

The Mudu Archaic City Site of the Spring-and-Autumn Period in Suzhou City, Jiangsu

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Abstract

In 2009 and 2010, a series of archaeological investigations were conducted in and around the Mudu archaic city site located in the southwestern highland of Greater Suzhou, Jiangsu. The excavations revealed sections of the north circumference wall at Wufeng and the water gate of the south circumference wall at Xinfeng. The surveys identified the possible locations of the east and the west circumference walls. Diagnostic proto-porcelain and stamped potsherds were recovered. It is tentatively argued that both the north and the south walls were built and in use during the late Spring-and-Autumn Period. The Mudu Site, therefore, was a large-scale walled settlement functioned as a regional center of its time. These findings are instrumental in the search for the lost capital of Wu State of the Spring-and-Autumn Period, the understanding of the relationship among the various contemporary settlement sites, cairns, earthen mounds, and caches distributed in the region, and the reconstruction of the local cultural history of Eastern Zhou.

Keywords: Mudu Archaic City Site (Suzhou City, Jiangsu); Wu State (Spring-and-Autumn Period)—archaeology

Archaeological background

The archaeological program of the Mudu Archaic City Site at Suzhou was a joint effort of the Institute of Archaeology, Chinese Academy of Social Sciences and the Suzhou Municipal Institute of Archaeology. The program systematically surveyed, excavated and studied the pre-Qin archaeological sites distributed in the western highland of the Suzhou City and its surrounding area. It addressed a number of questions pertaining to the chronology, characteristics, regional distribution, and human-land interaction of an urban center, burials and other occupations in the Mudu Basin and its neighboring area during the early historic times.

The seat of the Wu 吴 State of the Spring-and-Autumn Period is an unresolved academic question. Constrained by the written literature and folk legends, the traditional view is that it was located in the center of modern Suzhou City. However, decades of archaeological works at Suzhou failed to yield evidence of urbanization during the

pre-Qin era; thus undermined the validity of the proposition. The focus on the search of the seat of Wu State has recently shifted to the western highland of Greater Suzhou, where Eastern Zhou sites are densely distributed (Figure 1).

A mountainous terrain distributes in the southwestern part of the Suzhou City and to the northeast of Lake Tai. An archaeological survey in this area in 1957 yielded artifacts diagnostic to the Spring-and-Autumn Period. It identified a number of earthen mounds with stone-chambered tombs on mountain ridges nearby the Lingyan 灵岩 Mountains and Jingshanbang 金山浜 (Wuxian Council et al. 1963). Moreover, an excavation was conducted on an earthen mound with stone-chambered tombs at Wufeng 五峰 Hill (Zhu 1955). These findings inspired Qian Gonglin to argue in 1989 for the first time that Dacheng (greater city) of Wu, built by King Helü 阖闾, was located in one of the basins of Mudu 木渎. In 2000, the Department of Archaeology of Suzhou Museum discovered in survey a great number of elongated and rectangular earthen mounds that their distribution stretched for several kilometers, suggesting there existed a large-scale ancient site. In the spring of 2001, trial excavations at three elongated mounds yielded sherds of stamped pottery and revealed the structures of the mounds. These evidences tentatively indicated that the mounds were the preserved sections of the circumference walls of a major fortified settlement site of the late Spring-and-Autumn Period.

Based on the above findings, the joint archaeological team conducted a large-scale archaeological reconnaissance and excavation program in the region southwest of

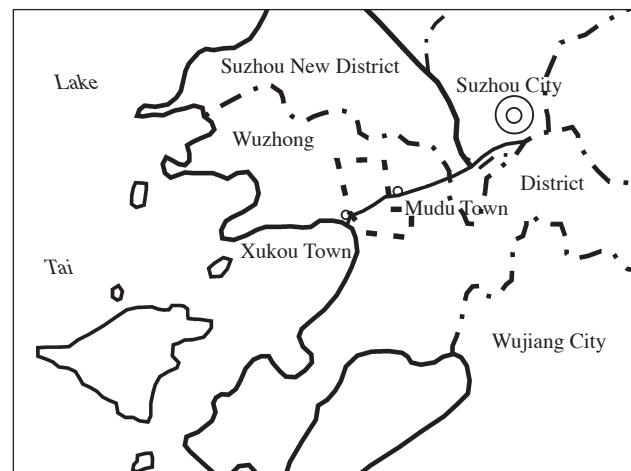


Figure 1 The location and scope of the Mudu Archaic City Site in the Greater Suzhou area.

