

# Western Zhou Living Ambience: Earth-Sheltered Dwellings in the Feng River Valley\*

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*Of old, Danfu the Duke,  
Made kiln-like dwelling-pits with roofs,  
As yet [the people] had no houses.*

古公亶父，陶復陶穴，未有家室。  
 (“Spreading” [Mian 綿], *Mao shi* 毛詩 237).<sup>1</sup>

The ode “Spreading” belongs to the “Da ya” 大雅 (“Greater Elegantiae”) section of the *Shijing* 詩經. It commemorates the foundation of the settlement Zhou 周 on the Zhou Plain (Zhou yuan 周原) by Danfu 亶父, the grandfather of the future King Wen 文, who is traditionally regarded as the founder of the Zhou dynasty (ca. 1046–256 BCE). The ode goes on to describe how a “chamber” (*shi* 室) with an ancestral shrine (*miao* 廟) was built for Danfu at this new location.

In 1976, archaeologists excavated a rammed-earth platform of roughly 1500 m<sup>2</sup> near Fengchu 鳳雛 in Fufeng 扶風 county, Shaanxi 陝西 province, i.e. on the ancient Zhou Plain. The platform served as a foundation for a group of timber-framed buildings that were arranged in a compound with two courtyards. The inscriptions on some oracle bones that were excavated from a pit in one room suggest that the building could have been constructed prior to the reign of King Wen 文王 (died ca. 1050 BCE; the title “king” title was bestowed on him posthumously). The ode “Spreading” is often used to illustrate and interpret the layout and functions of the erstwhile Fengchu structure. More recent excavations have revealed further earthen foundations of large-sized timber constructions that could have been used for representational, religious or residential purposes, both on the Zhou Plain and in the Feng 豐 River valley in the western outskirts of modern Xi’an 西安. During the so-called Western Zhou period (ca. 1046–771 BCE), the main political and econom-

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1 Qu Wanli 屈萬里, *Shi jing quan shi* 詩經詮釋 (Taipei: Lianjing, 1983), 459–463. Translation by Joseph Needham, with transliteration changed to *pinyin* by the author of the present paper; see Joseph Needham, Wang Ling, and Lu Gwei-djen, *Science and Civilisation in China*, Vol. IV: *Physics and Physical Technology*, Part 3: *Civil Engineering and Nautics* (Cambridge: Cambridge University Press, 1954), 123.

ic centers were located in these two areas and the stretch between both that follows the Wei River valley. It may be addressed as the Zhou metropolitan region.<sup>2</sup>

Excavations in the Zhou metropolitan region have also repeatedly uncovered remains of semi- or fully subterranean architectural structures of various shapes and sizes that date from the Western Zhou period. These sites demonstrate that well after the time of Danfu, some Zhou people still constructed “kiln-like dwelling-pits with roofs.”<sup>3</sup> The present paper aims to call attention to this early Chinese architectural form, and ponders what kind of people may have lived below ground during a time when timber-framed aboveground “chambers” were constructed for kings and other members of the highest elite. A look at the contemporary or slightly later burials associated with such houses may shed some light on the social standing of the inhabitants of semi- and fully subterranean dwellings.

### Early Houses (11<sup>th</sup>–10<sup>th</sup> centuries BCE)

The present-day Zhangjiapo 張家坡 village in Chang’an 長安 county is located ca. 1.8 km to the west of the Feng River. Together with the Keshengzhuang 客省莊 site on the western bank of the Feng River, this area is believed to be part of the Zhou royal center Feng 豐, which was founded by King Wen during the second quarter of the 11<sup>th</sup> century BCE.<sup>4</sup> The site yielded a number of graveyards at approximately 100–700 m distance to each other. Many of them were probably related to different residential units that belonged to an area one might call “greater Feng.”<sup>5</sup> A periodization based on a typological analysis of pottery subdivides the Western Zhou remains at Zhangjiapo into six phases (I–VI; Table 1). Some residential remains presumably predate Phase I and thus derive from the very beginning of the Western Zhou period, while even earlier remains have been interpreted as “proto-Zhou” (*xian* Zhou 先周, roughly the first half of the 11<sup>th</sup> century BCE).

2 For the locations and functions of royal centers as well as related historiographical issues, see Maria Khayutina, “Royal Hospitality and Geopolitical Constitution of the Western Zhou Polity (1046/5–771 BC),” *T’oung Pao* 96.1–3 (2010), 1–73; Maria Khayutina, “Western ‘Capitals’ of the Western Zhou Dynasty (1046/5–771 BC): Historical Reality and its Reflections Until the Time of Sima Qian,” *Oriens Extremus* 47 (2008), 25–65.

3 Kilns of the Neolithic and Early Bronze Age in Northern China usually consisted of two interconnected circular or rectangular pits that were dug directly into the Loess soil that is specific to the area. Firewood was burned in a lower placed combustion chamber (*huo tang* 火堂). The heat was then channeled through a “fire path” (*huo dao* 火道) to the firing chamber (*yao shi* 窯室), in which the vessels were placed. Cross-draught kilns with the combustion and firing chambers on the same level appeared around the 9<sup>th</sup> century BCE. See Rose Kerr and Nigel Wood, *Science and Civilisation in China*, Vol. V: *Chemistry and Chemical Technology*, Part 12: *Ceramic Technology* (Cambridge: Cambridge University Press 2004), 299–307. The association of dwellings with kilns is suggested by the use of the word *tao* 陶 (“pottery”) in the expression *tao fu tao xue* 陶復(覆)陶穴, literally “ceramic cover, ceramic cave,” in the “Spreading” Ode. This justifies Needham’s translation quoted above. Sometimes *tao* is rendered as “to mould,” or “to scrape.” However, this rendering fails to adequately explain the association of dwellings with kilns.

4 Sima Qian 司馬遷, *Shi ji* 史記 (Beijing: Zhonghua shuju, 1959), 4.118 and 170; 6.256.

5 Due to insufficient archaeological investigation, it is impossible to fully clarify the exact nature of such units. They might have been villages, hamlets, or dispersed farmsteads.

**Table 1** Periodization of the Zhangjiapo remains of the Western Zhou period<sup>6</sup>

Phase	Approximate correspondences to Zhou Reigns	Time span, ca. (BCE) <sup>7</sup>
I	King Cheng 成王 to King Kang 康王	1040–1000
II	Kings Zhao 昭王 and Mu 穆王	1000–920
III	King Gong 共王 to King Xiao 孝王	920–880
IV	King Yi 夷王, King Li 厲王, and Gonghe 共和 period	880–830
V	Late Western Zhou	830–770
VI	Final phase	after 770

During the excavation campaign of 1955–1957, six semi-subterranean houses were identified at Zhangjiapo Locus I, whereas five semi-subterranean houses were found as Locus IV respectively (Fig. 1). Nine out of these eleven houses have been dated to the early and two to the late Western Zhou period. The nine early structures are of two distinctive types: they either featured rectangular or circular floorplans.

### Houses with Rectangular Floorplans

The pits of the rectangular houses measured between six and eleven square meters.<sup>8</sup> A subsequent campaign of 1960 revealed another rectangular semi-subterranean house (H205) of some 12.5 m<sup>2</sup>.<sup>9</sup> The designation H205 suggests that it was located in or near Locus II or Locus III.<sup>10</sup> In 1997, a slightly smaller (10.8 m<sup>2</sup>) rectangular house was discovered on the territory of the Mawangzhen 馬王鎮 dairy products factory to the southeast from the Zhangjiapo Locus V (referred to as Zhangjiapo-Mawangzhen below).<sup>11</sup>

The pits of the rectangular buildings were between 1.0 and 1.7 m deep. The floor gently sloped down from the entrance towards the back wall. In the northwestern corner of house F1 at Zhangjiapo-Mawangzhen, a water runoff was cut into the floor (Fig. 2B). In general, the floors of rectangular dwellings were plastered with clay. Some such linings could comprise several layers. This phenomenon indicates the houses were used for a relatively long

6 Zhongguo shehui kexueyuan kaogu yanjiusuo, *Zhangjiapo Xi Zhou mudi* 張家坡西周墓地 (Beijing: Zhongguo dabaike quanshu chubanshe, 1999), 462.

7 Archaeologists often correlate archaeological phases with the reigns of Zhou kings as a means of chronological orientation. However, the exact dates of the reigns of each individual king remain hotly debated. Even if precise dates could be established, archaeological phases still may not be sharply distinguished from one another. For this reason, the dates in the table are only approximations.

8 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui 中國社會科學院考古研究所灃西發掘隊, *Fengxi fajue baogao* 灃西發掘報告 (Beijing: Wenwu chubanshe, 1962), 12, 75.

9 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “1960 nian qiu Shaanxi Chang’an Zhangjiapo fajue jianbao” 1960 年秋陝西長安張家坡發掘簡報, *Kaogu* 考古 1962.1, 20–22, esp. 20.

10 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “1960 nian qiu Shaanxi Chang’an Zhangjiapo” does not provide the exact location of house H205. Loci II and III were thoroughly investigated during the years 1957–1959; they were only some 20 m removed from each other. Since all features at both loci are registered with numbers beginning with “2,” it seems plausible to assume that H205 was found in this area.

11 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “1997 nian Fengxi fajue baogao” 1997 年灃西發掘報告, *Kaogu xuebao* 考古學報 2000.2, 199–256, esp. 202–203.

