

MINISTRY OF EDUCATION AND TRAINING    MINISTRY OF CONSTRUCTION

**HANOI ARCHITECTURAL UNIVERSITY**

**TRAN VU THO**

**LANDSCAPE ARCHITECTURE IN VILLAGES WITHIN THE  
GREEN BELT OF NHUE RIVER, HANOI CITY**

*Specialization: Architecture*

CODE: 9580101

**SUMMARY OF DISSERTATION**

HÀ NỘI, 2024

The thesis was completed at  
Hanoi Architectural University

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The dissertation will be defended at university-level council for  
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## INTRODUCTION

### 1. Reason for choosing the topic

The urbanization process in Hanoi, Vietnam, began in the 1980s and has rapidly developed under the influence of reform policies and international opening. This development has not only affected the inner city and suburban areas but also spread to the outskirts, creating a complex "semi-urban, semi-rural" landscape. Urbanization has posed challenges in managing and developing Hanoi's urban areas, especially in conserving and developing villages. The merger of Ha Tay province into Hanoi in 2008 has also added challenges to urban management and development. The landscape architecture (LA) value in villages is facing the risk of gradual disappearance. The General Planning (GP) approved by Decision 1259/QĐ-TTГ on July 29, 2011, for the development of Hanoi Capital by 2030 and 2050, emphasizes the conservation of green spaces and the cultural identity of villages. Resolution 15-NQ/TW of the Politburo has identified the development direction of satellite cities and urban clusters with the goal of harmonious development between rural and urban areas. Especially, the green belt (GB) along the Nhue River is considered an important buffer zone that connects the inner city with the expanded urban area while protecting the balance between urban development and environmental conservation. Development solutions need to conserve landscape architecture and quality of life for the people. This includes developing natural landscapes and renovating existing residential areas. The solution to organize landscape architecture (LA) in villages within the GB of the Nhue River has become a challenge for the sustainable development of Hanoi Capital. This is an important and necessary issue of both scientific and practical significance. It requires detailed research to determine the structure of models and solutions for organizing LA in villages effectively.

### 2. Research objects and scope research object

Research Objects: LA of villages within the green belt of the Nhue River, Hanoi city.

Research scope: The GB of the Nhue River is defined according to the GP within the boundaries passing through 4 districts: Ha Dong District, Nam Tu Liem District, Bac Tu Liem District, and Thanh Tri District, covering an area of about 362,302 hectares.

### **3. Research purpose**

To propose models and solutions for organizing LA in villages within the GB of the Nhue River to meet the functional requirements of the GB and sustainable development.

### **4. Research methods**

Survey and current status investigation method, map overlay method, inheritance method, synthetic analysis method, expert method, and forecasting method.

### **5. Theoretical and practical significance of the topic**

- The topic is an academic document providing a scientific basis and completing the theory of landscape architecture in villages within the green belt of the Nhue River and organizing landscape architecture in villages within the green belt of the Nhue River.
- The viewpoints and proposed solutions are used for planning the green belt area of the Nhue River in the next phase and serve as a reference basis for managing, building, and developing villages within the GB area.

### **6. Research Content**

- Survey the current status of villages in the green belt area of the Nhue River, identifying the characteristics of landscape architecture in general and the architectural landscape space of villages and residential areas to classify and determine the elements to be conserved, renovated, or developed.
- Building viewpoints and principles according to the development orientation of the village in line with the requirements of establishing the green belt of the Nhue River in Hanoi.
- Proposing models and solutions for organizing LA in villages within the GB of the Nhue River to ensure alignment with the GP of Hanoi Capital.

### **7. New Contributions of the Topic**

The research of the thesis has made new contributions as follows:

- Identification and classification of villages within the green belt area of the Nhue River, Hanoi city.
- Development of a methodology on LA in villages within the GB of the Nhue River, Hanoi city.

- Building viewpoints, principles, proposing models and solutions for the renovation, beautification, or new construction of LA components in villages within the GB of the Nhue River, Hanoi city.

## **8. Thesis Structure Consists of 3 main parts**

Introduction (07 pages), Main content (140 pages), Conclusion – Recommendations (03 pages). The content section has 03 chapters: Chapter 1 (47 pages) is an overview of the research problem, Chapter 2 (43 pages) covers the scientific bases, and Chapter 3 (50 pages) presents the research results of the thesis.

## **CHAPTER 1. OVERVIEW OF LANDSCAPE ARCHITECTURE IN VILLAGES WITHIN THE GREEN BELT OF THE NHUE RIVER, HANOI CITY**

### **1.1. Overview of urban green belts**

#### **1.1.1. Green Belts Around the World Green Belts (GBs)**

GB are green space areas surrounding large cities, originating early as seen in the "Garden City" model by Ebenezer Howard in 1902. The first GB established in London in 1935 and then spread worldwide. They vary in shape and size depending on geographical conditions and the size of the city. Besides limiting urban sprawl, green belts also improve urban living quality and reduce pollution.

#### **1.1.2. Green Belts in Vietnam**

Several major cities in Vietnam selected for green space analysis outside the urban center include Hanoi, Hai Phong, Vinh Phuc, Bac Ninh, Da Nang, and Ho Chi Minh City. These cities develop green belts to protect the environment and balance urban ecology. In Hai Phong, the green belt area is 34.569ha, including green corridors along rivers and other natural areas. Vinh Phuc and Bac Ninh also develop green belts focusing on natural heritage conservation and ecological balance. In Da Nang, the suburban green space includes ecological areas with a total area of 92.424 ha. In Ho Chi Minh City, the green belt consists of mangrove forests and agricultural land aimed at nature protection and sustainable development.

