



Figure 4.1

# Core Transitional Housing

**Judith Carlene Thatcher-Martin**

The goal of core transitional housing is to respond to the immediate need for post-disaster housing while also responding to the long-term goals of preserving open space for agriculture and sustainable natural systems.

The earthquake that shook Taoping in 2008 inserted a rupture in the development trajectory of a new tourist village. The village, occupying the prime agricultural land in the village, consisted of a planned 98 homes, one for each household in the old village. In their suspended state, the homes are in varying degrees of completion. The settlement pattern is starkly contrasted to the old village in density and footprint. Also, the relationship of public space to private space is treated in a largely symbolic manner. Houses are distinct entities that do not relate to each other in a meaningful way and the insertion of a large public plaza provides public space that is disintegrated with daily activities.

In order to reach our stated goals of immediate housing provision and agricultural sustainability, a new residential community that challenges the development pattern of the suspended new town is proposed. This community provides the same number of units planned in the suspended tourist village, though it has an increased level of density. The new village uses lessons from traditional Qiang architecture in order to provide an environment that is more contextual with the old village and is ultimately more appealing to tourists. However, the new village can provide modern amenities and a greater level of household autonomy.

In order to provide speedy construction, the new town is developed using a core-housing plan, where one core unit will be provided to each family, with a corresponding lot line, so that their home can gradually grow as resources become available. Further, the core unit is designed for seismic loads and can become a refuge inside each house in the time of an earthquake.

The core units are constructed using reinforced concrete. The square 5 X 5 metre buildings have two walls that form an 'L' to provide a high level of lateral resistance in both directions. Traditional stone forms the infill.

The site is terraced and also provided with a series of infrastructure walls that provide each unit with water, electricity and sewage and grey water disposal. This system forms the spatial layout of the future town, providing a framework within which growth can occur. The infrastructure walls are constructed using gabion structures that make use of the rubble from the demolished buildings.

Over time the new village will become a mix of residential and tourist accommodations, providing residents with greater earning potential while still preserving food security in the case of possible economic or natural disasters.



Figure 4.2

Slope Analysis 0-10% Slope 10-50% Slope <50% Slope

The slope analysis (figure 4.2) provides a basic framework for where development can occur. Following this, the green map (figure 4.3) further narrows the decisions based on avoiding the primary land for agriculture and green space. This map shows the desire to reclaim the historic floodplain for food production.



Figure 4.3 Opportunities for Arable Land

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图 4.1

# 成长型核心住房

Judith Carlene Thatcher-Martin

成长型核心住房的建设的目标是为了满足大地震之后住宅的急需，并且应对保护农业和可持续发展的自然生态系统保留开放空间这一长远目标。

2008年的5.12大地震阻断了桃坪的新旅游村的发展。这个新村是在占用原有农田的基础上开发而来，由各代表老村的一户人家的98个家庭组成。在过去的开发过程中，有些住宅完工了，另一些还没有。而且，开发的模式和旧村相比在密度和基底形式上大不相同。新村的公共空间与私密空间的关系也被更多地赋予符号和象征意义。新村的建筑也是相互分离的个体，主要的公共广场并没有和人们的日常活动紧密的结合起来。

为了实现我们提供应急住宅和保护农业的最终目标，一个新的居住区的设计将在我的方案中展示出来。这个新的居住区将不同于以前的新村设计。她将提供同样数量的住宅给旅游新村，并且提高了建筑密度（节约了土地的使用）。新的设计从羌族传统建筑中吸取精华，以使新村与旧村相协调并且

更加吸引游客。比原有开发进步的地方是，新的方案将提供现代化的设施和更多的住户自治。

为了保证快速的建设，新村采用统一的核心住宅平面来进行开发。每一个家庭使用同一的核心单元与相对应的地块边线。这样的话，每一栋住宅都会随着获得更多的建筑材料而逐渐的生长扩大。更进一步的是，核心单元都采用良好的抗震设计，这在地震时能为每个家庭提供一个坚固的避难所。

核心单元（图4.1）采用预应力混凝土建成。单元的基底是5X5米。它有两道成“L”型的混凝土墙在两个方向上都具有抗震性。传统的石材用于内墙材料。

基地被平整为梯田状，并采用一系列的“基础设施墙”为挡土墙。在这些基础设施墙中装有给排水管、电线和废水处理系统。这个基础设施墙系统形成了未来新村的空間形式，并且提供了新村发展的一种模式。这种基础设施墙采用传统石筐结构，并就地使用原有被毁建筑的材料。

随着时间的流逝，新村将变成村民与游客混合居住的场所。她能提供给村民充足的经济收入，而且提供居民在经济和自然危害中的食物保障。方案中的坡度分析（如图4.2）指明新的开发能在何处进行。进一步的分析（如图4.3）缩小了开发的范围，保护了基本的果园和农田。图4.3展示了将历史上的洪泛区还原为农业用地的目标。

