

Research on the Kitchen Space of Stone Reliefs in Han Dynasty Tombs at Dahuting Village in Mixian County

Li Xinghao

Xi'an University of Architecture and Technology, Xi 'An, Shaanxi, 710055, China

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Abstract: Stone reliefs depicting kitchen scenes are an important spatial theme in tombs from Han Dynasty in China. However, current research focuses more on the typological classification of kitchen images instead of the architectural space depicted by the images. Tomb No. 1 in Dahuting Village is one of the largest stone relief tombs from the Eastern Han Dynasty, and the vivid stone reliefs depicting kitchen scenes in the eastern room have left precious materials for the reproduction of the original kitchen space. In this paper, the spatial position and pattern of the real kitchens depicted in the stone reliefs in the No. 1 Tomb are studied by putting the stone reliefs in the contextual space in the tomb. Then, the scale and structure of the real kitchen depicted in the stone reliefs are reproduced by studying the unearthed pottery house model and the space of the tomb. At last, the functional streamline of the kitchen is represented by interpreting the content of the stone reliefs. Through the above methods, the kitchen space of Han Dynasty, once lost to time, is revived, thus enhancing the public's understanding and dissemination of the architectural cultural heritage of the Han Dynasty.

1. Introduction

Cooking culture from the Han Dynasty represents an important stage in the history of Chinese cuisine development, and the facilities, space and cooking process of the kitchen are extremely diversified. However, it is impossible to know the whole picture of the contemporary kitchen space as there is no physical object to represent it. Luckily, abundant murals and stone reliefs of the kitchen in Han tombs serve as spatial images depicting the real architecture and can be used as source materials.

Previous studies on kitchen stone reliefs of the time mainly focus on image element combination, chronology, regional typology, carving techniques and styles, and analyze the reliefs as a kind of painting, which has led to the neglect of certain spatial information in the three-dimensional works. With the development in recent years of research both in China and abroad, scholars of Chinese art history have paid increasing attention to the expressional logic of the space in ancestral temples and tombs from the Han Dynasty, based on which they have suggested placing the stone reliefs into the original architectural space to study the space presented therein by means of contextual reconstruction. Tomb No. 1 in Dahuting Village, located in Mixian County (now renamed as Xinmi City), Zhengzhou, Henan Province, is one of the largest stone relief tombs from the Eastern Han

Dynasty. As the tomb with the most realistic representation of any kitchen space in the Han Dynasty, the stone reliefs in the eastern room provide a vivid depiction of kitchen scenes and spatial patterns. In this paper, the stone reliefs of kitchen in Tomb No. 1 in Dahuting are placed in the contextual space of the tomb to locate the kitchen in the real courtyard space presented by the image. Then, the spatial pattern, function division and cooking streamline of the kitchen implied in the images are analyzed. Finally, the spatial scale of the kitchens from the Han Dynasty is represented by analyzing the pottery house model and the kitchen space of the tomb chamber.

Cultural heritage needs to be protected and transmitted. Through the analysis and interpretation of the kitchen reliefs, the once-lost kitchen is reanimated, which enables the public to know about historical people's lifestyles and facilitates the understanding and dissemination of the architectural cultural heritage of the Han Dynasty.

2. The Historical Background of the Kitchen Stone Reliefs in Tomb No. 1

Throughout the Han Dynasty, people gave as much attention to the dead as to the living. As another space for the soul of the deceased to live, tombs needed kitchens to provide food for the dead. From the Western Han Dynasty, the traditional coffin burial system began to collapse, and vertical tombs shifted to horizontal tombs, subsequently taking on the shape of residences. In the middle of the Western Han Dynasty, large-scale tombs with a side room space symbolizing the kitchen yard appeared. By the late Western Han Dynasty, small stone coffin tombs with kitchen images on the side walls of the coffins were used to symbolize the real kitchen. In the Eastern Han Dynasty, when the tomb of Dahuting was built, tombs modelled on residences were further developed, and the images in the tombs began to show connections with the represented space. The tomb, imitating the courtyard layout, has side rooms with different functions of living. In addition, the images representing the corresponding space are carved or painted on the walls of the side rooms to further symbolize the space of different functions in the residence.^[1]The spatial images in Tomb No. 1 in Dahuting are representative of this period, with the peak development of kitchen imagery in the Han Dynasty. There are vivid reliefs in the side rooms representing the front yard, stable, hall and kitchen to further symbolize the corresponding spaces. The reliefs in the east side of the room show kitchen processes, such as meat processing, brewing, plating, etc., and reflect the locations of different functional areas in the kitchen in three-dimensional space. Moreover, the scale of the human bodies and utensils as depicted reflects the actual spatial scale of the kitchen.