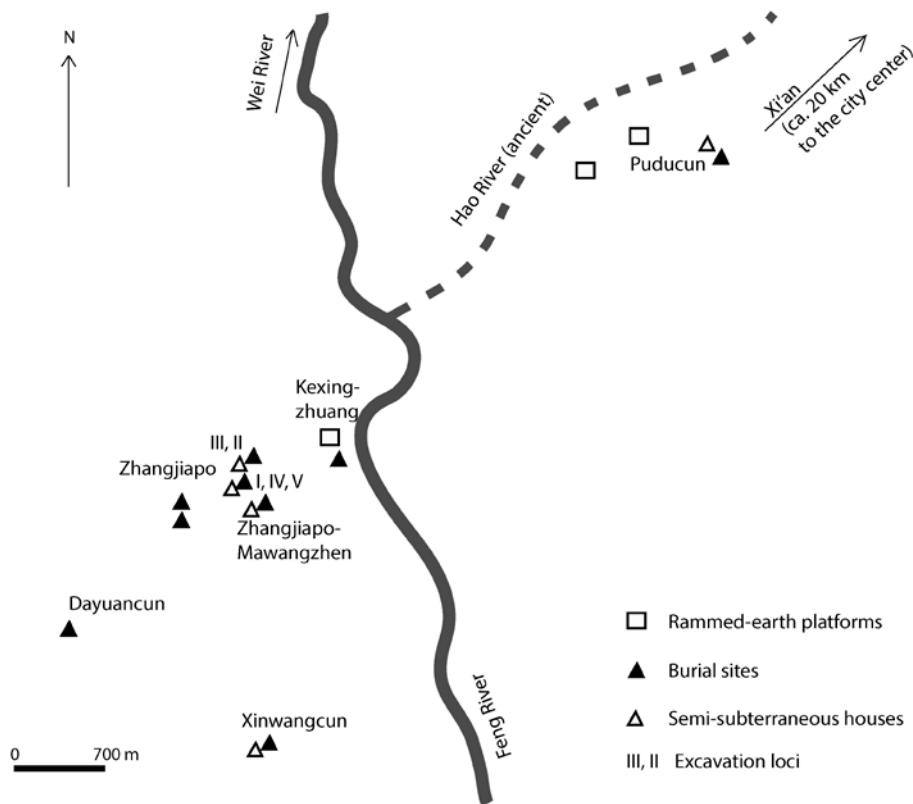


Fig. 1 Excavation sites in the Feng-Hao area. Drawing by the author.

period of time and occasionally repaired. The surfaces of the floors and walls were hardened through slight firing. An irregular oval depression either at the center of the room or closer to one of the walls served as a hearth. The doors of the reported houses were made either in the southern or in the northern wall, indicating that no particular cardinal direction was preferred. The orientation of the door depended very likely on the features of the terrain, or on the relationships with other houses. Unfortunately, these details have not been clarified in the reports. In a corner of House H205, a coarsely made large pottery jar *weng* 甕 was firmly installed in a depression in the floor. It may have served to store grain or keep fresh water, but its exact function is not clear.<sup>12</sup>

Postholes testify that the houses had roofs supported by one or more wooden pillars. The roofs were covered with some kind of organic material that did not leave any traces,

12 On the grain storage in China see Thomas O. Höllmann, *The Land of the Five Flavors: A Cultural History of Chinese Cuisine* (New York: Columbia University Press, 2014), 38–39.

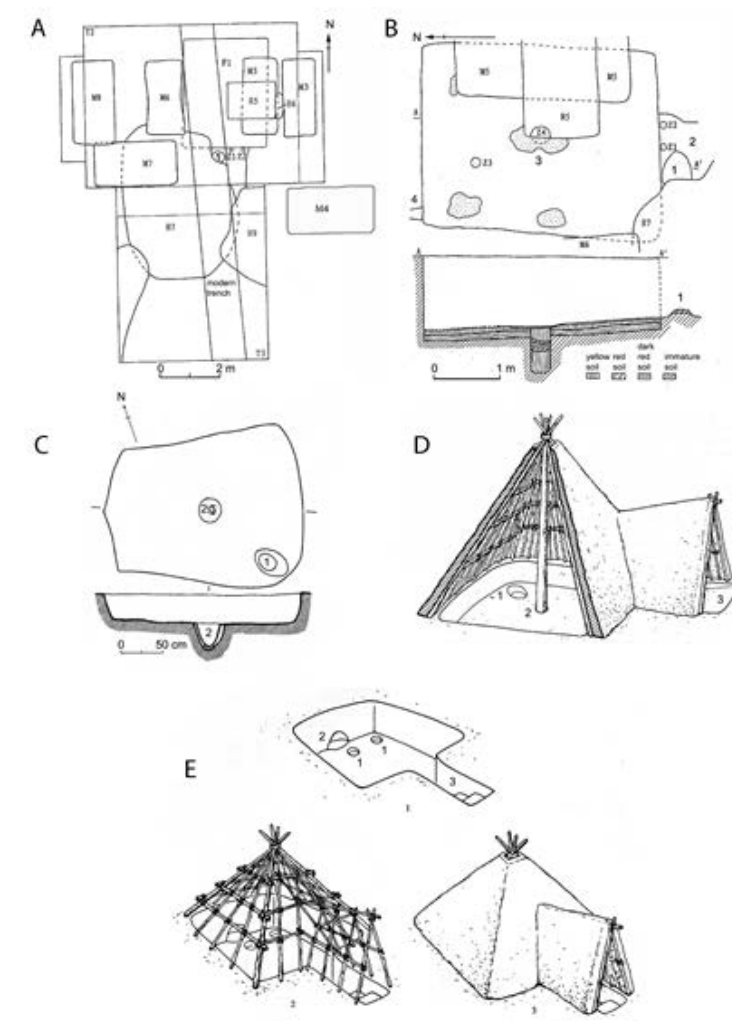


Fig. 2 Rectangular semi-subterranean houses at Zhangjiapo-Mawangzhen and Nianzipo. A: The excavation sections T2 and T3 at Zhangjiapo-Mawangzhen; B: Detail of A. Plan and cross section of Zhangjiapo-Mawangzhen F1, ca. 10.8 m<sup>2</sup>; 1 = tread; 2 = entrance pathway; 3 = hearth; 4 = water runoff; Z = posthole; M = tomb; T = excavation section; C: Plan and cross section of Nianzipo F504, ca. 4.1 m<sup>2</sup>; 1 = hearth; 2 = posthole; D: Reconstruction of Nianzipo F504; 1 = hearth; 2 = posthole, 3 = sloped entry ramp; E: Plan and Reconstruction of Nianzipo F304, ca. 7 m<sup>2</sup>; 1 = hearth, 2 = niche in wall, 3 = stepped entryway; After: Zhongguo Shehui kexueyuan kaogu yanjiusuo, "1997 nian Fengxi fajue baogao," Figs. 1, 4–5; Zhongguo Shehui kexueyuan kaogu yanjiusuo, *Nanbinzhou. Nianzipo*, Figs. 69–70, 72–73.

but the most common assumption is that they were thatched. Different ways to reconstruct the roofs have been proposed. House H205, for instance, was presumably supported by a single post erected at the center of the building. For the House F1 at Zhangjiapo-Mawangzhen, it appears that a massive central column first was raised during the construction, and then removed after the roof was completed (Fig. 2A). This process is suggested by a post-hole partially filled with soil underneath the central fireplace.<sup>13</sup> Rectangular houses had no internal subdivisions and could not accommodate more than two adults with one or two children.<sup>14</sup>

In Wei River valley, rectangular houses appeared already much earlier. Semi-subterranean houses with roughly ten to twenty square meters and 0.4–0.8 m deep pits have been excavated at the Neolithic Banpo 半坡 site (5<sup>th</sup>–4<sup>th</sup> millennia BCE) in the eastern suburbs of Xi'an. Other rectangular houses were fully aboveground. Their walls consisted of rows of vertical wooden posts installed along the perimeter of the house pit at regular intervals; in between such intervals, the actual walls were formed by a mixture of mud and straw. Notably, large rectangular houses at Banpo could measure up to 60 m<sup>2</sup>, while more recent excavations have revealed an exceptionally large structure with the floor area of 125 m<sup>2</sup> in the contemporaneous settlement Jianzhai.<sup>15</sup> Rectangular semi-subterranean houses of various sizes are also known from several 3<sup>rd</sup> to the 2<sup>nd</sup> millennia BCE sites in northern China.<sup>16</sup> Buildings consisting of two interconnected rectangular pits were documented during the 1955–1957 excavation campaign in Keshengzhuang.<sup>17</sup> This site is considered as the archetype of the so-called Keshengzhuang Phase II culture (ca. 2400–2000 BCE) that was widely distributed along the Wei River in central Shaanxi and adjacent areas in modern-day Gansu province.<sup>18</sup> Despite their geographical proximity, Banpo and Keshengzhuang houses do not seem to be direct prototypes of the Zhangjiapo dwellings, as there is a considerable chronological gap between the Neolithic and Western Zhou buildings. However, rectangu-

13 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “1997 nian Fengxi fajue baogao,” 1997, 203.

14 For his estimation of the population sizes of Neolithic villages Jiangzhai in the Wei River valley and Zhaobaogou in north-east China, Gideon Shelach has assumed ratios of 4 m<sup>2</sup> or 6 m<sup>2</sup> per person. 4 m<sup>2</sup> seem plausible for Jianzhai, where the average floor size was about 18 m<sup>2</sup>, while 6 m<sup>2</sup> appears more appropriate for Zhaobaogou, where the average floor size was ca. 30 m<sup>2</sup>. See his “Economic Adaptation, Community Structure, and Sharing Strategies of Households at Early Sedentary Communities in Northeast China,” *Journal of Anthropological Archaeology* 25 (2006), 318–345, esp. 333–334, and Gideon Shelach and Christian E. Peterson, “Jiangzhai: Social and Economic Organization of a Middle Neolithic Chinese Village,” *Journal of Anthropological Archaeology* 31 (2012), 265–301, esp. 276–277. For the Western Zhou houses in the Feng River valley, it seems reasonable to assume 4 m<sup>2</sup> per person.

