pair of horses on north m (Fig. 45) is key to the interpretation of the scene: upturned chariot or baggage?

The last frieze to be set up before the defeat of Athens in the Peloponnesian War in 404 B.C. ran around the exterior walls of the cella of the Erechtheion, including the north porch but not the south (of the Maidens). The height of the figures over the north porch was ca. 0.65 m, while the rest were only ca. 0.58 m high. A portion of the frieze is dated to 408/7 B.C. by expenditure accounts, which name the rather obscure carvers but do not identify the scenes. The entire frieze is calculated to

have taken from ca. 409 to 406 B.C. to carve. The temple is built of Pentelic marble, while the frieze background is of dark Eleusinian limestone. The frieze consisted of appliqué figures (Fig. 46), mostly in Parian marble, which were pegged to the blue-black background. This technique echoes the statue bases of the Pheidian School (Colour pl. 4). There is no record that the marble figures were gilded even though other architectural details like the volutes of the Ionic capitals were covered in gold leaf. The rear of the figures is flat, smoothed with a claw chisel but for a few exceptions, where the rear is rough picked. It has been suggested that
these may be Roman replacements after the west frieze was damaged by fire in the age of Augustus. It is more likely, however, that the restorers of the west frieze left it plain, particularly since damaged blocks were replaced with reused statue bases in Eleusinian limestone (Fig. 47). These bases have no dowel holes for the attachment of appliqué figures.

Stray marble akroteria found in the Athenian Agora have taxed the ingenuity of scholars in their attempts to assign them to buildings. Only a late fifth-century Nike in Pentelic marble and the fragments of another from near the Stoa of Zeus can be safely attributed to that Stoa. A wingless female figure in Pentelic marble found near the Hephaisteion poses an identification problem. Such generic figures are often described as “Breezes”. A similar figure found nearby and dated ca. 400 B.C., exceptionally in Parian marble, is sometimes reconstructed as part of an abduction group and identified as a central akroterion of the Hephaisteion but it is too large and too late in date to fit this temple. It remains difficult
to place. The fragment of an abduction group in Pentelic marble, probably from a central akroterion of the temple of Nemesis at Rhamnous, is one of the masterpieces of the post-Pheidian period and may issue from Agorakritos' studio if not by his hand.\textsuperscript{199}

The outbreak of the Peloponnesian War in 431 B.C. marked a revival in the production of marble reliefs. The completion of the Parthenon in 432 B.C. released a work force of skilled stonemasons seeking employment, while the war created urgent needs for public and private commemoration, state propaganda, and the manifestation of religious piety, especially after the onset of the plague in 430 B.C. Grave, votive and document reliefs began to appear in Athens and Attica soon after 430, eventually leading to a virtual explosion in the production of sculptured reliefs in the course of the fourth century. There was no established iconography at first, while the sculptors experimented with new means of expression. These reliefs were almost exclusively carved in Pentelic marble and were always rough picked in the rear, their sides often smoothed with a claw chisel.

**Grave reliefs** in the last quarter of the fifth century have no architectural frame. They are usually crowned by an ovolo topped by a fascia, mouldings picked out in paint rather than carved. These are all individual pieces, probably made to order, more often than not of exceptional quality with original iconography. Memorials of the war dead were set up in the *demosion sema* at public expense.\textsuperscript{200} They are rarely excavated *in situ*, as they were reused in later burials, moved to other cemeteries, even taken to Rome in antiquity. A double-sided stele from the *demosion sema*, topped by a panel with a lion on one side and a lioness on the other, is probably one of the earliest grave reliefs of the High Classical period.\textsuperscript{201} The bottom part of the stele was painted on both sides.

The Albani relief is among the largest war memorials, depicting a horseman who has dismounted to cut down his opponent.\textsuperscript{202} Fallen Athenian knights are often glorified in both public and private grave reliefs. *Demosion sema* iconography inspired votive reliefs dedicated by the military, for example the stele set up at Eleusis by Pythodoros, an Athenian general active in the Peloponnese in 414/13 B.C.\textsuperscript{203} The battle scene is here deployed in two tiers, involving both horsemen and hoplites. Private grave reliefs of soldiers probably belonged to citizens who perished in action, like the large stele of the brothers Chairedemos and Lykeas from
Salamis. It is commonly dated ca. 412/11 B.C., when Lykeas fell in battle.