- **Green Belt in Hanoi City** The general plan for the construction of Hanoi Capital was approved by Decision 1259/QĐ-TTg of the Prime Minister.



The GB, green wedge, was integrated into the structure of Hanoi city. According to the green space network planning project of Hanoi Capital, it includes: GB, green wedge, themed parks, and other green spaces (green axes, urban parks, garden parks, flower cultivation areas, ornamental trees, natural conservation trees, public buildings, water surfaces...).

- **Nhue River Green Belt:** acts as a buffer zone separating the expanded inner city area (limited from the historical inner city's ring road 2 to the Nhue River) from the expanded urban area south of the Red River (from the Nhue River to ring road 4). The green belt plays the role of an ecological "buffer zone" for the inner city area of Hanoi.

Boundary scope: To the North, it borders the Red River dike. To the East, it borders the Nhue River. To the West and South are urban sub-areas from D1 to D5.

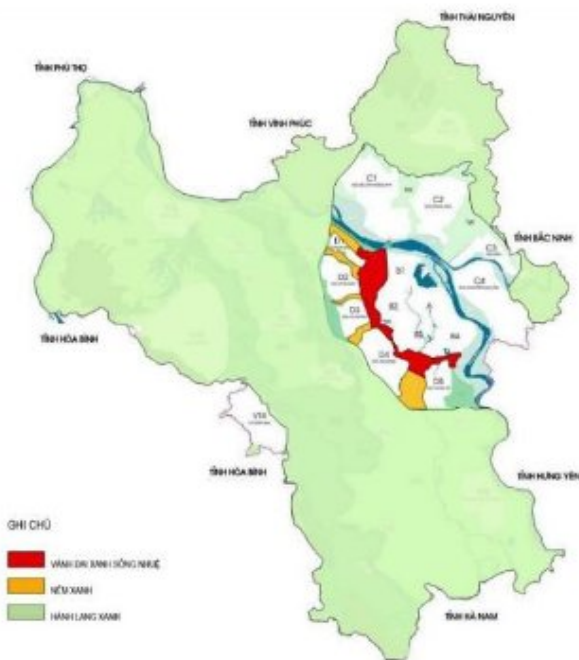


Figure 1.1. Green spaces in Hanoi

Falls within the administrative boundaries of 4 districts and 22 wards/communes: (1) Bac Tu Liem: 10 wards (Thuong Cat, Lien Mac, Thuy Phuong, Duc Thang, Minh Khai, Co Nhue 2, Co Nhue 3, Phuc Dien, Phu Dien, Phuong Canh). (2) Nam Tu Liem: 5 wards (Xuan Phuong, Tay Mo, Cau Dien, Phu Do, Dai Mo); (3) Ha Dong: 4 wards (Mo Lao, Phuc La, Ha Cau, Kien Hung); (4) Thanh Tri: 7 wards (Tan Trieu, Thanh Liet, Ta Thanh Oai, Huu Hoa, Dai Ang, Tam Hiep, Van Dien);

Research scale: about 362,302 ha.

## 1.2. Villages within the Green Belt Area

### 1.2.1. Villages within Green Belt Areas Around the World

Villages within GBs face pressures from urbanization. Each country has its policies to manage and develop villages, which usually have a lower population density compared to the total GB area. For example, in Seoul, the population

within the GB accounts for only 1.66% of the total population. In London and Canada, traditional villages with agriculture, water bodies, and wildlife conservation areas are highlights. Villages within GBs share many similarities with villages in the Northern Delta of Vietnam in terms of structure and population.