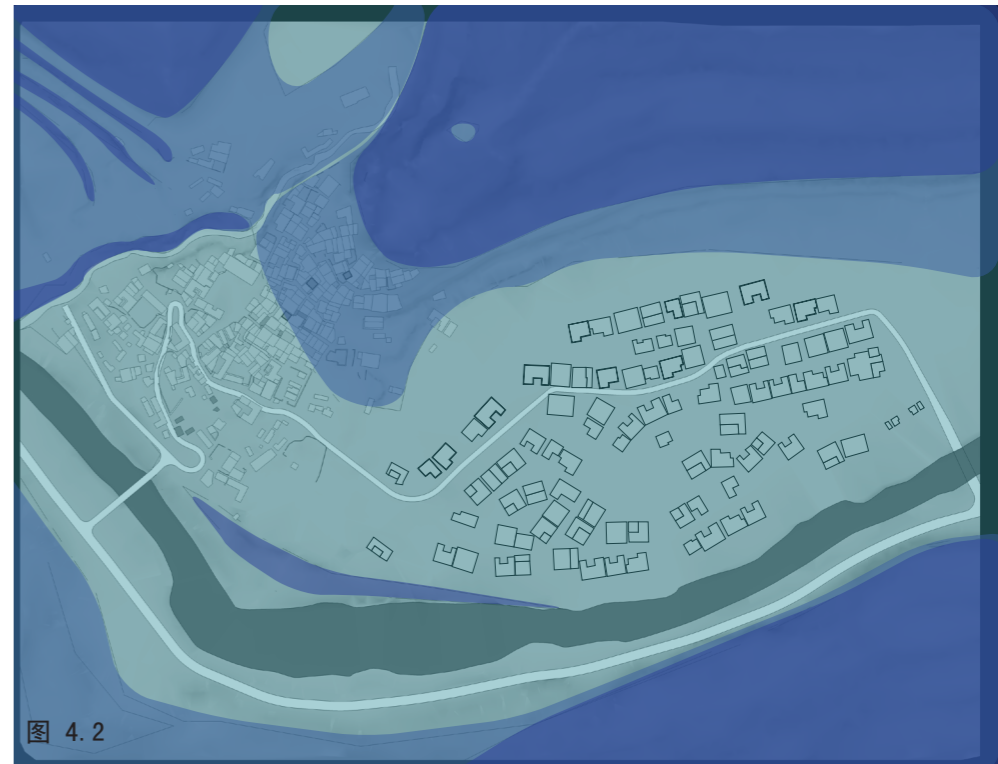


图 4.2

坡度分析 0-10% 坡度 10-50% 坡度 <50% 坡度

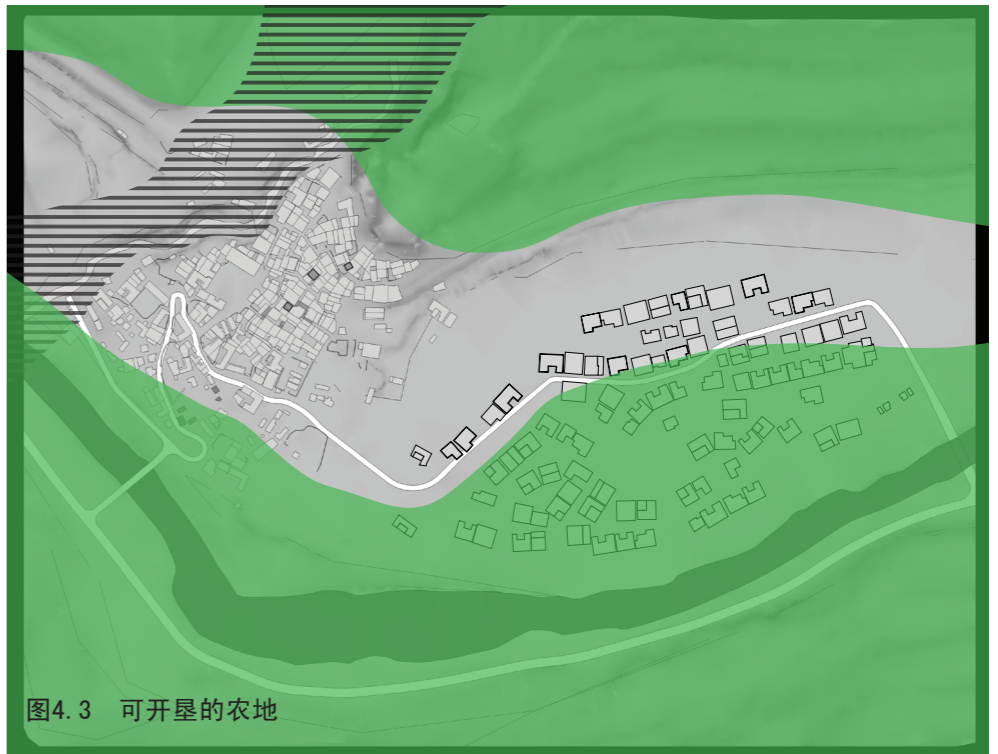


图4.3 可开垦的农地

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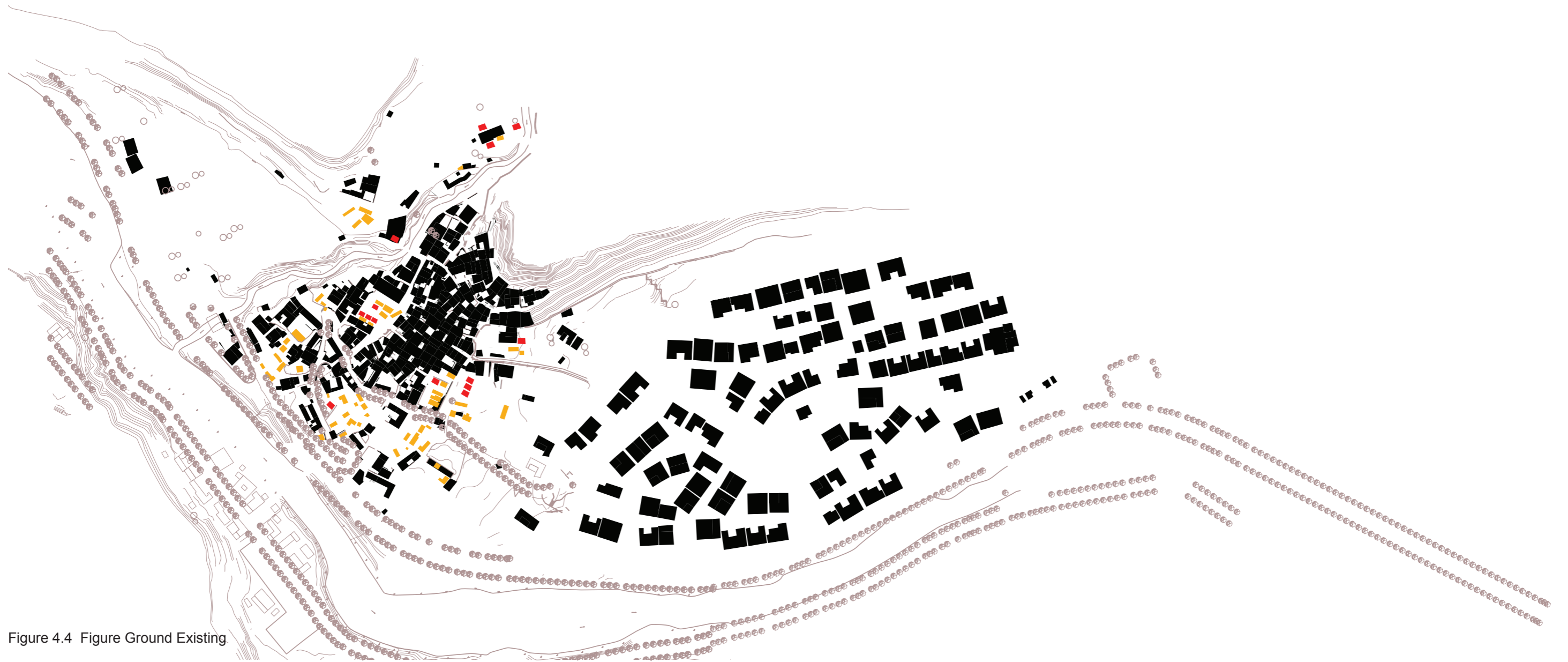


Figure 4.4 Figure Ground Existing

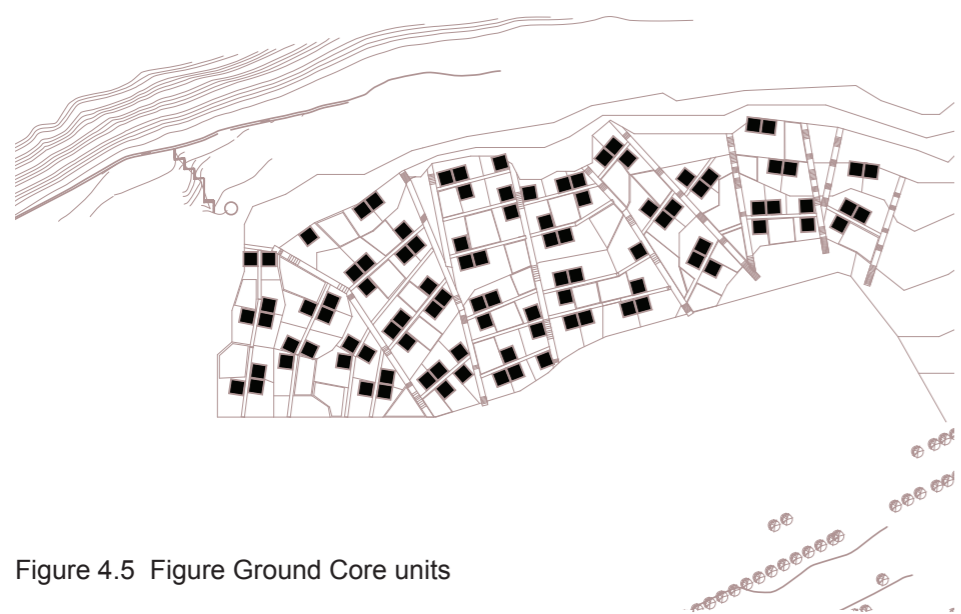


Figure 4.5 Figure Ground Core units

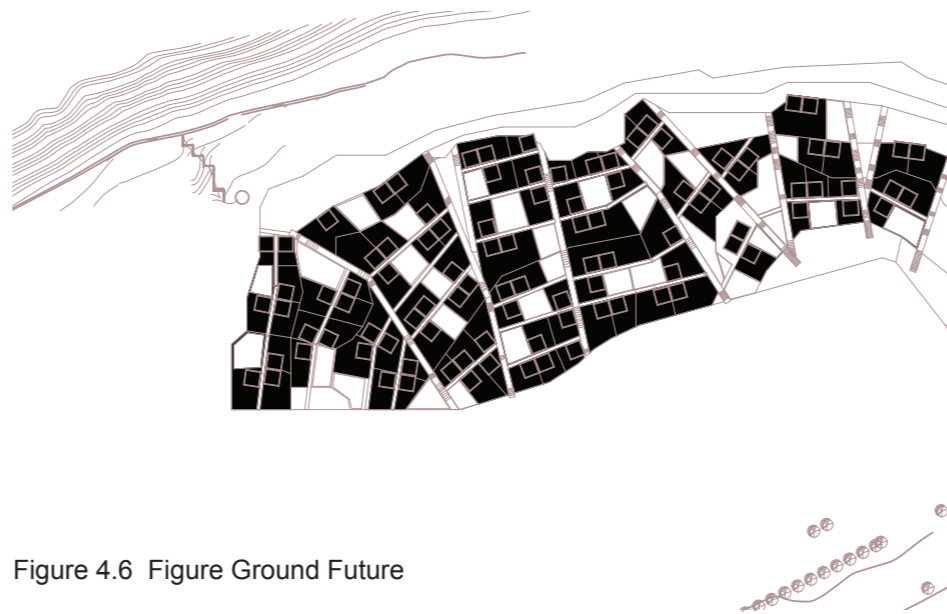


Figure 4.6 Figure Ground Future

The figure ground maps begin to tell a story about how density can change over time in the proposed village to more closely emulate the old village. The first figure (figure 4.4) shows the existing figure ground of Taoping. We can see here the dramatic difference between the figure and the ground relationship. The historic village functions as one mass with open spaces carved out of it whereas the suspended new town is a series of figures in an open field (ground). Figure 4.5 and figure 4.6 show a projected figure ground of the proposed new community at two points in time.