Suzhou City and northeast of Lake Tai from the spring of 2009 to the spring of 2010. It covered parts of three townships of Wuzhong 吴中 District, Suzhou City, which are Mudu Town, Xukou 胥口 Town and the Qionglong Mountain Scenery Precinct.

Regional survey of 2009

In November and December of 2009, the joint archaeological team completed the documentation and mapping of the major surface features of a 25sq km area in the Mudu Basin.

Ancient sites distributed in the Suzhou region rarely show surface distribution of potsherds and outcrop of occupation floor. However, past occupations are often indicated by earthen mounds rising above the ground. The joint archaeological team systematically covered a vast area with regional survey method, and with a focus on the documentation and mapping of earthen mounds. In addition to collecting surface distribution and identifying past occupations, when resources were available, the team also made trial excavation to some mounds to gain initial understanding of their cultural depositions (Figure 2).

1. The survey identified and documented 235 localities of earthen mounds and five occupation sites. The earthen mounds varied in shape that included rectangular, bar-

shaped and irregular plans. They also varied in height, from just above the horizon to 4-5m high. The lack of extensive excavation constrained the team from determining the chronology of these mounds in any level of certainty. Yet, it had collected potsherds with stamped geometric patterns and proto-porcelain sherds diagnostic to the Eastern Zhou. Wufeng 五峰, Xinfeng 新峰, Liaoli 廖里 and Sheguang 社光 showed unusual dense distribution of earthen mounds. For example, about 100 earthen mounds of varying size were found in Sheguang and diagnostic Eastern Zhou artifacts were collected in the nearby area.

2. Five occupation sites had been discovered. They were located in the vicinity of the villages of Maxianghang 马巷上, Hengjinglang 横泾郎, Nanyezhu 南野竹, Liaoli 廖里, and Shangyantou 上堰头.

The Maxiangshang Site was a stone implement workshop located on a foothill to the north of the village the site named after. It occupied a rectangular area of 200m east-west by 100m north-south. A great number of potsherds, stone artifacts and blanks of stone tools were found scattered on the surface. Two occupation floors consisted of large amount of potsherds and baked reddish earthen nodules were found in the western part of the site. Some occupation floors were densely lined with processed stone material and blanks. Blanks of chisel, ax, adze, and knife were collected among them.

The Hengjinglang Site was located to the southeast of the Hengjinglang Village. It measured 190m from east to west; whilst its north-south dimension has not been determined yet. A potsherd with stamped geometric pattern was collected from a stump pit. Small amount of potsherds and stone implements were recovered from the surrounding area.

The Nanyezhu Site was a pottery workshop to the north of the Nanyezhu Village. It measured about 250m east-west. The northern half of the site had been cut off by a quarry; therefore, its north-south dimension could not be determined. Potsherds were collected on the surface. An ash pit (S3H1) that yielded potsherds, pads, etc., was seen in the west side of the cut-off cliff. Remains of a pottery kiln (S3Y1) were located in the east side of the same cliff.

