# A Morphological Interpretation of a Northern Chinese Traditional Village

## Kun Li

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Case Study of Zhangdaicun Village





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#### Foreword I

Over the past two decades, urban morphology has been gaining attention in China as a study of the process of urban growth and its causes. Unfortunately, in the course of China's turbulent decade-long Cultural Revolution, not only did construction activities come to a virtual standstill, but the channels of communication between China and the West in the academic field were almost utterly cut off and to a certain extent led to the fact that China was later than the West in recognising living traditional cities and settlement spaces as cultural heritage. Almost all cities have lost large areas of their traditional urban fabric during the wave of construction in the past decades, especially those cities that once had a profound historical accumulation. This drastic change in the built environment has created a speciality, or rather a hindrance, to studying urban form in China.

Fortunately, some relatively intact traditional settlements are preserved in the Chinese countryside, which are similar to traditional cities in many aspects of spatial structure and thus can serve as valuable materials for studying the morphology of traditional Chinese settlements.

In the late 1980s, Chinese scholars, represented by Prof. Ruan Yisan of Tongji University, were keenly aware of the threat to historic villages and towns posed by the massive wave of contemporary urban and rural construction, which gave rise to the earliest conservation planning for historic towns of modern significance in China. In 1992, Prof. Peng Yigang and Prof. Nie Lansheng of Tianjin University published the book *Landscape Analysis of Traditional Villages and Towns*, which began to focus on the value of rural buildings and landscapes. In 1994, the first international organisation of urban morphologists, the International Seminar on Urban Form (ISUF), was established. In the same year, China's earliest research result on urban and rural morphology, the special issue *Theoretical Studies on the Morphological Structure of Villages and Small Towns*, was organised and published by the Xi'an University of Architecture and Technology under the coordination of Prof. Li Jue. In the symposium, Prof. Xiao Li and I co-authored *Dynamics Pattern of Town and Village Evolution*, which became one of the earliest academic research

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results focusing on the mechanism of spatial evolution of townships in China from the morphology perspective.

In that paper, through a survey of rural areas such as Hancheng County in Shaanxi Province, we put forward the concept of "pattern fields" from a holistic and systemic perspective, pointing out that pattern fields are the products of the superposition and interaction of social, economic and cultural fields, etc., which are perhaps more essential existences. At the same time, from history to the present and then to the future, the evolution of the township form structure is subject to an essential prototype (or archetype) and pattern field. This prototype (or archetype) and pattern field has no end, transcends time and space, and marks an ideal of human beings for developing township morphology and the inevitable way for the evolution of township morphology.

After the 1990s, my research focus shifted to cultural heritage protection, especially the theoretical and methodological research and practice of archaeological site conservation, so I could not devote more energy to studying the morphology of rural settlements. In 2016, Kun Li went to Politecnico di Milano to study for his doctorate, and before he left, he asked me for suggestions for his doctoral research direction. I specifically suggested he pay more attention to the building typology and urban morphology research development trends after his arrival in Italy and preferably acquire some applicable theoretical methods to solve typical problems in China's current urban and rural environments and strive for methodological innovations.

To my delight, the suggestion of that year has been specifically and honestly responded to in this book. Under the care and guidance of my colleague and good friend Prof. Laura Pezzetti, Kun Li continued to take the villages in Hancheng as the object and completed most of the research work in this book at Politecnico di Milano. From the perspective of exploring the problems of destruction and decline faced by the traditional villages, he took morphological investigation as the entry point, combed through the research methodologies of urban morphology and building typology, and found the methodological tools suitable for the study of the spatial form of traditional villages, and then described and evaluated the village of Zhangdaicun from the perspective of "typo-morphological process".

By adopting a multi-scale approach, Kun Li redefines the traditional settlement, an object of conservation and enhancement in its ontology, as a unity formed by the courtyard type, the village form and the associated landscape structure. All three levels of research have been thoroughly investigated, and a new approach has emerged from their interconnectedness. Li's approach overcomes the lack of understanding of the concept of "environment" in conservation regulations and the absence of conservation tools. It promotes the structural concept of "environment" and a local knowledge approach to rural settlement patterns based on cultural studies. His reading of the dimensions of the rural landscape is both innovative and original. Li's work explores all these dimensions deeply and interdisciplinarily in order to explain the complex issues involved and embodied in the tangible and intangible meanings of human settlements, thus opening up a novel scientific methodology for the study of China's countryside.

