

## Conference Paper

# Towards Design Strategies for Requalifying the Rural: A Comparative Study of Hollow Settlements in China and Italy

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## Abstract

Small settlements in countryside areas call for a growing number of challenges against the backdrop of global rural-urban transition. In this paper, we focus on the processes of depopulation and building abandonment in rural areas of China and Italy. We consider two similar experiences taking place in different contexts, and suggest useful design tools for strategies of architectural requalification. In China, we study a small village in Fujian Province as a paradigmatic example of the well-known phenomenon of “hollow villages.” The word hollow refers to the emptying of dwellings in the central parts of rural settlements, while, paradoxically, their fringe areas are the object of residential land expansion. This notion was coined in the early 1990s to describe the spatial, social and economic consequences of the combination of a rural exodus and a rampant urbanisation. In Italy, we consider a case study in the Province of Trento, where the evacuation of village central cores follows the sprawling towards the village’s outskirts. Even though the recent trends show that the demographic haemorrhage away from the village is declining, the abandonment of old houses in favour of the construction of new ones seems relentless. Such issues gather a growing interest by cultural, political and academic institutions. Never the less, little attention has been paid to the similarities of architectural experiences across national boundaries. Aiming to bridge this gap, we compare the results of our studies on the architectural requalification of rural settlements in both China and Italy. Our methodology embodies a graphic representation of our fieldwork, examines the relationships between the built form and its natural framework and analytically assesses the physical condition and use level of the existing buildings. Despite local specificities, there are significant overlaps from which these and other cases can gain insight. We observe that similar transnational issues can be stimulated by global transition processes driven by local forces and context-related patterns of spatial transformation. More specifically, the intensity and the extent of hollowing of Chinese villages stimulates the broad testing of a spectrum of methodologies and knowledges. These can be both inherited from other contexts or experimented with as innovative approaches. From this perspective, the Italian experience, where the abandonment dates backwards in time, is a fruitful source of comparison.

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## 1. Introduction

Rural areas have been shaped according to traditional practices and principles. The aspiration of economic growth all over the world is determining important and profound spatial transitions. Social and cultural changes often have similar causes, even if they differ in terms of procedures and outcomes. From this perspective, even if there are physical distinctions between the two contexts, it is worth comparing the current Chinese situation with the last few decades in the Italian Alps. Excluding a few exceptions, Chinese ruralities suffer from a condition of subalternity compared to urban areas, which manifests in a broad spectrum of forms. The most prominent form is a reversed relationship of self-sufficiency of the city and the countryside. In fact, rural territories were used to supply resources to the urban areas, while today their economy and development depend on cities [1]. In this paper, we study the specific case of “hollow village” as a paradigmatic phenomenon of a large part of Chinese rural settlements. The hollowing of villages determines the consumption of arable soil, the rampant urbanisation of rural areas and the concurrent abandonment of existing dwellings. These processes are intimately related to the turmoil of the policies promulgated over the last century and the current weak governance of the countryside [2–4]. Such a paradoxical condition has been exacerbated by the dual socio-economic structure of China [5], which culminated with the implementation of the household registration system (*hukou*) [6]. (Even though the *hukou* system, conceived during the Maoist period, has been considerably altered it is still used by the government to plan expenses for social services. The *hukou* system divides the population into two categories: rural residents working in the first sector and citizens working in the second sector. This system shaped the two classes so they enjoy different rights that were not interchangeable and generated substantial disparities. Chinese rural territories are now turning into an urban form melting settlements without solutions for continuity [7]. This land saturation is closely related both with the national socio-economic transition and the shifting patterns of cultural inheritance, which is determining consistent losses in terms of intangible heritage [8, 9]. Moreover, political concerns arise from the issue of food security [10], which is shaping what has been labelled as the *Food-Environmental-Development Trilemma* [11, 12]. In Italy, the alpine rural areas have suffered from a severe demographic decline which, together with the downturn of traditional agricultural activities, led to a very critical situation which features the abandonment of numerous buildings and the uncontrolled and robust expansion of the forests and the contraction of arable land. Following processes similar