3. The Spatial Position of the Kitchen in Tomb No. 1 in Dahuting Village

The kitchen space of Tomb No. 1 is located at the east side of the tomb, which is not an accidental phenomenon in the Han Dynasty. The kitchen images in tombs and ancestral halls in the Eastern Han Dynasty are all on the eastern wall. The relative positions of the images are mostly on the left side of the tomb owner, that is, to the east of the tomb owner. In addition, it is obvious that absolute position is considered more important than relative position.^[2]According to descriptions in contemporary poetry and literature, the kitchen is located to the east of the whole courtyard (also the main yard). Moreover, the position of the kitchen in the overall courtyard is also described to be in the east of the main courtyard according to the paintings and murals from this time. Based on the evidence in the tombs, literature, and courtyard murals, we can deduce the placement of the kitchen in the east side of the courtyard corresponds to a conventional spatial pattern. Therefore, the positioning of the kitchen in Tomb No. 1 in the east room means that the actual kitchens of the era which the reliefs represent were located to the east of the courtyard.

4. The Layout of the Kitchen in Tomb No. 1

The images of the kitchen in the Tomb No.1 are not single two-dimensional paintings, but spatial images formed by the solid walls of the tomb structure. There is a logical correspondence between the space in the images and the actual kitchen courtyard space. In the Han Dynasty, craftsmen arranged the scenes of the four directions of the kitchen courtyard on the four walls of the side room and the walls of the corridor according to the corresponding space, combining the images and the architecture to form a three-dimensional spatial framework, thus presenting the kitchen scene and layout in reality.

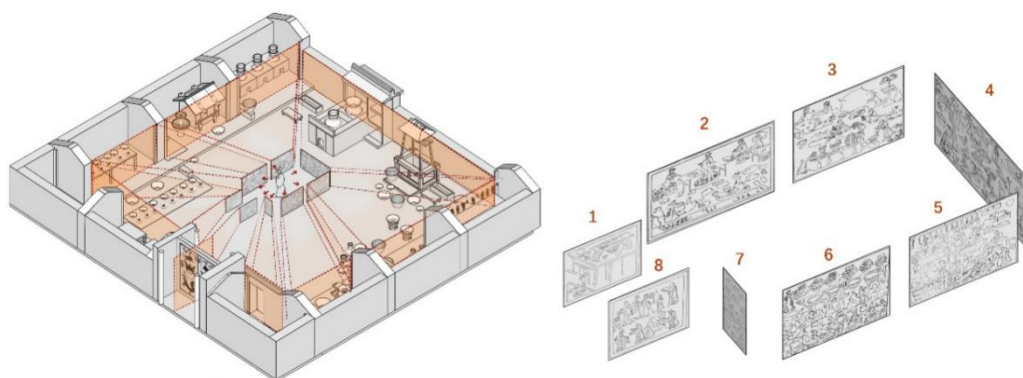


Fig.4-1 Layout of the Kitchen in Tomb No. 1 in Dahuting Village

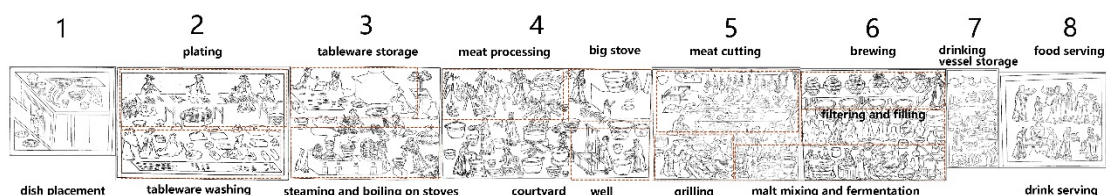


Fig.4-2 Stretch-out View of the Reliefs of the Kitchen in Tomb No. 1 Data from Han Dynasty Tombs At Dahuting Village in Mixian County, Henan Provincial Institute Of Cultural Relics

