Construction and practice of a conservation plan implementation evaluation system for historic villages

Yubin Luo and Luhui Qi

School of Environment and Civil Engineering, Dongguan University of Technology, Dongguan, China; College of Architect and Urban Planning, Guangzhou University, Guangzhou, China

ABSTRACT
Conservation planning plays an important role in the protection and development of historic villages. A conservation plan evaluation is helpful to discover problems that might exist in the work of village protection. Having a way to evaluate conservation plans will improve the conservation planning system. In this study, a theoretical conservation plan implementation evaluation system for historic villages is developed based on a review of the current situation of conservation plan implementation evaluations at home and abroad. This theoretical evaluation system includes three stages of the "planning program evaluation: a conservation plan scheme evaluation, an implementation process evaluation and an implementation results evaluation. Three stages are suggested consisting of an evaluation index, evaluation process, and evaluation contents. Finally, the Tangwei historic village is used as a case study. Four aspects of the conservation plan implementation and its effects are evaluated using field research and a questionnaire. These include protection and utilization of ancient buildings, roadway repair, and landscape and sanitation facility improvements. Such an evaluation reflects the rationality and effectiveness of a conservation plan for historic villages from the perspective of implementation and promotes the effective protection of cultural heritage sites.

1. Introduction
Historic villages are important parts of the urban and rural historical and cultural heritage. They have the function of passing down local national culture to future generations. In recent years, China has gradually increased the protection of urban and rural historical and cultural heritage sites. By 2016, China had established 129 historical and cultural cities, 30 historical and cultural blocks, 252 historical and cultural towns, 276 historical and cultural villages, and 4153 traditional villages. Conservation planning is regarded as one of the evaluation conditions during the selection process for urban and rural historical and cultural heritage sites. However, due to the different timelines and reference standards of conservation planning for urban and rural historical and cultural heritage sites, the implementation of conservation planning has been unsatisfactory. The research results have been primarily focused on classification and grading evaluations of urban and rural material and intangible cultural heritage sites. There have been a few studies on the evaluation and implementation of conservation planning efforts. Therefore, it is necessary to reflect on conservation planning from the perspective of implementation to test the effectiveness of conservation plans, as well as to improve the planning system and rational scientific planning formulation through the use of planning implementation evaluations.

Foreign planning evaluations began during the second half of the 20th century (Shiwen and Yu 2003). Initially, they only evaluated the rationality of planning and its content. After that, with the application of systematic methods, applied economics and policy science was used in urban and rural planning. Therefore, planning evaluations have gradually developed into examinations of a combination of various uncertainties in the planning implementation environment to evaluate the process and effect of planning implementation. They have evolved from using simple technical means to being an important guarantee for planning implementation (Alexander 2006). Such methods have focused on the policy systems and process mechanisms that affect the implementation of a plan. They have also compared the results with the contents of the plan to reflect on the value and rationality of the plan during the implementation evaluation process and the effect of the plan (Friedmann 1987; Alexander and Faludi 1988; Healey 1991; Landis 1992). Talen (1996) proposed that planning implementation evaluation can be divided into an evaluation of the plan before implementation, the process of planning practice, an evaluation of policy implementation, and an evaluation of planning implementation results (Talen 1996). Planning implementation evaluations can be divided into three types using...
different stages that are generally accepted by scholars at home and abroad.

The pre-implementation evaluation of a conservation plan scheme is not only an evaluation of the scheme itself but also the earliest evaluation that attracts attention. The current evaluation system for historical and cultural towns and villages in China was established by Yong (2008). The system was adopted by the Ministry of Housing and Construction in 2005. It contains two parts: value characteristics and protection measures. The content of conservation planning is determined by the principles of conservation planning, actual needs, and the status and role in the urban and rural planning system. Many studies have drawn on this idea and expanded it into different ways of thinking. For example, Shao Yong believes that a comprehensive evaluation system of the entire protection process should be established, instead of evaluating the best conservation plan (Yong and Juanjuan 2012). A number of scholars have suggested evaluations of the implementation process and results of protection planning. For example, Xu Honggong and others used Hongcun as an example to reveal the inadequacy in the interpretation of “authenticity” in planning and management documents by means of event process tracking, resident oral historical events, and resident in-depth interviews. This would lead to a one-sided understanding of the executors (Honggang, Xiaojuan, and Xiaojun 2012). Wei Fan uses the historical and cultural blocks of Sanfang and Qixiang as examples to evaluate the conservation and inheritance of conservation elements, the implementation of renovation planning content, and policy formulations (Fan 2013). Ren Dong suggested a conservation plan evaluation system based on historical and cultural villages, which included a selection of evaluation elements and evaluation methods (Dong 2012). Liu Lulu used the villages of Daling, Xiaozhou, Songtang, and Xiema as examples to construct an evaluation system of the implementation effect of historical and cultural village conservation from four aspects: the preservation effect, the social effect, the economic effect, and the environmental effect. He then determined the weight of each index in the evaluation system (Lulu, Dawei, and Xiao 2016).

