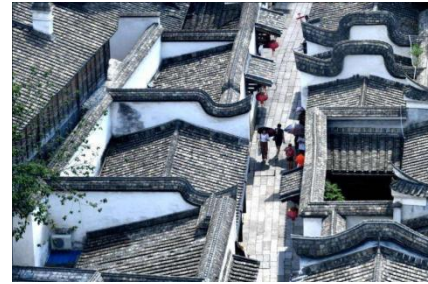


Table S1. The list of fire-sealing walls investigated in this study.

Number	Type (or local name)	Example Photo	Description	location
1-2	Fire Sealing wall		Fire Sealing wall in southern Anhui. Most of its gables are dropping (the shape is a stepped undulation from high to low)[113], the wall is higher than the roof, and the exterior of the building is mostly coated with white lime and paint.	Hongcun and Xidi ①, and Chengkan ②, Yi County, Huangshan City, Anhui Province
3	Fire Sealing wall		The Fire Sealing wall of Temple in Matsu and Kinmen islands is deeply influenced by the theory of the five elements, and the construction of Fire Sealing wall is carried out according to the characteristics of the five elements of metal, wood, water, fire, and earth ¹ .	Matsu and Kinmen, Taiwan
4	Saddle Wall ²		The saddle walls in Sanfang Qixiang of Fuzhou are generally symmetrical on both sides. The walls follow the undulations of the wooden roof trusses to form a streamlined shape, with their upturned corners extending beyond the residence. Resembling the shape of a saddle, they are thus called "saddle walls".	Gulou District, Fuzhou City, Fujian Province

¹ Cited from: <https://brezel.pixnet.net/blog/post/23828726>

² The saddle wall is a type of *Fire Sealing wall* (fire watchtower/wall parapet), so named because its shape resembles that of a saddle.

Number	Type (or local name)	Example Photo	Description	location
5	Fire Sealing wall		Pingshan Academy incorporates architectural elements related to Fire Sealing wall (fire watchtowers/wall parapets). Its walls adopt the form of "brick-earth Fire Sealing wall," constructed with a mixture of bricks and stones. This design not only adapts to the rainy and humid climate of northern Fujian but also serves the fire-prevention function of blocking the spread of fire, making it a typical example of the combination of fire separation and regional craftsmanship in traditional southern Chinese architecture.	Pingshan Academy on the south side of Xiaoyuan Natural Village, Changcheng Village, Jukou Town, Jianyang District, Nanping City, Fujian Province
6	Fire Sealing wall		The Chen's Grand House in Shaxian, commonly known as the "Filial Piety Archway Residence," is the best-preserved and largest-scale ancient Qing dynasty dwelling currently existing in the area. Constructed in the ninth year of the Daoguang reign of the Qing dynasty, the structure is entirely enclosed by fire-sealing walls, forming three distinct courtyard complexes and resulting in a clear spatial layout. In terms of form, the gable walls exhibit two styles: one is stepped, and the other is curved.	Chafengxia Village, Qiujiang Sub-district, Shaxian District, Sanming City, Fujian Province
7	Guanyin Dou ³		An iconic feature of the local architecture is the wavy "Guanyin Dou (Guanyin's Hood)". This design is a typical representative of the Ming and Qing dynasty residences in Huotong Ancient Town, and aligns with the local design concept of "shaping Fire Sealing wall into the curves of mountains, integrating the landscape into architecture".	Huotong Ancient Town, Jiaocheng District, Ningde City, Fujian Province

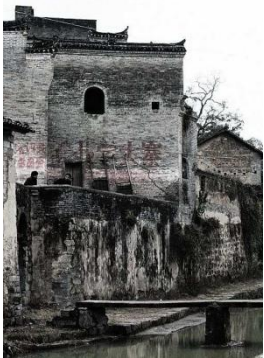
³ Guanyin Dou is a style of Fire Sealing wall, so named because its shape resembles the headscarf worn by Guanyin, a figure in Buddhism.