15 Zhongguo kexueyuan kaogu yanjiusuo and Shaanxi sheng Xi'an Banpo Bowuguan 陝西省西安半坡博物館, *Xi'an Banpo* 西安半坡 (Beijing: Kexue chubanshe, 1963), 9–20; Shelach, “Economic Adaptation,” 269.

16 See, for instance, Li Xiaolong 李小龍 and Cheng Pengfeng 程鵬飛, “Zhongguo beifang diqu xinshiqi shidai yaodong shi jianzhu jigou yanbian yanjiu” 中國北方地區新石器時代窯洞式建築結構演變研究, *Caoyuan wenwu* 草原文物 2015.1, 69, 76; Gansu sheng bowuguan 甘肅省博物館, “Wuwei Huangniangniangtai yizhi di si ci fajue” 武威皇娘娘臺遺址第四次發掘, *Kaogu xuebao* 1978.4, 421–448.

17 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, *Fengxi fajue baogao*, 43–46.

18 Keshengzhuang Phase I corresponded with the Yangshao culture. For the distribution and <sup>14</sup>C-dates of related sites of Keshengzhuang Phase II, see Liang Xingpeng 梁星彭, “Shi lun Keshengzhuang er qi wenhua” 試論客省莊二期文化, *Kaogu xuebao* 1994.4, 397–424.

lar houses similar to those at Zhangjiapo were uncovered at Nianzipo 碾子坡 – a settlement that roughly dates from the 12<sup>th</sup> century BCE and is located in the middle Jing 涇 River valley, some 175 km north-eastward of Zhangjiapo.<sup>19</sup> The Nianzipo houses were small and likely covered by pyramidal roofs (Fig. 2C–E). Nianzipo belongs geographically to the ancient Bin 邠 area, where, according to transmitted sources, the Zhou progenitors resided until Danfu moved to the Zhou Plain and established the Zhou settlement during ca. the mid-12<sup>th</sup> century BCE. Based on structural similarities between the houses at Nianzipo and on early Western Zhou sites in Feng River valley, some scholars have suggested that Nianzipo was a “proto-Zhou” site.<sup>20</sup> Some other archaeologists treat Nianzipo as a separate archaeological culture.<sup>21</sup> Although people who lived at Zhangjiapo and Nianzipo shared a common dwelling tradition, it was not specific to the Zhou, but relatively widespread throughout northern China during the 2<sup>nd</sup> millennium BCE.<sup>22</sup>

### Houses with circular floor plans

As a rule, circular buildings at Zhangjiapo were larger than rectangular ones. Most of the former covered an area of about 20 m<sup>2</sup>. Their pits extended roughly 2 m below ground, thus rendering them fully subterranean. An earthen elevation (possibly the remains of a wall) usually subdivided pit in two smaller compartments that were connected by a passage. The largest house excavated during the 1957–1959 campaign (H143) measured some 58 m<sup>2</sup>. At the time of excavation, it was still ca. 3 m deep (Fig. 3A). The excavators argued that orig-

19 Zhongguo shehui kexueyuan kaogu yanjiusuo, *Nanbinzhou Nianzipo* 南邠州碾子坡 (Beijing: Shijie tushu chubanshe, 2007), 84–92.

20 Hu Qianying 胡謙盈, “Lun Nianzipo yu Qi yi, Feng yi xian Zhou wenhua yizhi (muzang) de niandai fenqi” 論碾子坡與岐邑、豐邑先周文化遺址（墓葬）的年代分期, in *Kaoguxue yanjiu – Shaanxi sheng kaogu yanjiusuo chengli sanshi zhounian jinian wenji* 考古學研究——陝西省考古研究所成立三十周年紀念文集, ed. Shi Xingbang 石興邦 (Xi’an: Sanqin chubanshe, 1993), 332–355; Hu Qianying 胡謙盈, “Nan Bin Nianzipo xian Zhou wenhua yicun de xingzhi fenxi” 南邠碾子坡先周文化遺存的性質分析, *Kaogu* 2005.6, 74–86; Li Feng 李峰, “Xian Zhou wenhua neihan ji qi yuanyuan tantao” 先周文化的內涵及其淵源探討, *Kaogu xuebao* 1994.3, 265–284, esp. 271; Wang Wei 王巍, Xu Lianggao 徐良高, “Xian Zhou wenhua de kaoguxue tansuo” 先周文化的考古學探索, *Kaogu xuebao* 2000.3, 285–310.

21 Cf. Cao Bin 曹斌, “Xian Zhou wenhua yanjiu shulun” 先周文化研究述論, *Jiangnan kaogu* 江漢考古 2007.3, 60–66; Ma Lingwei 馬林偉, “Nianzipo wenhua chu lun” 碾子坡文化初論, *Longdong xueyuan xuebao* 隴東學院學報 2014.7, 37–40.

22 In particular, semi-subterranean houses were found in the Lijiaya 李家崖 settlement, regarded as the type-site for the so-called Lijiaya culture. Lijiaya is chronologically and geographically close to Nianzipo. At the same time, its ceramic repertoire and burial assemblages are distinctly different from the traditions of the Wei River valley. Rectangular semi-subterranean houses were also found in some parts of Yinxu 殷墟, the site of the capital of the later Shang kings in present-day Anyang 安陽. The excavators regard them as non-Shang elements and suggest a connection to migrants from the north and northwest. See Li Yung-ti and Hwang Ming-chornng, “Archaeology of Shanxi During the Yinxu Period,” in *A Companion to Chinese Archaeology*, ed. Anne P. Underhill (Chichester: John Wiley & Sons, 2013), 367–386, esp. 378; He Yuling 何毓靈, “Shi lun Anyang Yinxu Xiaomintun yizhi bandixue shi jianzhu qun de xingzhi ji xiangguan wenti” 試論安陽殷墟孝民屯遺址半地穴式建築群的性質及相關問題, *Huaxia kaogu* 華夏考古 2009.2, 99–108; Jing Zhichun, Tang Jigen, George Rapp, and James Stoltman, “Recent Discoveries and some Thoughts about early Urbanization at Anyang,” in Underhill, *A Companion to Chinese Archaeology*, 343–365, esp. 361.

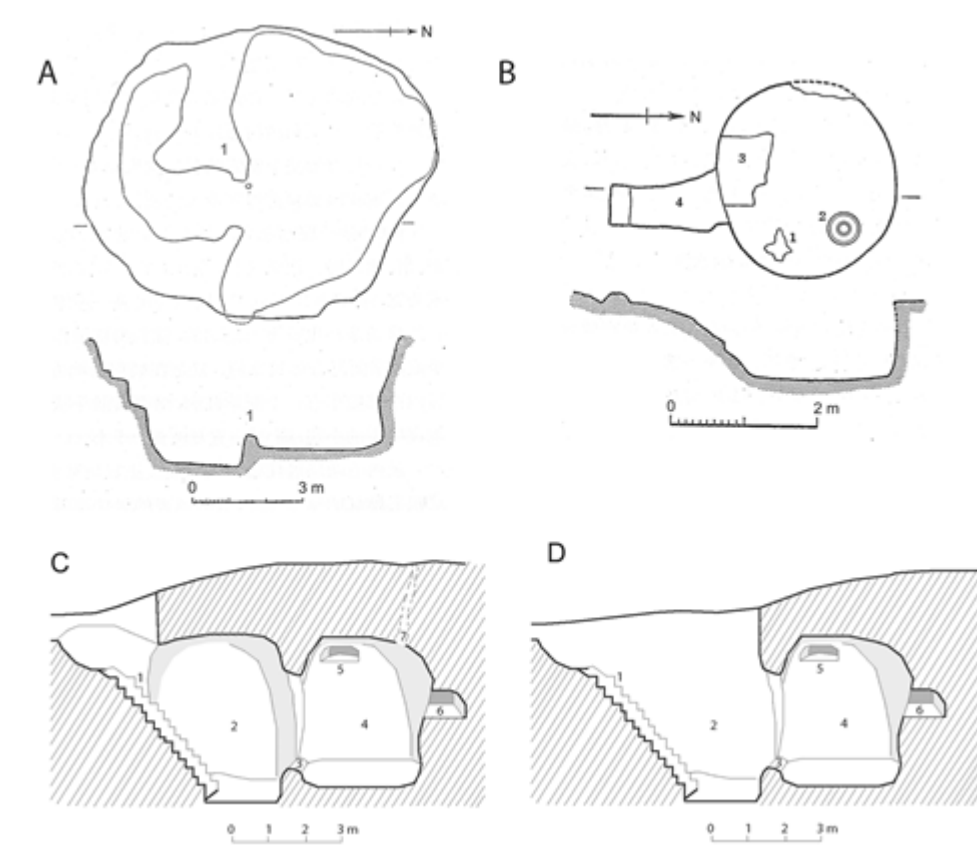


Fig. 3 Circular semi-subterranean houses at Zhangjiapo. A: Plan and cross section of house H143, ca. 58 m<sup>2</sup>; 1 = internal wall. B: Plan and cross section of house H104, 3.15 m<sup>2</sup>; 1 = hearth; 2 = pottery jar *weng*; 3 = earthen ramp; 4 = entry ramp. C: A tentative reconstruction of a Zhangjiapo cave dwelling with two rooms based on the data of the houses H143 and H104; 1 = stepped entryway; 2 = front room; 3 = internal wall with a passage; 4 = rear room; 5 = storage pit; 6 = stove; 7 = a hypothetical smoke outlet. D: Alternative reconstruction of the same dwelling with a courtyard and one room. 2 = courtyard; 4 = house; other numbers as in C, no smoke outlet. A–B. After: Zhongguo shehui kexueyuan kaogu yanjiusuo, ed., *Fengxi fajue baogao*, Figs. 46–47; C–D. Drawings by the author.