Relief no. 4 on the east wall of the east side room across from the entrance shows that the well, log fire, big stoves and meat racks are in a large, open-air space. Therefore, we can deduce that relief No. 4 depicts the scene of the kitchen courtyard as it would have appeared when entering the actual kitchen courtyard.

Relief no. 5 can be divided into three parts. The upper part is the rack for hanging meat, and the lower part depicts women cutting meat on the chopping board. Thus, we can see that this is the room for meat cutting and processing. On the lower part of the relief, the women are grilling, which relates to the scene of cutting meat in the upper part of the picture. From these parts we can deduce that this is the outdoor grilling area adjacent to the meat processing room. The scene of steaming and boiling on the lower part of the relief may be related to the scene of fermentation and alcohol making in relief no. 5. This scene is perhaps depicting grain steamed in the stove before brewing. The scene of steaming and boiling is in the same horizontal direction as the scene of grilling, and both processes require log fire, which indicates that the steaming, boiling and grilling areas are all in the same area in the courtyard, close to the indoor space.

Relief no. 6 can be divided into three parts: the top part depicts six large vats for fermentation on the long table; the middle part is the scene of brew filtering and filling; and, the bottom part depicts the scene of malt mixing and alcohol pressing. From the above evidence, it is obvious that this is a brewing room. From the brewery model unearthed from an Eastern Han tomb in Qilihe Village in

Luoyang, it can be seen that the large vats and large tables for fermentation are indoors, while the stove and pots for malt mixing, filling and filtering are placed outdoors. Based on the above archaeological evidence we can deduce that fermentation needs a large space and occupies a relatively independent room,^[3] while the operations of malt mixing, filling and filtering may be done in the courtyard or other outdoor space.

Relief no. 7 is located at the turning point of the west wall near the exit of the side room. In the relief, the table is covered by containers for alcohol to be used for banquets. We can see that this is the room for alcohol storage, located in the west side near the exit of the kitchen yard.

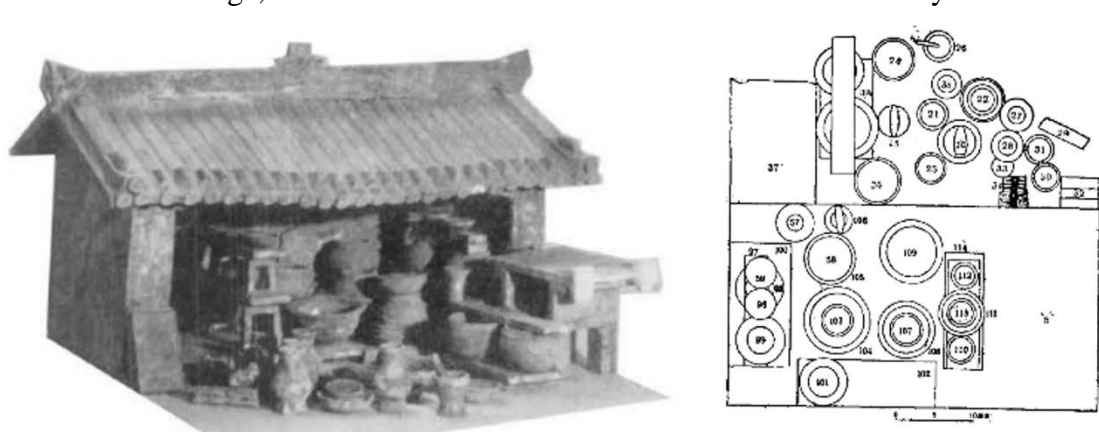


Fig.4-3 Brewery Model from Eastern Han Tomb in Qilihe Village, Jianxi District, Luoyang Data from Excavation of Han Tombs in Qilihe Village, Jianxi District, Luoyang,