Number	Type (or local name)	Example Photo	Description	location
8-9	Wok-ear houses ⁴		The wok-ear wall, also known as the Aoyu (mythical giant fish) wall, symbolizes that the Aoyu can bring rain and swallow fire, protecting people's residences and ensuring their safety-[112]. The Wok-ear houses (a distinctive type of traditional Chinese parapet) feature a shape that bulges rounded in the middle and slopes downward on both sides, closely resembling the official hats of ancient China. Their specific specifications are as follows: the front and rear ends stand more than 30 centimeters above the eave line, and the top part rises 1 meter above it. Moreover, during the construction of wok-ear walls, adjustments are made based on the actual number of residents in the household. The wall surfaces are plastered with white lime, and the tops of the walls are covered with gray tiles forming a double-pitched eave. In China's Five Elements theory, the color black represents water—this further confirms the wok-ear walls' fire-prevention function.	Lianping Lixincun, Guangdong; Longshan Town, Fogang County, Qingyuan City, Guangdong Province
10	Fire Sealing wall		Fire Sealing wall in Chaoxi Village, Longmen Town, has a unique shape that incorporates the different cultural characteristics of the locals.	Leizhou Peninsula is located in Zhanjiang City, Guangdong Province ⁵
11	Guanyin Dou		The "Guanyin Dou" (Guanyin's Hood) at Huang Yanpei's Former Residence is a typical style of Fire Sealing wall (fire watchtowers/wall parapets) in the Jiangsu-Zhejiang region. It gets its name because its shape resembles the hood worn by Guanyin Bodhisattva in Buddhism.	Pudong New Area, Shanghai, Zhejiang Province

⁴ The wok-ear wall is a type of Fire Sealing wall (fire watchtower/wall parapet), so named because its shape resembles the two ears of a wok.

⁵ Leizhou City's ancient architectural culture "three unique": roof ridge, sealing volcanic wall and zhaobi_ancient building culture_ancient building data_99 ancient building network

Number	Type (or local name)	Example Photo	Description	location
12	Fire Sealing wall		The Yingyun Ancient Residential Complex in Lishui, built during the Five Dynasties period (1644-1911), includes several buildings from the Yuan Dynasty, boasting a history of over a thousand years. Thirty-two fire Sealing walls can be seen along the Daqiao Road outside the ancient residences.	Heyang Village, Xinjian Town, Jinyun County, Lishui City, Zhejiang Province
13	Fire Sealing wall		In the Dashuijing Ancient Architectural Complex in Lichuan, Hubei Province, the Fire Sealing wall of the Li Clan Ancestral Hall are built with bricks and stones, featuring three tiers of crenellations. The wall surfaces are inlaid with colored porcelain carvings of peonies, magpies, fish, and other motifs. With exquisite craftsmanship, these Fire Sealing wall serve both fire-prevention and decorative purposes, and are typical representatives of Qing Dynasty architecture in the Bashu region that integrate Han Chinese wooden frame structures, Western architectural elements, and Tujia ethnic group characteristics.	Li Clan Ancestral Hall of Dashuijing Ancient Building Complex in Lichuan City, Hubei Province
14	Fire Sealing wall		The Fire Sealing wall (fire watchtowers/wall parapets) of Leijia Courtyard in Chibi, Hubei Province follow the Huizhou-style stepped Fire Sealing wall design. Integrating the regional characteristics of southern Hubei, they are constructed with gray bricks and white lime, serving both fire-prevention and decorative functions.	Leijia Compound, Yangloudong Ancient Town, Chibi City, Xianning, Hubei