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In this book, Li's research is clearly influenced by early Italian urban form studies. For example, Saverio Muratori's reflections on the "crisis of civilisation" and "fracture of organicity" arising from urban development are cited in the vigilance and reflection on the decline of traditional settlements in China; Giuseppe Samonà's research perspective on the "morphological units" is borrowed in the investigation of the morphological consistency of the Zhangdaicun Village area, and so on. Thus, another original feature of this book is the combination of Italian approaches to historical structure and morphology with specific Chinese cultural aspects. On the one hand, combining a thorough survey of all available historical records, maps, village archives, and genealogies and integrating the material investigation with knowledge derived from intangible culture provides new clues to the morphological structure of the village. On the other hand, by combining morphological interpretation with Chinese principles of I Ching, Feng Shui, and numerology, the authors have improved and validated the methodology of perceiving the essential morphological features of traditional Chinese settlements from the reality of the case study.

Therefore, the first unique feature of this book is that it is based on the traditional oriental (Chinese) cultural value system, observing, interpreting, and discussing the (morphological) structures, forms, and landscapes of the traditional villages as a whole. The second unique feature is the multi-level nature of the fieldwork, which consists of geography, landscape form, and architecture, each paying attention to the objective facts of the evolution of time. The third and most important unique feature is the multi-layered nature of the fieldwork. The author has shifted from the study of morphological elements, which was centred on the generalisation of intuitive formal characteristics of material objects, to the study of the morphology of local traditional villages, which is centred on the pivot of history and geography, rooted in traditional cultural factors, and characterised by the idea of "change" in the I Ching, to the study of the "invariance" of the morphology of local traditional villages and also made a pioneering proposal of four elements of the characteristics of Chinese historical village forms: "migratory", "orientational", "regulation and etiquette", and "geomancy numerology".

In this book, the scientific induction of the morphological characteristics of local traditional rural settlements will help optimise the theories and methods for improving the sustainable design of existing traditional towns and villages. At the same time, this study is expected to answer the critical question of exploring the origin of Chinese architectural culture from a particular perspective, which is the "reasons for the occurrence of traditional Chinese architectural wood structure characteristics", thereby making positive contributions to "adhering to the position of Chinese culture, refining and showcasing the spiritual symbols and cultural essence

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of Chinese civilisation, accelerating the construction of Chinese discourse and narrative system, and telling Chinese stories well". Li's research will promote the inheritance of traditional architectural culture and improve traditional village protection work in Shaanxi and even across the country.

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#### Foreword II

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Exploring an Integrated Methodology for Typo-morphological Reading of Traditional Villages in a Coevolutionary Concept of Preservation, Enhancement, and Development

The fact that rural villages are the locus of the permanence of the authentic forms of Chinese settlement and not just repositories of vernacular traditions and xiang-chou (nostalgia for the countryside) is perceivable. Nonetheless, present methods of investigation and assessment in historic landscapes have proved to be insufficient to decode, along with style and vernacular traditions, the settlement conditions, and their underlying formal structures (Pezzetti, 2022). Yet they are crucial for understanding the relation between single building types and their settlement and landscape forms, providing a scientific and cultural foundation to the knowledge project of the entire organism (Muratori, 1959). Preservation, regeneration, and sustainable development should be holistically referred to it.

In the process of urbanisation of villages and towns, now that development has turned from cities to the Chinese countryside, the conflict between the "Traditional" (architecture) and the "Modern" (self-built rough buildings) becomes prominent.

Chinese settlement forms have been investigated in previous literature and plans at a very large scale and following general abstract schemes, which are usually unrelated to the layering of built facts, landforms, and geographical surroundings. They lack their multiscale interrelations and the appreciation for the traces of a co-evolutionary system.

Since the relation with the morphological rural-urban structure has never been studied outside the plot scale (with no reference to architectural building types), or beyond mere plot aggregation (with no reference to the relation between building types and urban form), protection units are roughly determined and bear no relation with their building types, morphologies, and rural landscape. As a result, preservation and development are both rigidly standardised in the rough and arbitrary definition of three sequential zones corresponding to the "Key protection unit" (supposedly

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uniform), the "buffer zone" (supposedly unrelated), and the "environment control zone" for tourism development (supposedly a tabula rasa).

The doctrine seems also misleading. Besides the troublesome notion of "authenticity" and the dangerous opposition between tangible and intangible, the notion of "setting" contained in the ICOMOS China "Principles" (2015) is a major ambiguity impacting on knowledge methodologies. Together with the mere hint of "natural landscape and surrounding environment" in the "Regulation" (2008), "setting" is expressed as a vague reference lacking the appropriate knowledge tools that have, instead, a long tradition in Italian urban studies.

Limiting urban meaning to the "red line" preservation unit, to sterilise it "surgically" from the rest of the living city while simplifying its layered setting in the a posteriori "construction control zone" and the "environmental coordination zone", inevitably produces an oversimplification resulting in the tabula rasa of all morphological patterns, topographical signs, and agrarian structure that should constitute, instead, an integral part of the historic landscape (Council of Europe, 2000).