### 1.2.2. Villages in the green belt of Nhue River, Hanoi city

- Villages in the green belt of Nhue River, Hanoi city

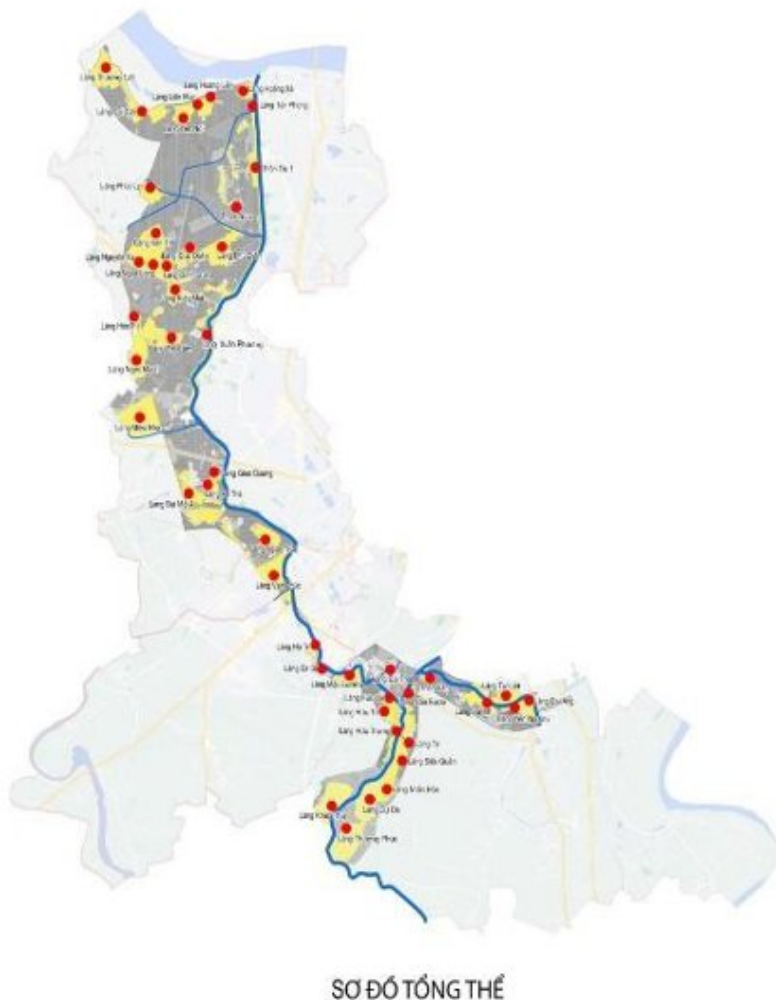


Figure 1.2. Location of villages in the GB of Nhue River

42 villages distributed in the districts as follows: (1) Bắc Từ Liêm District (17 villages): Hoàng Xá, Thượng Cát, Đại Cát, Yên Nội, Liên Mạc, Văn Trì, Nguyễn Xá, Phú Diễn, Kiều Mai, Đức Diễn, Hòe Thị, Phúc Lý, Thôn Trù 2, Tân Phong, Ngọa Long, Đình Quán, Thôn Trù 1. (2) Nam Từ Liêm District (7 villages): Đại

In the GB of Nhue River Upon surveying the current state of villages in the green belt of Nhue River, it is observed that many villages only retain their names; in reality, they have been completely urbanized, losing their village structure, or have become small residential clusters or merged; hence, within the scope of the thesis, only those villages that have been specifically identified and delineated based on the land use status statistics of the GS subdivisions according to the master plan approved in 2011 are discussed. Based on Figure 1.2, it is evident that there are currently a total of



Mỗ A, An Thái, Giao Quang, Ngọc Mạch, Thị Cẩm, Ngọc Trục, Miêu Nha. (3) Hà Đông District (3 villages): Mậu Lương, Đa Sỹ, Hà Trì. (4) Thanh Trì District (15 villages): Thượng Phúc, Yên Ngưu, Tựu Liệt, Khúc Thủy, Cự Đà, Làng Tó, Nhân Hòa, Siêu Quần, Thôn Văn, Hữu Lê, Hữu Từ, Hữu Trung, Phú Diễn, Đại Áng, Huỳnh Cung

- **Structure of villages in the GB of Nhue River, Hanoi city**

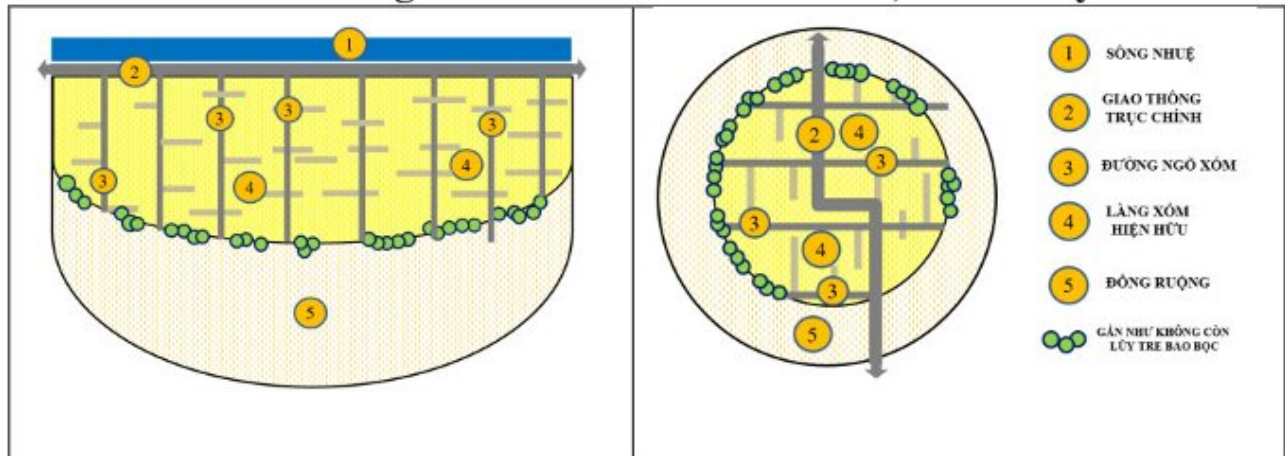


Figure 1.3. Current structure of villages in the GB of Nhue River

- **Economic activities**

+ For villages with a large proportion of agricultural land maintaining activities related to land resources, the economic characteristics are pure agricultural villages growing rice or villages with specific agricultural products (flowers, vegetables, fruit trees) classified as agricultural villages.

+ For craft villages, the economic characteristics are small-scale industrial villages, craft villages, or villages with a mixed economy of agriculture and small-scale industry, classified as craft villages.