Number	Type (or local name)	Example Photo	Description	location
15	Fire Sealing wall		The ancient residences in Langzi Ancient Village consist of more than 60 houses, all built with gray bricks and gray tiles, and equipped with tall Fire Sealing wall. Inside the village, there is a watchtower; climbing up it allows a bird's-eye view of the entire village. This watchtower is the only remaining ancient military structure in the county.	Gaotian Town, Yangshuo County, Guangxi
16	Saddle Wall		The Fire Sealing wall in Sanjie Liangxiang (Three Streets and Two Lanes) follow the Huizhou-style stepped design. Constructed with gray bricks and dark tiles, the walls cascade down in three stepped tiers along the wooden frame, with the upturned corners at the top rising gently and lightly—blending fire-prevention functionality with rhythmic aesthetic appeal. The color palette of white walls and gray bricks forms a unified historical style with the surrounding qilou (arcade houses) and the "gray-brick small-tile Fire Sealing wall" of the Ming and Qing dynasty ancient residences. At the same time, it integrates the qilou elements of Lingnan architecture, making it a concentrated embodiment of the architectural culture of "Yongzhou Ancient City" in Nanning from the Ming and Qing dynasties to the Republic of China period.	It is located in the ancient city of Yongzhou, ⁶ Nanning City, Guangxi
17	Horse-head wall		Siyuan Folk Custom Museum of Quanshou County is located in Baititou Village, Zhutang Village Committee, Jiantang Town, Quanshou County.	Dengjiabu Village, Quanzhou County, Guilin City, Guangxi ⁷

⁶ Yongzhou Ancient City_Baidu Encyclopedia

⁷ <https://share.google/gTFcouFZM6Ce8mgdG>

Number	Type (or local name)	Example Photo	Description	location
18	Fire Sealing wall		The tail parts of the ridges of the horse-head walls in the ancient town of Fenghuang are mostly decorated in the shape of a phoenix. Compared with the style of traditional Gan-style horse-head walls, the horse-head walls in Fenghuang County Town are designed with their ridge tails slightly upturned into a shape resembling the "phoenix ridge wings". This design adds a sense of lightness and dynamism to the originally solid architectural style, as well as the romance of Xiangchu culture [112].	Hunan Xiangxi Tujia and Miao Autonomous Region, Tuojiang Town, Fenghuang County
19	Horse-head walls		The Horse-head walls of the Huguang Guild Hall in Chongqing are mostly yellow Fire Sealing wall, a style common during the Ming and Qing dynasties. In terms of design, they adopt a linear composition and cascade down in a stepped manner, with forms including trapezoidal, curved (known as "bow-pulling walls"), gable-shaped, and straight-line shapes. Among them, the Fire Sealing wall of Qi'an Guild Hall are curved "bow-pulling walls" with an arc shape. Built along the contour of the mountain, the Huguang Guild Hall in Chongqing features horse-head walls that integrate closely with the terrain. The continuous enclosing walls give the entire guild hall an L-shape, extending straight down the hillside and creating a stunning visual impact.	Yuzhong District, Chongqing Municipality
20	Fire Sealing wall		The Jiangxi Guild Hall in Luodai Ancient Town, also known as Wanshou Palace, is a famous local scenic spot.	Longquanyi District, Chengdu, Sichuan
21	Fire Sealing wall		The Henan Provincial Seminary, located in the eastern suburbs of Kaifeng City, is a modern building of Chinese-Western integrated style constructed under the auspices of Italian Catholic missionaries[114].	Xiangfu District, Henan Province (formerly Kaifeng City)