# The forerunner case study of Fenghuang Historic Rural Town. Reading the triple relationship between architecture, morphology, and landscape through latent structures and morphological semantic units

In the studies on the Chinese rural areas, the current standardised methodologies of analysis and applied strategies are insufficient to read and reveal the principles that constitute urban-rural form, nor to interpret its underlying formal structures in their integrated relationship between type, morphology, and topography (Pezzetti, 2019a). Besides, in the study of urban planning and morphology in China, narrative descriptions are still dominant. There are relatively few analytical and conceptual approaches, as noted by Whiteland and Gu (2006).

In the Chinese context, more than ever, conserving and building should be intended as two moments that belong to the same act of consciousness (Rogers, 1958).

The first attempt to study the settlement form and morphology of Chinese villages beyond the methodologies focussed on the Conzenian plot (1960), devoid of the architectural dimension of type and form, and Caniggian processual typology, devoid of the synchronic reading and mechanically translating analysis into design, was the research on Fenghuang's historic cultural town (Zhashui, Shaanxi Province), collected in my book "Layered Morphologies and Latent Structures" (Pezzetti, 2019a).

The methodological reference adopted in the Fenghuang research has its cultural roots in the tradition of urban studies developed between Milan and Venice where two components have always been intertwined: the relationship between architecture and the city (or the settlement), and between design, history, and tradition.

From this basis, the research has transcended some common spatial ontologies such as urban/rural, architecture/planning, and conservation/design, developing a multiscale approach and integrating theoretical and methodological tools from urban studies, topology, and conservation to decipher the typo-morphological and topographical structure of a Chinese historic small town. This approach has led to redefining the object of conservation itself in its ontology, that is, as a unity formed

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by the courtyard type, the morphology of the village, and the related landscape structures, and to propose a joint strategy of enhancement, revitalisation, and development based on their meaningful historic structure and layering.

To express the concerns for the historic palimpsest, the concept of Layered Morphologies has been developed as a theoretical and methodological approach that operates across interdisciplinary fields and includes recent urbanisation and contemporary conditions in an overall understanding of the entire urban-rural organism.

The first theoretical and operational shift that the research on Fenghuang advanced, is to redefine "setting" and "assessment" in strict relation to the object of research, preservation, and revitalisation.

Unlike the indefiniteness of "setting", the structural and historical notion of context was assumed to penetrate the deep structure of the settlement where the site/place, rather than the visible hic et nunc, is read as the result of a dense texture of signs and relations, fractures and oppositions that are forms, ideas, memories, and absences, the decoding of which takes place first of all (but not only) within the layered text that is the site (Pezzetti, 2019a). This legacy also constitutes the reference framework also for the dialectical relationship between old and new, i.e. between the pre-existent to be conserved and design as the authentic form of its enhancement (Pezzetti, 2019b).

Therefore, place-as-a-context is also an absence and a possible text that, similarly to a palimpsest (Geddes, 1915; Corboz, 2001; Pezzetti, 2019a/b), contains several traces and different signs including the future ones.

Therefore, if the concept of context as a palimpsest allows the reading of morphology and topography as a continuous recording of signs, what our knowledge of the context is made of becomes a crucial issue.

The second theoretical and operational shift was to develop a methodology aimed at understanding the Chinese settlement's physical and intangible dimensions altogether, demonstrating how the layering of physical traces of the irreproducible and autograph manifestation of a cultural construction nourishes the immaterial stratification of memory resonances and narrative echoes. Therefore, the aim of Fenghuang research was also to define an analytical methodology to capture the locus solus, while making the general reading-decoding procedures and possibly the Feng Shui and Shan Shui principles explicit (Pezzetti, 2022).

Along this line of thought, the notion of historic landscape is assumed as a systemic approach to the context as a structure of structures (Pezzetti, 2019a; 2022), to include both the continuity and mutual definition between urban and rural settlement.

Nonetheless, despite the European Landscape Convention assertion, not everything is landscape. Landscape is a protean and still largely indeterminate concept (Zagari, 2006) that has come to cover everything that exists, with the risk of dissolving all its components in the undetermined concepts of "environment" and "place". That means its comprehension cannot be limited to what is visible, as this construction originates from a deeper structure of the settlement and co-evolutionary processes in the long-term of civilisation (Braudel, 1985) in the relationship with natural and geographical elements.

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The diffused historical landscape results from a cultural construction that we recognise a posteriori and as a layered text when it is characterised by the consistency of signs, formal quality, iconic nature, or typicality. This text is what we need to investigate as a palimpsest, i.e. in its diachronic construction and synchronic reading, detecting and ordering the strata of the spatial palimpsest and its associated (cultural and natural, tangible and intangible, historical and emotional, documentary and aesthetic) character and meanings.