+ For villages with a small proportion of agricultural land, where the economy is not dependent on agricultural production resources, classified as purely residential villages. Upon surveying the current situation of villages in the green belt of Nhue River, the researcher classified the villages within the study limits into 12 craft villages; 8 villages without crafts and already urbanized with no agricultural land left; the remaining villages still have agricultural land for development.

### 1.3. Current state of landscape architecture in villages in the green belt of Nhue River

Components of village landscape architecture



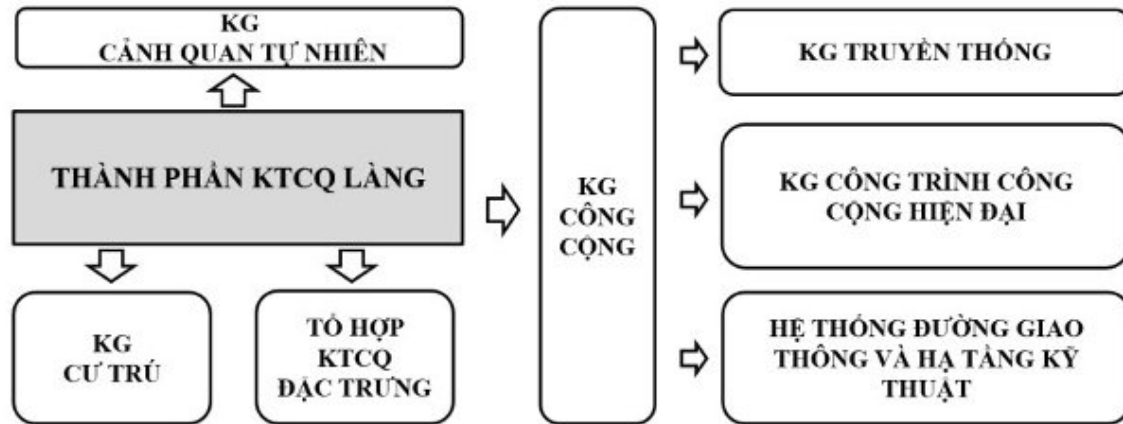


Figure 1.4. Diagram of LA components in villages

#### 1.4. Research related to the thesis topic

Scientific topics, theses, dissertations, articles, and scientific conferences have been referenced and synthesized to address issues related to villages, GBs, or HLX, providing specific LA organization solutions. However, LA in villages within GBs has not been researched, partly because GBs were first applied in Vietnam, thus lacking specific analyses of villages within GBs.

#### 1.5. Research issues

Organizing LA in villages in this area becomes urgent and important, needing to meet the requirements of the GB to prevent uncontrolled expansion. From the actual situation of villages in the GB area of Nhue River, the following research issues can be identified: (1) Classify villages according to the city's master plan criteria. Determine the function and structure of LA space in villages within the GB of Nhue River:

- Identify LA space layers in the study area to guide the organization of each space separately and solutions to connect them into a unified complex.
- Maximize the use of existing landscape elements such as topography, water bodies, architectural structures, greenery, technical equipment systems, colors, and lighting.
- Reorganize the structure with a focus on emphasizing existing distinctive features.
- Renovate and enhance the aesthetic quality of existing components lacking in function, aesthetics, and materials, including terrain organization, ground surfaces, and traffic throughout the study area, as well as the form and components related to architectural structures. (3) Develop models and solutions

for development for each type of village focusing on elements such as landscape system structure, architectural space, and technical infrastructure.

(4) Propose solutions to connect the landscape in the study area with adjacent green spaces, especially the landscape along the roads around the GB, the landscape along the Nhue River, and the western area of the Nhue River GB.

## **CHAPTER 2. SCIENTIFIC FOUNDATIONS FOR THE ORGANIZATION OF LANDSCAPE ARCHITECTURE IN VILLAGES WITHIN THE GREEN BELT OF NHUE RIVER, HANOI CITY**

### **2.1. Legal Basis**

Through the study of legal documents, resolutions, and development policies related to green belts according to the Hanoi city master plan approved in 2011, and development policies for villages to serve as a premise and important direction in organizing landscape architecture in villages within the green belt of Nhue River, Hanoi city.

### **2.2. Theoretical Basis**

The thesis studies theoretical foundations applicable to the topic: (1) Theory on LA; (2) Theory on planning and construction of rural residential areas; (3) Green architecture theory; (4) Trends in planning and constructing residential areas associated with natural exploitation and historical-cultural heritage; (5) Sustainable development theory; (6) Urban agriculture theory.

### **2.3. Factors Influencing the Organization of Landscape Architecture in Villages within the Green Belt of Nhue River, Hanoi City**

(1) Natural characteristics; (2) Cultural-social conditions and traditional cultural features; (3) Economic-social development factors and actual requirements at villages; (4) Influencing factors of tourism and leisure; (5) Influencing factors of the Nhue River green belt.

### **2.4. Current Characteristics and Classification of Villages in the Nhue River Irrigation System, Hanoi City**

#### **- Current Characteristics of Villages in the Nhue River Irrigation System, Hanoi City**

+ Location relative to the river: There are two types of villages - riverside villages and non-riverside villages. Currently, in the Nhue River irrigation system, there are 26 riverside villages and 16 non-riverside villages.

+ Structural characteristics: Depending on their location relative to the river, the structure of the villages can vary. Riverside villages (RV) often have a linear RV structure, while non-riverside villages (NRV) have a more concentrated development structure. Currently, in the Nhue River irrigation system, there are 26 villages with a concentrated development structure and 16 villages with a linear structure.