Among private grave reliefs, those of children stand out for novelty of subject-matter and high quality of execution. The finest reliefs of teenage boys are dependent on the Parthenon frieze. The tall rectangular stele of Eupheros from the Kerameikos, dated ca. 430 B.C., carries an inset relief pediment and painted decoration: a pair of confronted lions in the pediment, two book rolls between the antefixes, and a blue ribbon on top of the stele. Traces of colour indicate that the boy’s hair was blond, the background blue. The “Salamis” relief of a boy holding a bird (Fig. 87), also dated ca. 430, exceptionally includes a grave stele in the background, a motif borrowed from painting. Carving technique and drapery echo those of the Parthenon frieze, while the crowning fascia decorated with palmettes in low relief is unique at this time. Another unusual grave relief actually comes from Salamis, showing a boy actor holding the mask of a female character from Attic drama. The stele is topped by a pediment, a new feature introduced towards the closing years of the fifth century.

Large marble vases also served as grave markers, like the lekythos of Myrrhine, where she is shown being led by Hermes to the Underworld. A group of bystanders on a smaller scale, their hands extended as if in prayer, look more like worshippers rather than family. Hermes’ presence is rare in Attic grave reliefs and may be related to the priestly status of the deceased. Myrrhine has been identified with the first priestess of Athena Nike, whose salary was regulated in 424/3 B.C. Marble funerary vases stood on rectangular bases, which were sometimes decorated with reliefs. A base from Kallithea with reliefs on three sides must have carried another exceptional stone vase, since Hermes makes an appearance on one of the sides. Not surprisingly, a priest is shown on the other side.

High Classical votive reliefs are crowned by an ovolo topped by a fascia or have no crown at all. A few examples towards the end of the fifth century are exceptionally crowned by a pediment. The figures step on a ledge, and the bottom of the relief usually ends in a tenon for insertion into a pillar base. The top panel of the pedestal sometimes carries reliefs as well. Dedications can be inscribed on the architrave, the pedestal, or both, as is the case with the relief of Echelos and Basile, carrying a dedication to Hermes and the nymphs on the entablature, as
well as the donor’s name on the pillar base. Reliefs dedicated on the Akropolis were sometimes duplicated and set up in another sanctuary in Attica.

Three-figure reliefs are common in this period. The gods are shown in groups or on their own. They can be attended by worshippers whose scale varies in relation to the deities. The recipients were mostly Asklepios, Athena, and the Eleusinian goddesses, Demeter and Kore. In times of crisis the Athenians turned for comfort to Asklepios, their new healing god introduced around 420, or their city goddess, Athena, and the two goddesses of the Mysteries with their promise of a happy afterlife.

The colossal three-figure relief of Demeter, Ploutos and Kore from Eleusis is not only among the earliest but also the largest of all known votive reliefs in this period. Its style echoes the east frieze of the Parthenon, Demeter being a mirror image of kore, east frieze VII 55. The Parthenonian overtones of the Great Eleusinian Relief associate it with the Pheidian circle. Indeed, Alkamenes was known to have made a relief of colossal proportions in Pentelic marble, dedicated by Thrasyboulos to the Herakleon of Thebes in 403 B.C. The Great Eleusinian Relief is a special monument not only on account of its size but also because of its numerous metal attachments. Kore’s golden (or gilded bronze) jewellery was once held by pins: one in her neck for the attachment of a necklace, another in her left ear for an earring, a pair in the contour of each forearm for bracelets, and one in the bottom buttonhole of her left sleeve for a button. A hole before Ploutos’ forehead served for the attachment of a golden wreath, placed on his hair by Kore. Golden ears of grain were handed to Ploutos by Demeter. The forceful removal of the golden wreath and the ears of grain caused the fingers of Kore and Ploutos to break off. The cultic significance of this relief is attested by the existence of two Roman copies found in Rome.

Closely related to the style of the Nike temple parapet is another three-figure relief found on the Athenian Akropolis. It shows Nike crowning Herakles, attended by Hebe or Athena (Fig. 48). A deep cutting in Nike’s right hand must have accommodated a golden (?) wreath. The coronation of Herakles in the context of his marriage to Hebe was a common theme in the period of the Peloponnesian War and after, suggesting blissful existence in the afterlife.
Votive reliefs to Asklepios began to appear at his sanctuaries in Piraeus and on the south slope of the Akropolis soon after his arrival in Athens in 420. An unusual double-sided relief from the Athenian Asklepieion was dedicated by its founder, Telemachos, and is now recomposed on paper of fragments scattered in three countries. It was crowned by a separately carved moulding and inset into a panel with reliefs on all four sides. This panel was carved of one piece with a tall pillar. The chronicle of the introduction of the cult of Asklepios to Athens is inscribed on the pillar. Both stele and pillar are made of Pentelic marble. There is a contemporary copy of this monument, which would have been set up in another sanctuary. A shrine adjacent to the Athenian Asklepieion has been suggested but the Piraeus Asklepieion is equally possible.