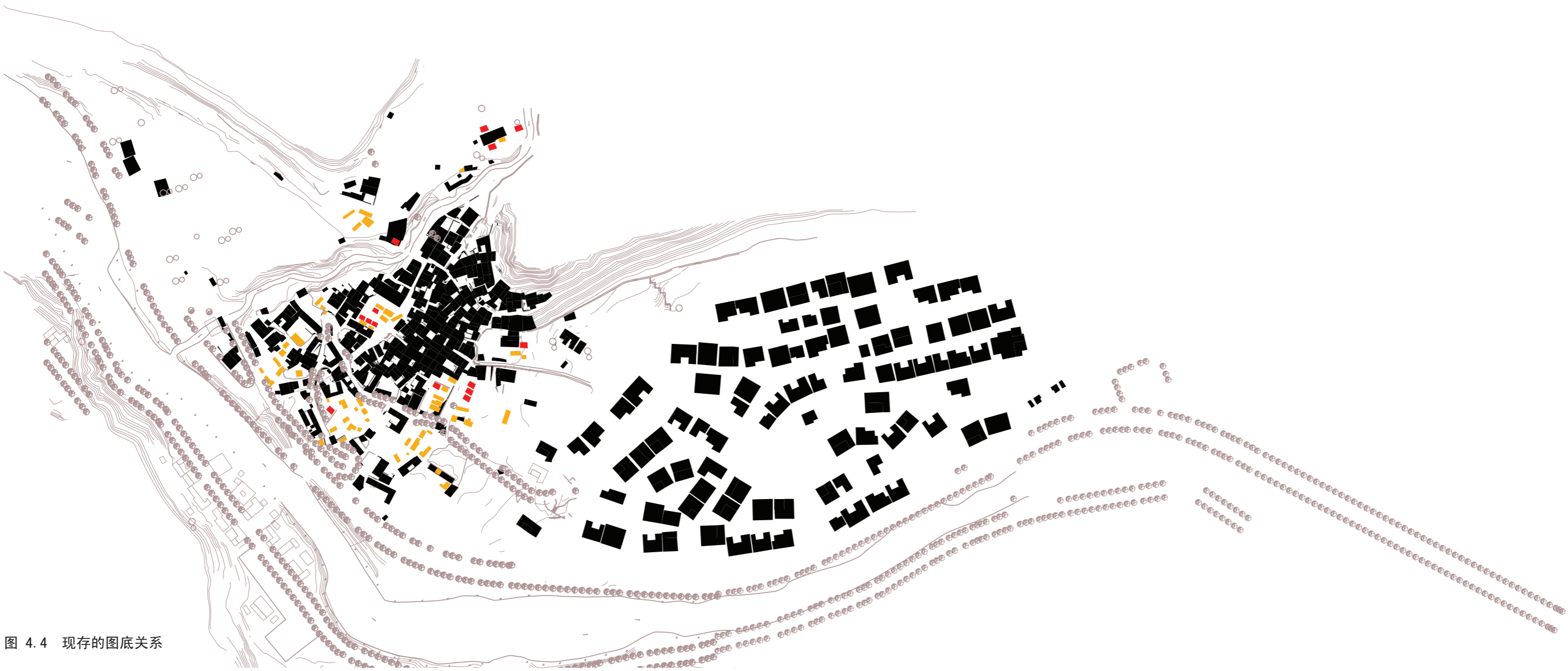


图 4.4 现存的图底关系

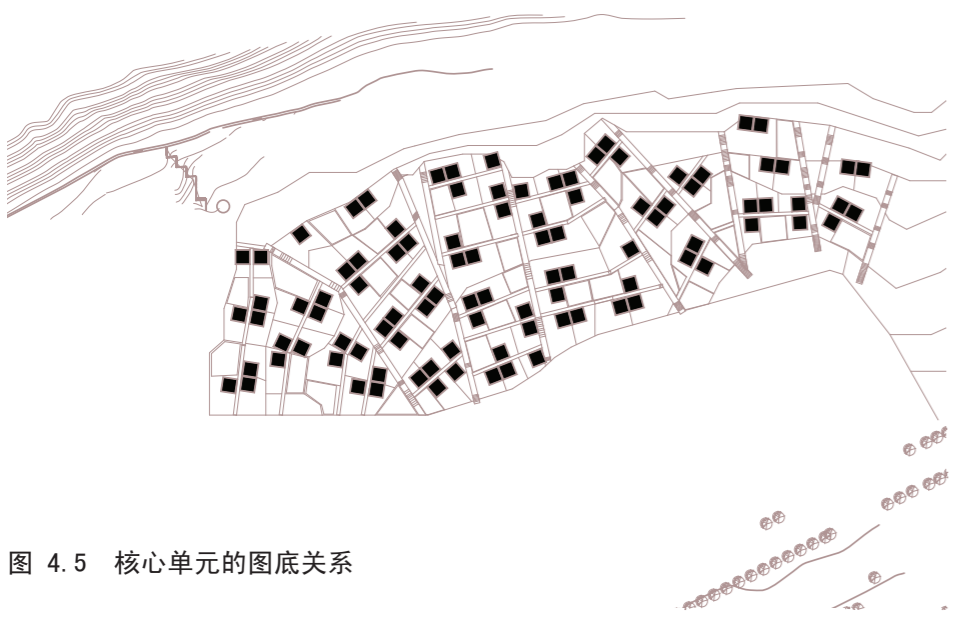


图 4.5 核心单元的图底关系

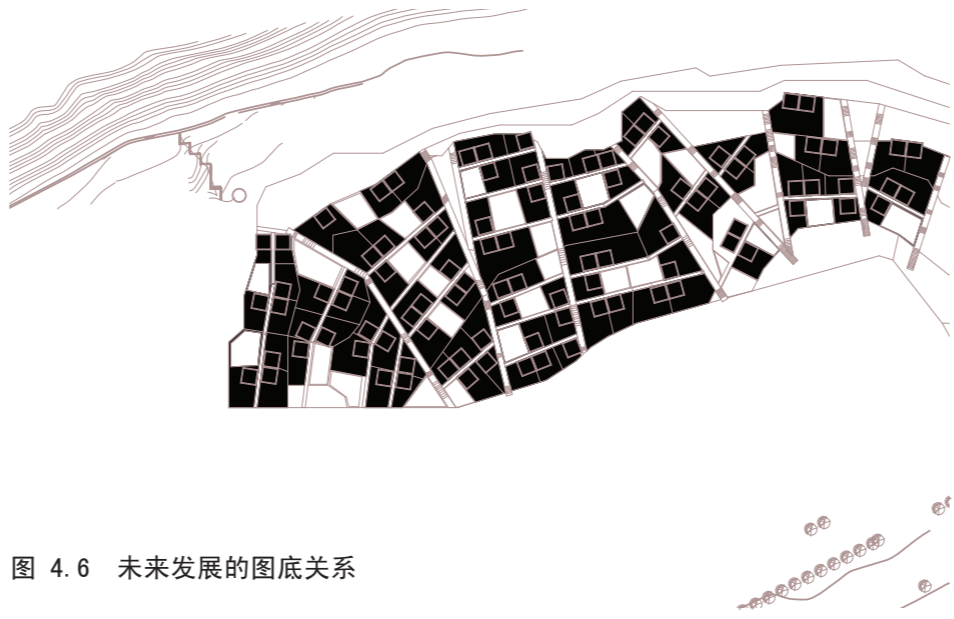


图 4.6 未来发展的图底关系

图底关系告诉我们新村的建筑密度如何随时间的变化而增加，最终使新村的发展在形式上接近于旧村。图4.4 是现存的桃坪图底关系图。对比旧村与原有新村的图底关系，我们可以发现她们之间的极大不同。旧村的图底关系图就像一块被开敞空间挖去一些部分的实体。而原有新村是在一大块开敞空间中星星点点地放置一些建筑实体。图4.5 与4.6 显示了他们之间的对比。

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Figure 4.7

Figure (4.7) illustrates the relationship of various parts of the site. The heart of the village—the historic centre remains the economic and social locus of the whole town, while the new town is wholly residential and homestay properties. This decision came out of a desire to develop the area as one town, and to split it apart as much as possible. The green buffer zone between the two ‘neighborhoods’ is protected as the most successful existing green space, and paths are pierced through it to provide visual and spatial connections.