From the above studies, it can be seen that implementation evaluations of urban and rural historical and cultural heritage conservation plans are still in their infancy. The efforts have been focused on case studies, and the formation of a systematic evaluation system has not yet been achieved. The lack of a systematic evaluation theory and mechanism will make it difficult to find problems that exist in the implementation of conservation plans, and such drawbacks will restrict the conservation movement of urban and rural historical and cultural heritage sites.

2. Construction of a conservation plan evaluation system for historic and cultural villages

2.1. Contents and indicators of a conservation plan evaluation system for historic and cultural villages

Urban planning evaluations are not usually conducted as a final evaluation at the end of planning implementation, but they may be conducted several times during the planning implementation period. The core of an urban planning evaluation focuses on whether the planning implementation has achieved the objectives set by the statutory plan, or whether it has promoted or contributed to it Shiwen (2016). In many planning and implementation evaluations, different stages have different evaluation contents and purposes. According to scholars at home and abroad, a conservation plan implementation evaluation for historic villages can also be divided into three stages: the pre-implementation evaluation, the implementation process evaluation, and the implementation result evaluation. The evaluation of each stage should combine the characteristics of famous historic villages, protect the material and intangible cultural heritage, and combine with local resident economic and social development needs to activate and recycle them into the local economic development system so as to improve the residential quality of life. The evaluation contents and criteria of each stage of the conservation plan implementation evaluation system for historic villages are shown in Table 1. The first stage is to evaluate the project context of the historic villages prior to the implementation of the conservation plan, which consists primarily of the value characteristics, planning objectives, technical routes, protection measures, and other factors. The purpose of the evaluation is to test whether the conservation plan has adequately described the plan objectives and implementation measures for the protection of the authenticity and integrity of the material cultural heritage in historical and cultural villages. In addition, the purpose is to evaluate whether the document has described the countermeasures and suggestions for promoting the activation, utilization, and effective inheritance of the intangible cultural heritage aspects of historical and cultural villages. The second stage is to evaluate the implementation process of the conservation plan for historic villages. The operational pattern of the conservation plan implementation can be divided into government-led, developer-led, village committee-led, resident autonomous, and public-private cooperation. The understanding of the implementers and the implementation of a conservation plan are different. During the process of implementation, the process will be affected by protection policies, management agencies, financial security, and public participation. All of these factors need to be analyzed during the process of a conservation plan
implementation evaluation of historic villages in order to judge whether the conservation plan is being effectively implemented by the organization or not. The third stage is to evaluate the implementation results of the conservation plan. During the second stage, the effective or ineffective implementation of the conservation plan by the implementing agencies will have an impact on the environment of the historical and cultural villages, and the degree of impact will be different. An evaluation of the implementation results can be divided into a built environment evaluation and an implementation benefit evaluation. The evaluation of the built environment is to compare the gap between the goal of conservation planning and the actual construction results using spot investigations of ancient buildings, roadway traffic, the green environment, and public infrastructure of historical and cultural villages. The implementation of the benefit evaluation can be divided into a social benefit evaluation and an economic benefit evaluation. The evaluation of social benefits can be measured by the social influence after the implementation of the conservation plan, improvement in the the sense of belonging of the residents, and an evaluation of resident satisfaction. The economic benefit evaluation can be measured using the income of residents, tourism income, and changes in the surrounding real estate prices.

2.2. Process flow of a conservation plan evaluation for historic and cultural villages

The differences between effective implementation and ineffective implementation during an conservation plan evaluation process for historic villages requires attention. For instance, there might exist unreasonable aspects in the formulation of a conservation plan, such as regarding tourism planning as conservation planning and unilaterally emphasizing the function of tourism development and its economic benefits. Another example is to regard the conservation planning of cultural relics as the conservation planning of historical and cultural villages, unilaterally emphasizing the static protection of museums and not allowing any transformation or utilization. The plan’s objectives will inevitably deviate from the essence of conservation. Even if 100% of such planning is implemented, it will not be able to fully protect the historic and cultural heritage. Therefore, during the stage of the pre-implementation evaluation, there will be two situations of effective implementation and ineffective implementation (Figure 1). One situation is that the conservation plan is reasonably formulated, and evaluators should only pay attention to whether the plan can be effectively implemented. The second situation is that there are unreasonable areas in the formulation of the conservation plan, and evaluators should focus on whether unreasonable areas are corrected in the implementation during an evaluation of the implementation process. If it is amended, then it is possible for the implementing agencies to implement the conservation plan effectively. If unreasonable areas have not been amended, it can be determined that the implementing agencies have not effectively implemented the conservation plan.