The duplication of reliefs is also attested for this period by the so-called Lenormant relief, again reassembled on paper of scattered fragments.
It shows the sacred trireme, Paralos, with its crew, attended by its eponymous hero Paralos, who is shown on a colossal scale, seated on a rock at the right. The top left of the relief is missing: it probably included another deity, perhaps Athena. This relief is again transmitted in two copies. One stood on the Akropolis, the other possibly in the sanctuary of Paralos in the Piraeus harbour. It may have been dedicated by the crew of the sacred ship which changed annually, celebrating its end of term with an offering to Paralos.

A new class of reliefs, known as record reliefs, was introduced around 430 B.C. They provided a visual commentary on the content of decrees issued by the Athenian state and inscribed on Pentelic marble stelai. In the fifth century they were carved of one piece with the stele. Unlike votive reliefs, they end in mouldings at the bottom as well as the top, setting the scene off from the inscribed text. Some reliefs are recessed, framed by pilasters. Record reliefs were originally intimately related to the workings of the Athenian Empire, as they tended to illustrate foreign treaties, honours to foreign benefactors, tribute collection or accounts of the treasurers of Athena. The earliest attested record relief illustrates a decree of 426 B.C., appointing collectors of the tribute of the Athenian Empire. Only a fragment of the relief survives, with water jars and wine sacks as receptacles of the tribute money. Reliefs illustrating alliances usually show Athena shaking hands with a representative of the allied state, a local deity or a city personification, for example the Sicilian city of Messana, whose name is inscribed in the background.

The majority of reliefs in this period belong to state decrees set up on the Akropolis. Sometimes treaties were copied into a second stele to be erected in the allied city as well; one assumes that record reliefs were duplicated too though no such duplicates survive. An instance of design (but not content) duplication is known from the Akropolis. A scene of Athena shaking hands with Hera on a stele concerning relations with Samos was reproduced four years later on a different stele with an inventory of the treasurers of Athena and the Other Gods. Both reliefs stood on the Akropolis. Because record reliefs come with dated inscriptions, they are valuable documents for the dating of sculpture as they sometimes echo well-known statuary types. Needless to say, the inherent conservatism of these monuments implies that they adapt types
which may be quite well established and therefore considerably earlier than the date of the decrees.\footnote{233}

**Abbreviations**

Clairmont  C. W. Clairmont, *Classical Attic Tombstones* (Kilchberg 1993)

Danner  P. Danner, *Griechische Akrotere der archaischen und klassischen Zeit* (Rome 1989)


Lapatin  K. D. S. Lapatin, *Chryselephantine Statuary in the Ancient Mediterranean World* (Oxford 2001)


Overbeck  J. Overbeck, *Die antiken Schriftquellen* (Leipzig 1868)


Trianti  I. Trianti, *To Μουσείο Ακροπόλεως* (Athens 1998)

**Notes**


2. Thuc. 1.89 and 93. See also W.-D. Niemeier, *Der Kuros vom Heiligen Tor* (Mainz/Rhein 2002) 22.


4. There is some dispute concerning the date of the inception of the Classical style. Did it appear before or after the Persian Wars? The break with the past is so extreme, as to imply a change in mentality occasioned by momentous historical events: J. J. Pollitt, “Art, politics, and thought in Classical Greece,” in D. Buitron-Oliver, *The Greek Miracle*, exh. cat. (Washington, D.C. 1992) 33–34.

5. See Chapter VI. On the Early Classical or Severe Style, see B. S. Ridgway, *The Severe Style in Greek Sculpture* (Princeton 1970); Bonacasa and Mandruzzato (supra n. 3).

6. Holtzmann (supra n. 1) 96–100.

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8. These statues are documented by inscribed statue bases and/or the testimony of Pausanias. Keesling (supra n. 7) 165–180. Victors in panhellenic games occasionally dedicated portrait statues in their home towns; see provisional list in C. O. Pavese, L’Auriga di Mozia (Rome 1996) 45–46.