inally, H143 represented an earth-sheltered cave that was dug into the undisturbed soil. The northern / back room was slightly larger than the southern / front room. A steep stepped slope at the southern side of the structure served as the entrance. Judging from the fact that the surfaces of the steps were hardened by the constant treading of feet, it seems plausible that the house was in use for quite a long time. The house floor was plastered with lime soil. A pile of soil on the floor might very well have been the remains of the collapsed northern wall and roof. Instead of removing the pile, the inhabitants trampled the earth flat, thus transforming it into a new floor level and rendering the house habitable again. Since no traces of postholes have been discovered, the new roof was probably constructed of horizontal beams that were spread over the opening of the pit. A semi-oval depression close to the northern wall served as a fireplace.<sup>23</sup> In 1960, a comparable but slightly larger earthen structure of 68 m<sup>2</sup> (H104) was excavated in or near Locus I. Its floor descended 6 m below ground level and was also divided into a larger northern room and a smaller southern room by an internal wall. At a height of about 2 m above the floor, a large stove was built into the northern wall; its hard-fired surface suggests long term usage. Moreover, a storage niche was dug into the western wall of the northern room at a height of ca. 3 m above the floor level. A pile of soil on the floor indicates that this cave dwelling once had an earthen roof as well. It is unclear how exactly the building itself, the stove, and the storage pit were accessed.<sup>24</sup> Yet, we may surmise that the dwellers used some kind of ladder or scaffolding. Fire precaution and reducing smoke emission in the room might be the reasons for constructing a hearth at such a height. It is conceivable that smoke was channeled outside through a chimney.<sup>25</sup> Making the storage pit somewhat hard to reach may have been a protective measure against burglary or rodents. Most likely, the considerable depths of the circular houses were required by technical reasons: In order to prevent the roof from collapsing, the ceiling of a cave dwelling must be located at least 1.8–2.4 m below the earth surface (Fig. 3C–D).<sup>26</sup>

Circular houses also appeared in Wei River valley during the Neolithic. In particular, thirty-one circular buildings between 20 and 30 m<sup>2</sup> have been excavated at Banpo.<sup>27</sup> While only some floors were slightly sunken below ground, most houses were fully aboveground. Due to their round floor plan, it is highly likely that they had conical roofs, which were supported by several massive posts in the interior and a framework of thin posts installed along the perimeter at equal intervals. The intervals were filled in a way similar to the rectangular houses. Underground circular cave houses with a depth of up to 4.15 m have been excavated in Keshengzhuang.<sup>28</sup> Again, despite the geographical proximity, the chronological gap between circular dwellings at Keshengzhuang and Zhangjiapo precludes direct conceptual

23 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, *Fengxi fajue baogao*, 75–76.

24 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “1960 nian qiu Shaanxi Chang’an Zhangjiapo,” 20–21.

25 See Thomas O. Höllmann, *Schlafender Lotos, trunkenes Huhn: Kulturgeschichte der chinesischen Küche* (München: C.H.Beck, 2010), 85.

26 See Mother Earth News editors, “How to build a cave” at <http://www.motherearthnews.com/diy/build-a-cave-zmaz82mazglo.aspx>, last accessed on March 16, 2016.

27 Zhongguo kexueyuan and Banpo bowuguan, *Xi’an Banpo*, 25–34.

28 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, *Fengxi fajue baogao*, 45–46.

relations. Thus far, no circular houses have been uncovered at Nianzipo, although earth-sheltered cave dwellings of irregular forms are attested there as well.<sup>29</sup>

When tombs of one or several subsequent phases are located in immediate vicinity of each other, it is often supposed that their occupants were related to each other as members of one family in several generations.<sup>30</sup> Following the same logic, the proximity of tombs to houses also appears to be of significance. Burials inside residential quarters are attested at numerous Neolithic sites throughout China; cemeteries were sometimes separated from settlements only during phases of long-term occupation. In other cases, people switched from communal to household-related burial practices.<sup>31</sup> Consequently, archaeologists studying early sites regularly address the occupants of burials near or inside houses as the erstwhile inhabitants of the latter.<sup>32</sup>

Scholars of the Chinese Bronze Age seem to be more reluctant to take the spatial proximity of tombs and houses into account.<sup>33</sup> For instance, all excavations at Zhangjiapo that

29 See Zhongguo shehui kexueyuan kaogu yanjiusuo, *Nanbinzhou Nianzipo*, 89–98.

30 The excavators of Zhangjiapo suggested that certain small groups of the neighboring tombs belonged to particular families; see Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, *Fengxi fajue baogao*, 115–116; Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “1967 nian Chang’an Zhangjiapo Xi Zhou muzang de fajue” 1967 年長安張家坡西周墓葬的發掘, *Kaogu xuebao* 1980.4, 457–502, esp. 487–492. This interpretation was accepted by Zhu Fenghan 朱鳳瀚, *Shang Zhou jiazhu xingtai yanjiu* 商周家族形態研究 (Tianjin: Tianjin guji chubanshe, 1990), 304–306. Lothar von Falkenhausen went so far as to interpret cemeteries that comprised hundreds of tombs as cemeteries of a single lineage, i.e. a corporation of patrilineally related families; see his *The Chinese Society in the Age of Confucius (1000–250 BC): The Archaeological Evidence* (Los Angeles: Cotsen Institute of Archaeology, University of Los Angeles, 2006), 127–161. However, recent analyses of some ancient DNA samples from Western Zhou tombs at Shaolingyuan 少陵原 cemetery in Xi’an have shown that at least two distinct groups of genetically related relatives used the same burial site for several generations; see Li Lin, Wang Peihuan, Liu Daiyun, Shao Jinling, and Duan Xiaohong, “Hereditary Constitution Analysis of Shaolingyuan Ancient Human in Xi’an, Northwestern China,” *Natural Science* 5.8 (2013), 947–954.

31 Compare the cases of early and late Neolithic sites of the Yangshao and Longshan cultural horizons; Yanping Zhu, “The Early Neolithic in the Central Yellow River Valley, c. 7000–4000 BC,” in Underhill, *A Companion to Chinese Archaeology*, 171–193, esp. 186–187; Juzhong Zhang and Cui Qilong, “The Jiahu Site in the Huai River Area,” in Underhill, *A Companion to Chinese Archaeology*, 194–212, esp. 198–199; Sun Bo, “The Longshan Culture of Shandong,” in Underhill, *A Companion to Chinese Archaeology*, 435–458, esp. 448–449.

32 Burying dead inside abandoned houses was practiced in the early Bronze Age Qijia 齊家 culture distributed in Gansu 甘肅 and Qinghai 青海 provinces during ca. 2200–1600 BCE. See Wang Renxiang 王仁湘, “Shi qian juanqi fangwu fengsu de zai zhanjiu” 史前捐棄房屋風俗的再研究, *Zhongyuan wenwu* 中原文物 2001.6, 16–28, esp. 20–22. It should be noted that, together with the Keshengzhuang culture, Qijia is considered as one of potential sources of the “proto-Zhou culture.” Cf. Wang Wei and Xu Liangao, “Xian Zhou wenhua de kaoguxue tansuo,” 286–305.

33 The excavators of Yinxu recognize that the coexistence of residential features and burials was typical throughout the area of Anyang. Based on the stratigraphy of one particular site, Jing Zhichun and colleagues argue that it was first used for habitation and later converted into a cemetery. The authors point out that the latter was organized in two clusters, each associated with an extended family that was part of one lineage. However, they do not pay particular attention to the fact that both clusters were obviously arranged around two large houses. Some of the tombs of the clusters are located slightly removed from the respective houses. Establishing their relative dates would be important to understand whether the phases of habitation and funerary uses were neatly separated from one another, or partially overlapped. See Jing Zhichun et al., “Recent Discoveries and Some Thoughts on Early Urbanization at Anyang,” 355–357.

were conducted throughout the second half of the 20<sup>th</sup> century focused on tombs. For some reason, the excavators neglected the interrelations between burials and residential features. More particularly, they did not map both features together. Such interrelations, however, can be inferred from the descriptions in the reports. The maps of more recent excavations at Zhangjiapo and at other Western Zhou sites indicate that the deceased were obviously continuously buried at residential and craft production areas inside the settlements.<sup>34</sup> The practice of burying the dead near the houses that continued to be inhabited suggests very strong ties between the people and their homes, and between the living and the dead. Burying the dead at the location of a house that was abandoned recently or years or decades ago may reflect the wish to return the dead to the place where they were born and spent a considerable part of their lives.<sup>35</sup> Tombs of subsequent generations clustered near the place of the old house would then suggest strong ties to the ancestors that were buried near their former place of residence. In analogy to various earlier sites, then, it appears justified to suppose that tombs located near contemporary houses or constructed at the place of a recently abandoned house at Western Zhou sites were likely the tombs of the houses' original inhabitants. If this is to be true, the size and grave good assemblages of the earliest tombs associated with the houses may reveal what kind of people once lived there, while the contents of chronologically successive tombs may reveal the economic and social fates of their families in later generations.

Several early houses were located in the western part of Zhangjiapo Locus I.<sup>36</sup> The excavators assume that they were constructed after the foundation of Feng by King Wen and abandoned around the time of King Cheng or King Kang. They also suggest that the tombs of Phase I were built close to the houses when the latter were no longer in use.<sup>37</sup> This is not obvious from the evidence they provide, but their claims are impossible to reevaluate due to the lack of maps of domestic features. In any case, Tomb No. 173 at Locus I was re-dated to the "proto-Zhou" phase in a later study.<sup>38</sup> Thus, at least this one tomb was likely contemporaneous with the houses. It belongs to a cluster of closely located tombs in the western part of Locus I. These burials were arranged in a U-shape with the opening towards the west, where two horse-and-chariot pits were located. Nine tombs were dated to Phase I and

34 See Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, "1997 nian Fengxi fajue baogao," Fig. 1.

35 The reasons for abandoning a house could be manifold: for instance, a rampant mold infestation might endanger food stocks and the health of the inhabitants; in aged dwellings, there was an increased danger that walls and roofs might collapse; besides, abandonment might have been more convenient than renovation. Additionally, as Wang Renxiang 王仁湘 has argued, a dweller's death because of illness could also be a reason for abandoning the house. See his "Qite de fangwu juanqi zhi feng" 奇特的房屋捐棄之風, *Huashi* 化石 1982.1, 22–23, esp. 23.