The remaining dimensions of Liaoli Site were 215m north-south and 95m east-west. However, its original

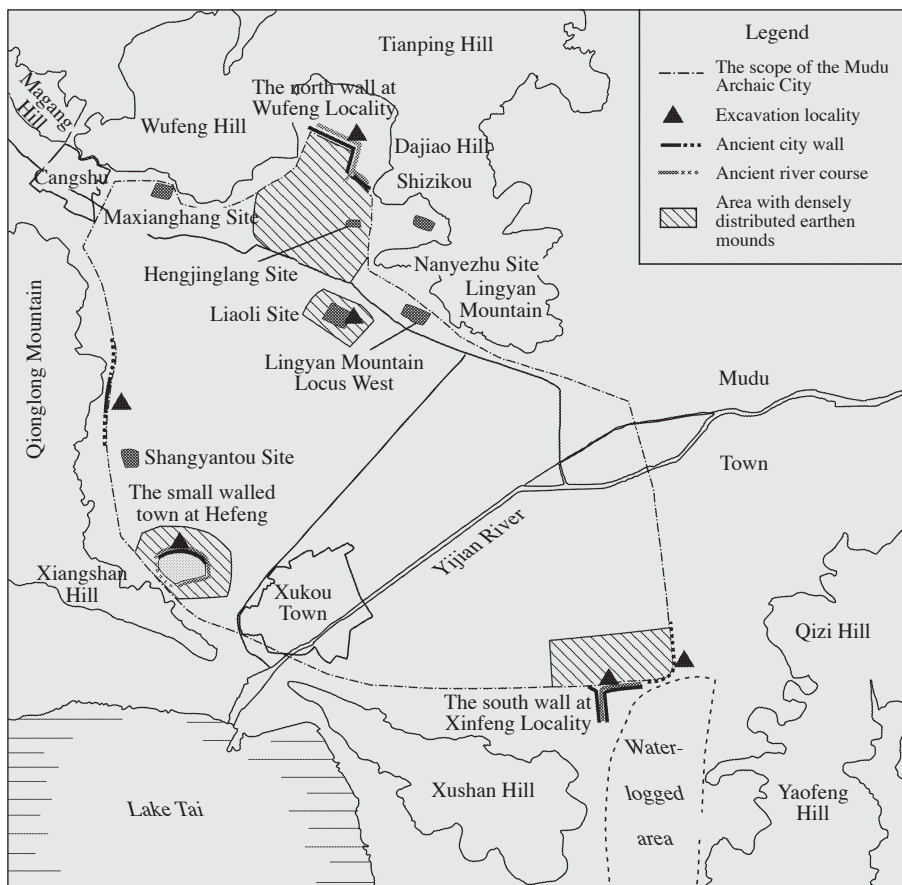


Figure 2 The distribution of the main localities of the Mudu Archaic City Site.

size should have been considerably bigger. Five earthen mounds rose above the ground. Several ash pits were clearly identifiable around the mounds and a great number of potsherds scattered on the surface. An irrigation ditch ran through the center of the site. The earthen piles on both sides of the ditch yielded a great number of ceramic sherds that included proto-porcelain and geometric stamped pottery.

Shangyantou Site was located to the southeast of the Shangyantou Village. It measured about 95m from east to west and about 200m from north to south. Remains of two earthen mounds were seen on the surface. D212 was located in the south; wherein D213 was located in the north. Large quantity of sandy red potsherds were scattered on the disturbed ground to the east of the earthen mounds.

These discoveries provide important information for the understanding of the changes of ancient culture, past settlement patterns in this area and the chronology and characteristics of walled settlements.

Excavation results in 2010

In accordance to the project's objectives and the results of 2009 regional survey, approved by the National Administration of Cultural Heritage, the joint archaeological team conducted excavations at several localities in the following year. We are going to discuss below the major findings related to a walled urban center.

1. The north circumference wall and moat distributed to the north of Wufeng Village

The surface reconnaissance indicated that the Wufeng section of circumference wall started from the foothill of Shizishan Hill in the south. It extended west-north-west, headed north, turned west near the southwest corner of Wujialong 吴家弄 Village, and continued towards the Wufeng Hill. This section of the wall measured 1150m long. Its remaining thickness and height were 20-26m and 0.5-3m, respectively. The excavation zone was located

about 130m to the west of Wujialong of Wufeng Village, Mudu Town. It was where the wall started to turn northwest. Seven excavation units that included six 4 x 10m units and one 4 x 5m unit cut across the wall and the moat.