+ Characteristics of agricultural space, water surface

### - Classification of Villages in the Nhue River Green Belt, Hanoi City

Table 2.1. Classification of Villages in the Nhue River Green Belt, Hanoi City

Vị Trí	Cấu trúc	Loại làng	Có làng		Tên loại làng
			Có (X)	Không (O)	
Làng ven sông	Trái dài	Làng NN	X		Làng ven sông có cấu trúc trái dài
		Làng Nghề	X		
		Làng ỚĐT		O	
	Phát triển tập trung	Làng NN	X		Làng ven sông có cấu trúc phát triển tập trung
		Làng Nghề	X		
		Làng ỚĐT	X		
Làng không giáp sông	Phát triển tập trung	Làng NN	X		Làng không giáp sông có cấu trúc phát triển tập trung
		Làng ỚĐT	X		
		Làng Nghề		O	
	Trái dài	Làng NN		O	Làng không giáp sông có cấu trúc trái dài
		Làng Nghề		O	
		Làng ỚĐT	X		

## 2.5. Practical Experience

GBs have appeared in most developed countries and are now being applied in developing countries (Indonesia, Vietnam...). In the GB areas worldwide, there are residential areas living along the main traffic axes for development. However, the construction density is low, and green spaces occupy a large proportion in the village structure. The policies of various countries encourage the development of agriculture or tourism in the existing village areas.

## CHAPTER 3. SOLUTIONS FOR THE ORGANIZATION OF LANDSCAPE ARCHITECTURE IN VILLAGES WITHIN THE GREEN BELT OF NHUE RIVER, HANOI CITY

### 3.1. Perspectives, Objectives, and Principles

#### 3.1.1. Perspectives

The villages within the GB of Nhue River have been formed, changed, and developed over a long history. Therefore, organizing LA in villages in this area not only needs to be compatible with the local ecosystem and highlight the characteristic elements of the village but also must align with the general planning orientation of Hanoi city according to decision 1259/QĐ-TTĐ dated July 29, 2011.



Figure 3.1. Perspectives on organizing LA in villages within the GB of Nhue River

#### 3.1.2. Objectives

The organization of landscape architecture in villages within the green belt of Nhue River must achieve the following objectives:

- Objective 1: Organize architectural landscape space to preserve heritage values and improve the quality of life for residents.
- Objective 2: Designing village landscapes should enhance local identity and be compatible with modern urban development.
- Objective 3: Organizing landscape architecture in villages is an important factor in creating village identity, where the values of cultural landscape and natural landscape space will be elements establishing identity not only for the architectural landscape of the village but also for the green belt and the city in general.
- Objective 4: For existing residential areas and constructions in villages, control is strictly enforced, and the housing structure is completed according to the model of low-density, low-rise ecological living, and traditional architecture.

#### 3.1.3. Principles



When organizing LA for villages in this area, it's necessary to implement four main actions in a coordinated manner:

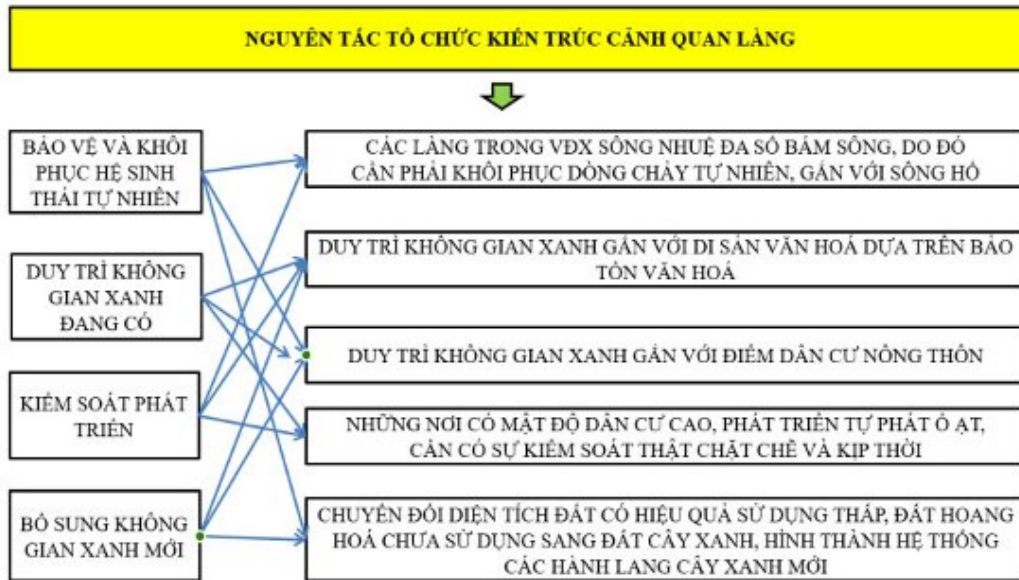


Figure 3.2. Principles of organizing LA in villages within the GB of Nhue River

**3.2. Landscape Planning Models for Villages within the Green Belt of Nhue River, Hanoi City: 3.2.1. Landscape Planning Model for Riverside Villages**