9. Athens, Akropolis Museum 698. Parian marble. Buitron-Oliver (supra n. 4) cat. no. 5; Trianti, figs. 236–239. For a date soon after 479 B.C., see J. M. Hurwit, “The Kritios Boy: discovery, reconstruction, and date,” AJA 93 (1989) 43–80; id. (supra n. 3) 147, fig. 117. For a date just before 480 B.C., see Holzmann (supra n. 1) 66, fig. 45. See also Ch. II, p. 57. For inlaid eyes in Archaic marbles, see Ch. II, pp. 55–58.

10. For a suggestion that the Kritios Boy represents Theseus, see Hurwit (supra n. 9).


12. V. Brinkmann, Die Polychromie der archaischen und frühklassischen Skulptur (Munich 2003) cat. no. 110.


15. Athens, Akropolis Museum 140. Parian marble. Buitron-Oliver (supra n. 4) cat. no. 7; Rolley (supra n. 11) 351, fig. 364; Hurwit (supra n. 3) 149–150, fig. 29; Trianti, fig. 251. For the inscribed column, see A. E. Rabitschek, Dedications from the Athenian Akropolis (Cambridge, Mass. 1949) no. 22.


19. Athens, Akropolis Museum 695. Parian marble. The Panathenaic connection is argued by H. Jung, “Die sinnende Athena,” JdI 110 (1995) 95–147, followed by Holzmann (supra n. 1) 96. See also G. Neumann, Probleme des griechischen Weihreliefs (Tübingen 1979) pl. 20a; Buitron-Oliver (supra n. 4) cat. no. 8; Trianti, figs. 249–250.


27. IG I² 453–460 (expenditure accounts), ill. in Holtzmann (supra n. 1) fig. 90; Schol. Ar. Pax 605. On the date, see Lapatin, 64. Sources on the Athena Parthenos are collected in O. Jahn and A. Michaelis, Arx Athenarum a Pausania descripta (Bonn 1901, repr. Chicago 1976) 56–58; D. Harris, The Treasures of the Parthenon and Erechtheion (Oxford 1995) 263–265; Lapatin, 63 nn. 22–23.


29. The height of the statue and base is discussed by G. P. Stevens, “Remarks upon the colossal chryselephantine statue of Athena in the Parthenon,” Hesperia 24 (1955) 252–256. He calculates that the height of the statue alone was 10.107 m.

30. On the epithet “Parthenos” and the function of Pheidias’ Parthenos as a cult statue, see Lapatin, 64; G. Nick, Die Athena Parthenos, AM-BH (Mainz/Rhein 2002) 116–132. It is interesting that the Parthenos functioned as a cult statue longer than the more venerable olive-wood Athena Polias in the Erechtheion, cf. Lapatin, 89.


32. On the technique of the Athena Parthenos and ivory moulding which facilitated the creation of ivory colossi, see K. D. S. Lapatin, “Pheidias’ θεοστούργος,” AJA 101 (1997) 663–682; Lapatin, 68–79.


34. On the Athena Promachos, see Hurwit (supra n. 3) 24–25, 151–152; D. W. J. Gill, “The decision to build the temple of Athena Nike (IG I² 35),” Historia 50 (2001)
269–274 (arguing for a date in the 430s). See also Ch. VI. p. 226. Speculation as to its height is offered by E. B. Harrison, “Phidias,” in O. Palagia and J. J. Pollitt (eds.), Personal Styles in Greek Sculpture (Cambridge 1996) 31.


36. On the Zeus, see Lapatin, 79–86, 88–90. See also infra n. 53.


40. Pausanias 5.20.2–3. Lapatin, 97.

41. Plato, Hippias Major 290b.

42. Pausanias 1.24.7.


44. Thuc. 2.13.5; Pausanias 1.25.7.

45. Schol. Ar. Pax 605; Overbeck, no. 629; Lapatin, 66 with n. 55.

46. Harris (supra n. 27) nos. V 94–96.

47. Harris (supra n. 27) no. V 89. It is not certain that the silver gilt gorgoneion mentioned in the inventories belonged to Athena’s shield since it is called “the shield from the temple” rather than “from the statue”: Harris (supra n. 27) no. V 30. N. Leipen, Athena Parthenos (Toronto 1971) 19 with n. 26 assumed that this shield belonged to Athena. 