to Chinese settlements hollowing, new dwellings have been erected, causing, on the one hand, further consumption of cultivable land, and, on the other hand, the idleness of the old houses that remain vacant. The modest technological and architectural quality of the newly constructed buildings affects the traditional spatial settlement. Both local governance and planning have failed in mitigating the population shrinkage and residential land expansion. The rural-urban migration flows are a global issue taking place in different parts of the world which reshape societies with different intensities and courses according to local conditions. The main reasons of this flow can be found in the pursuit of economic prosperity, driven by a wider range of job opportunities provided by urban areas, combined with significantly higher revenues. Even though the signals of a reversed process are hard to envisage, we find a shift in terms of values related to the countryside living, boosted by political agenda, like in China, and a more sensible collective consciousness, like in Italy. Against the backdrop of our researches, we seek context-related methodologies to suggest architectural strategies to requalify rural territories. We focus on the structural relationships between the built form and the spatial layout, shedding light on the socio-economic transition taking place in our study's context. After a comprehensive fieldwork campaign based on several months of on-site observations coupled by interviews with local workers, we identify an array of weaknesses upon which we set and develop our design strategies. This paper summarizes the results of these phases and proposes a graphic comparison in order to emphasise points of interference, common backgrounds and shared challenges.

## 2. Case Studies: Introduction and Methodology

Two rural settlements in China and Italy have been selected on the basis of land productivity through agricultural usage, typical in the countryside. Our methodology seeks to empirically compare the results of our studies adopting graphic representation with theoretical support. The first-hand data embodies the state of conservation of artefacts, buildings and open spaces present in both villages and bring to light their problematics in terms of architectural consistency and spatial distribution. In China, we consider a rural settlement of 1,500 people in Fujian Province, connected with Putian City by a single road, forty minutes driving in length. The village lies in a small plain surrounded by hills covered by woodland. It is crossed by a principal creek which gently turns to create idoneous wetlands drenched by irrigation ditches. The village is consistent with the principles of *fengshui* and the relationship with the local natural resources is its main asset [13]. The built form is structured on a dozen family halls, which

are complexes of buildings dedicated to housing, farming and worshipping the clans' forefathers. They represent the backbone of the village. Today they face the challenges of modernity, struggling for the desire of privacy and the aspiration for contemporary lifestyles. Except for the four temples and the primary school, the other buildings are houses made of concrete and brick that have been realized since the opening and reform policies of the 1980s. Some of them replace existing old structures and the largest part is randomly scattered on the land without apparent criteria. With their fancy motifs dressing the facades and their decorated roofs, they represent the typical contemporary rural multi-storey dwelling, an expression of the peasant emancipation from traditional humble life. In the Italian Alps, the Bresimo Valley has a linear development of some 25 km that goes from an altitude of 1,000 meters above sea level to 2,400 meters. On the valley floor, there are some small settlements with populations of around 250 inhabitants, while at higher altitudes there are numerous pastures almost unused, in which it is possible to find collective buildings which were formerly used as stables during the summer. The condition of isolation, due to the scarce connection and the high altitude, makes rural areas the object of severe phenomena of underuse. Since a consistent part of the Italian village population moved to the city to find job opportunities in the rising industrial economy, the abandonment has been exacerbated by the demographic decline and the desertion of traditional agricultural activities. In this context, both buildings and open spaces were left and have become wasted resources. Most of the ancient wooden and stone-made buildings, which define the dense village cores, are now ruins. They paradoxically stand near "banal" constructions that have only recently been erected. The conditions of fragmentation and partial use of buildings share a common aspect: they clearly show how what has been abandoned is linked to a rural past and is permeated by hardship and poorness. This past recalls the collective memory of the alpine countryside, labelled for decades as the "world of the defeated" [14], subordinate to the city. The Chinese and the Italian Alpine cases share significant similarities, as the results of this study clarify in the next paragraphs (Figure 1).