Figure 4.8

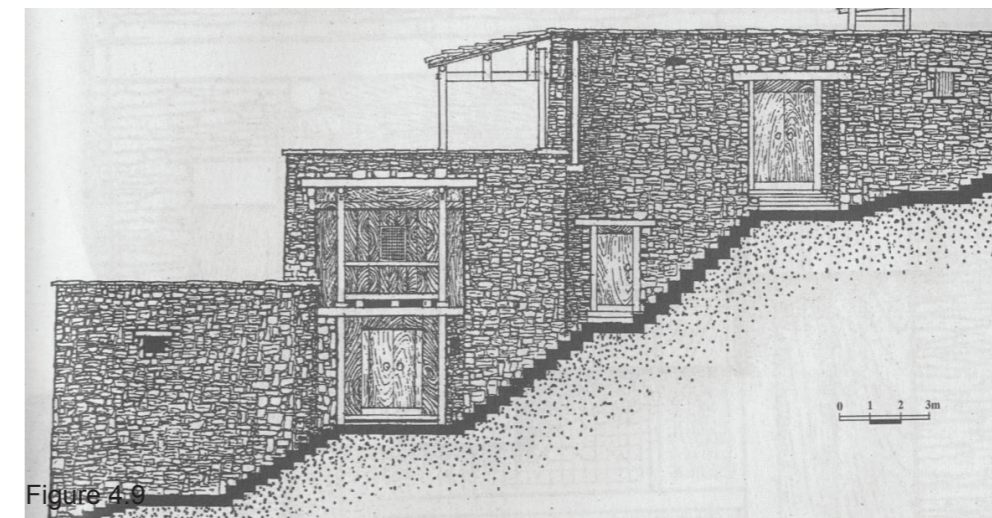


Figure 4.9

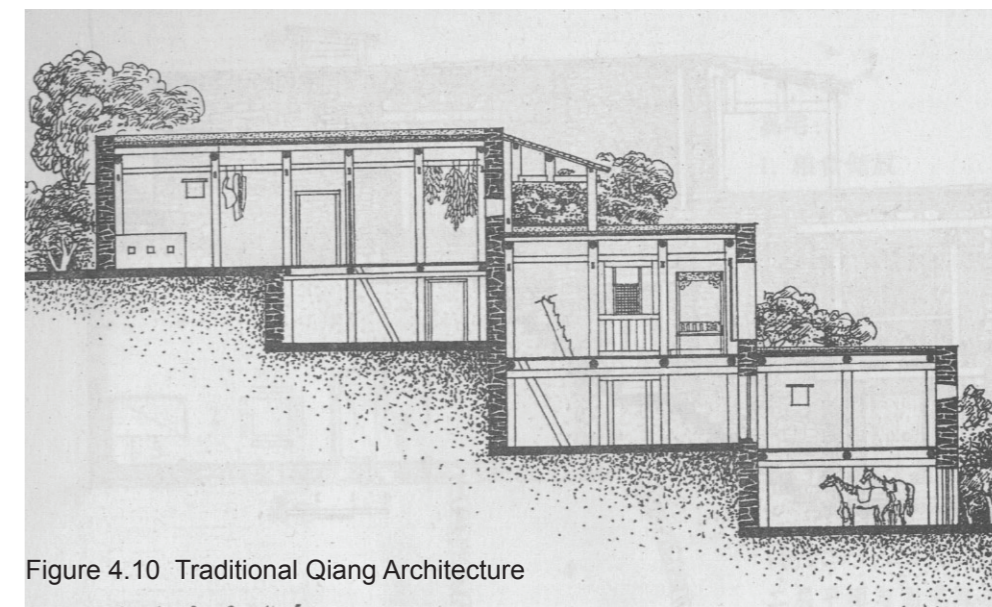


Figure 4.10 Traditional Qiang Architecture



Figure 4.11

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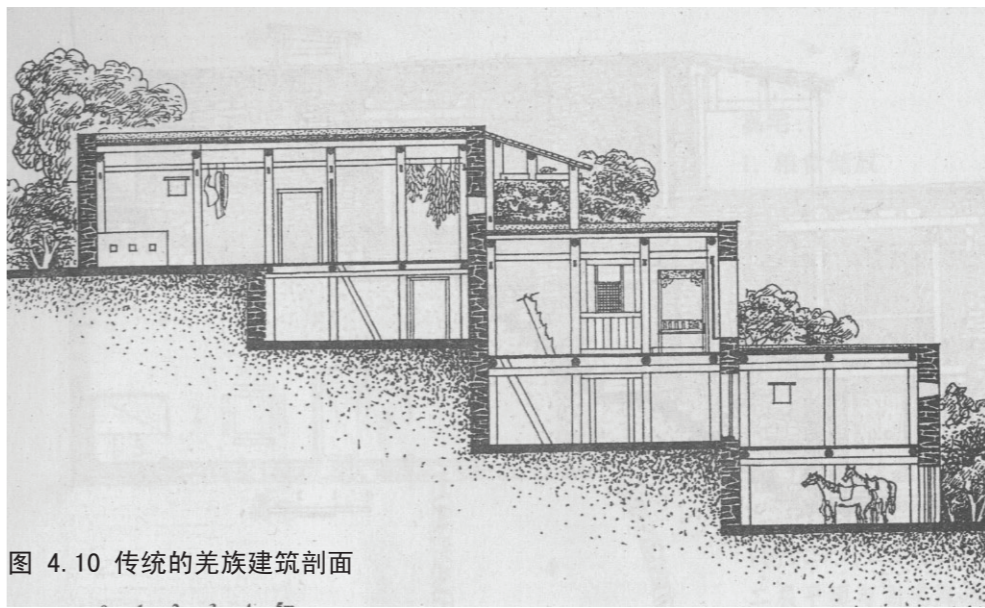
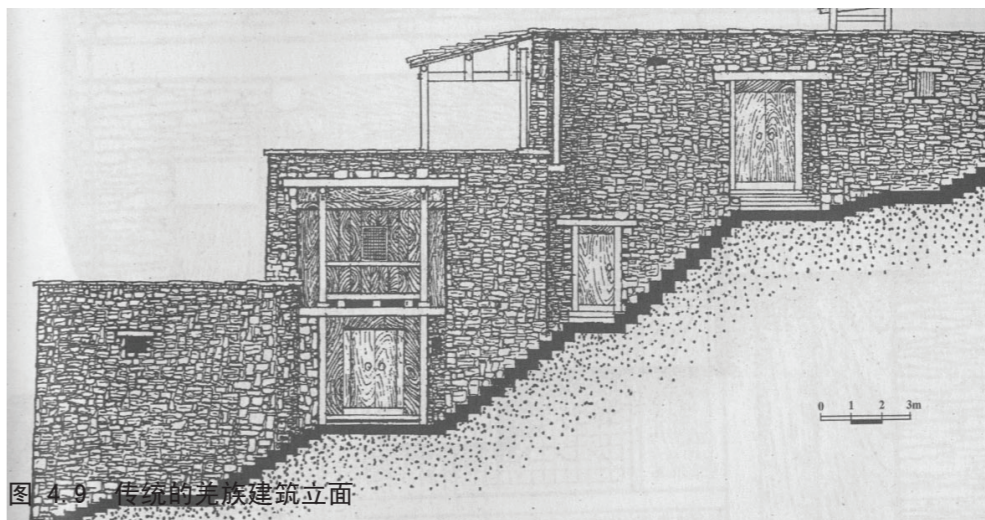
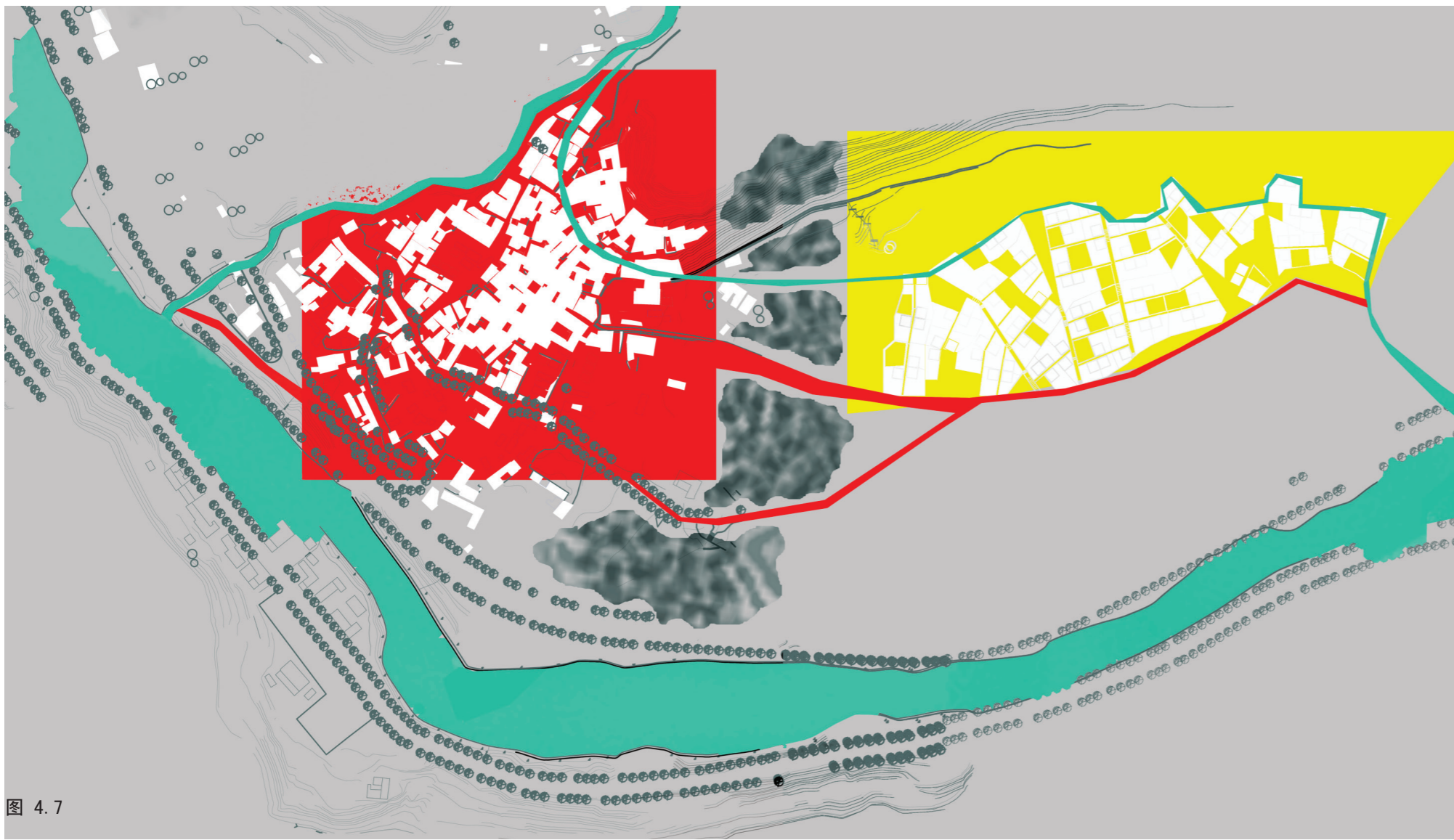


图4.7显示了基地各部分之间的关系。羌寨的灵魂，历史核心y依然作为整个村寨的社会经济的延续，而新村只有居住和家庭旅馆的功能。这样设计的目的是为了把社区分成两个独立的社会团体；而在新旧村之间的绿带被保护起来作为良好的绿化空间，这样一来新村的建设也不会破坏老寨的历史风貌。乡间小路穿过这一绿带并且联系新旧两村。



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Figure 4.12

Lessons from traditional Qiang architecture are explored to further the connections with the old village. Terracing of land with retaining walls allows a high degree of density and also connection to light and air for each building. Staircases transecting these terraces allow for efficient vertical circulation and also create enclosed spaces with views in a specific direction. The existence of green space and gardens interwoven within the dense terraced landscape provides outdoor 'rooms' with beautiful views towards the fields. Finally, the flat roofs at varying levels are retained for functions such as social space or crop drying.

The infrastructure wall proposed is built out of the rubble from the destroyed village. It is found in three conditions on different parts of the site. The main feed (figure 4.14) can be found along the upper ridge. This line serves as a retaining wall and as a service wall. The secondary wall forms the main staircases in the town and also provides services to the tertiary walls (figure 4.15)(figure 4.16) that create walkways and service attachments to the households. Each house is provided with freshwater, electricity, sewage disposal and grey water disposal through this system.



Figure 4.13



Figure 4.14 Infrastructure Wall Main Feed



Figure 4.15 Infrastructure Wall Secondary Feed

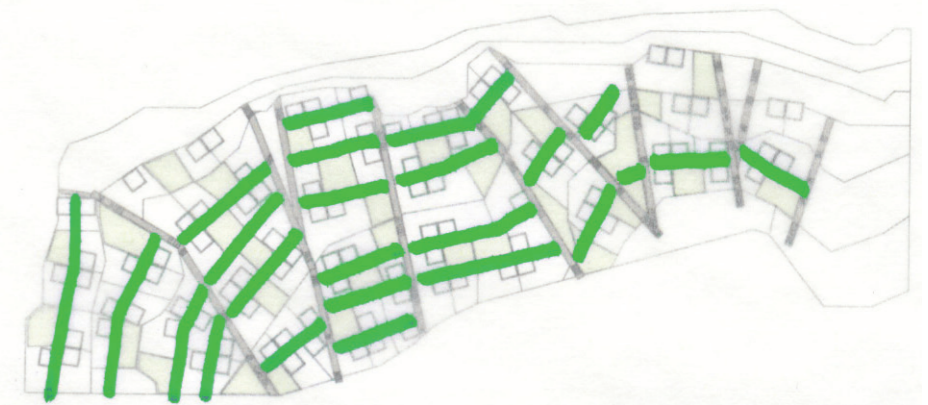


Figure 4.16 Infrastructure Wall Tertiary Feed



图4.12 旧村建筑

从传统的羌族建筑而来的经验帮助增强新旧村之间的联系。挡土墙形成的台地提高了建筑的密度并使每栋建筑都能获得阳光和空气。楼梯切过这些台地起到有效的垂直联系，并且创造了向着特定方向的视觉景观。这些存在于密集台地景观中的自然空间，花园与高密度的建筑相互交错形成了一种朝向自然景色的室外居室。传统的错落屋顶平台的功能也在方案中被保留下来，用作社会交往空间和晾晒谷物的场地。

基础设施墙使用倒塌的房屋中的建筑材料建造。它们将以三种不同等级的形式存在于新村的不同地点。第一级的基础设施墙（图4.14）沿着山脚的边沿分布。这堵墙有着挡土和提供水、电、暖的功能。第二级的基础设施墙（图4.15）形成了室外楼梯的维护空间，并且提供服务设施给第三级的基础设施墙（图4.16）。第三级的基础设施墙是室外的步行道，并且将基础设施引入各家各户。每栋楼房的给排水，废水排放和供电都是通过这个基础设施墙来提供。