48. Pliny, NH 36.18.


51. Stevens (supra n. 50); Lapatin, 70, figs. 150–151.

52. Orlandos (supra n. 50) fig. 245.

53. Pausanias 5.11.8. Palagia (supra n. 49); Lapatin, fig. 176 (base of Zeus).

54. Athens, Epigraphical Museum 6286. IG¹ 501; Raubitschek (supra n. 15) no. 168; Keesling (supra n. 7) 53, fig. 17.

55. Goette (supra n. 21) 36–37, figs. 76–77.
56. Athens, Agora A 3001. Total height, 0.17 m. Height of top moulding, 0.07 m. The extant length of the combined fragments is just under 1 m. I am grateful to Richard Anderson for discussing the base with me. H. A. Thompson, "Activities in the Athenian Agora: 1959," *Hesperia* 29 (1960) 356–357, fig. 8, suggested that it belonged to one of the Agora temples. It was attributed to the Parthenos base by Gadbery (supra n. 50) 123–154, followed by Lapatin, 69, figs. 152–153, and A. Kosmopoulou, *The Iconography of Sculptured Statue Bases in the Archaic and Classical Periods* (Madison 2002) 236, no. 59, fig. 93 (here upturned). But the technique, suggesting a crown of dark limestone placed on a die of white marble, militates against attribution to the Parthenos since we assume that its base was faced with dark limestone.

57. B. Petrakos, "Προβλήματα της βάσης του αγάλματος της Νεώτερος," in H. Kyrieleis (ed.), *Archaische und klassische griechische Plastik II* (Mainz/Rhein 1986) 90, fig. 1; id. (supra n. 22) 251–256, figs. 163–167. The base has been reconstructed by Petrakos in a storeroom on the Rhamous site.

58. For the quarries at Dionysos (Ikaria) on the other side of Mt. Pentelikon, see Petrakos (1986, supra n. 57); M. Korres, *From Pentelikon to the Parthenon* (Athens 1995) 89, pl. 18, no. 2.


60. Pliny, *NH* 36.17; Pausanias 1.3.5 (attributed to Pheidias). Despinis (supra n. 59) 111–112.


62. The rectangular dowels indicate marble attachments. If the figures were in bronze, they would have been fastened with pins.

63. Thompson and Wycherley (supra n. 61) 145 calculated that the base was decorated with twelve figures.


65. A white marble crown is also suggested by Thompson and Wycherley (supra n. 61).


68. Overbeck, nos. 808–826.

69. Pausanias 1.20.3. Lapatin, 98–100.

70. Kolotes: Overbeck, nos. 846–850; Lapatin, 97–98. See also supra n. 40. For Theokosmos, see Pausanias 1.40.4; he also worked in bronze: Pausanias 10.9.8; *SIG* 3 115 (Lysander’s dedication at Delphi). Lapatin, 96. See also Ch. VII, p. 263.


Quantities of Pentelic marble were already being quarried in the early fifth century for the production of the Severe Style predecessor of the Parthenon, which remained unfinished as a result of the Persian sack of the Akropolis in 480/79 B.C.

73. Palagia, 348-350.


75. Athens, National Museum 199. IG Ἡ 1021; Palagia, 349–350, fig. 6; Kaltsas, no. 223; Petrakos (supra n. 22) II, no 88. This type of tall limestone pedestal was also employed for votive reliefs, e.g. relief of Echelos and Basile, Athens, National Museum 1783 and of Xenokrateia, Athens, National Museum 2756, J. N. Svoronos, Das Athener Nationalmuseum I–III (Athens 1908–1937) pl. 182. See also infra nn. 212–213. For a similar pedestal made of marble, see infra n. 223.


77. Despinis (supra n. 59) 174–175, 190–191.


84. Athens, National Museum 1604. Delivorrias (supra n. 83) 19–31, pls. 7–8; Kaltsas, no. 224; Rosenzweig (supra n. 82) 40–44, fig. 33; Die griechische Klassik (supra n. 71) 348–349, no. 231.


86. Eleusis Museum 5076. S. Adam, The Technique of Greek Sculpture in the Archaic and Classical Periods (London 1966) pl. 25a-c; Despinis (supra n. 59) 186; Boardman (supra n. 20) fig. 137; K. Papangelis, Ελευσίνα (Athens 2002) 212–215. A repair caused by a flaw in the marble is attested by the lower lip of the herm Athenian
Agora S 2452, Harrison (supra n. 17) 166–167, fig. 3. For repairs due to marble flaws, see also Ch. VII, pp. 248–249 and Fig. 80.

87. T. L. Shear, “The current excavations in the Athenian Agora,” AJA 40 (1936) 196, 198, fig. 14; Despinis (supra n. 59) 187–188.