The interaction between survey and cartographic mapping is the first level of decoding the settlement rule. It offers both the ubiquitous vertical view that fully penetrates the stratigraphic depths of history, recording visible and intangible signs in their interconnections, and the perception of landscape, which only comprises fragments that are framed one place at a time (Corboz, 2001).

In the Fenghuang survey, fragmentary traces and clues integrated the scarcity of records and allowed the discovery of structural relationships and the recognition of substructures and units into which the landscape could be subdivided. Fenghuang's disappeared rural landscape emerged as one of the substructures and the key to unveiling the town's matrix, showing "the ensemble of durable and deep bonding between man and ground" (Lebeau, 1986).

Therefore, landscape is a "context containing other contexts" (Carandini, 2017) or, for architects, a context of structures (Pezzetti 2019a) that do not require separate instrumentality but rather multi-disciplinarity to include the different (architectural-territorial, hydro-geographical, socio-ethnological, legal-economical, etc., etc.) systems they are composed of in a broad cognitive framework.

The research on Fenghuang has demonstrated the typo-morphological solidarity between the dwelling courtyards and the topographic structure, which allows us to read and interpret the entire settlement form as a high-quality figure-organism (Pezzetti, 2019a), jointly redefining the object of conservation, the modalities for enhancement and the strategy for development.

In research on Fenghuang, the interaction between survey and cartographic mapping produced interpretative maps, both synchronic and diachronic. The tool of interpretative maps revealed a deep-seated urban order within which the architectural zhai yuan type (narrow courtyard) and the overall rurban landscape were linked by mutual structuring relationships. Fenghuang's settlement formal structure unveiled three main interconnected factors at the base of the Chinese village:

• The first is the relationship between the typological invariant of the unique zhai yuan type (narrow courtyard house), grafting Chu and Wu (central and southern culture) elements onto the Guanzhong type layout –thus giving a formal representation of the cultural features of port activities and migrations– andvarious the settlement's winding linear structure, giving shape to a peculiar morphotype, including building and a walled vegetable garden. The identification of morphotypes in the town's historical process brought to the identification of different composite landscape units and the complete redefinition of the "red line".

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The identification of various morphotypes in the town's historical process brought to the identification of different landscape units. I defined them "morphological semantic units" since they were distinguished by the permanence of their constitutive rules and character rather than a temporal or visual uniformity.

These concepts reformulate the object of conservation itself, which is far more complex and differentiated than the three generic protection and control units.

On the other hand, the recording of the variations determined by adaptation to the terrain and co-evolutionary processes has identified the type in its "practical application, i.e. within the building fabric" (Muratori, 1959), thus demonstrating the unacceptability of conceptual interchangeability in current preservation practices of the a priori type (or archetype), which is a formal structure, with the real type, which is instead a unique irreplaceable building.

• The second relates to the existence of a latent structure (Pezzetti 2019a), that I defined as the settlement matrix established by an original interaction between the architectural morphotype, the geography of the valley (the meander of the river), and the fan-like topographical form of the settlement, giving shape to a radial structure.

Synchronic mapping has clarified that the correspondence between the building parcel and building type generated an original radial structure converging on the upland on the Ying Pan Hill, where the ancestors recognised in the village form the deployed wings of the flying Phoenix (fenghuang). This structure defines the whole settlement, starting from the plot of the zhai yuan narrow courtyard houses, stretching to the backyards and vegetable gardens, continuing along the fields' division down to the riverbank wall, where it finally opened like a fan and reverberated in an ideal triangulation with the mountains' peaks.

Comparing the latent structure to the small town's historical development, the synchronic readings identified the different settlement layouts that superimposed onto the original radial structure and unveiled that, despite the appearances, they never totally erased the matrix.

The third is the triple relationship that the latent structure establishes among the
type, morphology, and topography of agrarian fields' structure, which describes
the interaction between architectural type, natural-geographic elements, and the
rural landscape at the origin of this settlement of this reclaimed land since its
foundation in the Tang Dynasty.

Additionally influenced by the original role of Fenghuang as a fluvial commercial hub, agrarian structure, and Feng Shui principles, the traces of this underlying topographical structure provide traditional Feng Shui and Shan Shui (mountain and water) principles, at the base of the Chinese concept of landscape (fengjing), with an extrinsic and fully expressed spatial form, which can be analysable and transmittable in futures designs.

Besides, these lines of force establish the relationship between mountain and water through the void, similarly to Chinese painted landscapes where invisible lines underlying things establish their mutual relationship (Cheng, 1979).

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The discovery of a resilient structure resulting from this original triple relationship opens readings and potential that, while unexplored, require urgent attention in the Chinese context.

The latent structure is the primary settlement matrix supporting what is now visible as a landscape. Such a territorial figure is no less important than that of the built heritage embodied in the "wings" of the Phoenix. Both emerged and lived in a mutual relationship that encapsulates the meaning of Fenghuang's urban-rural form.