Luoyang Museum

At the top of relief no. 3 is a cabinet with a hipped roof shape at its top. On the west side of the cabinet, two women are arranging the tableware for a banquet. On the east side of the cabinet is a double-layer shelf, on which are placed drinking vessels for the banquet. On the west side, a woman is cleaning the cups just taken from the plate. From the above clues, it can be deduced that this room is used for tableware storage.

On the west side of the north wall is relief no. 2. At the top of the relief is a long table, behind which are four women arranging the dishes. All depicted face the exit of the west side of the side room corridor. On the west side of the table is a set of food trays that has been piled up and is ready to be served.

In relief no. 4, there is a long mat at the bottom, behind which all four women face the direction of the kitchenware storage room in the east, opposite to the direction which the people face at top. Such images, typical of the Han Dynasty, indicate the direction of the space by showing the movement orientation of characters. Based on that fact, we can deduce that the bottom part of the picture depicts the storage process in the storage room. The two women on the left appear to be stirring and cleaning dishes in the bucket, while the woman in the middle is washing the drinking vessels on a large basin-like object. Her action is the same as that of the woman in the storage room, and the utensils in her hands are the same, but are oriented differently. The woman on the right is sorting the drinking vessels next to the tableware storage room on the east side. The whole picture depicts the women cleaning and putting the used tableware into the storage room. Therefore, we can infer that this is a room for tableware cleaning and arranging.

Relief no. 1 is to the north of the corridor of the side room in the east. In this relief, there is a board on which tableware has been placed. A woman is taking the dishes on the tray out from the kitchen. Thus, we can see that this is the serving room, where the dishes are ready to be served.

According to the above analysis, we can reproduce the layout of the kitchen courtyard in Tomb

No. 1. The courtyard has houses on three sides. The most important facilities in the courtyard are the well and the big stove near the east side. The processes of steaming, boiling, butchering, cleaning, and cutting are carried out around the well and the big stove. Meat cooking is mainly done in the courtyard and room on the east side of the kitchen. As the first few steps of food processing, the rough processing and fine processing space is relatively far away from the entrance, which prevents the smoke and dirty water from affecting other streamlines in the kitchen. The west side is close to the entrance, so the west side of the courtyard is the space mainly for food preparing, tableware storage and serving dishes. This is the final step of cooking, which is convenient for transportation and avoids streamline crossing. Brewing is carried out in the house on the south side of the courtyard. Due to the large volume and weight of the vats, the streamline for brewing is short, without spanning the whole courtyard. Because of the need for water, the space for fermentation and brewing is close to the well. Brew storage and filling space is close to the entrance to facilitate transportation. The serving space is located at the north side of the courtyard close to the entrance because it is the final step of food processing. In order to discharge the smoke and start flames, some operations are done in the open-air space, such as grilling, steaming, and tableware cleaning, whereas the space for food storage, tableware storage and brewing occupies a large part of the indoor area.