36 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, "1955–57 nian Shaanxi Chang'an Fengxi fajue jianbao" 1955–57 年陝西長安灃西發掘簡報, *Kaogu* 1959.10, 522.

37 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, *Fengxi fajue baogao*, 73–74. The excavators did not clarify why they thought that these houses were abandoned. Elsewhere (p. 142), it was reported that some early residential features were damaged by the construction of horse-and-chariot pits that were likely associated with the graves. Yet, there is no explicit mention of such residential features including the houses mentioned above.

38 See Zou Heng 鄒衡, "Zai lun Xian Zhou wenhua" 再論先周文化, in *Xia shang Zhou kaoguxue lunwenji* 夏商周考古學論文集, ed. Zou Heng (Beijing: Kexue chubanshe, 1980), 304, 307.

two to Phase II; due to the lack of burial goods, the date of four tombs was indeterminable. All deceased were buried in coffins and held a single cowry shell in their mouths. Some tombs had waist pits (*yaokeng* 腰坑) that either contained a dog sacrifice or no finds whatsoever. Two tombs of Phase I, Nos. 178 and 187, included weapons. The pit of Tomb No. 178 was 3.32 m long, 1.70 m wide, and 4.10 m deep; it brought to light the following bronze vessels: one *ding* 鼎 cauldron, one *gui* 簋 tureen decorated with animal masks and heads in low and high relief, and one undecorated vessel lid. The burial, furthermore, yielded several pottery vessels, a well-polished stone axe, a grinding stone, and a jade adze. Two horse-and-chariot pits must be considered part of this cluster. They contained one chariot with two horses (No. 185) and three chariots with altogether eight horses (No. 192). In addition to the horses, one single male human was interred in each pit; perhaps they may be addressed as stablemen.<sup>39</sup> Weapons in the early tombs that were closely associated with the horse-and-chariot pits could emphasize the roles of the deceased as warriors.<sup>40</sup> Indeed, it seems hard to accept the idea that such rich burials can be correlated with relatively humble dwellings. However, considering the early date of the tombs, the occupants could be veterans of wars that were frequently held at the beginning of the Zhou dynasty. The possession of bronzes could be related to the military achievements of the deceased, who did not necessarily belong to the hereditary elite.<sup>41</sup>

A close relation between an early house and the nearby early tombs can be observed more clearly at the better documented Zangjiapo-Mawangzhen site. Tomb No. 4, dated by the excavators to the earliest post-conquest phase, was situated near the southeastern corner of House F1 and ran parallel to its southern wall (Fig. 2A). The 2.98 m long, 1.46 m wide, and 3.20 m deep grave pit exhibited step-like earthen ledges *ercengtai* 二層台 and a *yao-keng*. The deceased was encased in a coffin that had been placed inside a wooden burial chamber (*guo* 槨, sometimes defined as an outer coffin). A cowry shell was put into his mouth. The burial goods comprised one small bronze *ding* cauldron, one bronze *jue* 爵 beaker with an inscription (*kao fu yi* 考父乙, “deceased father *fu* Yi”), one bronze *zhi* 觚 goblet, one pottery *zun* 尊 jar that emulated a bronze vessel of the same type, and six other pottery vessels. Animal bones lay scattered between some pottery vessels and inside the bronze cauldron.

It is possible that Tomb No. 4 was built when the house was still in use. At the time it was sealed and House F1 was abandoned, people continued to live somewhere nearby. This is suggested by the deposits in adjacent pits that contained household waste from the early, middle, and late Western Zhou periods. Only small parts of the entire site were thoroughly excavated and no other house foundations have been found. However, a group of tombs of later phases associated with House F1 and Tomb No. 4 have been reported (Fig. 2B). Tomb

39 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, *Fengxi fajue baogao*, 141–142.

40 Aside from a bronze axe, Tomb No. 178 also contained two dagger-axes. Judging from their physical appearances, both dagger-axes were indeed suitable as weapons. The dagger-axe in Tomb No. 187, in contrast, was an imitation that was probably manufactured especially for the burial. See Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, *Fengxi fajue baogao*, 118–119.

41 Inscriptions on an early cauldron that came to light at another Zhangjiapo location commemorate the participation of its commissioner in a war, in which he captured metal that he used to cast this very vessel. See Zhongguo kexue yanjiuyuan kaogu yanjiusuo, *Yin Zhou jinwen jicheng* 殷周金文集成 (Beijing: Zhonghua shuju, 1984–1994) (thereafter JC), JC2457.

No. 5 (dated one phase younger than Tomb No. 4) overlapped partially the earlier house and was oriented along the outlines of its eastern wall. The contemporary Tomb No. 7 lay near the southwestern corner of F1, “outside” its footprint and parallel to its southern wall; the undated Tomb No. 6 was aligned parallel to the western wall of F1, only slightly overlapping its footprint. Tombs No. 3 and 8 of the subsequent phase were constructed further away from F1, but ran parallel to Tombs No. 5 and 6. A distance of roughly 15 m was left open between this group of tombs and other burials at the Zhangjiapo-Mawangzhen site. It is likely that the occupants of the tombs in this cluster belonged to several generations of one single family and that their spatial proximity to the old house was not merely coincidental.

Similar to Tomb No. 4, Tombs No. 6–8 were constructed with *ercengtai* and *yaokeng* and yielded coffins and wooden burial chambers. Tombs No. 3 and 5 had no *yaokeng* and only yielded a coffin each; Tombs 3, 5, and 6 were looted. Although Tomb No. 7 was still intact, it contained only pottery vessels, while other intact tombs at this site also unveiled bronze objects. It is noteworthy that ten of the fifteen tombs located fairly close to the old house featured wooden burial chambers, which, in general, were relatively scarce at Zhangjiapo and any other Western Zhou site. Their presence is often interpreted as a marker of rather high social status, although it cannot be ruled out that they could be accessible also to economically well-off people.<sup>42</sup> The people buried at Zhangjiapo-Mawangzhen partly enjoyed ritual honors comparable to those of the presumable family founder buried in Tomb No. 4. However, some of them were not wealthy or distinguished enough to be buried with bronze vessels.

It should be mentioned that the casting quality of the bronze cauldron from Zhangjiapo-Mawangzhen Tomb No. 4 was comparatively low. This means that the family might not have had access to the bronze workshops that produced more exquisite vessels for members of the Zhou royal family and their close associates during the first decades after the conquest of Shang.<sup>43</sup> In contrast, the vessels from the Tomb No. 178 at Locus I were well pro-

42 Tradition holds that in the Zhou society, the possession of prestige goods was regulated by strict sumptuary rules in accordance with a system of nobility ranks. However, ritual texts on which this presumption is based, post-date the period discussed above by more than a half millennium. The existence of such a system and such rules during the ca. 11–10<sup>th</sup> centuries BCE is not corroborated. Archaeological data suggest that sumptuary rules were promulgated in the Zhou metropolitan region and in polities ruled by Ji-surnamed lineages since the late 10<sup>th</sup> century BCE in the course of the so-called “ritual reform.” Yet even then they were not universally followed. See Jessica Rawson, “Statesmen or Barbarians: The Western Zhou as Seen through their Bronzes,” *Proceedings of the British Academy* 75 (1989), 71–95, esp. 89–91; Falkenhausen, *Chinese Society*, 29–64. For correlations between wooden chambers and the status of the deceased, see Falkenhausen, *Chinese Society*, 137–139.

43 For instance, many splendid vessels of the earliest part of the Western Zhou period were excavated at Daijiawan 戴家灣 near to Baoji 寶雞; see Wang Guangyong 王光永, “Shaanxi Baoji Daijiawan chutu Shang Zhou qingtongqi diaocha baogao” 陝西寶雞戴家灣出土商周青銅器調查報告, *Kaogu yu wenwu* 考古與文物 1991.1, 3–22. Inscriptions suggest that some of them were commissioned by members of several Ji-surnamed lineages (ibid, 3–4; see also JC0648; JC2109; JC2739; JC12077). The famous Li *gui* 利簋 was excavated in Lingkoucun 零口村 in Lantian 藍田 county, Shaanxi province. Its inscription informs us that Li, after personally receiving awards from king Wu 武 (JC4131), had commissioned the tureen. The high-quality of the vessel indicates that it was manufactured in one of the royal workshops. The close personal relationship of Li to the king certainly facilitated access to royal workshops.

portioned and delicately decorated. It is more likely that they came from a more sophisticated workshop. The *zhi* and *jue* vessels from Tomb No. 4 do not differ from the contemporary Shang-Zhou standard in any significant way. They could have been commissioned by the tomb occupant during his lifetime for his deceased father, or by his children for himself when he passed away. The bronzes may equally have been the tomb occupant's own war booty, or were given to him out of the spoils of a superior as a reward for his military achievements.<sup>44</sup>