### 3. Methodology

Our methodology is similar in its essence since it moves from the necessity of investigating the *status quo* adopting architectural disciplinary tools. Since the aim is to produce practical graphic representations to adopt in the design phase, we map the condition of the buildings and soil in order to investigate the intensity and spatial distribution of the hollowing phenomena. This methodology varies slightly in its application, because



**Figure 1:** The selected Case Studies. Left: China. Right: Italy. Source: Photographs by Semprebon and Marinelli.

of two reasons. First, we set the evaluation's principles according to our critical thinking that is shaped by our personal identity. Second, different sites call for different practices of implementation and force assessment on the basis of other experiences may compromise the sincerity of the study. The large use of graphic documentation is intended to make the research findings understandable. This method demonstrates the malleability and flexibility of a methodology that may be applied again in other contexts and perhaps optimized.

### 3.1. Mapping the housing condition and use level in a Chinese village

Considering the state of conservation of the buildings, the fieldwork in the Chinese village shows that some 83% of the buildings are in acceptable conditions or require little maintenance. These houses are in large part realized in recent times in the form of boxlike "villas" [15]. The boxlike "villa" is a freestanding luxury pavilion typology surrounded by a private yard. In some cases, the unit is coupled symmetrically to form twin ensembles. These dwellings concentrate in the fringe areas of the settlement and result from a process of expansion towards the cropland. However, some of them can be found in the core of the settlement, probably erected after the demolition of decadent houses. The remaining 17% of dwellings call for substantial maintenance work to ensure adequate standards of comfortability, for a total of 15,000 m<sup>3</sup>. Most of these dwellings are located in the central part of the village, in the proximity of the ancestral halls. Conversely, the dwellings nearby have been underused over time, in favour of modern accommodation. Eventually, the lack of use has led to degradation. On the other side, but somehow related, the use level survey reveals that 39 dwellings are abandoned or underused, counting for almost 10%. They are scattered in the built fabric following

the similar logic of the dilapidated houses, namely in the proximities of the ancestral shrines. Mapping the condition and use levels of the buildings we find there is no direct correspondence and their intensity varies in the settlement's layout. (Figure 2) For instance, some buildings in acceptable condition are unoccupied.



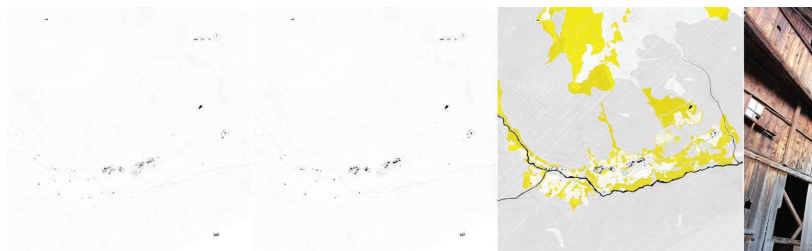
Figure 2: Condition and use level in a Chinese village. Source: Drawing by Semprebou.

### 3.2. Mapping the Condition and use level in an Italian Alpine settlement

Shape and distribution were used to map the buildings and open spaces. The "architecture of the territory" [16], shaped by the strong relationship between living and agriculture, tends to dissolve and become a ruin. However, building abandonment is not widespread nor homogeneous. Conversely, it is fragmented and complex. We graphically show using different scales of grey the degree of building usage (Figure 3). The map reveals that the abandonment of dwellings took place in dense cores of the settlement. Moreover, the under-usage overlaps with the dilapidated condition of the old structures, located far from the road's network. Traditionally dedicated to agricultural functions, these old constructions become vacant because of the almost complete disappearance of rural activities. An intermediate ring of recent buildings is currently active, accounting for a small part of the existing built volume. Following different lines of logic, the abandonment of open space reveals different patterns in its usage. The yellow parts of the map define the shape and the distribution of the unused open spaces. We



find that some of these areas have been overgrown by forests, while others are still open but destined to wild re-naturalisation. The stratification of these two categories of abandoned spaces produces a series of complex situations. Three typical conditions identified include: active buildings on abandoned land, active buildings on active land, and abandoned buildings on abandoned land. The reasons for the abandonment still remain an obstacle to current building use. Such reasons have different origins and must be understood in order to mitigate phenomena of underuse and the consequential deterioration of the rural landscape [17].