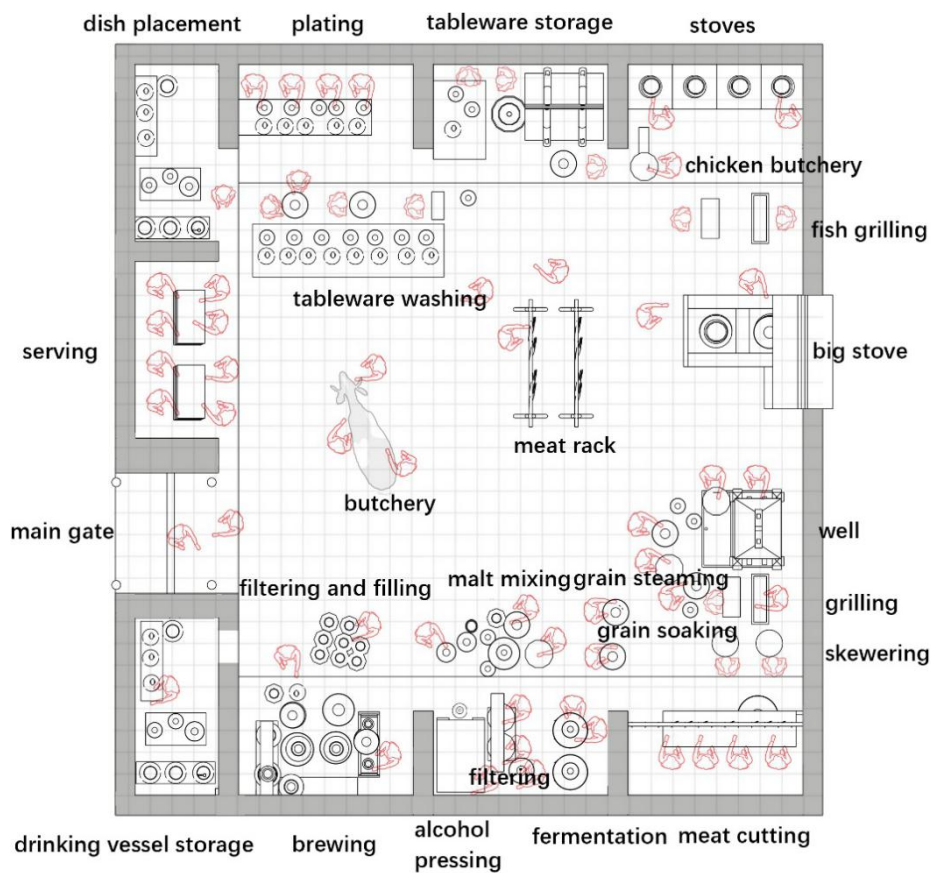


Fig.4-4 Plan of the Kitchen Layout in Tomb No. 1

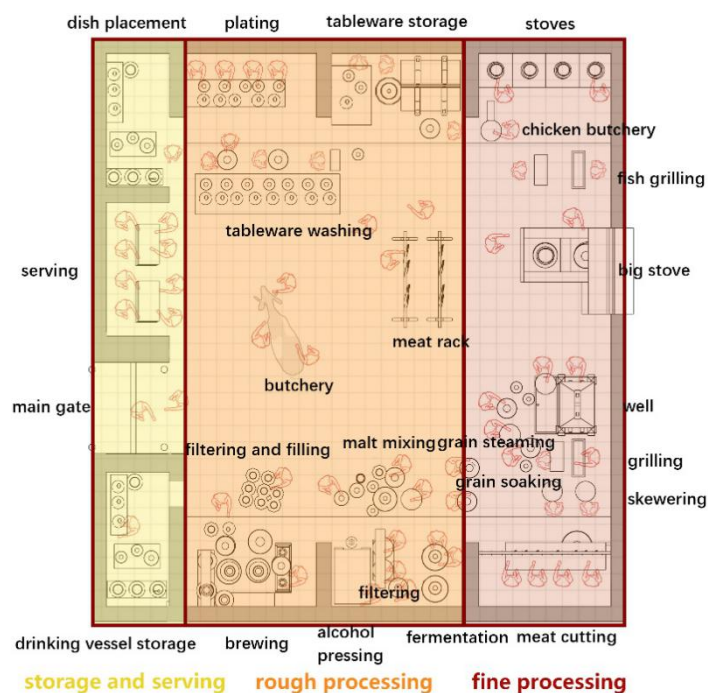


Fig.4-5 Plan of the Kitchen Function Areas of Tomb No. 1 in Dahuting Village

5. The Architectural Scale and Structure of the Kitchen in the Han Dynasty

There is no specific image of the kitchen in Tomb No. 1, so we can only infer the scale and the structure of it based on other tombs, pottery building models and residential ruins from the Han Dynasty.