The excavation cut through the inner side of the wall, the wall, and the moat on the outer side of the wall. Other than the top layer, the stratigraphy in different parts of the excavated zone varied (Figure 3). Depositions in the moat could be divided into six layers, sequentially numbered from H ② to H ⑦. Depositions on the outer side of the wall comprised of W ③ -W ⑧. Among them layers W ③ -W ⑥ were layers of late depositions, and layers W ⑦ -W ⑧ were filling layers formed prior to the construction of the wall. Finally, depositions on the inner side of the wall were sequenced from N ③ to N ⑪. Among them N ③ -N ⑦ were late depositions superimposing over the wall, and N ⑧ -N ⑪ were early depositions superimposed by the wall.

Layers ① and ② were the plow zone or top soil layer and modern disturbed layer. Layers W ③ through W ⑥ were late historic depositions later than the Tang-Song era. Layers W ⑦ and W ⑧ were depositions of Eastern Zhou or earlier. Layers N ③ through N ⑤ were Ming-Qing depositions. Layer N ⑥ was Tang-Song deposition. Layer N ⑦ superimposed over the wall and was formed after the wall was dismantled during the Eastern Zhou era. Layer N ⑧ was an Eastern Zhou formation. Layers N ⑨ to N ⑪ were dated to Eastern Zhou or earlier. Layers H ② to H ④ were filling layers of the moat during the Ming and Qing Dynasties. Layers H ⑤ and H ⑥ were filling layers of earlier times. Finally, H ⑦ was a layer of silt deposition in the moat.

The seven excavation units revealed features of the circumference wall, the moat (Figure 4), and one ash pit (H1). The ash pit was located in the north central part of unit T0345. Its northern half overlaid by the unit's partition wall. It opened under layer ① and cut through layer

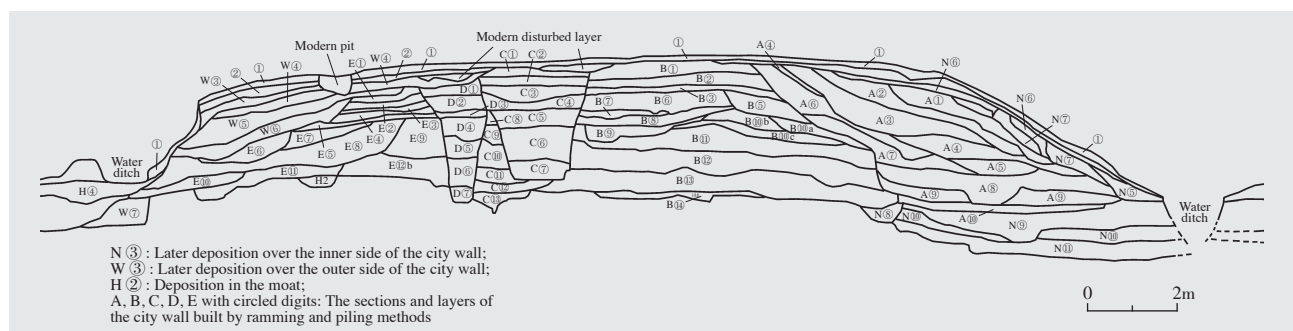


Figure 3 The south wall of 2010SKHT0345.

1. Top soil; 2. Modern filling; W ③ -W ⑥ . Post-Tang-Song deposition; W ⑦ and W ⑧ . Eastern Zhou or pre-Eastern Zhou deposition; N ③ -N ⑤ . Ming-Qing deposition; N ⑥ . Tang-Song deposition; N ⑦ . Eastern Zhou deposition after the dismantling of city wall; N ⑧ . Eastern Zhou deposition; N ⑨ -N ⑪ . Eastern Zhou or pre-Eastern Zhou deposition; H ② -H ④ . Ming-Qing fillings in the moat; H ⑤ and H ⑥ . Earlier fillings in the moat; H ⑦ . Silt deposition in the moat; A-E Rammed earth of the city wall.



Figure 4 The north wall and moat of the Mudu Archaic City at Wufeng Locality (E-W).

N ⑨ . No potsherd was yielded from the feature.