Number	Type (or local name)	Example Photo	Description	location
22	Fire Sealing wall		The Fire Sealing wall (fire watchtowers/wall parapets) of the ancient residential buildings by the river feature "horse-head" shapes, mostly in the styles of "Jinyinshi" (golden seal form) and "Chaohushi" (official tablet form). Their lines tend to be neat and solid, with fewer intricate curves, exuding a more dignified and grander aura. Compared with those in Huizhou-style architecture, the number of tiers (of the Fire Sealing wall) is more flexible. Two-tier and three-tier structures are common, while large-scale residential buildings (such as ancestral halls and mansions of wealthy merchants) can have up to five or six tiers. The main body of the walls is mostly in the original color of gray bricks, which is relatively dark, presenting an ancient and calm appearance.	Jiangpan Village, Yanxi Town, Taihe County, Ji'an City, Jiangxi Province ⁸
23-35	Fire Sealing wall		Gan school buildings are mainly distributed in Jiangxi, Hunan, southeastern Hubei, and southwestern Anhui, and the architectural characteristics of Fire Sealing wall, green bricks and gray tiles, and rectangular plans, representing the villages of Le'an Liukeng Village, Dongxiang Shangchi Village, and Taihe Jiangban Village.	Liukeng, Le'an County, Jiangxi Province, Wuxi, Dongxiang District, Diaoyuan, Ji'an City, Taihe County title, Fengcheng Baima Village, Luotian in Anyi County, Jingtai Village, Shuinan Town, Egret in Gan County, Qianshan Hekou Town, Shangqing Town in Guixi City, Yiqian Town in Guangchang County, Tangyin in Yihuang County and other villages and towns
36	Fire Sealing wall		This ancestral house, called "Bangzhai Residence", was built in the 22nd year of Qing Daoguang (1842), and the architectural skeleton is deeply hidden in the Hui school law - rigorous axis, symmetrical layout, and towering Fire Sealing wall is its foundation; The smart and flying corners and decorative details full of southeastern Guizhou style inject the soul of unique national architecture into it.	Bangzhai Village, Dunzhai Town, Jinping County, Qiandongnan Prefecture, Guizhou Province ⁹

⁸ https://baike.baidu.com/item/%E6%B1%9F%E7%95%94%E6%9D%91/22622467?fromModule=search-result_lemma

⁹ <https://www.msn.com/zh-tw?bv=midlevel&bundles=staging>

Number	Type (or local name)	Example Photo	Description	location
37	Fire Sealing wall		The Fire Sealing wall in Defeng Town, Liping County, Guizhou Province are mainly concentrated on Qiaojie Street. These structures are adorned with upturned decorative corners; their eaves curl upward gracefully, featuring flexible and vivid lines. When paired with buildings like siheyuan (courtyard houses), they form a spectacular scene where the structures are densely arranged in an orderly yet staggered manner. Most Fire Sealing wall have white walls and gray tiles, embodying the architectural style of the Ming and Qing dynasties. With a simple and elegant color palette, they exude a sense of antiquity. The wall surfaces are painted with exquisite patterns covering a wide range of themes. In terms of architectural style, the Fire Sealing wall here are influenced by Huizhou-style architecture, while also integrating cultural elements of local ethnic minorities such as the Dong and Miao peoples.	Confucius Temple Dacheng Hall in Defeng Town, Liping County, Guizhou Province
38	Fire Sealing wall		Wenchang Palace (Yao'an County People's Government - Yao'an Guanglu Wenchang Palace): Besides the common stepped style, some of the Fire Sealing wall in Yao'an County also incorporate curved elements of Yi ethnic group architecture. In terms of design, they are not as neat and regular as the Fire Sealing wall in Huizhou-style architecture, but instead have a more flexible and livelier feel. Some Fire Sealing wall feature unique arcs or modified designs resembling the totem elements of the Yi ethnic group, adding a sense of artistry and regional characteristics.	Yao'an County, Yunnan Yi Autonomous Prefecture
39	Fire Sealing wall		The main hall of the building is three rooms wide and three rooms deep, with a brick and wood bucket structure, a hard mountain top, and the mountain surface rises above the roof, forming Fire Sealing wall.	Funing County, Yunnan Province

Number	Type (or local name)	Example Photo	Description	location
40	Fire Sealing wall		The Fire Sealing wall in Malong Loess Slope Village, Qujing has a peculiar shape, and the walls are made of clay	Qujing City, Yunnan