In the Eastern Han Dynasty-era Tomb of King Chu at Beidongshan, the rooms from no. 6 to no. 11 symbolize the kitchen space, the scale of which is close to that of real residences from the Han Dynasty. The side rooms symbolizing the kitchen are about 2.3 meters in length and 3 to 6 meters in width, with the roof ridge being 2.9 meters high and the wall being 2.1 meters high.^[4] From the actual ruins in the Han Dynasty, the length of common residences is usually no more than 4 meters, the length of the side rooms is about 2.6 meters, and the width of residences ranges from 3 to 8 meters. Through analogy, we can roughly infer that the width of kitchens from the Han Dynasty is about 5 meters, the interior length is about 2.6 meters, the roof ridge is about 3 meters high, and the height from the floor to the eaves is about 2.1 meters. The seven rooms symbolizing the courtyard in the Tomb of King Chu are 11 meters in width, with the capability to accommodate three rooms side-by-side with different functions. In Tomb No. 1, there are two or three spaces with different functions on one side of the courtyard, hence the width of the courtyard should be about 11 meters as well.

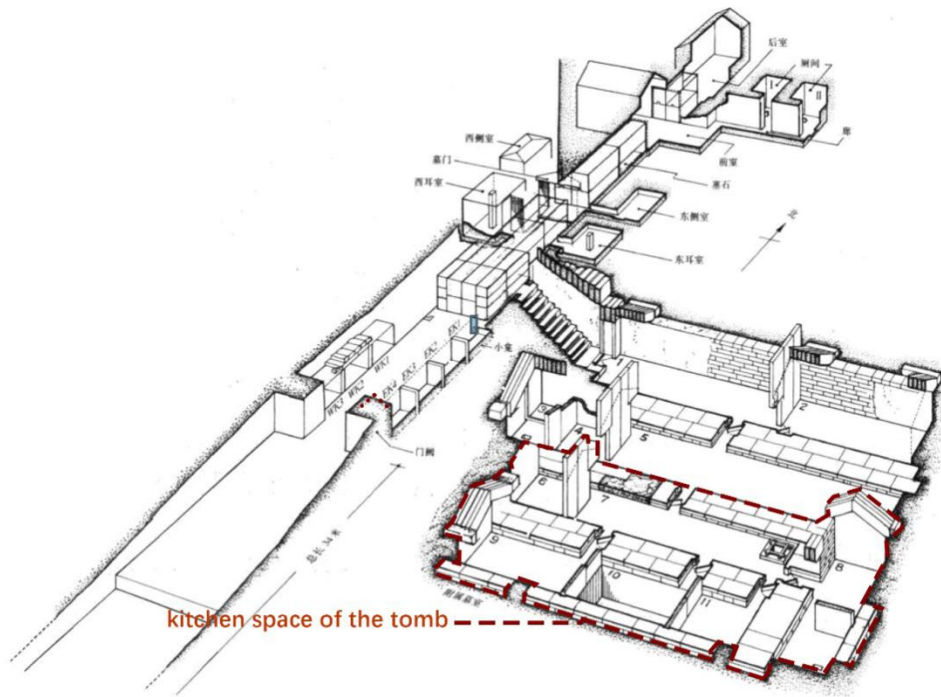


Fig.5-1 Perspective of the Kitchen in the Tomb of King Chu in Beidongshan

Data from *The Tomb of King Chu in the Eastern Han Dynasty in Beidongshan, Xuzhou*, Xuzhou Museum, Department of History, Nanjing University

In residential ruins from the Han Dynasty, houses with such subsidiary functions may be directly supported by the walls. For example, there is neither trace of pillars nor space for their installation inside the house at the Sanyangzhuang site in Neihuang County, and the wall thickness is about 0.45 meters. The house structure from the Han Dynasty is mainly a combination of rammed earth and wooden frames. In the framing process, the square columns are erected vertically on the rammed earth wall along the widthwise direction, and the inclined beams are horizontally placed on the square columns. Then, the purlins are placed on the inclined beams, and on the purlins are the rafters on which tile is laid. The beam load is transferred to the wall with the help of the square columns.^[5]

From the analysis of the spatial pattern and function areas of the kitchen in Tomb No.1 in Dahuting Village, combined with the speculated scale and structure of the kitchen, the plan and the construction of medium-sized kitchens in the Han Dynasty can be reproduced.