The moat located to the east of the wall. It opened under layer ① and cut through layer W ⑦ and the primary soil. The narrowest part of the moat measured 13.92m. It was 0.1-0.22m below the present ground surface and 1.28m at the deepest. The bottom of the moat was 1.05-1.24m to the east part of the base of the wall. The wall opened below W ⑥ and N ⑦ and cut through layers N ⑧ , N ⑨ , W ⑦ , and the primary soil.

The fillings of the wall contained some potsherds and stone implements. The pottery assemblage comprised of sherds embellished with *yunlei* (circular and square whorl), checker and cord mark patterns diagnostic to the Eastern Zhou era, and *ding*-tripod legs diagnostic to the Liangzhu 良渚 Age. The N ⑨ layer in T0346 and T0345 was directly superimposed by the wall. It yielded stamped *yunlei*-patterned potsherds, suggesting that construction of the wall should not be earlier than the Spring-and-Autumn Period. However, N ⑦ , the layer directly superimposed over the wall, yielded also the stamped *yunlei*-patterned potsherds of Eastern Zhou style. Taken together, this section of the wall was most likely in use for a relatively short time.

The excavation provided evidence on the structure and construction method of the wall. The wall had a trapezoidal cross-section with a narrower top and a wider base. The top measured 12.9–15.35m wide, wherein the base measured 22.3–22.35m wide. The top was 0.07–1.43m above the modern ground surface. The thickest point of the wall was 3.2m.

The past ground on which the wall was built was not level with the east side higher than the west side. Before erecting the wall, depressed area was filled. No wall foundation troughs were dug. Layers A ⑩ , B ⑭ , C ⑬ and D ⑦ were likely filling layers. In the east side of the wall, W ⑦ and W ⑧ were superimposed by the wall and flanked by the wall and the moat. They were likely the filling layers to make a leveled foundation for the wall, as well as functioned as reinforcement at the same time.

The texture and color of the excavated part of the wall could be partitioned into five sections of rammed earth from A to E that were built in sequence. For example, sections A and C were built when section B had been built to a certain height. Section D was built when sections C and E had been built to a certain height. The ram layers of sections B, C and D in the center were more-or-less horizontal, closely rammed, but varying in thickness. No ram mark was seen. The inner side of section A was a slope, indicating that it was built with the piling method without ramming procedure. Similarly, the outer side of section E was also a slope that it would have been built with the same piling method but finer. The thicknesses of ram layers of both sections were inconsistent and no ram mark was uncovered. In sum, the building of the wall was irregular and lacked standards on the width and thickness of ram layers.

2. Water gate locality to the south of Xinfeng Village

The survey discovered a preserved section of the circumference wall near Xinfeng Village. This section was located to the north of the gap between Qingming 清明 Hill and Yaofeng 尧峰 Hill. The remaining wall extended for 560m long and in general oriented east-west. An opening was located on the western half of the section. Both sides of the wall at the opening extended southward for about 360m and formed a channel between them. The remaining wall was 14-45m wide.

The excavation was located about 120m to the north of Hetou 河头 Village, Xukou Town and about 130m to the south of Gujiashang 顾家上 Village, right on the wall opening. The stratigraphy of the excavation zone was ① → ② → ③ → ④ → G1 → ⑤ → rammed earth → ⑥ → primary soil. In the following, we are going to illustrate the stratigraphy with the east wall of T9426d (Figure 5).

Layer 1: Top soil, yellowish grey, loose texture, 10-15cm thick. Material remains included blue-and-white porcelain and brick fragments.

Layer 2: Dark yellowish brown soil, hard texture, yielded considerable amount of porcelain and brick sherds. This layer was 10-20cm thick and 10-15cm deep.