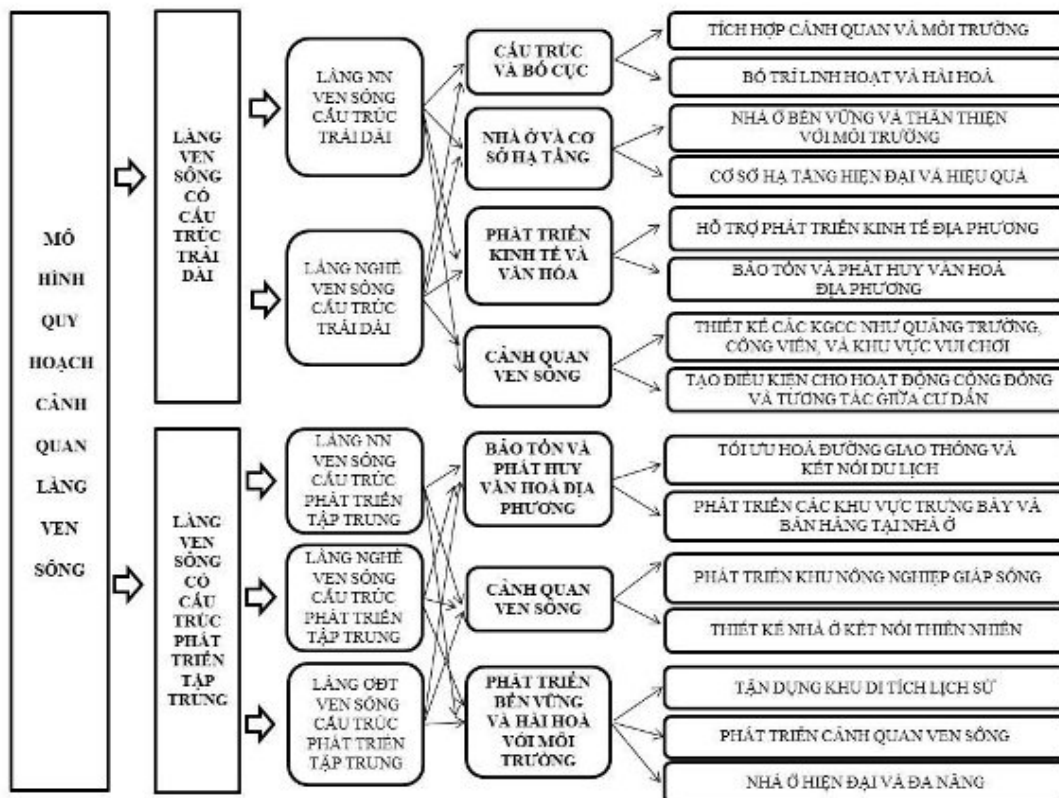


Figure 3.3. Landscape planning model for riverside villages

### 3.2.2. Landscape Planning Model for Non-Riverside Villages

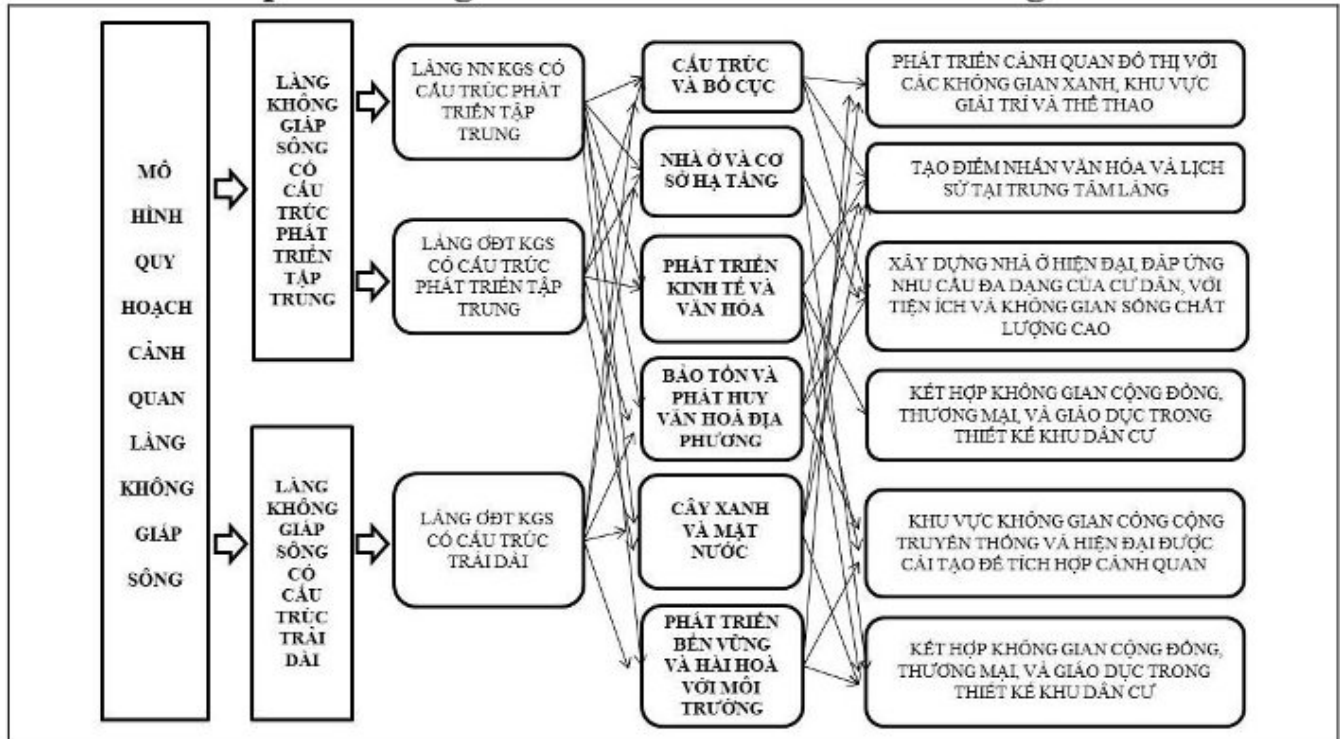


Figure 3.4. Landscape planning model for non-riverside villages