**Figure 3:** Buildings and soils' condition and use level in an Italian settlement. Source: Drawings and photos by Marinelli.

## 4. Towards Design Strategies that Requalify reading Patterns of Change

### 4.1. Village hollowing in China: Driving Forces and Implications

After twenty years of forced collectivism, Chinese ruralities have experienced an unprecedented transformation in terms of land use, built form and social order. The architectural character of dwellings has evolved spontaneously towards typological homologation and stylistic contamination of local elements with western influences. This architectural transition has impacts on the spatial arrangement of most of the rural settlements determining a pervasive transformation of the landscape, physical and cultural. The fieldwork results report a relatively comforting situation about the condition of the dwellings, with more than four-fifth of the structures in an acceptable state of conservation. The intense construction activity taking place in the last decades has led to an increase in the number of new dwellings in good condition. On the other side, the dilapidated houses belong to the first wave of rural urbanisation spread after the reform and opening policies of the 1980s. These buildings were realised with traditional techniques and obsolete layouts, probably replacing or enlarging existing structures. The diffusion of modern technologies, and in particular of reinforced concrete, coupled with the improvement of social conditions, coming from the market economy, stimulated

the adoption of new housing schemes able to meet the demands and the values of an evolving society. Therefore, the old houses became the oppressive and backward place from which to move out as soon as the financial position made it possible to do so. It would be reasonable to expect a high rate of abandonment, as the appearance of the village suggests. Conversely, this indicator mismatches the perceived atmosphere, revealing a relatively low degree of underuse. In fact, a large part of recent buildings appear to be occupied only in some parts, mainly by aged peasants who still cultivate the fields. This can be explained considering that, usually, the youngest members of the family are either commuters or migrant workers in the closest cities. As a consequence, the dual-track social structure prevents them from legally moving out of the countryside and living in the urban areas [18, 19]. They keep a room or even a residential unit in the countryside, both for legal reasons and in case of ill fortune. This parameter may increase significantly if future studies are able to also consider the partial underuse of multistorey buildings which is a large volume used occasionally for family gatherings or national festivals. In addition to the partial emptiness of new houses, we also find cases of total abandonment of dwellings in an acceptable state of conservation (Figure 4). Coupled with intense construction activity taking place at present, this building fabric is the symptom of an attitude of acquiescence towards land consumption, both from the private and the governance sides. These parameters reveal different forms of a village hollowing, which can be framed in two categories: premature evacuation and lack of ordinary and extraordinary maintenance, perhaps due to the absence of skilled craftsmen able to work on existing structures at reasonable costs [20–22]. The shifting patterns of living in the countryside correspond to the Chinese transition towards development, at every level of political administration and grassroots engagement, with the consequent assimilation of unprecedented scales of value and aspiration. These in turn, reflect on the architectural (self) expression [23]. This controversial transition is acknowledged to lead both to an incremental socio-economic prosperity and, alternatively, towards a worrying flattening of cultural diversities leading to enormous losses in terms intangible heritage.



**Figure 4:** Evidence of "village hollowing." Vacant dwellings in sound condition. Source: Photos by Semprebon (Sept 2018).