图4.13 旧村建筑



图4.14 第一级基础设施墙



图4.15 第二级基础设施墙

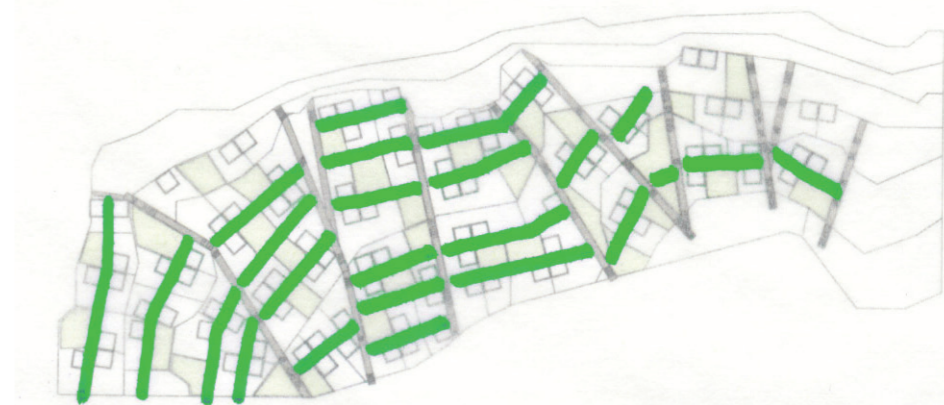


图4.16 第三级基础设施墙

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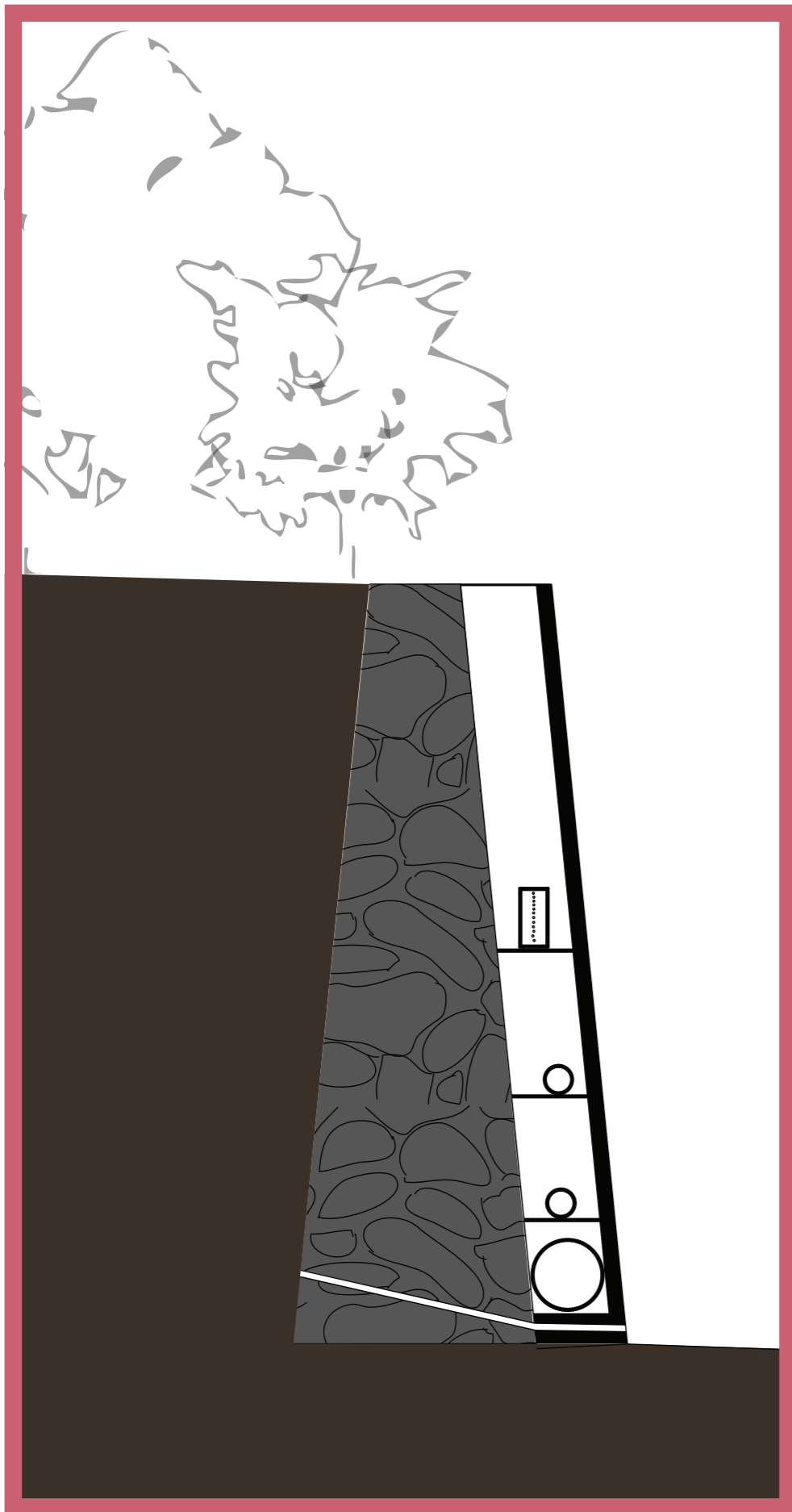