Moreover, mapping revealed that those lines of force have influenced the positioning of later traditional buildings and rough self-built constructions as well.

Therefore, despite visual appearances, the latent structure offers a sound constitutive logic for re-structuring the whole rurban form Fenghuang's latent form, and not just of the heritage unit: maximising conservation, reconnecting separated urban-rural parts, integrating new grafting for the revitalisation and sustainable enhancement of the urban-rural landscape.

# Reading Traditional Villages in their relation between morphology and family clan lineages

The way we look at this cultural construction is neither a neutral accumulation of data nor an assessment of fatally transient values. "Historical awareness in planning all too often remains at the level of dating and describing individual features" (Whitehand, 2007). The relation between facts and the modes of description are themselves the method.

Fenghuang town has proved to be the text of a story of which it retains the structure and footprints, those outcomes fostered the interest for further research.

In this context lies the doctoral thesis of Li Kun (2021), who has extended the scope of research to the category of Traditional Villages which lack historical and environmental protection and represent a crucial challenge for the inheritance of Chinese traditional settlement forms. Excluded from the circuits and interests of tourism development, they are excluded from preservation lists and destined to disappear.

Continuing the approach based on sound fieldwork and documentary research while introducing anthropological interviews, Li's study analyses the form and evolutionary development of Chinese historical villages in terms of structure and morphology, based on the Italian tradition of typo-morphological research.

Drawing from the theoretical concepts developed by in my research on Fenghuang, Li's research intends to provide a methodological basis and an operational framework for the study of Chinese traditional villages as a precondition for the preservation and enhancement of their traditional forms.

Testing the definition of this new approach for integrating different scales of reading villages together with their territory and combining protection and enhancement of the Chinese heritage category of "Traditional Villages", the book applies a specific case study in the Hancheng context, Shaanxi Province through an in-depth knowledge path and sound methodological principles.

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Analogous to Fenghuang research, this study tests a multiple scales approach to redefine the object of preservation as a unity formed by the courtyard type, the morphology of the village, and the related landscape structures. All these three levels of study are deeply investigated, put into relationship, and resulting in a methodology that overcomes the inadequacy and ineffectiveness of the notion of "setting" deriving from conservation Charters, to embrace the structural notion of "context" and a knowledge approach to rural settlements' form.

The innovative feature of this book lies in reading Traditional Villages in their landscape dimension, which in turn is studied, like in Fenghuang, as "a context made of several interrelated structures" (Pezzetti, 2019a) rather than a setting.

The original feature of the book is the integration of Italian historic-structural and morphological methodologies with specific Chinese cultural and anthropological aspects. Li explores in-depth and interdisciplinary all those dimensions to account for the complex issues that are related and embodied in both the physical and intangible meaning of human settlements, opening a novel scientific methodology for Chinese studies as a sound base to define three key integrated project actions: what, why, how to preserve, enhance, or develop.

This research uses typo-morphological research as well as the primary method to investigate the spatial structure of Traditional Villages, exploring the essential relationship between "type" and "morphological structure" and revealing the hidden order under the disordered surface.

Following the methodology developed in the Fenghuang case study, the morphological structure is analysed through multi-scale combined analysis tools, extracting different landscape components and morphological semantic units.

At the same time, Li's research also analyses the status quo of research and trends in the conservation and development of Traditional Villages, the historical environmental protection works, as well as the deficiencies of the current assessment of historical environmental integrity.

Since the beginning of the twenty-first century, a few scholars have focused on Chinese villages' morphology. In Chap. 2, Li discusses the research development process for protecting rural heritage in China from the beginning of the last century. The literature review shows a growing concern in China for conserving traditional villages. He observes that in previous studies, most discussions have focused on how to preserve the macro-structure of villages, as well as the documentation of tangible and intangible cultural heritage, paying attention to the relationship between cultural routes and village conservation, grading and classifying different types of traditional villages based on value assessment and discussing the content for conservation planning in traditional villages.

In Chap. 3, the book examines the state of both conservation theories and morphological studies in China, comparing and reflecting on the Western morphological tradition (namely the Anglo-Italian), theories and tools, and their significance for studying the Chinese context.

The second part of this chapter is a foundational discussion on the spatial characteristics of Hancheng's historic rural landscape and traditional villages through systematically investigating all historical sources, from historic territorial cartographic maps

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to diagrams and records contained in local chronicles (gazetteers). Li analyzes the presentation and expression of rural landscapes in ancient gazetteers and maps to understand the landscape characteristics of the area in the ancients' thought. That meant studying the semantic expression of the landscape in the historical period related to traditional Chinese society starting from abstract, even symbolic records. Afterwards, the transformation and the crisis of the traditional rural landscape in Hancheng County are discussed.