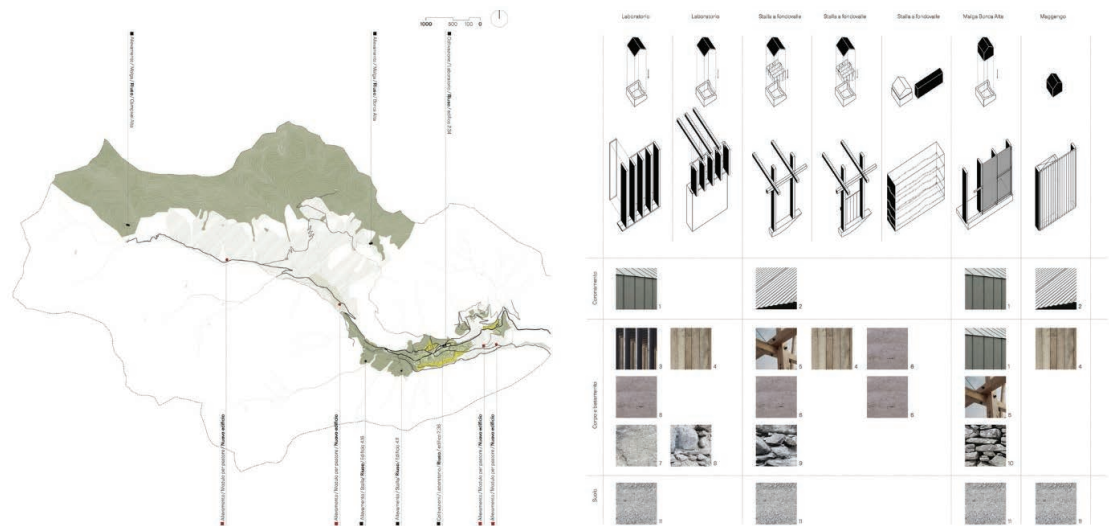


## 4.2. The Alpine rural landscape: from abandonment to strategies of reuse.

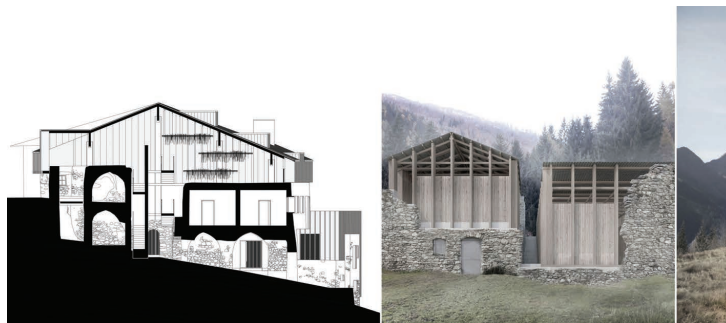
In the Bresimo Valley, the state of abandonment, in its different forms and conditions, is one of the results of cultural and economic changes. Its principal consequence is the transformation of the traditional peasant society into a living culture aspiring to industrialisation without having any apparent possibilities. This has led to the underuse of all the local resources that could not be industrialised. We find it both in the steep mountainous soil, unsuitable for industrial agriculture, and in the typology of traditional buildings, which beyond failing in meeting the comfort requirements, recalls a past of poverty and hardship. The abandonment is, therefore, a consequence of a profound change in the economic and social patterns that led to disinterest in the local mountain culture in favour of urban and industrial culture. The abandonment is also the cause of the ruin of the territory's architecture. "A person builds its fields like its cities" [24] and the rural mountainous landscape, with its complex and fragile soils, is the result of tireless care [25], a daily construction practice conducted by farmers and builders. Even though the Bresimo Valley, like many other rural territories in Italy, is threatened by the dissolution of an important cultural heritage, we find some valuable opportunities. First, the phenomena of abandonment appears to have stabilised in recent years, finding a condition of equilibrium that allows us to affirm that the most critical time of risk is over. Second, we find that Alpine rural territories are the object of a renovated interest by urban citizens, witnessed by unexpected returns [26, 27]. Since what now is still abandoned can be reused, people interested in returning to villages may benefit from these available spaces and they may generate new economic cycles that can interpret the mountain living with new strength and awareness. In this sense, a strategy of both soil reuse and settlement regeneration has been developed, together with agronomists and experts in mountain farming. [Figure 5, 6] What has emerged is an important theoretical and practical experiment that allows us to imagine the reuse of rural resources and rural landscapes. The case of the Bresimo Valley suggests methodologies and practices of investigation oriented to a new recognition of rural land value, avoiding soil consumption.

## 5. Conclusions and openings

In this manuscript, we have built a dialogue between our research in rural contexts in China and in Italy. We found some differences, such as the reasons for the new



**Figure 5:** Regeneration Strategies. On the left the strategy at the territorial scale. On the right the abacus of architectural transformation. Source: Drawings by Marinelli.