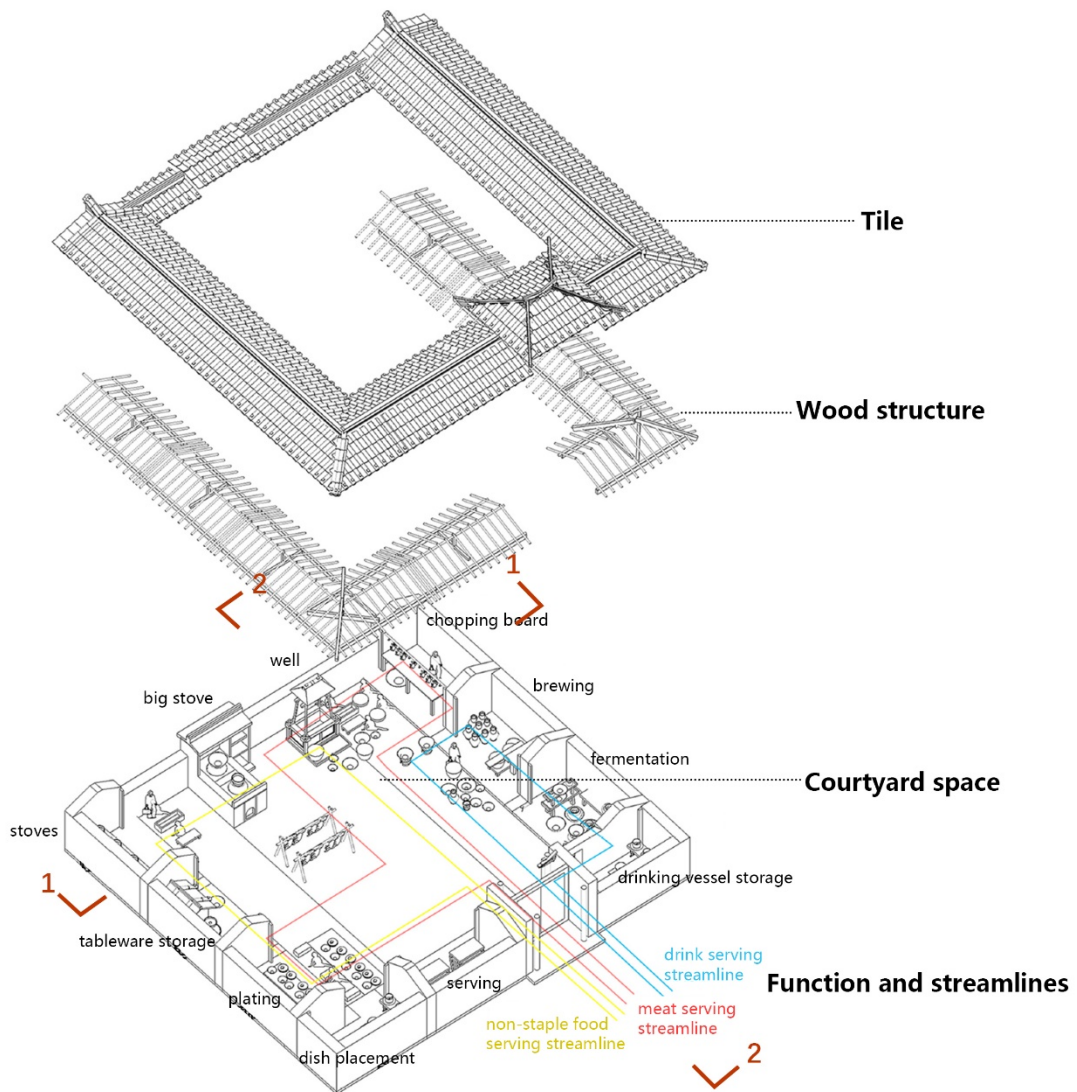


Fig.5-2 Axonometric Drawing of the Kitchen Courtyard in Tomb No. 1

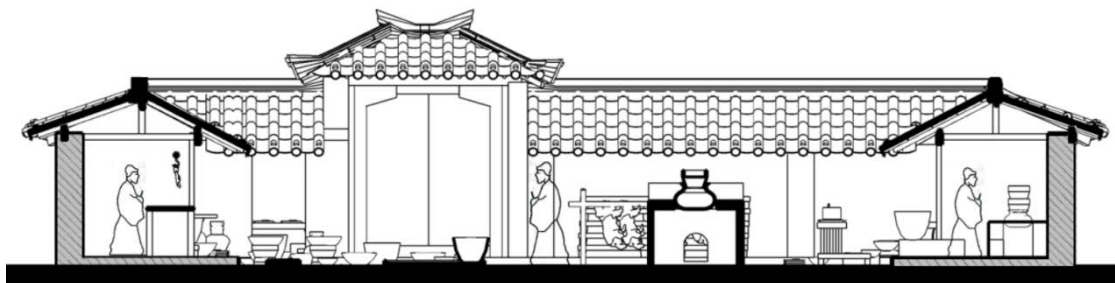


Fig.5-3 Cross-Section 1-1 of the Kitchen Courtyard in Tomb No. 1

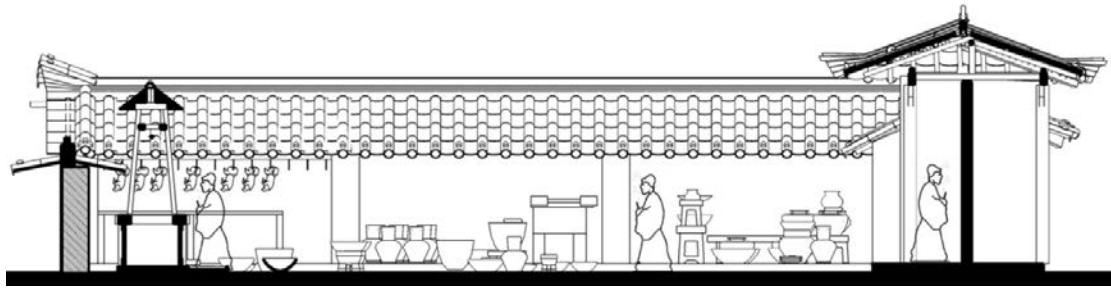


Fig.5-4 Cross-Section 2-2 of the Kitchen Courtyard in Tomb No. 1

6. Conclusion

Through the research on the layout and streamlines of the kitchen in the tomb in Dahuting Village, we find that the cooking space and layout in China were fully developed as early as the Han Dynasty 2000 years ago, and kitchens were well equipped with space for meat processing, brewing, serving and storage. The form of the kitchen in the tomb in Dahuting Village is that of a courtyard. The well and large stove are close to the innermost part of the courtyard. This space is for simple processing, such as undertaking the function of meat cutting, grilling, and cooking. In the middle of the courtyard is the space for fine processing such as brewing. Near the exit is the serving and storage space. The streamlines in the kitchen from the Han Dynasty are rather like that of the kitchen space in modern Chinese restaurants, which proves that Chinese cooking culture now is consistent with the historical tradition. Through the interpretation and research on the kitchen space in the Han Dynasty reliefs in the tomb in Dahuting Village, contemporary cultural heritage of the cooking space can be protected and disseminated.

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- [6] "Contextual rebuild" is regarded by Wu Hong as an important method in the study of art history. "Rebuild" means to rebuild the historical context of the study object, including its original physical form (screen, vertical scroll, etc.), creating process, space where it is located (tombs, grottoes, etc.), as well as the background of the material, society, politics and religion during the certain period.
- [7] "Hipped roof" refers to a traditional roof style in Chinese architecture with four corners lined by five ridges.