Figure 4.17 Infrastructure Wall Main Feed

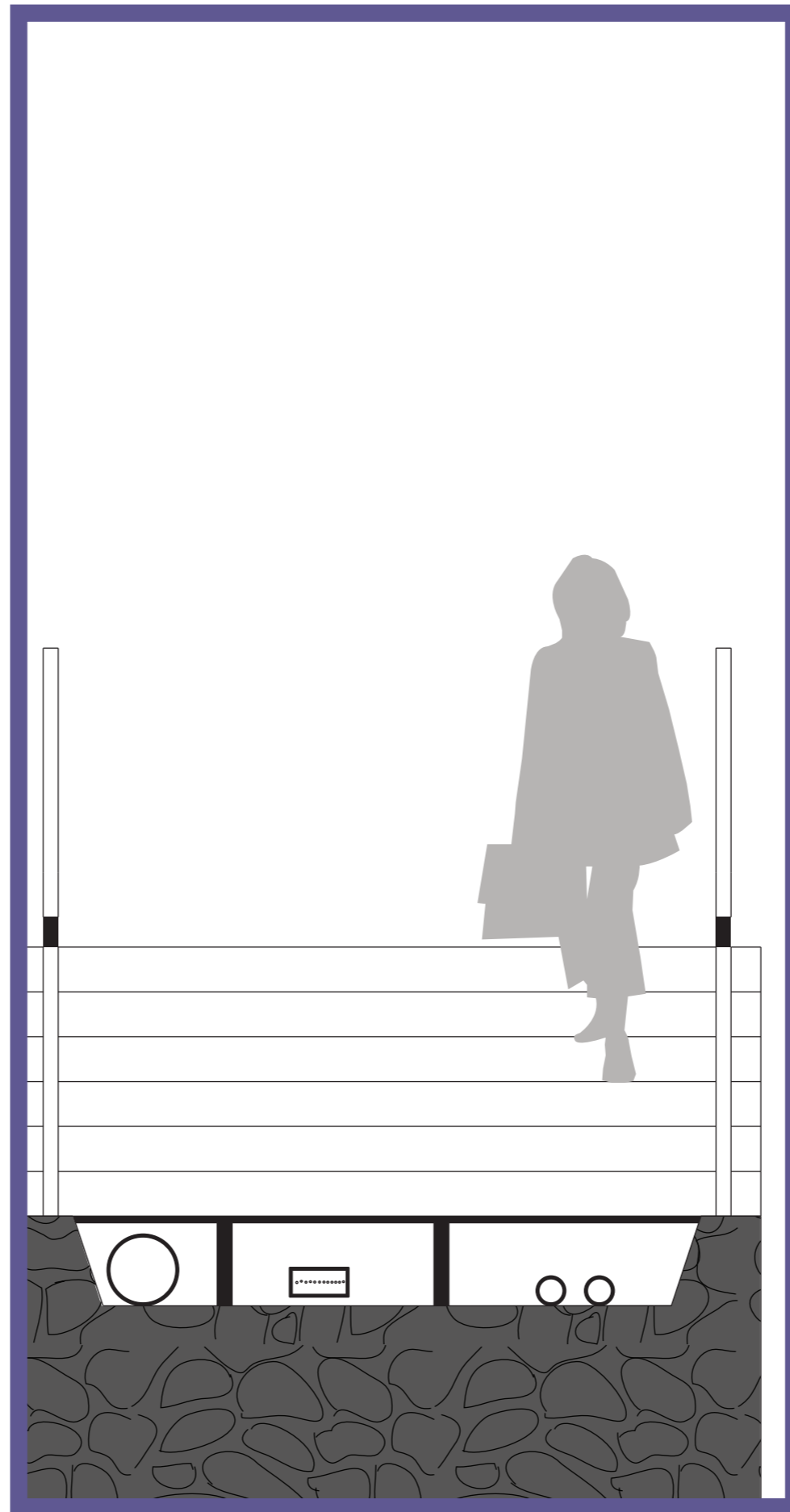


Figure 4.18 Infrastructure Wall Secondary Feed

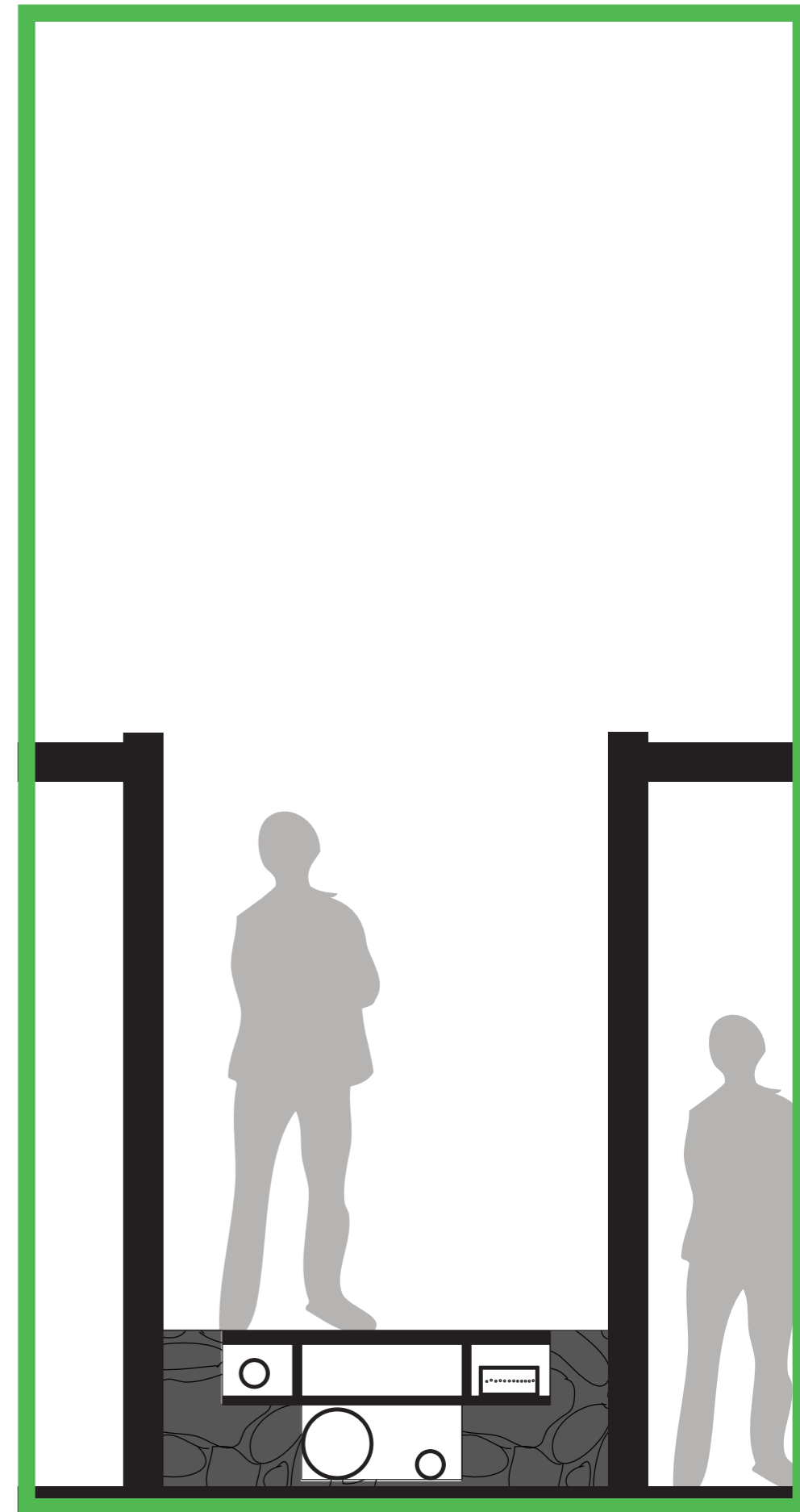


Figure 4.19 Infrastructure Wall Tertiary Feed

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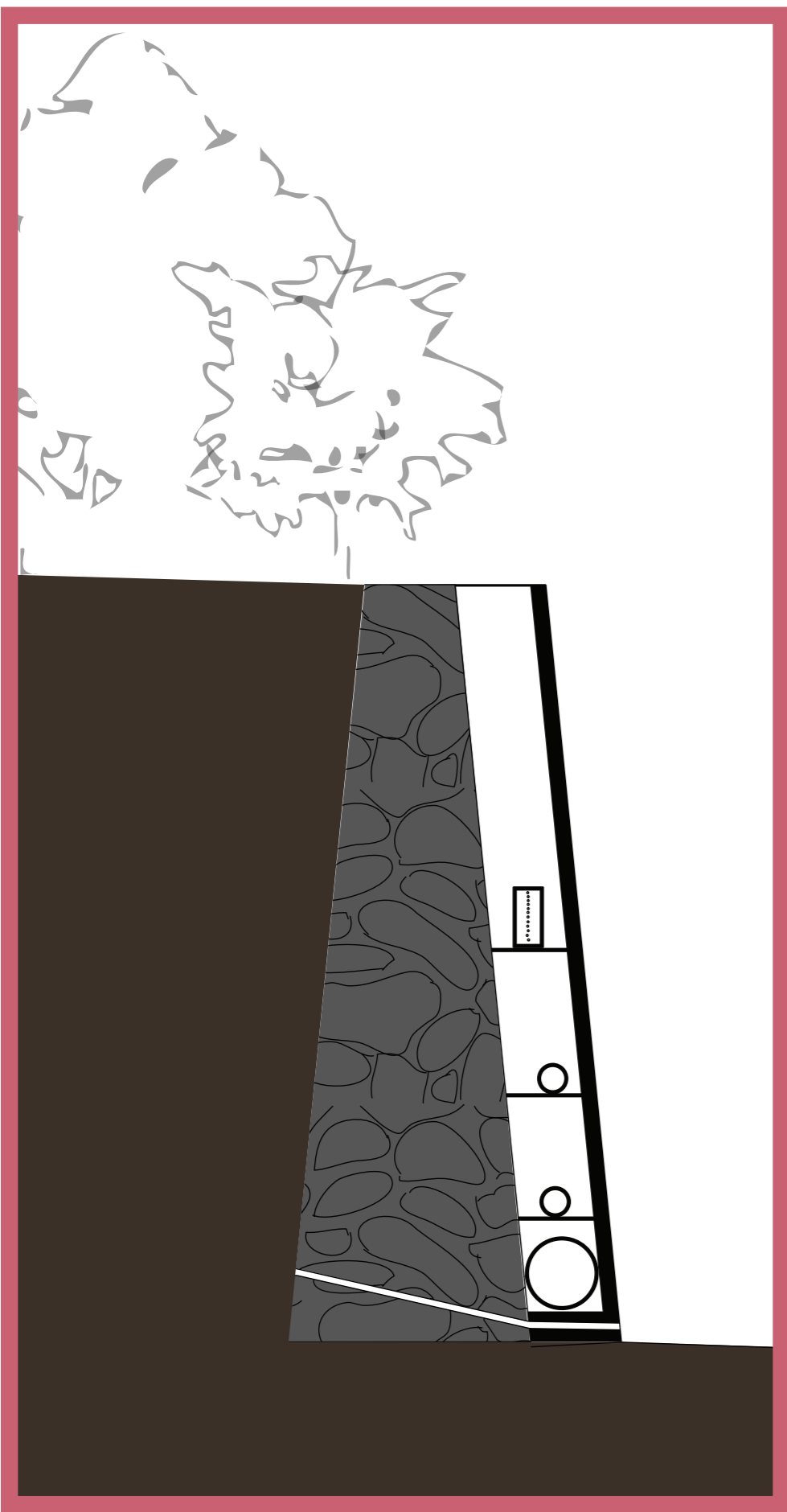


图 4.17 第一级基础设施墙的剖面

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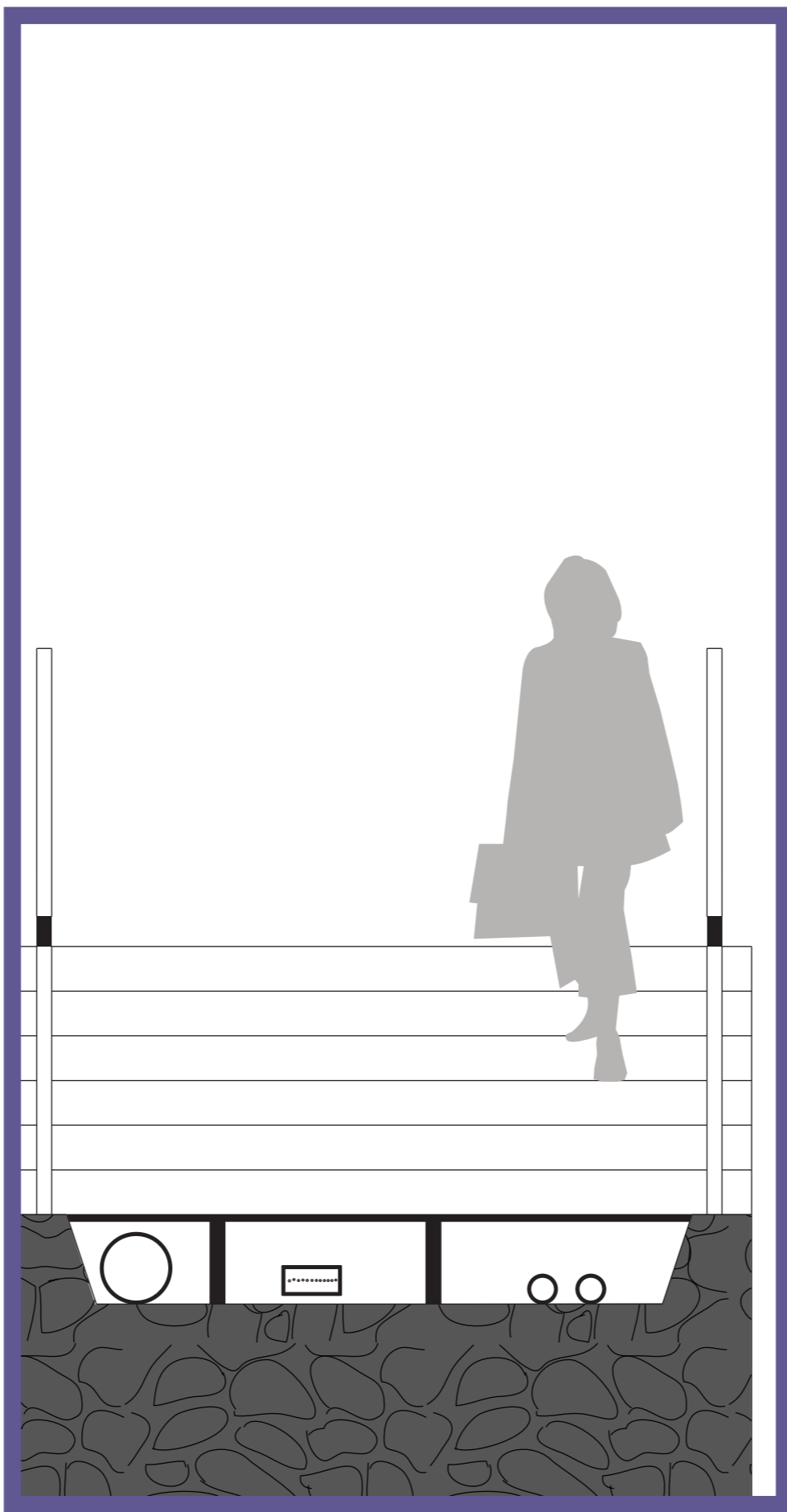