**Figure 6:** Architectural designs of reuse of existing structures. Source: Drawings by Marinelli.

interest towards the countryside, in one case the natural consequence of the political agenda, on the other, the result of a spontaneous bottom-up process. The problem of arable land underuse appears to be more intense in Italy, probably because of the local orography and because the food supply is becoming a serious problem in China, pushing towards land consolidation and optimisation. Another element of diversity is the variation of design schemes and styles, weak in China with the repetition of few residential models and stronger in Italy, probably because of the presence of a wider architectural vocabulary and approach to the project in the design culture. The profoundly different climate condition is also worthy of mention. In particular, threats of typhoons in Southeast coastal China represent a serious preoccupation for the local population, which in turn, sees concrete structures as a means of safety. In Italy, the local climate suggested built forms able to withstand the snow loads and, at the same time, to be protected from avalanches. Finally, we found a more profound socio-economic disequilibrium between rural and urban areas in China, a symptom of the deeper transition toward development. On the other side, we also found significant

similarities, such as the correspondence between the socio-economic transition and the modification of the landscape, physical and cultural. Another element in common is the process of soil consumption which raises many questions in regards to political agendas. Indeed, in China, urbanisation represents the primary means of development. In Italy, it provides the almost unique financial resources for local administration via compensation. Moreover in both cases, we found that the typical contemporary rural dwelling is conceived as an urban living space, detached from the soil and often modest in architectural solutions. Finally, in China and in Italy, the rural territories are dismantling their cultural heritage, both in terms of folkloristic inheritance and traditional habits. Being part of a complicated process, it seems reasonable to explain this in the light of a global process of standardisation, and consequential trend of losing the artisanal and handcrafted abilities, which, in the past, imposes the cyclical reuse of construction elements and other available resources. This is consistent with the widely adopted economy of scale's approach which calls for an interchangeable workforce rather than skilled-labour force. More than declaring a conclusion, here we want to open some perspectives between the two contexts, in particular considering the status and the meaning of a strategy of rural regeneration. The Italian case reveals important potentialities in terms of building reuse to redeem the related soil. The dissolution between the built and the open space is a matter of fact in ordinary architectural production, often guided by urban living models as symbols of social emancipation. However the designs in the Bresimo Valley declare energetically the opposite, by proposing architectures strongly rooted in the soil, either physically or in their spatial layout taking distance from any vernacular or country-style language. They challenge the collective consciousness by questioning whether or not there is a chance to be modern and to be rural. This experience may bring enormous advantages in Chinese contexts, both as a level of practice and as a way to open up different approaches to requalifying the rural. Indeed, even though we saw a lot of effort in recent years with the promulgation of national and regional policies [28–33] targeted to encourage processes of rural restructuring, their implementation has generated “light and shadows.” The wave of practices and experiments which have been following since the turn of the millennium have lead to controversial outputs. For instance, some projects which managed to alleviate conditions of local poverty also comported the mass relocation of villagers into new suburbia-like settlements. The authors suggest that a revitalisation strategy should move from an in-depth study of the existing condition of the *status quo*, as discussed earlier. The results presented here show that the condition of emptiness of some buildings, or parts of them, may represent an asset if conceived as spaces available

for new cycles of use. These types of re-utilisation can be imagined in a long time span, including actions of partial demolition, adaptation or extension which gradually re-integrate portions of buildings or even settlements otherwise underused or abandoned. Whether the regeneration of Chinese ruralities will take the Italian case as a useful reference is hard to say. Much will depend on the political intention, today oriented more to land-use optimisation rather than cultural and environmental protection. Without question, the large number of experiments taking place in the Chinese countryside have already and will further blossom in some interesting regeneration projects, as the participation to the last Venice Biennale of Architecture, with the pavilion “Building a Future Countryside,” [34] and other initiatives already showed. From this perspective, it is Italy that has to observe China in order to understand its peculiarities and the potentialities from which to learn.

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