As it has been suggested above, the larger rectangular House H205 was located near Zhangjiapo Loci II and III. In this part of the Zhangjiapo area, tombs of Phase I appear in small groups with gaps of 20 m or more between them. If people buried in contemporary adjacent tombs were likely related to each other, the greater spatial distance from other tombs may correlate with a greater social distance between their occupants. Thus, people buried in this area probably belonged to several different families. At Locus III, the neighboring Tombs 218 and 219 are the only ones dateable to Phase I. They are larger and deeper than the burials at Zhangjiapo Locus I and Zhangjiapo-Mawangzhen. Tomb No. 218 measured 3.88 m by 1.90 m and was 5.32 m deep, while Tomb No. 219 measured 3.00 m x 1.60 m x 5.70 m; each of both burials exhibited a *yaokeng* and included only one single coffin. Two individuals, along with the main occupant, were interred in Tomb No. 218 to "accompany" him in the afterlife. The burial also yielded a dagger-axe, which hints at the fact that the deceased was most likely a male. Seeing that the grave was looted, it is unclear whether the tomb originally contained bronze vessels. The remaining burial goods included one pottery *li* 鬲 tripod, some jade ornaments, and one cowry shell. Tomb No. 219 revealed one bronze *ding* cauldron, one pottery *gui* tureen, one *guan* 罐 jar, a jade figurine of a rabbit, a jade chisel, and a cowry shell. The neighboring Tombs No. 217 and 220 were also large and deep and had *yaokeng*. It was impossible to date both burials because they were looted and lacked pottery vessels that might have provided a rough date. Tomb No. 220 included one human "attendant," a bronze lance head, a bronze knife, a bronze axe, and a jade dragon figurine. The latter was perforated at the upper end and possibly served as a coffin ornament. Tomb No. 217, moreover, revealed the skeleton of a sacrificed dog. Judging from the individual sizes, the quantity and quality of the assemblages, and the spatial arrangement between the individual burials, it is likely that these graves, together with Tombs No. 218 and 219, formed a group, and that their occupants belonged to one family.

Tombs of Phase I at Locus II include one pair of tombs (Nos. 201 and 204) and two individual burials (Nos. 206 and 213). Each of these relatively large and deep pits featured a *yaokeng*, and human or dog sacrifices. Although these tombs had been looted, Tombs Nos. 204 and 206 still contained jade objects and weapons. Measuring 5.50 m in length, 3.15 m

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44 Other inscriptions convey that bronze objects captured in wars could be melted in order to produce new ritual vessels. In this way, ritual vessels could be detached from the ancestral rites of other families or clans; see Maria Khayutina, "Sacred Space of an Aristocratic Clan in Ancient China under Transformation," in *Creating and Representing Sacred Spaces*, eds. Vera Dorofeeva-Lichtmann and Michael Dickhard (Göttingen: Peust & Gutschmidt, 2003), 113–144, esp. 114–116. However, it is not certain if such considerations had guided the actions of the Zhou already from the very beginning of the dynasty. In any case, tradition has it that King Wu captured and used the sacrificial cauldrons of the Shang king. It is therefore not unlikely that some of Shang-style vessels in early Zhou tombs were not commissioned by the tomb owners or their families, but represented war trophies.

in width, and 7.82 m in depth, and including four human “attendants”, Tomb No. 204 represented the most lavish Phase I burial of the entire Zhangjiapo cemetery. Among the artifacts left behind by the looters were a dagger-axe, a lance head, and an arrowhead. Their presence possibly emphasizes the role of its occupant as a warrior. In addition, there were two animal-shaped jade pendants that represented a fish and a dragon. Tomb 206 yielded a bronze dagger-axe, a jade *qi* 戚-axe, a jade *fu* 斧 axe, a jade “handle-shaped implement” (*bingxingqi* 柄形器), a number of jade pendants that once were part of a ceremonial garment, as well as jade and stone coffin pendants in the shapes of fishes, cicadas, and birds.<sup>45</sup>

The earliest tombs at Loci II and III manifest the highest sumptuary standard of Phase I at Zhangjiapo. Was the proximity of the rectangular House H205 to this burial site just a coincidence? Or does it suggest that, at the beginning of the Western Zhou period, buildings of this kind represented a widely adopted dwelling form even for relatively well situated social groups?

### Later Samples (10<sup>th</sup>–9<sup>th</sup> centuries BCE)

In the course of frequent archaeological campaigns between the years 1976 and 1984, rammed-earth platforms of various sizes have been discovered at Keshengzhuang just 200–300 m from the present-day bed of the Feng River. The largest of them, No. 3 and No. 4, measured 790 and 1,830 m<sup>2</sup> respectively; smaller platforms vary between 35 and 60 m<sup>2</sup>. Based on stratigraphic data, the excavators suggested that the large platforms were constructed during the mid- to late 10<sup>th</sup> century BCE, while the buildings for which they served as foundations were abandoned around 850 BCE. Two other groups of platforms that supported timber-framed buildings with roofs covered by pottery tiles were identified on the opposite side of the Feng River. Supposedly, they originally stood on the bank of the ancient Hao 滹 River, where, according to traditional historiography, the royal residence Hao 鎬 established by King Wu was located (Fig. 1).<sup>46</sup> The largest platform (No. 5) measured 3,000 m<sup>2</sup> and was constructed sometime during the first half of the 9<sup>th</sup> century BCE.<sup>47</sup>

The larger platforms could have supported structures similar to that in Fengchu on the Zhou Plain. They were most likely used as ritual buildings or residences by Zhou kings or members of the highest nobility.<sup>48</sup> Smaller platforms on both sides of Feng River could

45 For comparable coffin decorations, see Jessica Rawson, “Ordering the Exotic: Ritual Practices in the Late Western and Early Eastern Zhou,” *Artibus Asiae* 73 (2013), 5–76, esp. 17–22.

46 See note 2 above. I am indebted to Professor Höllmann for his insight that Zhou royal centers can be more suitably defined as “residences” rather than “capitals” (Thomas Höllmann, personal communication, ca. 2006; cf. Khayutina, “Royal Hospitality and Geopolitical Constitution of the Western Zhou Polity,” and “Western ‘Capitals’ of the Western Zhou Dynasty”).

47 Shaanxi sheng kaogu yanjiusuo 陕西省考古研究所, *Haojing Xi Zhou gongshi* 镐京西周宫室 (Xi’an: Xibei daxue chubanshe, 1995), 52–58.

48 Based on the pit with oracle bones found in the building of the western wing of the Fengchu courtyard, the excavators addressed this building as an ancestral temple. See Shanxi Zhouyuan kaogudui, “Shaanxi Qishan Fengchucun Xi Zhou jianzhu jizhi fajue jianbao” 陕西岐山鳳雛村西周建築基址發掘簡報, *Wenwu* 1979.10, 27–34. However, since the pit contained almost exclusively pieces of broken oracle bones that were mixed with various kinds of waste, it was probably constructed after the building had already been abandoned. One of the rooms on the eastern side included a hearth, which led some scho-

have been used for similar purposes by families with relatively high standing. It is worth considering the relationships between the platforms and adjacent tombs. In Keshengzhuang, one tomb was located roughly 15 m south of the Platform No. 3 and roughly 30 m north of the Platform No. 10 (56 m<sup>2</sup>). The tomb measured 3.4 m in length, 1.8 m in width, and 5.4 m in depth; it had an *ercengtai* and a *yaokeng* and yielded the remains of one person, one dog, and some pig bones. This tomb featured a wooden burial chamber and a coffin, while the burial goods included three bronze *ding*-cauldrons, one bronze *gui*-tureen as well as two lacquer vessels. Over one hundred cowry shells, clams and jade ornaments once probably adorned the coffin, while a semi-circular pendant (*huang* 璜) made from an unspecified stone was part of a ceremonial garment.<sup>49</sup> Stylistically, the bronze vessels bore characteristics of the mid- to late 11<sup>th</sup> or early 10<sup>th</sup> century BCE. This tomb clearly manifests a higher sumptuary standard in comparison to the contemporary tombs at Zhangjiapo. Its location suggests that, during the first half of the 10<sup>th</sup> century BCE, this part of the Keshengzhuang site was already a burial ground – possibly also a residential area – of the higher elite. The date of the platforms suggests that it took some time until the local elites abandoned their subterranean dwellings and adopted timber-framed or wattle and daub buildings on rammed-earth platforms.<sup>50</sup>

This kind of aboveground architecture apparently did not spread to Zhangjiapo. Only two small houses that date from the latter part of the Western Zhou period have been identified in Zhangjiapo thus far. Both are of the circular semi-subterranean type. The house pits were in the western part of Locus I, in the same place, where the early houses and tombs were located. The old cemetery had been abandoned a long time ago, and the new occupants of the site were most likely unrelated to the earlier dwellers. House H104 covered an area of only 3.15 m<sup>2</sup> (Fig. 3B). It was accessed from the south through a sloped entry ramp. A small depression of irregular shape was used as a hearth. A large coarsely made clay *weng* that was sunk into the floor probably served as a storage jar. The inhabitants could only sit or sleep inside, while most of other activities would have taken place outside. Compared to earlier semi-subterranean houses, these buildings were even more cramped. The excavators suggested that they were occupied over a long period of time and that they were associated with small contemporary or slightly later burials.<sup>51</sup> The dateable late Western Zhou tombs in this area include Tomb Nos. 119 and 145 of Phase IV, and Tomb Nos. 127

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lars to assume that it might have served as a kitchen. In the northern courtyard, there were several storage pits. Sherds of pottery and proto-porcelain vessels of daily use – *li* 鬲, *dou* 豆, *guan* 罐 and *lei* 罍 –, bronze arrowheads and buckles (*pao* 泡) as well as carved jade ornaments were found in pits and on the floor of the Fengchu courtyard compound. Although these finds corroborate the hypothesis that the building was used by members of the elite, they do not necessarily suggest that it was a temple; its use as a residence cannot be ruled out. See Guo Ming 郭明, “Zhouyuan Fengchu jia zu jianzhu ‘zongmiao shuo’ zhiyi” 周原鳳雛甲組建築“宗廟說”質疑, *Zhongguo guojia bowuguan guankan* 中國國家博物館館刊 2013.11, 6–17.