图 4.18 第二级基础设施墙的剖面

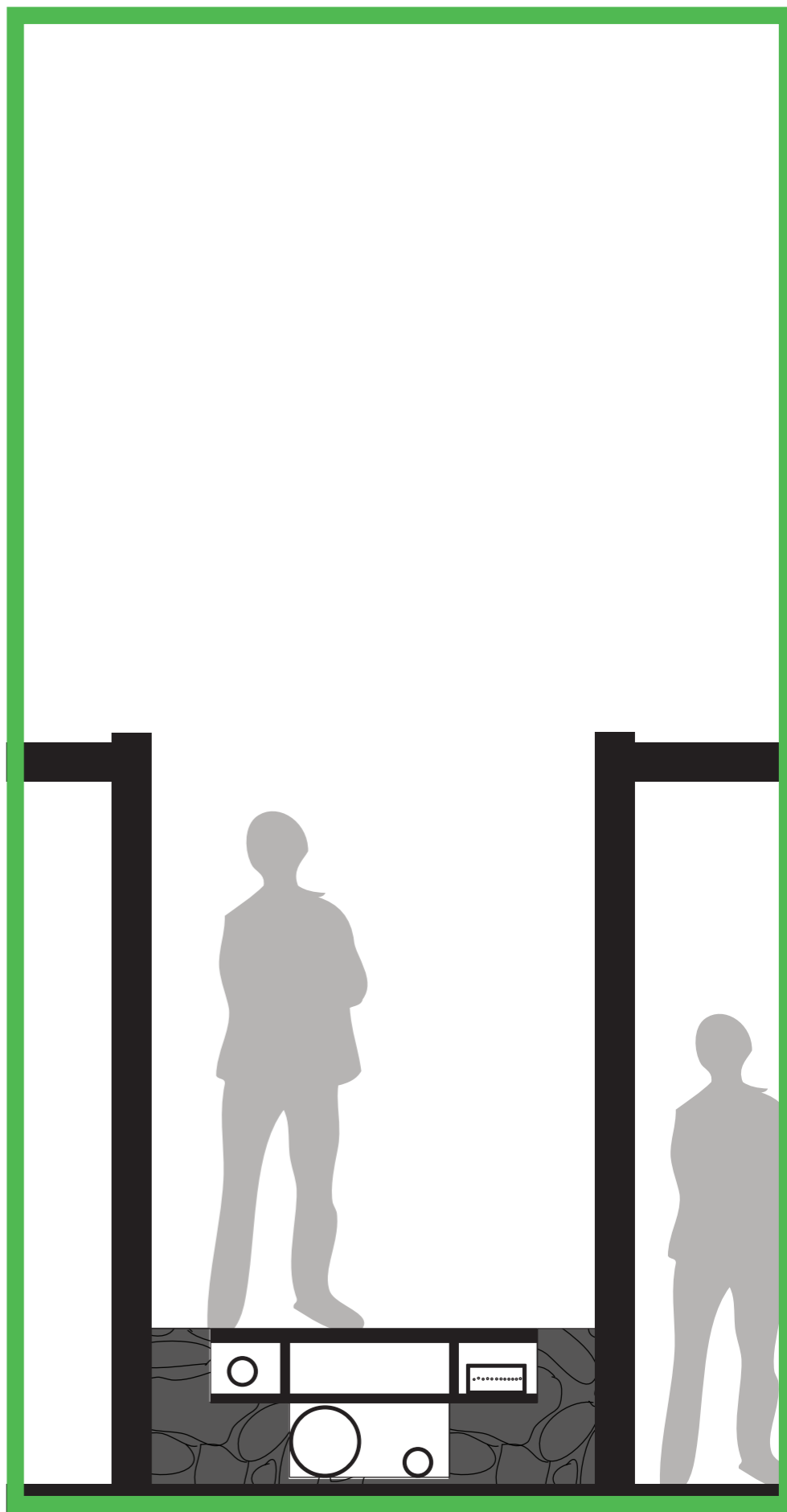


图 4.19 第三级基础设施墙的剖面





Figure 4.20 Taoping Village Plan

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图4.20 桃坪总平面

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Figure 4.21 Core Unit Town Plan

The core-housing site sits on the upper part of the agricultural fields. The site is separated from the fields by an existing road that would be improved and narrowed. At the entrance to the new housing there is a parkette and lunch spot that could serve as a place for tourists to orient themselves, or for farmers to rest and have their lunches.

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图4.21 新村核心单元平面

新建的住宅坐落于复耕农田的北面。住宅区和农田之间被一条现存的道路分隔。这条道路的质量可以被提高，宽度可以被缩小。在通往新住宅的入口有一个小公园和午餐点。这个场所是为旅游者的活动和参观定位以及村民们休憩与午餐所设计的。

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Figure 4.22 Taoping Valley Section Looking West

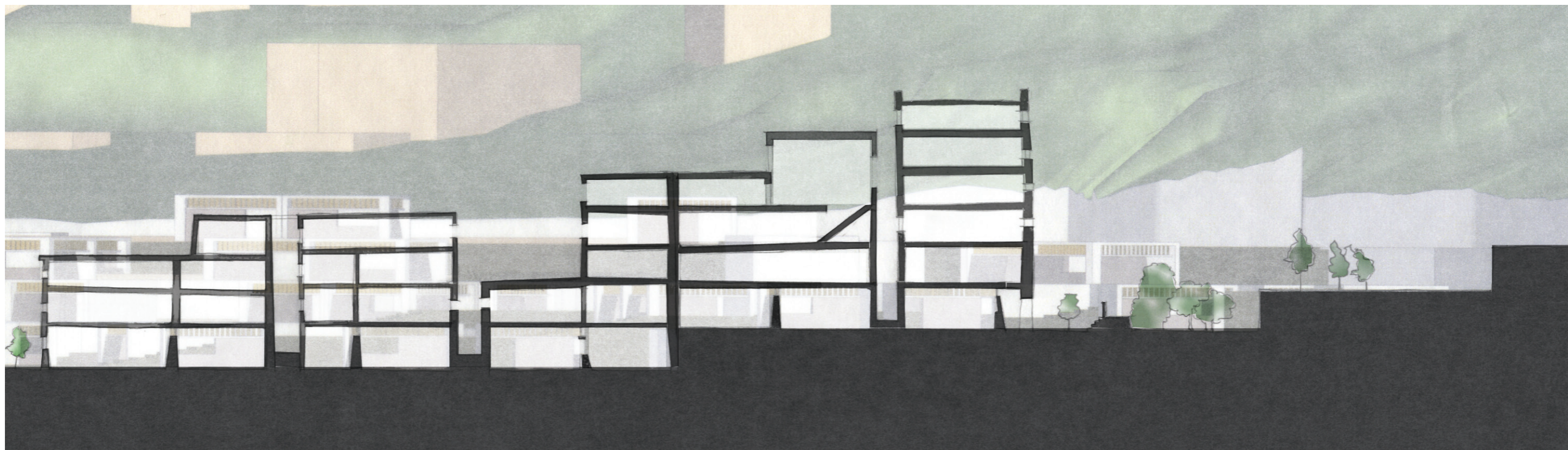


Figure 4.23 Taoping Town Section Looking West

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图4.22 眺望西方的桃坪山谷剖面

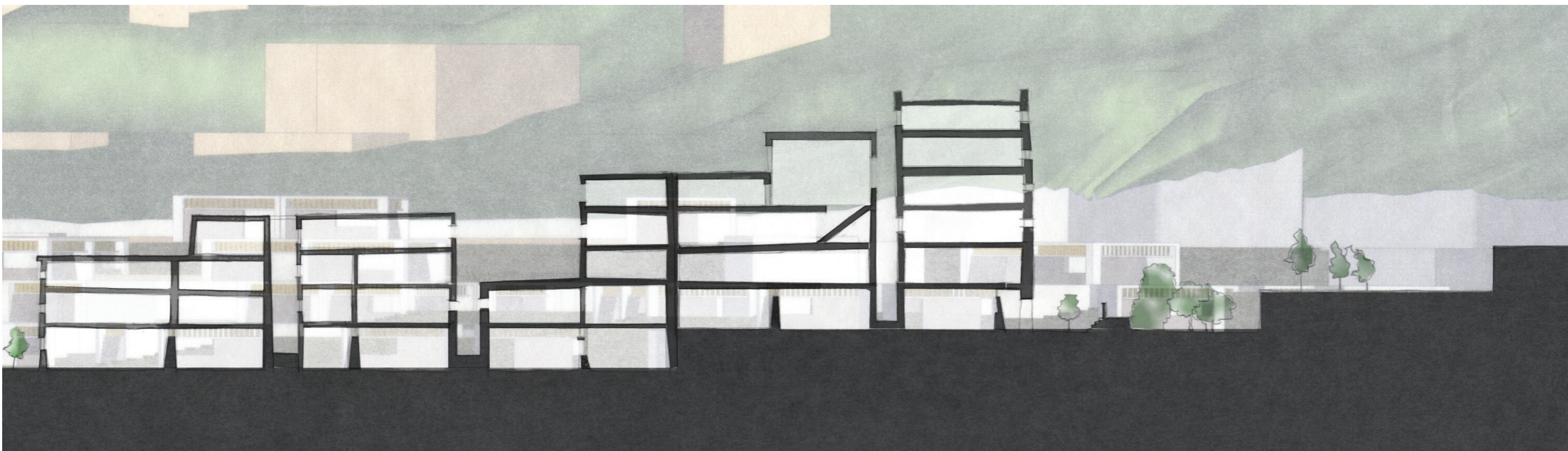


图4.23 眺望西方的桃坪新村剖面

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The final figures imagine the way that the core units will grow over time. While some may take on a more traditional Qiang architecture, some are imagined as concrete frame structures with stone infill, a faster and more modern way to build.

The valley section (figure 4.22) draws attention to the visual and spatial connections between the old village and the new. From afar, a path that links the two together is visible, and the fabric of the old and the new can be spotted in one frame.

Below it (figure 4.23), a town section shows a high level of density in the new town. People can sit on rooftops and see out over the town, they can move from roof to roof and talk to other people. A varied section and a terraced site allow for the possibility of light and air and views for the tightly packed structures.



Figure 4.25 Developed Core unit Looking West



Figure 4.24 Core unit



Figure 4.26 Section through Core unit

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以下的图画展示了核心单元随着时间的流逝不断生长的过程。当一部分的核心单元生长成传统的羌族民居，另一些生长成混凝土框架和石材填充、建造时间更短、设施更为现代化的住宅。

如图4.22，山谷剖面将我的注意力引向新村与旧村之间的视觉与空间联接。从远处望去，联接两个村寨的小路隐约可见，并且两个村寨的肌理相互协调、相得益彰。

如图4.23，新村的剖面展示了新村建设的高密度。人们可以坐在房屋的楼面上远眺桃坪，他们也在多个楼面上穿插活动，和友人聊天。多样的建筑剖面 and 台地空间给房屋提供尽可能多的光线、空气和景观视线。



图4.25 经过发展之后，朝向西面的核心单元剖面



图4.24 核心单元



图4.26 通过核心单元的剖面

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Figure 4.27 Entrance to Taoping

When you turn off the highway into Taoping you are immediately confronted with a productive field, a living reminder of an ancient tradition and also the site of a thriving agrotourism industry. Elderly farmers work alongside traveling students. The new town is visible on the upper part of the hill, and the old village is peaking through the trees.