88. Despinis (supra n. 59) 188–189; Boardman (supra n. 20) fig. 136.

89. Supra n. 86.

90. Kaltsas, no. 215.


94. Brinkmann (supra n. 93) 122–123.


96. Infra n. 156.


99. Brinkmann (supra n. 93) 122.

100. Brommer (supra n. 97) pl. 178.

101. Brommer (supra n. 97) pl. 197.

102. Brommer (supra n. 97) pl. 221.

103. Brommer (supra n. 97) pl. 197.

104. Brommer (supra n. 97) pl. 197.

105. Brommer (supra n. 97) pl. 197.

106. Brommer (supra n. 97) pls. 195.1, 196.1, 196.3; Triant, fig. 257. This technique was used in the early fifth century in the head of a dying warrior in the corner of the east pediment of the temple of Aphaia on Aigina: D. Ohly, Die Aegineten I (Munich 1976) 76–79, figs. 67, 70, pl. 37. See also Ch. VII, p. 262 with n. 94.


108. Palagia (supra n. 80) 46, figs. 92–94.

109. Brommer (supra n. 97) pls. 42.2, 45, 49, 79.2.

110. Brommer (supra n. 97) pls. 49, 79.2.


113. Korres (supra n. 98) 92–108; id. (supra n. 111) fig. 36; G. Gruben, *Griechische Tempel und Heiligtaümer* (Munich 2001) fig. 136; Hurwit (supra n. 37) 270 n. 30, fig. 87. A frieze running around the walls of the east porch is tentatively restored in the temple of Poseidon at Sounion: see Leventi, infra n. 160.


115. The figures are given by Korres (supra n. 98) 99, 103. The thickness in fact varies considerably from slab to slab.

116. Slab widths are tabulated by Brommer (supra n. 93) 160–165. See also Neils (supra n. 93) 75–76.

117. East V: Brommer (supra n. 93) 115, 161; Berger and Huwiler (supra n. 112) 155.

118. Brommer (supra n. 93) pls. 123–127; Neils (supra n. 93) 85.

119. Blue background: Orlandos (supra n. 50) 460, fig. 283; Neils (supra n. 93) 77, fig. 57; Brinkmann (supra n. 93) 122, fig. 204. Different coloured background of east V: W. R. Lehaby, “The central part of the eastern frieze of the Parthenon,” *JHS* 49 (1929) 11, fig. 5.

120. Brommer (supra n. 93) pls. 172, 174.

121. Neils (supra n. 93) 90, fig. 65. Painted pupils of horses’ eyes: Lehaby (supra n. 119) 13.


123. Brommer (supra n. 93) pls. 52, 154–160.

124. Examples are collected by Brommer (supra n. 93) 235–236; Neils (supra n. 93) 93; M. B. Moore, “Unmounted horses on the Parthenon frieze, especially West XII,” *AntK* 46 (2003) 38.


126. Brommer (supra n. 93) 18–19, pl. 36; horsewhip. It has also been interpreted as a trumpet or caduceus (Neils supra n. 93) 91.

127. Brommer (supra n. 93) 119, 261, pl. 182.

128. Brommer (supra n. 93) 260, pl. 176.

129. Brommer (supra n. 93) 35, pl. 68.

130. Brommer (supra n. 93) 109, pl. 169; Neils (supra n. 93) 91, 93. J. Boardman prefers to see it as one of the legs of the loom: “The Parthenon frieze,” in E. Berger (ed.), *Parthenon-Kongress Basel* (Mainz/Rhein 1984) 213. The incense burner on east VIII is modelled in full.