2.3. Conservation plan evaluation system for historic and cultural villages

According to the contents and indicators of the above three stages for a conservation plan

![Flow chart for a conservation plan implementation evaluation for historic and cultural villages.](image-url)
implementation evaluation for historic villages, the evaluation process can be formed into an evaluation system. The evaluation system includes an evaluation of the value of historic and cultural villages, the designation/login of historic and cultural villages, a compilation of the conservation plans for historic and cultural villages, and the implementation of conservation plans for historic and cultural villages. Finally, the evaluation content is fed back to the compilation of conservation plans for historic and cultural villages and forms a perfect conservation planning system for historic and cultural villages. The evaluation system is also applicable to the conservation of other historic and cultural heritage sites in urban and rural areas (Figure 2).

3. Case study – evaluation and analysis of the conservation plan implementation for the Tangwei historic village in Dongguan

3.1. Pre-implementation evaluation of the conservation plan

The Tangwei ancient village is located in Shipai Town, Dongguan City. It was founded during the Song Dynasty. The village is bounded by ancient fences and covers an area of approximately 40,000 square meters. It is a large family farming settlement of the Li clan. The Tangwei ancient village is built on a gentle slope of a mountain. The village form uses the construction method of imitation image, which means that a crab guards the village and thousands of fields. Tangwei village has 21 ancestral temples, 268 ancient
dwellings, 19 study rooms, and 10 ancient wells built during the Ming Dynasty and the Qing Dynasty. The village was listed as a cultural relic protection unit in the Guangdong province in 2002. In 2007 it was named as a famous historical and cultural village in China. After that, it was successfully awarded the titles of “Chinese traditional village” and “Chinese landscape village” and declared a national 4A-level tourist attraction in 2016.

To more effectively conserve the overall style and features of the Tangwei historic village, the Municipal Cultural Relics Management Committee of Dongguan commissioned the Institute of Architectural and Cultural Heritage Protection and Design of the South China University of Technology to compile the “Conservation Plan of the Ancient Architectural Buildings of the Ming and Qing Dynasty of the Tangwei Historic Village in Dongguan City (2003–2010)” (hereafter referred to as the conservation plan). Since then, the conservation work of the Tangwei historic village has been primarily based on the plan for more than ten years, and this can be divided into the short-term (2003–2005) and long-term (2006–2010) periods. The conservation plan for material and cultural heritage is divided into four parts: preservation and renovation of ancient buildings, road traffic renovation, green environment renovation, and environmental sanitation infrastructure renovation.

In terms of the preservation and renovation of ancient buildings, the conservation plan suggests the renovation of 16 key buildings, while only the suggestion of the “regular preservation and maintenance” is stated for the remaining 200 ancient dwellings. However, there is no detailed explanation on how to carry out the preservation and maintenance for the 200 ancient dwellings. It can be seen that the plan has selected key buildings for repair and to protect the authenticity of ancient buildings to a certain extent, but there are still deficiencies in how to conduct the maintenance to maintain the integrity of ancient villages. For intangible cultural heritage, conservation planning only describes the current situation, but does not provide a strategy for activation and utilization of the evaluation implementation of the historic villages. For the aspect of road traffic renovation, the conservation plan suggests the construction of peripheral lanes, parking lots, and the repair of internal lanes. It also suggests that maintaining the original scale and proportion of the ancient village lanes and restoring the “seven vertical and four horizontal” lanes and road network of the ancient village are conducive to the restoration of the original features of the ancient village. For the green environment, the conservation plan suggests the protection of old trees and to form a green belt by planting trees around the periphery of ancient villages to separate the new areas. It is suggested that this would be conducive to maintain the complete landscape of ancient villages. The conservation plan offers a series of suggestions on fire control, line networks, and drainage systems of ancient villages that are conducive to protect and restore the natural and simple historical features of ancient villages.