49 *Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui*, “1976–1978 nian Chang’an Fengxi fajue jianbao” 1976–1978 年長安灃西發掘簡報, *Kaogu* 1981.1, 13–18; 76; *Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui*, “Shaanxi Chang’an Fengxi Keshengzhuang Xi Zhou hangtu jizhi fajue baogao” 陝西長安灃西客省莊西周夯土基址發掘報告, *Kaogu* 1987.8, 692–700.

50 The construction dates of the smaller platforms at Keshengzhuang have not been thoroughly investigated. It cannot be ruled out that some of them may predate the larger platforms.

51 *Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui*, *Fengxi fajue baogao*, 73–77.



and 147 of Phase V. They were smaller than neighboring tombs of earlier phases, yet the deceased were interred in coffins and a large number of pottery vessels served as grave goods. Adjacent to these tombs was a group of burials that contained only corpses. The fact that they did not yield any burial goods rendered their dates indeterminable. In all likelihood, the people who lived in small houses such as H104 and were buried in tombs without grave goods had limited means and relatively low social status. Nevertheless, this does not mean that cave-dwellers during the late Western Zhou period were social underdogs, while members of better situated social groups all moved in timber-framed houses built on rammed-earth platforms.

Two slightly larger houses with oval outlines that date from the 9–8<sup>th</sup> centuries BCE were found within an excavated area of 140 m<sup>2</sup> at Puducun 普渡村 on the eastern bank of the Feng River. The location lies about 500 m east of the rammed-earth platforms that are associated with the ancient Hao. The house pits encompass roughly 11 m<sup>2</sup> (H2) and 7.8 m<sup>2</sup> (H3).<sup>52</sup> Radially curved, sloping entry ramps and steps lead down to the pits with uneven floors, reaching a depth of 2.6 m (H2) and 3.0 m (H3). Since both houses did not reveal any postholes, the roof construction remains unclear. A storage niche in a wall of H2 contained one pottery *yu* 盂-bowl with remains of cereals (Fig. 4). Considering that intact and fully employable pottery vessels have been found in abandoned houses on a regular basis, it does not seem too far-fetched to assume that they were not simply left behind, but were remnants of offerings for ancestral spirits that might have been believed to return to their former dwellings.<sup>53</sup> Judging from the contents of the midden H1 associated with House H2 – it contained a number of potsherds and bones of horses, cattle and sheep – the former inhabitants were eating meat on a regular basis. Thus, although the Puducun houses appear modest, they did not belong to the poorest and humblest.<sup>54</sup>

Another example of the Western Zhou semi-subterranean house type was found 2 km south of Keshengzhuang at Xinwang 新旺 village.<sup>55</sup> An excavation was launched after the accidental discovery of a purported hoard of two bronze cauldrons.<sup>56</sup> Eventually, the pit that contained both vessels turned out to be a niche in the wall of a house. Similar to the pottery vessels in the smaller houses discussed above, it might also have been left as an offering by the departed dwellers. The house itself and the surrounding area of altogether 400 m<sup>2</sup> have been fully excavated. Apart from other domestic features, the archaeologists un-

52 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “1979–1981 nian Chang’an Fengxi, Fengdong fajue jianbao” 1979–1981 年長安灃西、灃東發掘簡報, *Kaogu* 1986.3, 197–209, here 204–205.

53 Complete pottery vessels have been found inside destroyed (sometimes, burned down) houses on the sites of several early cultures, including Yangshao (Banpo), Keshengzhuang, and Qijia. Wang Renxiang has suggested that both the demolishing of the house and depositing of vessels were parts of purposeful house abandoning rituals. See his “Qite de fangwu juanqi zhi feng,” 23; Wang Renxiang, “Shi qian juanqi fangwu fengsu de zai zhanjiu,” 18.

54 For “meat as one of the clearest indicators of status,” see Höllmann, *The Land of the Five Flavors*, 27.

55 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “Shaanxi Chang’an xian Fengxi Xinwangcun Xi Zhou yizhi 1982 nian fajue jianbao” 陝西長安縣灃西新旺村西周遺址 1982 年發掘簡報, *Kaogu yu wenwu* 2012.5, 19–27.

56 Zhongguo shehui kexueyuan kaogu yanjiusuo Fengxi fajuedui, “Shaanxi Chang’an xian Xinwangcun xin chu Xi Zhou tong ding” 陝西長安縣新旺村新出西周銅鼎, *Kaogu* 1983.3, 217–219.

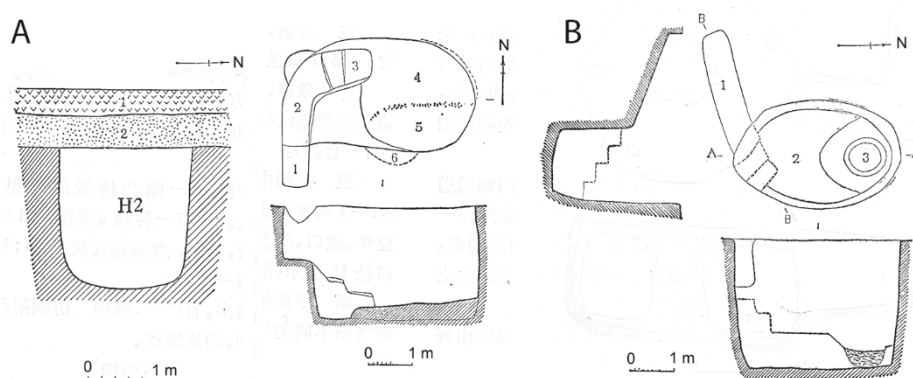


Fig. 4 Semi-subterranean houses at Puducun. A: Plan and cross section of house H2, ca. 11 m<sup>2</sup>; 1 = pathway; 2 = sloping entry ramp; 3 = steps; 4 = living area; 5 = fireplace; 6 = niche in wall. B: Plan and cross sections of house H3, ca. 7.8 m<sup>2</sup>; 1 = sloping entry ramp; 2 = living area; 3 = hearth. After: Zhongguo shehui kexueyuan kaogu yanjiusuo, “1979–1981 nian Chang’an Fengxi, Fengdong fajue jianbao,” Figs. 13–14.

covered one jar-burial of a child. The tomb of an adult was discovered at some distance from the house.

The house had an irregular oval shape and measured 14.52 m<sup>2</sup>. There were no signs of internal walls, but the stepped floor suggests a subdivision into functionally different spaces. The back room was 4.4 m deep, while the front room was only half as deep. The front room’s floor was originally covered with wooden planks. A 1.6 m deep hole of unclear function was dug inside the house and a water well was dug several meters away from the building. Pieces of bronze knives, arrow heads, stone and bone tools, ceramic vessels of diverse types, some of which imitated bronze, were either found on the floor, in adjacent middens, or scattered as stray finds nearby. The middens contained a large number of bones of domestic animals, which suggests that the inhabitants regularly consumed meat. One midden brought to light several turtle plastrons and one bovine scapula, all of which exhibited holes of various shapes that indicate their use in divination. About 120 large fresh-water clams were deposited in a depression in the floor of the house. The excavators surmise that they served as raw material for certain craft production. In this respect, it is worth noting that the building was only several hundred meters removed from a contemporary bone workshop.<sup>57</sup> It follows that the dwellers at Xinwang village might have been artisans.

The shaft of the nearby tomb of the adult occupant was 2.65 m long and 1.40 m wide. It was constructed with an *ercengtai* and a *yaokeng* and included one wooden coffin. The latter was decorated with four fish-shaped ornaments that were made of clams. Six ceramic

57 Zhongguo shehui kexueyuan kaogu yanjiusuo Feng-Hao gongzuo dui 中國社會科學院考古研究所禮部工作隊, “Shaanxi Chang’an xian Fengxi Xinwangcun Xi Zhou zhigu zuofang yizhi” 陝西長安縣禮部西新旺村西周制骨作坊遺址, *Kaogu* 1992.11, 997–1003.

vessels of three different types were placed on the *ercengtai*. Bones of an animal (sheep or goat?) were found on the floor of the tomb. The shapes of the pottery vessels from the tomb are similar to these found in the middens near the house. In general, they are comparable to the pottery of Phases IV and V at Zhangjiapo. Therefore, it seems likely that the tomb dates from the second half of the 9<sup>th</sup> century BCE. Since both bronze cauldrons were intentionally placed in the wall niche of the house, their dates are of interest: The larger one carries stylistic features of the early Western Zhou (11–10<sup>th</sup> centuries BCE) and may very well represent an heirloom of the householder, while the shape of the smaller cauldron became widespread from the mid-9<sup>th</sup> century BCE onwards. Thus, the vessels could have been deposited in the abandoned house roughly at the same time when the tomb was closed. Overlapping middens that were partially filled with household waste point to the fact that people continued to live at the site, even though the house was no longer in use as living quarters.