131. Brommer (supra n. 93) pl. 19.


136. IG I 3 444-449.
137. IG I 3 449.
138. Only the inner horses of the west pediment chariots were flat at the back: Palagia (supra n. 80) 44-45, 48, fig. 101. The pedimental statues of the temple of Aphaia on Aigina were also finished in the round: Ohly (supra n. 106) pls. 34 and 56; II (Munich 2001) pls. 121, 138.
139. Palagia (supra n. 80) 29 with n. 206.
140. Korres 1994 (supra n. 111) 61.
141. E.g. dowels: Selene’s horse, underside (east O) (oddly enough, not used): Palagia (supra n. 80) 23, fig. 53; head Akr. Mus. 2381 (Fig. 40); Palagia (supra n. 80) 23, fig. 57, and Athena, rear (west L): Palagia (supra n. 80) 46, fig. 94. Cramps: Selene’s horse (east O): Palagia (supra n. 80) 23, fig. 52, and Peplos Figure Wegner, Akr. Mus. 6712: Palagia (supra n. 80) 24, fig. 62.
142. F. Brommer, Die Skulpturen der Parthenon-Giebel (Mainz/Rhein 1963) 12, fig. 1; Palagia (supra n. 80) 20.
143. Orlando (supra n. 50) 525-531; Palagia (supra n. 80) 27 with nn. 162-163; Korres 1994 (supra n. 111) 61, fig. 7.
144. Palagia (supra n. 80) 9, figs. 29, 46, 53.
145. Palagia (supra n. 80) 20-21, figs. 37-38, 42-43.
146. Palagia (supra n. 80) 49-50, figs. 110-111.
147. Separate head with neck: Athena (west pediment L) (Fig. 38): Palagia (supra n. 108).
149. Boardman and Finn (supra n. 132) pl. 18; Palagia (supra n. 80) 23.
150. Brommer (supra n. 142) pls. 27, 91, 111; Palagia (supra n. 80) 19, 44, 48.
151. Palagia (supra n. 80) 20-21, fig. 45.
152. Palagia (supra n. 80) 23, figs. 56-59; Spetsieri-Choremi (supra n. 148) 393, fig. 2.
153. Brommer (supra n. 142) pl. 101; Palagia (supra n. 108).
154. Brommer (supra n. 142) pl. 105; Palagia (supra n. 80) 44, 47. P. Schultz has suggested that Poseidon wore a bronze cuirass: ap. Hurwit (supra n. 37) 271 n. 40. If he did, we must assume that he wore a short chiton underneath. For a cuirassed torso wearing a transparent short chiton indicated only in paint, see Akr. Mus. 599, supra n. 14.
155. Brommer (supra n. 142) pls. 82.1 and 84.1; Palagia (supra n. 80) 18, 41, fig. 25; Jenkins (supra n. 95) pl. 6. See also Ch. VII, pp. 260-261.
156. Jenkins and Middleton (supra n. 93) 188, 204-205, fig. 1; Palagia (supra n. 80) 20.
157. Danner, 13-14, no. 77; Palagia, “Fire from heaven” (supra n. 85) figs. 19-20.
158. Korres 1991 (supra n. 111); Palagia, “Fire from heaven” (supra n. 85) fig. 14.
159. Poseidon temple: Dinsmoor (supra n. 98) 181-182; Gruben (supra n. 113) 229-232; Goette (supra n. 21) 26-30. On the use of Parian marble: Palagia, 348, figs. 1-2. On the quarries of Agrileza, see Goette (supra n. 21) 90-91, figs. 201-202.


162. Dinsmoor, *Hesperia* Suppl. 5 (supra n. 61); id. (supra n. 98) 181–182; Gruben (supra n. 113) 223–229.


165. Korres (supra n. 98) 92, fig. 21.


167. For inset penises in the south metopes of the Parthenon, see supra n. 103.


169. For a bronze snake pegged on a giant’s leg on the east metopes of the Parthenon, see supra n. 109.


173. J. Stuart and N. Revett, *The Antiquities of Athens* (London 1762) Ch. II; Dinsmoor (supra n. 98) 185; Gruben (supra n. 113) 205–206.

175. Vienna, Kunsthistorisches Museum I 1903 and 1094, Berlin, Staatliche Museen; Antikensammlungen Sk 1483, Athens, National Museum 1780 and 3941. Beschi (supra n. 174) figs. 5–8, 9–10, 12–13; Palagia (supra n. 170) figs. 1–9.

176. Palagia (supra n. 170).

177. Beschi (supra n. 174) 14 with n. 21.


183. E.g. Despinis (supra n. 180) 113–14, pls. 18–19; Trianti, colour pl. 55.

184. Schultz (supra n. 179).


186. Palagia (supra n. 170).

187. Trianti, fig. 391.

188. Felten (supra n. 160) pl. 38.1; Trianti, fig. 395.

189. Felten (supra n. 160) pl. 36.2.

190. Felten (supra n. 160) 126, pl. 37.2 (chariot); Trianti, fig. 394; Palagia (supra n. 170) fig. 15 (baggage).

191. On the temple, see Dinsmoor (supra n. 98) 187–195; Gruben (supra n. 113) 209–222; Hurwit (supra n. 37) 164–180.


193. Travlos, Athens, fig. 289. The figures of the Erechtheion frieze are usually described as made of Pentelic marble. They are, in fact, of Parian marble with a few exceptionally made of Pentelic, such as Akr. Mus. 1071 (Fig. 46) (cf. infra n. 194), see Palagia, 350. Perhaps the contractors ran out of Parian marble and were obliged to use Pentelic near the end of the project. For a similar situation

194. Smooth rear. Boulter (supra n. 192) figs. 10 and 16. Akr. Mus. 1293 and 1263 described as Roman replacement figures: Boulter (supra n. 192) 18-19, figs. 17-20, pl. 30. The rear of the group of Demeter and Kore (?), Akr. Mus. 1071 (Fig. 46) (Boulter, no. 77, pls. 11-12), is rough picked even though this is surely a fifth-century original.