Layer 3: Greenish grey tacky silt containing yellowish brown mottles, yielded porcelain and brick sherds. This

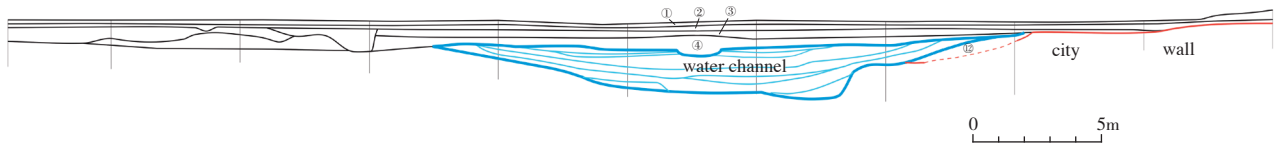


Figure 5 The stratigraphy of the east wall of 2010SDK Xinfeng Locality.

① . Top soil; ② . Dark yellowish brown soil; ③ . Greenish grey silt; ④ . Dark brown silt; ⑤ . Greenish grey mosaic deposition.

layer was 25–30cm thick and 20–35cm deep.

Layer 4: Dark brown tacky silt containing small amount of brown mottles, yielded brick and glazed potsherds. This layer was 10–45cm thick and 45–65cm deep.

G1: This was an old river course that opened below layer 4. The deposition can be partitioned into seven layers.

Layer 5: Greenish grey mosaic soil with brownish mottles, charcoal bits and small amount of reddish baked earthen nodules. No artifact was yielded from this layer. It had not been excavated, and therefore its thickness was not known. This layer was 60–135cm deep measured from the ground surface.

Piling soil: This was the remains of the wall.

Layer 6: This was the earliest deposition among the various layers of cultural deposition. The piling deposition of layer 5 superimposed over this layer and had not been excavated. Our knowledge of layer 6 was based on the sections of several later pits that intruded into layer 6, revealing that it consisted of black and pure “secondary soil.” This layer of deposition distributed on the intersection of layer 5 and the piling soil layer.

Below layer 6 was the primary soil.

The piling deposition would have been the remains of city wall. It could be partitioned into the northern half and the southern half with a gap 12.2m wide between them. The northern half was linked to D184, a section of piling earth. The upper part of D184 had been eroded and its remaining height was 20cm. It measured 94m from east to west and 78–116m from north to south, with a wider eastern half. The piling deposition located on the outer side of G1 and was 1.5–4.5m from the old riverbed. The southern half connected to the northwest corner of D186 where it made a turn. Excavation on D186 showed that the deposition was built with the piling method. The thicknesses of pile layers were inconsistent, varying from 8cm to 38cm. No ram mark was seen. The piling located on the inner side of the moat and was 0.4–3.1m from the bank of the moat.

The north and the south sides of the piling deposition were superimposed by layer 5. In spite of not excavated, the sections of the several later pits on the north side revealed that this layer superimposed the piling deposition and oriented similar to the piling deposition, suggesting that layer 5 was closely related to the piling deposition. This layer primarily deposited on the gentle bank of the moat. It was very likely resulted from the human activities occurred between the moat and the “city wall”. One