3.2. Evaluation of the conservation plan implementation process

The conservation and renovation work for the Tangwei ancient village began in 2002. The conservation work was primarily based on the conservation plan. An implementation organization was established by the village committee as a cultural relics protection group. A special commissioner was assigned to take charge of the overall protection and management of the ancient village. In addition, a tourist center and management office was established in the ancient village. The daily management was performed by an enthusiastic elderly man in the village. In the interviews, managers repeatedly pointed out that there was a shortage of staff and many tasks could not be conducted at all. Because most of the aborigines have moved away from the ancient villages, they are not enthusiastic about the conservation and development of ancient villages. Primarily migrant workers live in the ancient villages. They live there due to the low rent. They have no sentiment toward the ancient villages, let alone care about how to protect them. Rural rules and regulations formulated by village committees have little effect. “To not destroy is the best protection,” the managers reluctantly said.

Lack of funds is also one of the difficulties faced by the Tangwei historic village. The renovation fund is primarily raised by the village committee. Every year the village committee invests 16% of its annual total economic income in the maintenance and renovation of the village. The renovation fund is primarily used to repair ancient buildings and part of the surrounding roads and infrastructure. In addition to self-financing by village committees, the renovation fund also includes external capital input from the Dongguan Municipal Government and the Shipai Town Government. The ratio of self-financing to external capital is approximately 1.85:1. Currently, the renovation funds are only used for ancestral halls, study rooms, and a small number of dwellings that are of great value in the historic village. Most of the dwellings are facing disrepair, damage, or collapse.

3.3. Evaluation of the conservation plan implementation results

According to the results of the on-site survey, only approximately 70% of the short-term objectives of the conservation plan for the Tangwei historic village
have been implemented in nearly 13 years. The long-term objectives have not been implemented due to a lack of funds and difficulties in demolition and relocation. This reflects that the formulation of the conservation plan is too ideal, and there is a lack of foresight regarding the feasibility in the plan and budget for capital input. This also further illustrates that the formulation of conservation plans for historic villages must be based on local social, economic, and cultural conditions. But beyond that, detailed and feasible implementation rules are needed to guide the development of protection work.

3.3.1. Built environment evaluation
According to the results of the site survey, only 15% of the key buildings proposed in the conservation plan were repaired adequately. These areas were primarily concentrated near the east entrance, which included the seven-room hall, the Leping study, and the Fengchi study (Figure 3). The rest of the key buildings were partially repaired or not repaired. There were twelve key buildings that were partially repaired, such as Li’s ancestral temple, Huizong study, and others (Figure 4). Some key buildings only had the façade repaired, some only had the main structure repaired, but the interior decoration, such as shadow walls, door masks, window carvings, floor tiles, and other parts were not repaired. In addition, a large number of ancient dwellings had not been maintained for a long time. Some of them had been renovated or added to (Figure 5). Some of them even collapsed due to disrepair. The utilization rate of the repaired old buildings was low, with only three of them utilized. The remaining 85% of the old buildings were idle whether they were repaired. For example, Li’s ancestral temple was used as a showroom of village history (Figure 6). The Leping study was used as a management office for the village, and the sixth ancestral house was used as a tourist center.

Most of the roadways in Tangwei historic village are well preserved (Figure 7). The skeleton of the roadways are “seven vertical and four horizontal.” The main materials used in the roadway are red sandstone and flagstone, and some of the materials are green brick pavement. About 15% of the roadways in the ancient villages have been partially repaired, and some pavement materials have been damaged. There are also a small number of roadways that are overgrown with weeds and in a state of abandonment. Generally, the longitudinal roadways are relatively smooth, while the crosswise roadways are not connected smoothly. In addition, it was found that there were a small number of motor vehicles entering the village that had damaged some roadways. This needs to be stopped before further damage is inflicted.

According to the field survey results, we found that the green landscape of the Tangwei historic village basically maintained the status quo. The water quality of the pond was good. Leisure seats were added under the two big banyan trees at the southeast

![Figure 3](image-url). Evaluation of the major ancient architecture renovations in the Tangwei historic village.
entrance to form a leisure place with a high utilization rate. Some of the green areas in the ancient village have been abandoned, and some have been transformed into private vegetable fields. A small amount of newly built green space is primarily concentrated on the vicinity of the parking lot outside the historic village (Figure 8). The long-term construction of a green belt around the village mentioned in the conservation plan has not been realized due to demolition difficulties and a lack of funds.