The presence of ceramics of various types, metal tools, and the meat diet indicate that the inhabitants of the Xinwang house were part of a well-to-do family. This example corroborates that artisans could occasionally own bronze vessels, or, vice versa, that people who owned bronze vessels and therefore are often regarded as representatives of the ranked elite engaged in productive work.<sup>58</sup>

The two cauldrons recovered from the Xinwang house bore inscriptions that include the following graphs: 𠄎 𠄎, and 𠄎. Such graphs are usually interpreted as family or lineage emblems (*zu hui* 族徽). Vessels with the first combination of graphs were also found in Tomb No. 87 at Zhangjiapo. This was one of the most richly furnished, although not one of the largest burials of Phase II; it was located at some distance from the main cluster of tombs in Zhangjiapo, but relatively close to Keshengzhuang. The graphs 𠄎 and 𠄎 also appear independently from each other on vessels of unclear provenance. The first graph was cast on vessels from the 11<sup>th</sup>–10<sup>th</sup> centuries BCE, whereas the second one on vessels from the 11<sup>th</sup>–9<sup>th</sup> centuries BCE. The 𠄎 graph occurs on some exquisite vessels from a hoard, also discovered in Xinwang village and containing vessels from the late 9<sup>th</sup> to the early 8<sup>th</sup> centuries BCE.<sup>59</sup> These inscriptions suggest that the last inhabitants of the Xinwang house, on the one hand, were related by kinship to a rather prominent and prosperous local family of their own time. On the other hand, they were also related (kinship or by marriage) to another old family that resided in the neighboring area during the late 11<sup>th</sup>–9<sup>th</sup> centuries BCE. Thus, the Xinwang family enjoyed a relatively high standing in the society of “greater Feng,” in comparison with the inhabitants of small houses and occupants of tombs without burial goods from Zhangjiapo Locus I.

58 For additional evidence on the relatively high status of artisans, see Constance A. Cook, “Scribes, Cooks, and Artisans: Breaking Zhou Tradition,” *Early China* 20 (1995), 241–277.

59 Zhang Changshou 張長壽, “Ji Shaanxi Chang’an Fengxi xin faxian de liang jian tong ding” 記陝西長安豐西新發現的兩件銅鼎, *Kaogu* 1983.3, 244–248, 259; Wang Zhangqi 王長啟, “Xi’an shi wenwu zhongxin shoucang de Shang Zhou qingtongqi” 西安市文物中心收藏的商周青銅器, *Kaogu yu wenwu* 1990.5, 25–43, esp. 42.

### Concluding remarks

Archaeological excavations have revealed only a few traces of aboveground architecture from the Western Zhou period. With the exception of the early palace in Fengchu, known large buildings on rammed-earth platforms, which could represent palaces or temples of the highest Zhou elite, were constructed no earlier than a century after the beginning of the dynasty. The finds of semi- and fully subterranean houses in the Feng River valley indicate that the Zhou people continued to live in earth-sheltered dwellings. The proximity of early examples of such houses to relatively richly equipped tombs and horse-and-chariot pits does not seem to be accidental. Yet their relationships are not yet fully understood. One possibility is that inhabitants of quite modest square semi-subterranean houses were able to rise to elite status through military achievements in wars at the beginning of the dynasty. By constructing larger, fully subterranean, circular houses, some of them could attempt to improve their living conditions without radically changing their habitual way of life. Finds from the late Western Zhou period suggest that people from various social groups, and not only the poorest, continued to live below ground even several centuries later.

It is unclear whether semi-subterranean houses remained the standard form of dwelling for the majority of the Zhou metropolitan population during the Western Zhou period.<sup>60</sup> An answer may only be found if excavations of Bronze Age settlements would be included in the agenda of future archaeological projects. Until then, the best we can do is to make some educated guesses. In particular, one can imagine that some people lived in simple thatched huts without subterranean pits, or in houses, whose walls were made of sundried clay bricks. Such materials usually decompose and leave minimal traces at best. Poor preservation, thus, might be the reason why such kinds of houses have not yet been discovered in Shaanxi.<sup>61</sup> Nevertheless, even if such buildings did exist, they were not necessarily more comfortable and larger than semi-subterranean dwellings.

There could be various reasons why some people preferred earth-sheltered dwellings to above-ground houses on rammed-earth platforms.

Loess soils in the area are suitable for earth construction.<sup>62</sup> Thus, clay represented a building material that was available almost everywhere and to everyone. It was comparably easy to cut with use of spades made of stone, bone, or clams – working tools that, to that day, have changed little since the Neolithic period. Clay that was used for ramming was first freed from stones and then watered. When layer after layer was pounded, construction workers allowed enough time for every level to dry, thus making sure that there would be

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60 Lothar von Falkenhausen has argued that aboveground houses became common only by the Warring States period. Until then, even representatives of the ranked elite still lived in semi-subterranean dwellings; see his “The Waning of the Bronze Age: Material Culture and Social Developments,” in *The Cambridge History of Ancient China: From the Origins of Civilization to 221 B.C.*, eds. Michael Loewe and Edward Shaughnessy (Cambridge: Cambridge University Press, 1999), 450–544, esp. 455.

61 For an overview of discoveries of sundried brick buildings on Chalcolithic and Early Bronze Age sites in China, see Li Shaoyang 李曉揚, “Zhongguo zaoqi tupi jianzhu fazhan gaishu” 中國早期土坯建築發展概述, *Caoyuan wenwu* 2016.1, 78–86.

62 Matthew R. Hall, Rick Lindsay, and Meror Krayenhoff, eds., *Modern Earth Buildings: Materials, Engineering, Constructions and Applications* (Cambridge: Woodhead Publishing Ltd., 2012), 166–168; Gideon Golany, *Chinese Earth-Sheltered Dwellings: Indigenous Lessons for Modern Urban Design* (Honolulu: University of Hawai’i Press, 1992), 18–20.

no shrinkage cracks or similar damages that might pose a threat to the stability of the structure. It is fairly obvious that this process required labor and time: one estimation shows that ramming a cubic meter of soil amounts to twice the amount of labor it takes to dig a hole of the same volume.<sup>63</sup> Excavating a pit required no additional work; it was much faster than ramming earth and clearly saved labor. Plastering the floor and walls of the finished pit with lime soil, or applying heat stabilized the Loess structure.

In contrast to clay, timber of a suitable size was probably scarce on the Zhou Plain and in Feng River valley during the 11–8<sup>th</sup> centuries BCE. This situation changed substantially since the Banpo period, when timber was widely available and used for construction.<sup>64</sup> During the late Holocene from the late 3<sup>rd</sup> millennium BCE, forest decline began in southeastern Loess Plateau, spreading to wider regions. Apart from climate aridization and cooling, the intensification of agricultural activities during the Neolithic period possibly contributed to the process of deforestation.<sup>65</sup> Felling and transporting timber from elsewhere required not only time and labor, but also wealth.

Several inscriptions from the middle and late Western Zhou period indicate that Zhou kings controlled the usage of forests in the Wei River valley. For instance, the Tong *gui* 同簋 inscription mentions certain Wu 吳 (or *yu* 虞 “forester”) *dafu* 大父, who was supposed to “manage territories and forests, foresters and herdsmen from the east of Piao River to the [Yellow? Wei?] River, and, in the opposite direction, up to the Xuan River” (司易 [場]、林、吳 [虞]、牧, 自澆東至于河, 厥逆至于玄水).<sup>66</sup> The Mian *fu* 免簋 inscription quotes a command to the Manager of Lands (*si tu* 司土) “to manage the granaries (forests?) that were returned by Zheng, together with foresters, together with herdsmen” (司奠 [鄭] 還藪 [廩/林?]、眾吳 [虞]、眾牧).<sup>67</sup> The Lai *ding* 逯鼎 inscription, dated from 785 BCE, documented a royal order to Wu 吳 (Forester 虞) Lai 逯; it says that Wu Lai was “to manage foresters and forests (granaries?) in the four quarters, to employ charioteers of the palace” (司四方吳 [虞] 替 [林/廩?], 用宮御).<sup>68</sup> Although it is not very clear whether 林/替/藪 designated *lin* 林 “forest” or the homonymous *lin* 廩 “granary,” *yu* 虞 plausibly designated “forester.” According to the *Zhou li* 周禮, a 4<sup>th</sup>–2<sup>nd</sup> centuries BCE idealized account of the Zhou administration, foresters controlled the cutting of wood and the collecting of brushwood.<sup>69</sup> As foresters are mentioned in Zhou bronze inscriptions together with *mu* (“herdsmen”), who presumably were responsible for the care of royal pastoral animals, it is likely that foresters focused on the management of hunting resources. However, it is also conceivable that people during the Western Zhou period were already aware of the ne-

63 Li Xinwei, “The Later Neolithic Period in the Central Yellow River Valley Area, c. 4000–3000 BC,” in Underhill, *A Companion to Chinese Archaeology*, 213–235, esp. 218.

64 Zhou Kunshu 周昆叔, “Xi’an Banpo xinshiqi shidai yizhi de baofen fenxi” 西安半坡新石器時代遺址的孢粉分析, *Kaogu* 1963.9, 520–522.

65 See Li Liu and Xingcan Chen, *The Archaeology of China: From the Late Paleolithic to the Early Bronze Age* (Cambridge: Cambridge University Press, 2012), 40.

66 See Tong *gui*, JC4271.

67 See Mian *fu*, JC4626.

68 Zhong Bosheng 鍾柏生 and Chen Zhaorong 陳照容, *Xin shou Yin Zhou qingtongqi mingwen ji qiyong huibian* 新收殷周青銅器銘文暨器影彙編 (YHB), 3 Vols. (Taipei: Yiwen yinshuguan, 2006), YHB 747–757.

69 Sun Yirang 孫詒讓, comm., *Zhou li zheng yi* 周禮正義 in *Shi san jing Qing ren zhushu* 十三經清人註疏 (Beijing: Zhonghua shuju, 1987), 1198–2003.

cessity to prevent the excessive use of wood, and that this was one of the major tasks of foresters. In this case, obtaining timber could involve negotiations with royal officials and, most likely, paying fees. Keeping the number of timber elements to a minimum could be a way to economize one's living expenses.

At the same time, below-ground dwellings had certain advantages in comparison to aboveground houses. They required only a minimal amount of heating in winter and stayed cool during the summer.<sup>70</sup> It should be noted that since the Banpo era, the climate in the region became much colder and arid. The quest for the "energy efficiency" could be one reason why Western Zhou houses were as small as the smallest houses at Banpo, or even smaller.

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70 Golany, *Chinese Earth-Sheltered Dwellings*, xv and 35.