The historical structural and typo-morphological investigation of the identity of the Traditional Villages in Hancheng County constitutes the central part and significant core of the research work.

The spatial morphological features of Traditional Villages include both dominant material features and intangible components, which need to be jointly decoded and interpreted as the essential pre-requisites for the protection and development of Traditional Villages.

Chapter 4 delves into the context specificity and integrates tools without losing sight of the different international positions. Moreover, this chapter aims to integrate the analysis and reading of the village's tangible structures in their diachronic and synchronic historical development with the ancient Feng Shui principles and Family Clan lineages. The first accounts for the settlement structuring principles. The second fills the gap of the lack of cadastres and infographic records while disclosing the cultural rules presiding over the type, the morphology, and the village orientation.

This combined reading revealed a new understanding of the village's structure and morphology, illustrated by detailed typo-morphological plans. The graphic investigation and presentation of the results are based on original cartographic territorial and landscape analysis, deep onsite surveys, study on family lineage, and the three-dimensional reconstructions of the architectural types, morphological units, and architectural components drawn by the author. Diagrams and abacuses clarify the processes of transformation of historical buildings.

As the research on Fenghuang has shown, reading and decoding the structure of spatial morphology in its typo-morphological and topographical characteristics is essential in the study of urban and rural settlements (Pezzetti, 2019a).

Li seeks to demonstrate that the morphological invariants of the traditional settlements in the middle and lower reaches of the Yellow River represented by the traditional villages of Hancheng County constitute a specific logical principle of spatial production and spatial co-evolution. They can be considered as a "third authenticity" in addition to the physical authenticity of the materials of the built environment ("first authenticity") and the authenticity of the architectural forms and craftsmanship under the tradition of the replacement of oriental building materials and elements ("second authenticity").

Villages and landscape are investigated as an inseparable unity formed by the interaction between the courtyard type invariants, the various morphological units that this type ordered over time, and the relations with the context's geomorphological and topographical configurations, resulting in a distinctive and multi-temporal landscape unit. Joining the investigation of "landscape as a structure of structures" (Pezzetti,

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2019a) he identifies the context's transcalar components in their historic development, structural interrelations, and morphological units, thus providing a knowledge base and a critical interpretation for both preservation and design enhancement.

Finally, Hancheng case study demonstrates that the grammar of the organic traditional morphologic units is reinforced by reading a combination of Feng Shui concepts, numerology, ancient regulations, and the mechanism of land rights (Li & Pezzetti, 2022).

Indeed, the substantial original feature of the book is the integration of Italian historic-structural and typo-morphological methodologies with specific Chinese cultural aspects. On the one hand, the aforementioned methodologies in combination with a thorough investigation of all available historical sources (data, records, maps, gazetteers, family branches), have allowed Li to produce deeper knowledge of the formal structure of the village by integrating morphological survey and intangible culture. On the other hand, by integrating structural readings with Chinese Feng Shui principles and reconstruction of local family lineages, he has improved and validated this integrated methodology and research principles in strict relation to the reality of the case study.

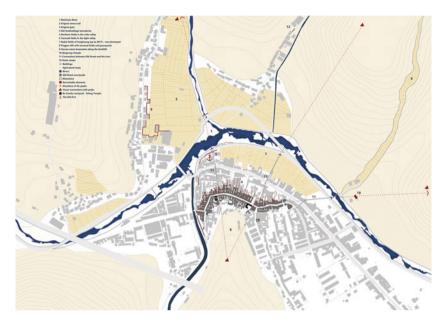
This approach has validated also for Hancheng the relationship between the pattern of the village and the pattern of the agrarian land, the location of the villages and the gully, the orientation of the villages, and some geographical natural landmarks. Besides, he proved that the existence of different morphological units explaining the diachronic historical construction of rural form has a close correspondence to the local families' branches.

Through the application of the methodology developed in Fenghuang Historical Town and the fur-ther development in delving into the influence of local cultural aspects, the book reinforces a new approach to the study and conservation of the integrity of traditional villages.

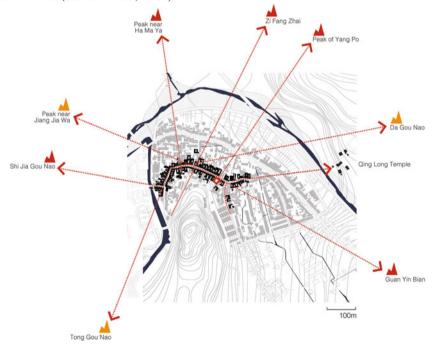
Finally, in Chap. 6, Li Kun lays a foundation for the qualitative and quantitative assessment and management of the historical environment through the detailed survey of historical landscape persistence and individuation of all components forming traditional villages and rural landscapes considered as a unit. Based on the ascertained typo-morphological structure, the challenges for old and new, that is the challenges of coevolution, are considered in their mutual interferences, proposing conservation strategies in conjunction with revitalising design enhancement.