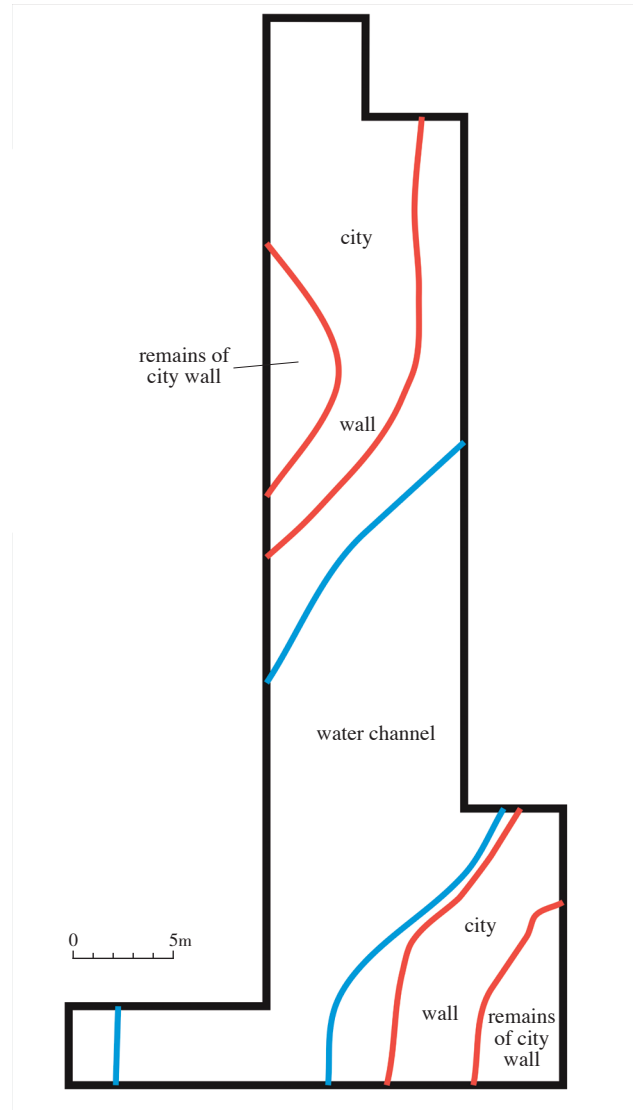


Figure 6 Plan of the excavation area in 2010SDK Xinfeng Locality.

specimen of potsherd belonging to the Eastern Zhou was yielded from the deposition, suggesting its date. The north side of layer 5 measured 4.7–6.1m wide, wherein its south side measured 2–3.8m.

In between the two sections of “city wall” was a ditch-shaped vestige 12.3–13.9m wide. The excavation revealed a section of 26.3m of the ditch. It ran from the northeast to the southwest in the northwestern half of the excavation area. It then meandered towards the south in the southern

half. The fluvial deposit in the channel indicated that it was once a water channel (Figure 6).

The stepwise banks of the channel were gentler on the upper half and steeper on the lower half. Layer 5 directly superimposed over the gentle slope of the channel bank, suggesting that the upper part of the channel bank was gentle when the channel was in use. The channel was 1.75–1.9m deep. Deposition in the channel could be partitioned into seven layers.

The recovered material remains and the stratigraphy of the “city wall” and layer 5 indicated that their dates of occupation were within the Eastern Zhou era. Figure 5 shows that the three features were neighboring each other with similar orientations; therefore, they should be closely related. They would have been built at the same time and functioned together. We tentatively argue that they were the remains of a “water gate”.

Diagnostic artifacts recovered comprised of proto-porcelain, pottery, bronze and wood components.



Figure 7 Proto-porcelain bowl (10SDKT9426d ⑩ :10).



Figure 8 Proto-porcelain bowl (10SDKT9426d ⑩ :14).

Proto-porcelain bowls. Sample 10SDKT9426d ⑩ :10 has contracting rim that measured 10cm in diameter, globular body, and 7.2cm in height (Figure 7). Sample 10SDKT9426d ⑩ :14 is in cylindrical shape, has flaring mouth measuring 14.5cm in diameter and 11.2cm in height (Figure 8). Both vessels have rounds of sunken bowstring pattern from the base to the rim.

Pottery bowl (10SDKT9326d ⑧ :1). Fine clay, dark grey paste, contracting rim, and curved body. Its diameter at mouth measured 16.6cm and height measured 5.4cm (Figure 9).

Bronze arrowhead (10SDKT9326d ⑨ :1). It has a pair of wings and a tang, measuring 6cm in length (Figure 10).

3. The search of the east and the west circumference walls

In the fall of 2010, archaeological survey and test excavation were conducted in the eastern and the western parts of the basin in search of the east and west circumference walls of the urban center. Test excavation on the earthen



Figure 9 Pottery bowl (10SDKT9326d ⑧ :1).



Figure 10 Bronze arrowhead (10SDKT9326d ⑨ :1).

mound distributed to the east of Yantou 堰头 Village in the Qionglong Mountain Scenery Precinct in the west revealed that the mounds were built during the Eastern Zhou. Many smaller earthen mounds scattered to its south and north were very likely associated with the west circumference wall. Investigation in the east indicated that the land along Mudong 木东 Road was higher than that of its surrounding area and this strip of higher ground eventually joined the south wall. This feature was likely related to the east circumference wall.