The conservation plan suggests a sewage discharge from the underground ditch pipeline in the infrastructure, but this has not been implemented. Open ditch drainages are still used in the village. The bare pipes are not in harmony with the style of the historic village. It was also found that the Tangwei historic village lacked a garbage dump, especially for the collection of domestic refuse. This resulted in the random stacking of domestic refuse, which seriously affects the landscape (Figure 9). Old-fashioned poles are still used in the village, and the network is in disorder. The conservation plan requires that the wire network be relocated underground, but this require has still not been implemented. Although some houses had been installed meters, most of them are not in use.

3.3.2. Implementation benefit evaluation
Professor Lewis D. Hopkins has proposed four criteria for evaluating the effectiveness of a conservation plan: effect, net benefit, internal validity, and external...
validity (Hopkins 2009). Effect refers to whether the plan has an impact on decision-making. Net benefit refers to the benefits of the plan minus the costs. Internal validity refers to whether the plan content consists of reasonable logic or not. External validity means that the implementation of the plan must meet the expectations of society (Shigang 2010).

According to the four criteria proposed by Professor Hopkins to evaluate the implementation of the Tangwei village conservation plan, the effect is obvious. The formulation of the conservation plan has played a direct guiding role in the conservation of the Tangwei historic village in the past decade. This is evidenced by the conservation of the ancient buildings, roadway repairs, green environment improvements, and infrastructure improvements of the Tangwei historic village. It is difficult to measure the net benefits of the conservation plan for Tangwei village because the benefits caused by the conservation plan cannot be accurately calculated. For

Figure 6. Li’s ancestral temple has been partially repaired and is used as a village history exhibition hall.

Figure 7. Evaluation of the roadway renovation in the Tangwei historic village.
Figure 8. Evaluation of the green landscape implementation in the Tangwei historic village.

Figure 9. Distribution of the foundation sanitation facilities in the Tangwei historic village.
example, the preserved cultural heritage will have a certain social impact, promote local tourism, promote the price of surrounding real estate, attract foreign tenants, and other indirect benefits. However, it is difficult to measure whether these things are a direct or indirect benefit of the conservation plan or not.

The internal validity of the Tangwei village conservation plan is basically reasonable. The short-term and long-term objectives of the plan are formulated according to the conservation value, urgency, and scope of the historical heritage. The implementation results also showed that the short-term objectives of the plan are feasible, but there is still a big gap between the implementation effect and the expected objectives of the conservation plan. The external validity of Tangwei village conservation plan is not obvious. Although some key ancestral halls, a study, and residential buildings have been renovated according to the conservation plan, they have not been effectively activated and utilized. The roadway space and green landscape of the Tangwei ancient village also affect the integrity of the ancient village style because of some collapsed buildings and abandoned sites. Additionally, Tangwei village’s history and culture has attracted attention from the outside world and attracted artistic workshops at the village, such as the Beijing 798.

According to the statistical results of the survey, most villagers are not very satisfied with the implementation of the conservation plan. For example, in an evaluation of the protection and utilization of the ancient buildings, 40% of the villagers expressed satisfaction and 43% of the villagers believed that only a small number of ancestral halls and study rooms were repaired well (Figure 10). In addition, the utilization rate of these ancient buildings is low. In an evaluation of roadway repair condition, 35% of the villagers expressed satisfaction, 47% of the villagers thought that the primary roadways were well preserved, but some roadways were blocked and abandoned. Hence, the work of roadway repair needed to be strengthened (Figure 11). A total of 44% of the villagers were satisfied with the construction of the green landscape (Figure 12). Some villagers believed that some green areas had become private vegetable fields, and they believe that management should be strengthened. In addition, they thought waste near the pond should be disposed to avoid polluting the water. In an evaluation of the basic sanitation facilities, 31% of the villagers expressed satisfaction and 47% of the villagers believed that, although some sanitation facilities were added in Tangwei village as well as environmental sanitation being improved, there was still much of the infrastructure that still needed work (Figure 13).

4. Conclusion

In this study, a theoretical conception of an evaluation system for conservation plan implementation for historic villages was proposed based on a review of the current studies regarding conservation plan implementation evaluations. The system proposed the use of evaluation indexes, an evaluation process, and evaluation contents of the three stages in the implementation of a conservation plan: pre-implementation program evaluation, implementation process evaluation, and implementation result evaluation. Then, the Tangwei historic village in Dongguan was used as an example to conduct the conservation plan implementation evaluation. The proposed system combines theory with practice in
order to reflect on the conservation of urban and rural historical and cultural heritage sites from the perspective of implementation. Understanding the rationality and effectiveness of a conservation plan will promote more effective protection of cultural heritage sites.

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