### 3.3. Solutions for Organizing Landscape Architecture in Villages within the Green Belt of Nhue River, Hanoi City

#### 3.3.1. Overall Village Structure Solutions

- **Riverside villages with a longitudinal structure**

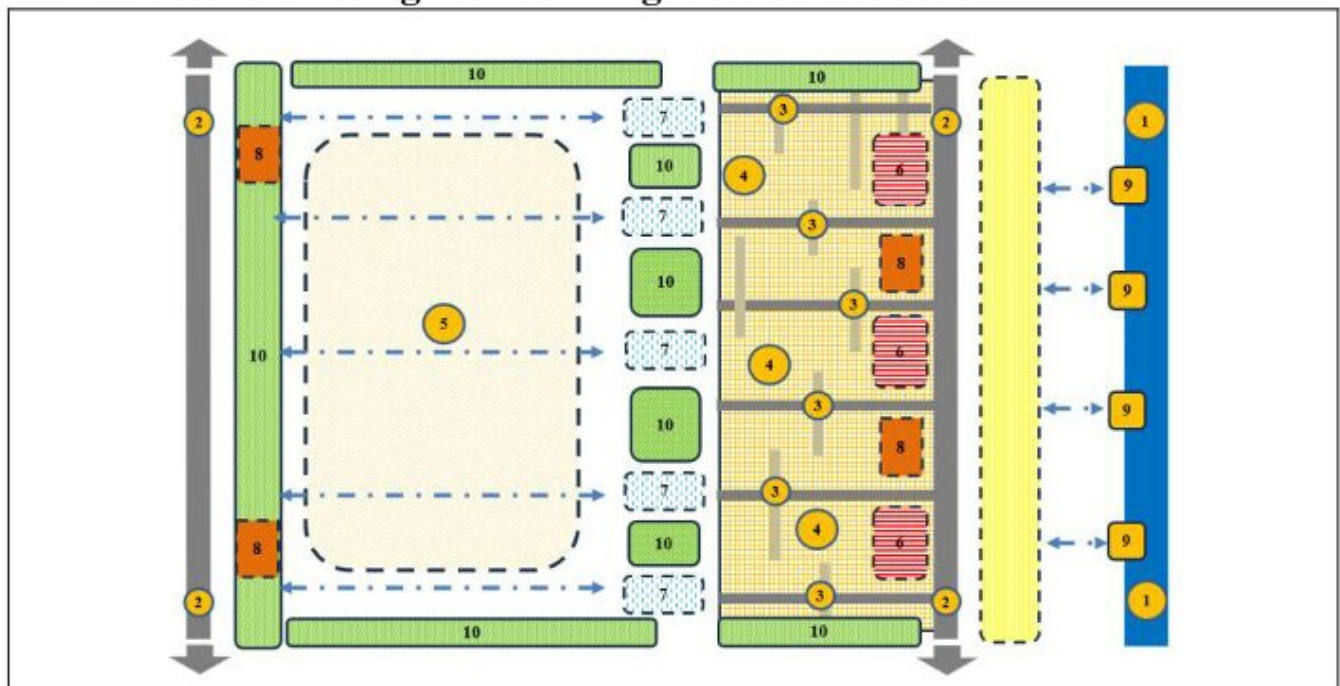


Figure 3.5. Solution for agricultural village space along the river with a longitudinal structure



