



Earth construction process in Mui Tsz Lam village

## 1.1 Earth construction

Earth structure is a structure made largely from soil, it has been used widely since prehistoric times. Soil can be combined with other materials to produce different strength and appearance. Rammed earth, cob, adobe bricks, CEB and fired clay bricks are common earth construction materials.



Existing condition of Mui Tsz Lam village



Rammed earth wall of the Old House

## **1.2 Mui Tsz Lam village**

Mui Tsz Lam, as one of the seven villages in the Hung Chun Yeuk Alliance, it has 360 years of history, includes different kind of dwelling units and building methods. Rammed earth wall is one of the most unique features found in Mui Tsz Lam, for example in Old House, most of the exterior wall and interior wall are built with rammed earth, alongside bricks. There are many combinations of ingredients in rammed earth wall such as sticky rice, lime, grain, clay, brown sugar, and straw etc.





Rammed Earth 夯土



Poured Earth 生土澆築



Earth Mortar 泥漿砌石



Earth Adobe 土坯磚

## 2.1 Earth construction in Mui Tsz Lam

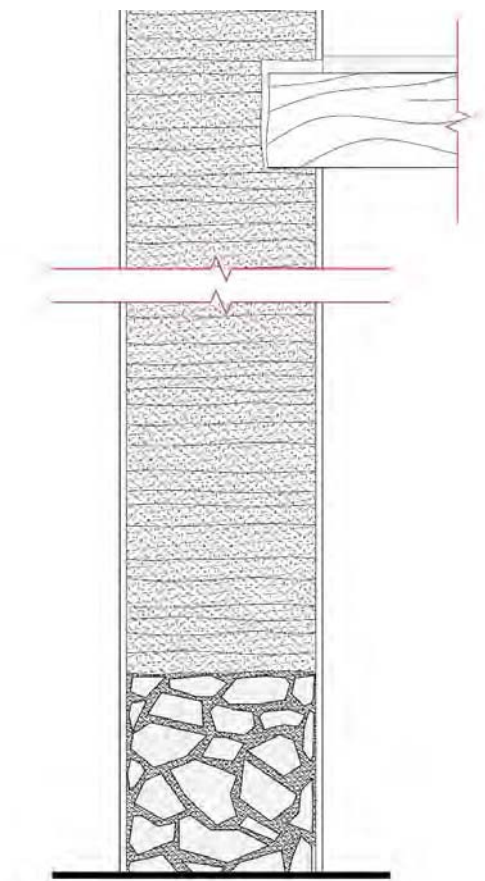
Earth construction traces are found everywhere in Mui Tsz Lam including rammed earth, adobe bricks, poured earth, earth plaster and earth mortar etc.



External wall of the old house

### **2.1.1 Rammed Earth**

Rammed earth can be found in the walls of Old House. They were built on the compacted earth surface with 300mm high stone base and white plastering as finish. As high level, holes were present to hold beams supporting the loft floor plate.



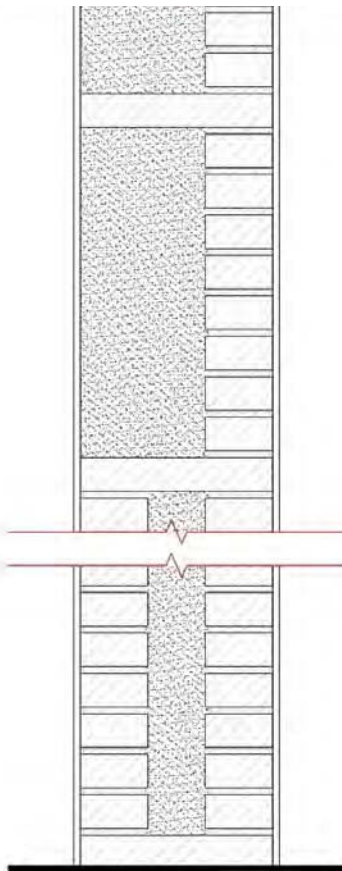




Interior wall of the old house

### 2.1.2 Poured Earth

Poured earth makes use of earth as filling of walls. This method can be found in brick walls along the axis along Old House's courtyard. The wall was constructed with bricks forming the profile to desired thickness, and the void is filled with earth. The finish is either plastering or mortar to imitate granite texture. At certain level, the bricks were laid in perpendicular orientation to allow better incorporation between bricks and earth. The advantages of this method include saving bricks, allowing bricks to achieve different thickness, and maintaining good heat isolation.