196. Athens, Agora S 312 and 373. Thompson and Wycherley (supra n. 61) 99, pls. 51c and 52; Danner, 17, no. 105, pl. 10.

197. Athens, National Museum 1732. Danner, 26, no. 158, pl. 25; Kaltas, no. 163.

198. Athens, Agora S 182. Danner, 22-23, no. 143, pl. 19; Delivorrias (supra n. 163) 100, fig. 21.

199. Athens, National Museum 1732. Danner, 26, no. 143, pl. 19; Kaltas, no. 163.

200. The iconography of war memorials is discussed by Stupperich (supra n. 23) 93-103.

201. Athens, National Museum 3709. Stupperich (supra n. 23) 94; Kaltas, no. 284.


203. Piraeus Museum 385. Boardman (supra n. 20) fig. 152; Clairmont, 2.156; Stupperich (supra n. 23) 96, fig. 3; G. Steinhauser, *To Αρχαιολογικό Μουσείο Πειραιώς* (Athens 2001) fig. 446.

204. Athens, Kerameikos Museum P 1169. B. Schlorb-Vierneisel, “Zwei klassische Kindergräber im Kerameikos,” *AM* 79 (1964) 90-95, 101-104, Beil. 48.1, 49, 51.1; Boardman (supra n. 20) fig. 147; Clairmont, 1.081; *Die griechische Klassik* (supra n. 71) 468-475, fig. 3.

205. Athens, National Museum 715. Its provenance from Salamis is inspired conjecture. It was originally housed in the Aigina Museum which served as a National Museum in the 1830s. S. Karouzos, *Εθνικόν Αρχαιολογικόν Μουσείον Συλλογή γλυπτών* (Athens 1967) 49, pl. 25; Despinis (supra n. 59) 192; Buitron-Oliver (supra n. 4) cat. no. 30; Clairmont, 1.550; Kaltas, no. 287. See also Ch. VII, p. 257.

206. A similar frieze appears later on the early fourth-century stele Piraeus Museum 3638: Clairmont, 2.120; Steinhauser (supra n. 204) fig. 426.


208. Athens, National Museum 4485. From the cemetery in Sintagma Square, Athens. Boardman (supra n. 20) fig. 154; Clairmont, 5.150; Kaltas, no. 289.

Classical Athens

(Locust Valley 1979) 103–110, pls. 30.2, 31. For the degree regulating the priestess' salary, see supra n. 178.


212. E.g. double-sided relief of Echelos and Basile, Athens, National Museum 1783. Buitron-Oliver (supra n. 4) cat. no. 26; Kaltsas, no. 258. See also supra n. 75. Classical Attic votive reliefs are discussed by Comella (supra n. 22) 41–80.


215. There are also the odd reliefs dedicated to Aphrodite, Artemis Brauronia, Apollo, Dionysos, Kephisos, and others: see Comella (supra n. 212).


218. Clinton and Palagia (supra n. 217) 275, pl. 70.2.


220. One is in New York, Metropolitan Museum of Art 14.130.9, purchased in Rome: Schneider (supra n. 217) 110–116, pl. 32. The other was recently excavated in Rome and is still unpublished. For the hole before Ploutos' forehead, once holding a golden wreath, compare the Sounion stele, Athens, National Museum 3344: supra n. 21.

221. Athens, Akropolis Museum 1329, currently in the Museum of the History of the Ancient Olympic Games, Olympia. Neumann (supra n. 19) pl. 42a; Comella (supra n. 22) 44–45, fig. 30.

222. For these reliefs, see Comella (supra n. 22) 46–56, 73–76; I. Leventi, Hygieia in Classical Greek Art (Athens 2003) 129–137.


228. Athens, Epigraphical Museum 6595. IG I3 68. Lawton, 81-82, no. 1, pl. 1.
229. Leiden, Rijksmuseum van Oudheden RO.III.95. IG I3 148. Lawton, 114, no. 66, pl. 34.
230. For example, stele of the Thracian Neapolis (modern Kavala), Athens, Epigraphical Museum 6598. IG I3 101. Lawton, 85-86, no. 7, pl. 4.