4. The small walled town at Hefeng 合丰

A small walled settlement site was found in the vicinity of Hefeng Village. The round-cornered rectangular occupation measured 450m from east to west and 400m from north to south, making an area of 22ha. Several earthen mounds were distributed on a straight line on the east and the north sides of the occupation, forming the circumference walls for the settlement of about 600m long. A moat was dug on the outer side of the wall (Figure 2).

Preliminary understandings

1. Chronology of major features

The characteristics of the potsherds, the stratigraphy of occupations and the structure of the circumference walls indicated that the north wall was built during the late Spring-and-Autumn Period. The south wall was closely associated with the water gate. Together they formed a unique walled urban center with a water gate during the early historic era in southeastern China. The silt deposition of the ancient riverbed yielded artifacts of stamped potsherds, roof tiles, bronze arrowheads, proto-porcelain bowls, and pottery bowls diagnostic to the late Spring-and-Autumn Period. The distance between the north wall and the south wall was 6728m. The shortest distance between these two walls was 6145m.

2. The nature of the site

The pilot study and the previous archaeological surveys and excavations provide crucial information on the nature of the walled urban center. The landscape of western Greater Suzhou comprises of many mountains. The mountain

peaks and ridges are populated by considerable number of earthen burial mounds and stone tombs, including high-ranked burials, of the Spring-and-Autumn Period. Among them the tomb D33 excavated in the spring of 2010 was located on a 30m long and 3m high earthen mound situated on the northern corner of Zhenshan 真山 Hill. A layer of crushed stones was laid on the bedrock, followed by the piling of a “stone outer coffin”, and finally the stone structure was covered with earth. The main burial, built with stones of different size, was oriented east-west. Its outer dimensions were 13m by 9.3m. The inner dimensions were 7.2m by 6m. The apex of the stone outer coffin was 1.8m high (Figure 11). The tomb had been looted, but the two sacrificial pits (K1 and K2) still yielded considerable number of artifacts. K1 yielded 48 artifacts (Figure 12), including 24 stamped hard pottery urns, four stamped hard pottery jars (Figure 13), five *ding*-tripods, and 15 proto-porcelain tureens. K2 yielded 10 artifacts, including two stamped hard pottery urns, three jars (Figure 14), and five proto-porcelain bowls.

A jade cache was discovered in the Yanshan 严山 Hill in April 1986. A total of 402 sumptuous artifacts were



Figure 11 Zhenshan D33 (E-W).



Figure 12 The artifact cache K1 of Zhenshan D33 (N-S).



Figure 13 Stamped hard pottery jar with a lid (D33K1:19).



Figure 14 Stamped hard pottery jar (D33K2:7).

recovered from a 2m by 1.5m rectangular earthen pit. Among them, 204 were made of jade, and the rest were made of agate, turquoise, crystal and glass. The cache was dated to the Spring-and-Autumn Period. Some argued that it was a royal collection of the Wu State. The existence of a great number of ranked burials and high valued jade cache indicate that there should be a correspondingly regional political center in the vicinity.

The archaeological surveys and excavations in recent years yielded a series of important findings that included circumference walls, gate, moat, grandiose structures, workshops, burials and caches. Their chronologies, characteristics and distribution support the proposition that a large-scale walled settlement at the rank comparable to state capital of the late Spring-and-Autumn Period was located in the basins of Mudu-Xukou area in the southwestern highland of Greater Suzhou.

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Postscript

The original article, authored by Xu Lianggao 徐良高, Zhang Zhaogen 张照根, Tang Jinqiong 唐锦琼, Sun Mingli 孙明利, Fu Zhongyang 付仲杨 and Song Jiangning 宋江宁, was published in *Kaogu* 考古 (Archaeology) 2011. 7: 19–26 with five illustrations and two plates. The abridged version was prepared by the first author and translated into English by Lee Yun Kuen 李润权.