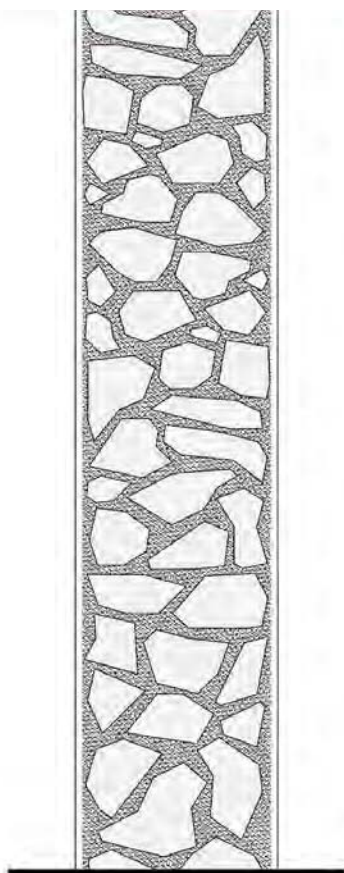




External wall of the three-gate house

### **2.1.3 Earth Motar**

Earth mortar method makes use of stones as the aggregates of the wall, and earth as adhesive to hold them together. The finish is usually plastering. This method can be seen in the left gate and middle gate of the Three-Gate House.



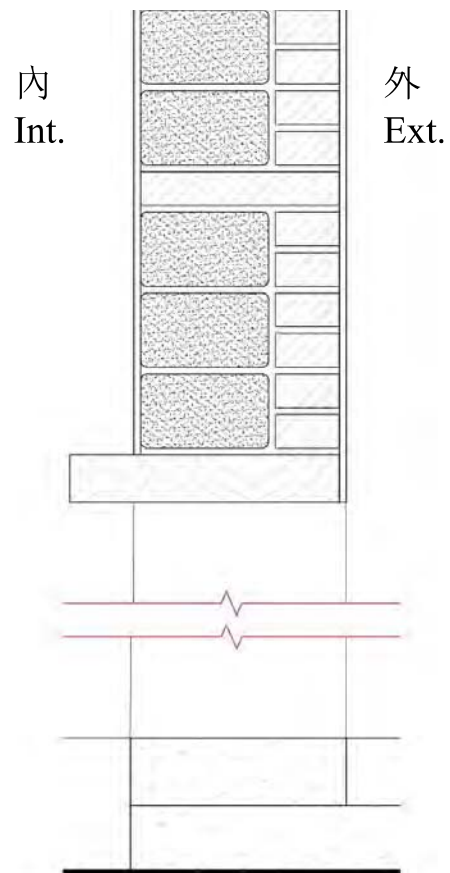


External wall of the three-gate house

#### **2.1.4 Earth Adobe / Mud Bricks**

Earth abode brick can be found in the right gate of the Three-Gate House as well as the party wall of this house and the northern neighbor. They were normally laid on stones and bricks.







Rammed earth + Granite + plaster

### **2.1.5 Combination Of Earth Materials**

Typically in Mui Tsz Lam, different construction methods and materials are merged in one façade or one wall. For example, on the surface of rammed earth wall and mud bricks, plaster was applied on it; Blue bricks, rammed earth wall and cement screeding have different purpose in one wall. Blue bricks as structural support purposes, earth wall as main body and cement screeding as finish on the surface.



Earth mortar + Plaster



Earth Adobe + Plaster





Rammed earth + cement



Rammed earth + Granite + earth plaster + cement screeding