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 $\textbf{Fig. 1} \quad \text{Fenghuang's triple relationship among typomorphology, farmland structure, and geographical elements.} \ (Source \ \text{Pezzetti}, 2019a)$ 



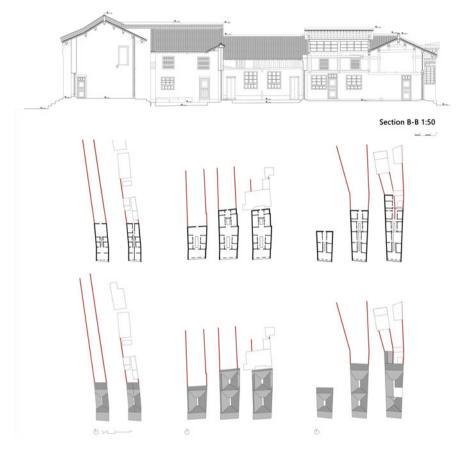
 $\textbf{Fig. 2} \ \ \text{Fenghuang's Feng Shui relationships with the settlement form. } \\ (\textit{Source Pezzetti}, 2019a) \\ t \\$ 

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 $\textbf{Fig.\,3}\,$  Fenghuang, detail of the typological map and zhai yuan morphotypes. (Source Pezzetti, 2019a)

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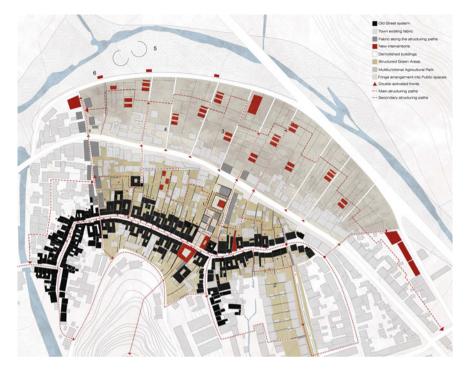


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#### References

- Bandarin, F. (2010). Foreword', in van Oers, R. and Haraguchi, S. (eds) Managing historic cities, World Heritage Papers 27. UWHC, Paris.
- Braudel, F. (1985). La Méditerranée. L'espace et l'histoire. Flammarion, Paris.
- Canella G., Coppa M., Gregotti V., Rossi A., Samona' A., Scimeni G., Semerani L., Tafuri M. (1968). Teoria della progettazione architettonica. Dedalo, Bari.
- Carandini, A. (2017) La forza del contesto. Laterza, Rome.
- Cheng, F. (1979). Vide et plein : le langage pictural chinois. Edition du Seuil, Paris.
- Conzen, M.R.G. (1960). Alnwick, Northumberland: A Study in Town-plan Analysis, Institute of British Geographers Publication 27. London, George Philip.
- Corboz, A. (2001). Le territoire comme palimpseste. In Le territoire comme palimpseste, et autres essais. Editions de l'Imprimeur, Paris.
- Council of Europe (2000). European Landscape Convention (Florence) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachmentdata/file/236096/8413.pdf.
- Della Torre, S. (2019). A Coevolutionary Approach to the Reuse of Built Cultural Heritage. In G. Driuss (Ed.), Il patrimonio culturale in mutamento. Le sfide dell'uso (25-34). Arcadia Ricerche. Geddes, P. (1915). Cities in Evolution. Williams, London.
- ICOMOS China (2015). Principles for the Conservation of Heritage Sites in China (2002), rev. 2004 and 2015. Getty Conservation Institute, Los Angeles.
- ICOMOS-IFLA (2017). Principles concerning rural landscapes as heritage, https://www.icomos.org/images/DOCUMENTS/ Charters/GA2017\_6-3-1\_RuralLandscapesPrinciples\_EN\_adopted-15122017.pdf, accessed September 2018.
- Lebeau, R. (1986). Les grands types de structures agraires dans le monde (1969). Masson, Paris.
- Li, K. (2019). Interpretation of the location and pattern of Fenghuang Town from the Perspective of Fengshui. In L.A. Pezzetti, Layered Morphologies and Latent Structures: Reading, Decoding and Rewriting to Enhance Historic Rurban Landscape, 34-41. Tongji University Press.
- Li, K. (2021). Principles for Reading Structure, Morphology, and Landscape as a Unity: The Investigation of the "Chinese Traditional Village" of Zhangdaicun Village, Hancheng, Ph.D. Thesis in Architecture, Built Environment and Construction Engineering XXXII CYCLE, ABC Department, Politecnico di Milano, supervisor Laura A. Pezzetti
- Li, K., & Pezzetti, L.A. (2022). Reading the structure of Chinese villages through typomorphological semantic units: the case of traditional villages in Shaanxi, China. In Architettura rurale. La memoria del paese, ICOMOS Italia Comitato Scientifico Nazionale Architettura Vernacolare, 21-22 May 2022 (forthcoming).
- MOHURD, NCHA (2012). Requirements of Historically and Culturally Famous City, Towns and Villages Conservation Plan.
- Muratori, S. (1960). Studi per un'operante storia urbana di Venezia (1959), 2nd edn. Istituto Poligrafico dello Stato, Rome.
- Pezzetti, L. A., & Li K. (2018). Exploring a Regenerative Structure Integrating Conservation, Remodelling, and Development for Fenghuang Historic Rurban Landscape. Urbanistica Informazioni, special issue, (278) 68-79.
- Pezzetti, L.A. (2019a). Layered Morphologies and Latent Structures: Reading, Decoding and Rewriting to Enhance Historic Rurban Landscape. Tongji University Press.
- Pezzetti, L.A. (2019b). Rurban Landscape as a Context of Structures: Theory and Tools for Conservation, Revitalization and Design Enhancement of Layered Morphology in Fenghuang Historic Town. Built Heritage Conservation in Rural Vitalisation, Built Heritage, Shanghai, 375-397.
- Pezzetti, L.A. (2020). Layered Morphologies and Topographical Structures in Historic Rurban Landscape: Integrating Typo-Morphological, Topographical and Landscape Tools with Feng Shui. In Cities as Assemblages, ISUF, XXVI International Seminar on Urban Form, 1-11.
- Pezzetti, L. A., & Li, K. (2021). Reading Structures, Morphology and Landscape as a Unity in Chinese Villages. Typological and Interpretative Maps of Zhangdaicun (Shaanxi) Traditional Village. U+D Urbanform and Design (16), 162-171.