The new village is a mixture of residences and also a series of homestays with adorable gardens. A tourist could sit on a terrace in the morning and have a cup of tea while looking out over the valley.



Figure 4.28 Having Tea in a Homestay Garden

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图4.27 进入桃坪的入口

当你离开快速干道进入桃坪，你立刻就能意识到你来到了一片富饶的土地，这里有着悠久的历史文化和旺盛的旅游农业。农夫们在观光客的身旁不紧不慢的耕作。这是一幅悠闲的桃源美景：新村矗立在近旁的山坡之上，老村寨却在远处的树梢上显露了出来。

新村是一处提供当地居民居住的混合区域，也是一系列能为游客提供可爱花园的家庭旅馆。在日出雾薄之时，游客们可以放松地坐在旅馆的露台之上，品尝一口茶马古道的香茗，远眺一眼在崇山峻岭之中古老的羌寨河谷。



图4.28 在家庭旅馆的花园里品茶

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The paths through the village are varied and winding, connected and departing from the fabric of the old village. The perspective below shows the lit wall at night that forms a pleasant stroll in the evening. The light helps to orient tourists and encourage people to activate the town during the darker hours of the evening.

Walking up the infrastructure stairs, one experiences a feeling of enclosure that is not unlike the historic village. Wondering what is up the stairs and around all of the corners keeps the visitor intrigued.

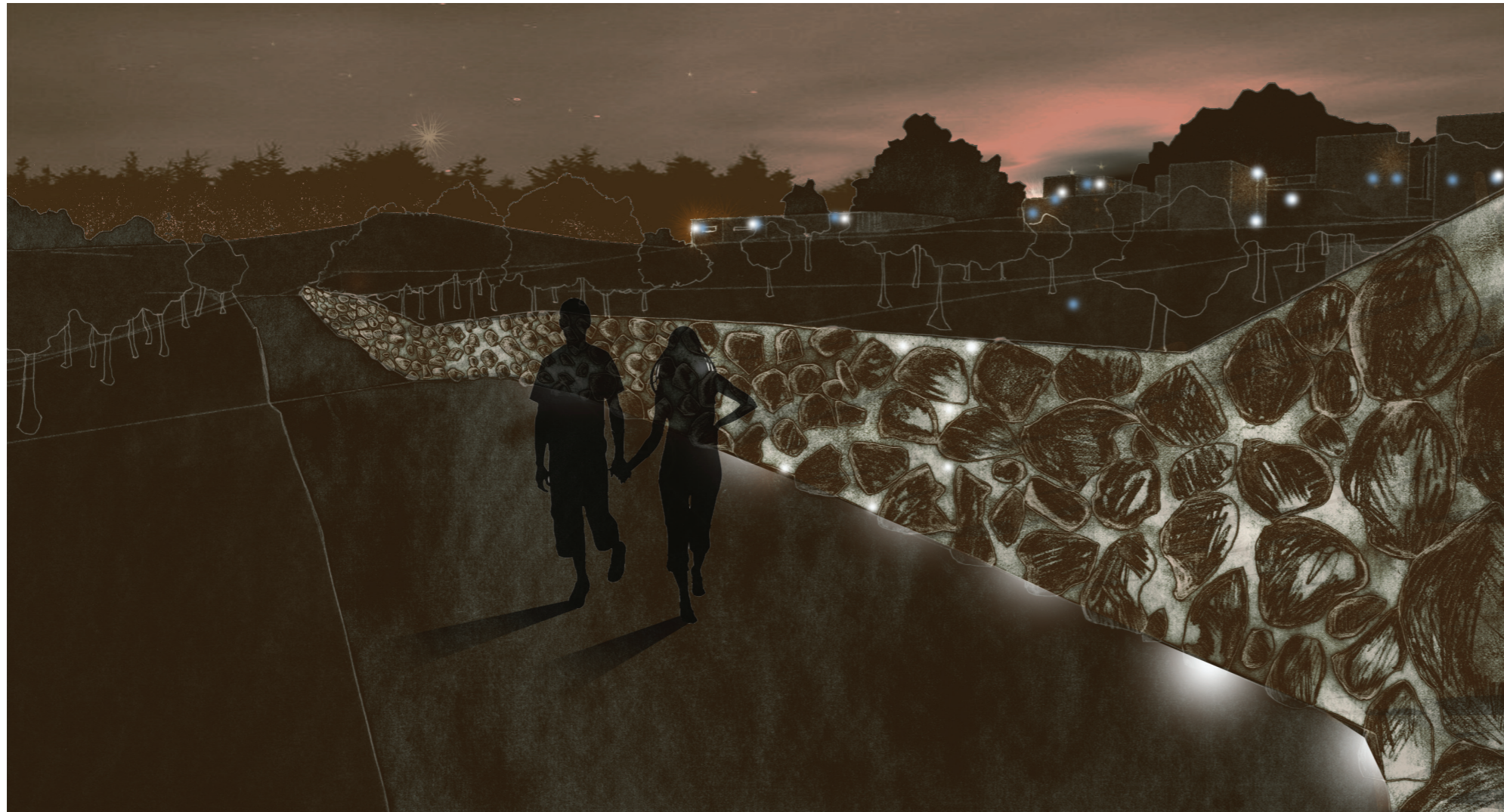


Figure 4.28 Walking from new town to old village



Figure 4.29 Walking up the Stairs in the New town

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这数条小径蜿蜒曲折，分隔而又联系着桃坪羌寨的肌理。如下的透视展示给我们一幅恬静的乡村夏夜图：一堵被照亮的矮墙旁是漫步的游客。他们在微黯光线的引导下，鼓足勇气去探究在这星月无光的夜晚中神秘的桃坪古寨。

沿着铺盖着基础设施的楼梯，游客们在新村能体验到和桃坪古寨相似的狭窄、神秘的空间体验。对于即将看到的楼梯之上的东西与躲在角落处的物品吸引着游客们四处观赏探奇。

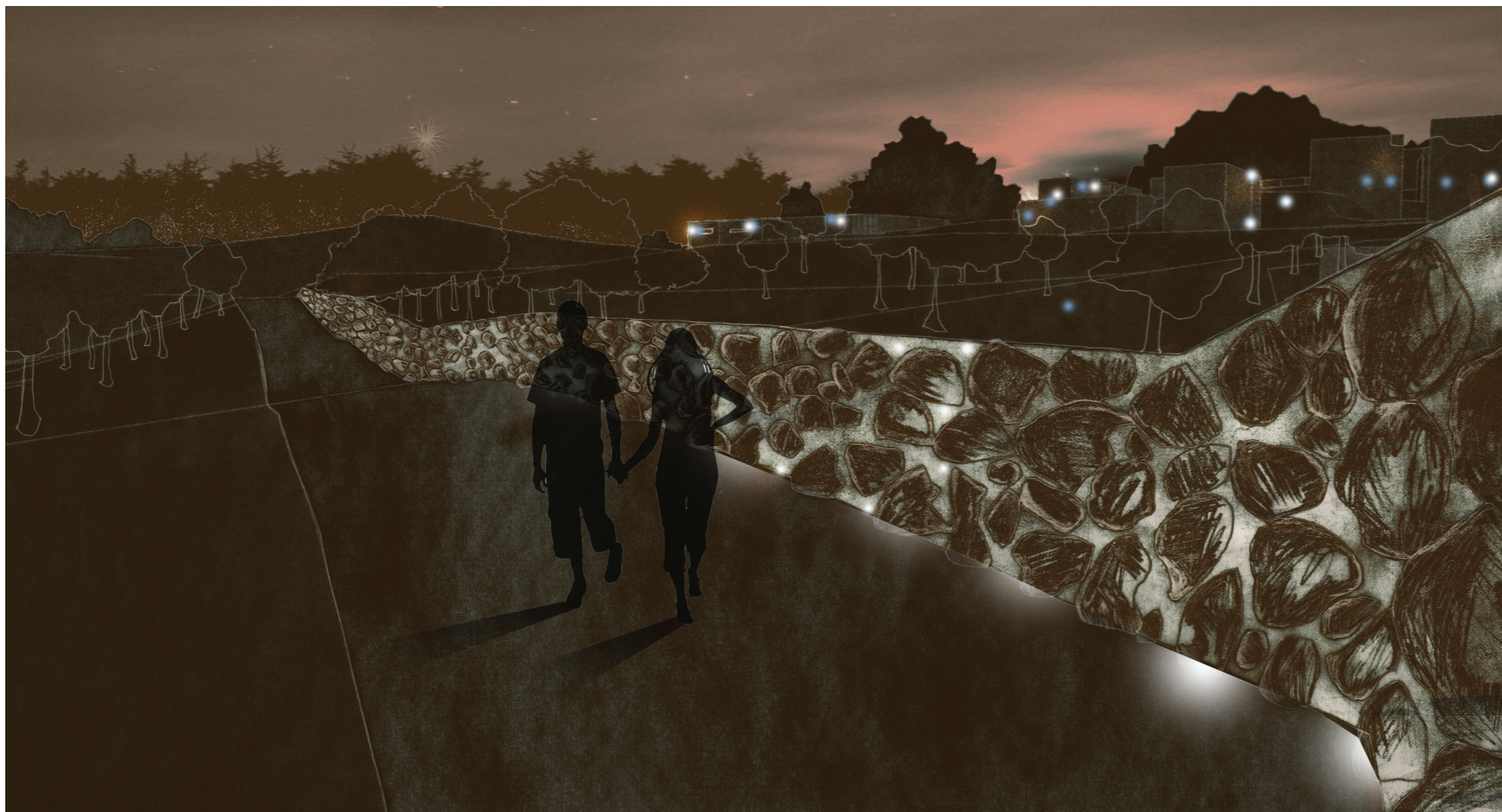


图4.28 从新村闲逛到老村

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图 4.29 在新村中沿着楼梯向上走