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Pezzetti, L.A. (2022). Layered Morphologies and Topographical Structures in Historic Rurban Landscape: Integrating Typo-Morphological, Topographical, and Landscape tools with Feng Shui. In N. Charalambous, A. Camiz, I. Geddes (eds), Cities as Assemblages: Proceedings of the XXVI International Seminar on Urban Form 2019, Vol. 1, 117-132. Rome, Tab Edizioni.

- Rogers, E. N. (1957). Verifica culturale dell'azione urbanistica. Casabella- continuità, Difesa e valorizzazione del paesaggio urbano e rurale (217).
- Rogers, E. N. (1966). Il problema di costruire nelle preesistenze ambientali (1958). In Esperienza dell'architettura. Einaudi, Turin, 311.
- Rossi, A. (1964). Considerazioni sulla morfologia urbana e la tipologia edilizia. In AA.VV., Aspetti e problemi della tipologia edilizia. Documenti del corso di caratteri distributivi degli edifici, a.a. 1963-64. Cluva, Venice.
- Sereni, E. (2011). Storia del paesaggio agrario italiano (1961). Laterza, Rome-Bari.
- State Council P.R. China (2017). Regulation on the Protection of Famous Historical and Cultural Cities, Towns and Villages (2008), rev. edition.
- UNESCO. 2011. Recommendation on the Historic Urban Landscape, http://whc.unesco.org/uploads/activities/documents/activity-638-98.pdf, accessed June 2017.
- Whitehand, J. W. R., & Gu, K. (2006). Research on Chinese urban form: retrospect and prospect. Progress in Human Geography, 30(3), 337-355.
- Whitehand, J. W. R (2007). Conzenian urban morphology and urban landscapes. Proceedings of the 6th International Space Syntax Symposium (Instanbul) ii-09.
- Zagari, F. (2006) Questo è paesaggio. 48 definizioni (Rome, Mancosu).

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### **Abbreviations**

CFHCC Famous Historical and Cultural Cities of China
CFHCT Famous Historical and Cultural Towns of China
CFHCV Famous Historical and Cultural Villages of China

CLV China Landscape Village CTV China Traditional Villages

ISUF International Seminar on Urban Form

ICOMOS International Council on Monuments and Sites

MOC Ministry of Construction of the People's Republic of China MOF Ministry of Finance of the People's Republic of China MOHURD Ministry of Housing and Urban-Rural Development of the

People's Republic of China

MOCU Ministry of Culture of the People's Republic of China MOLR Ministry of Land and Resources of the People's Republic of

China

SRCAs Society for Research into Chinese Architecture, in Chinese: 中国

营造学社

NCHA National Culture Heritage Administration of the People's

Republic of China

GB-PPAV PRC National Standard: Protection and Profit of Ancient

Villages (draft for comments)

RPFHC-C/T/V Regulation on the Protection of Famous Historical and Cultural

Cities, Towns and Villages

VASA Historical Environmental Assessment, in Italian: Valutazione

Storico Ambientale

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