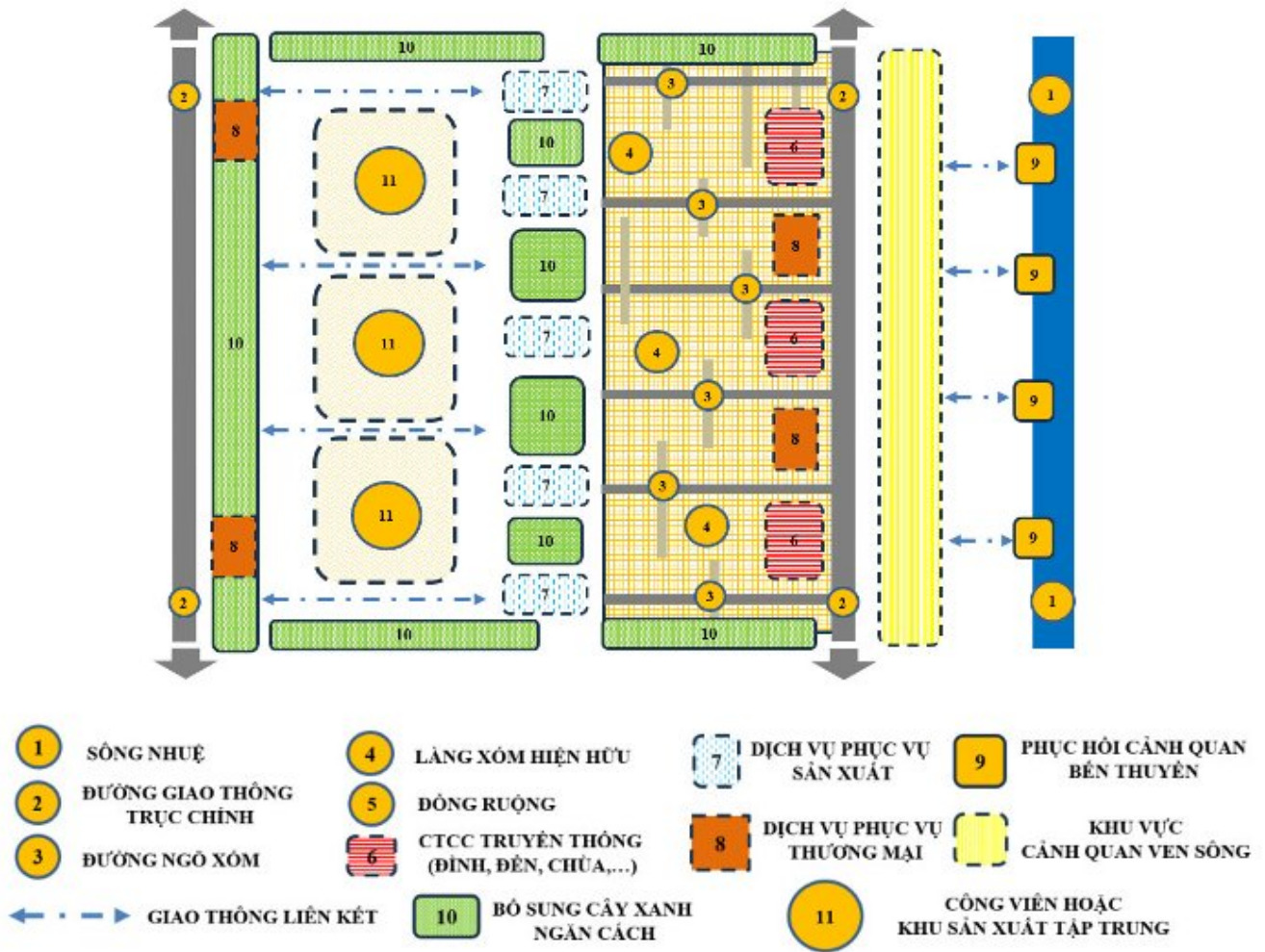


Figure 3.6. Solution for craft village space along the river with a longitudinal structure

• **Riverside villages with a concentrated development structure**

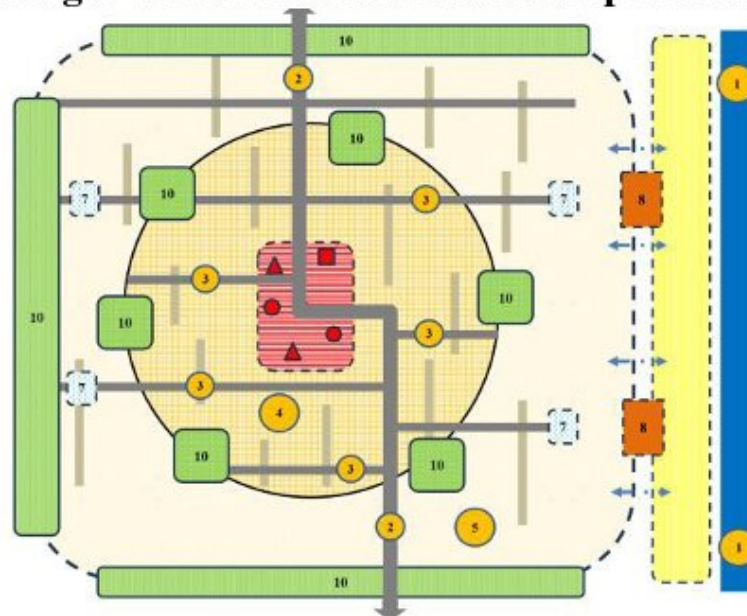


Figure 3.7. Solution for agricultural village space along the river with a concentrated development structure

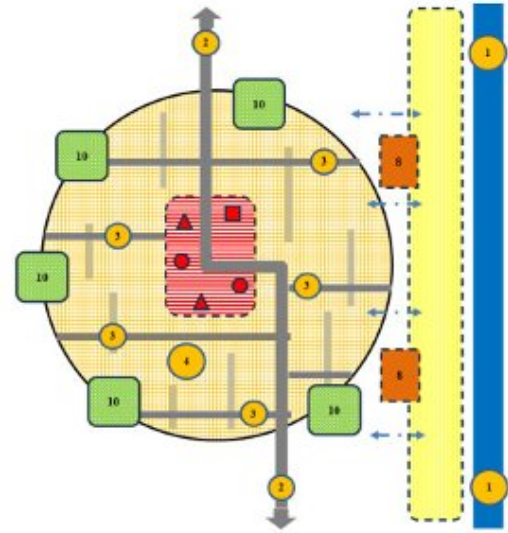
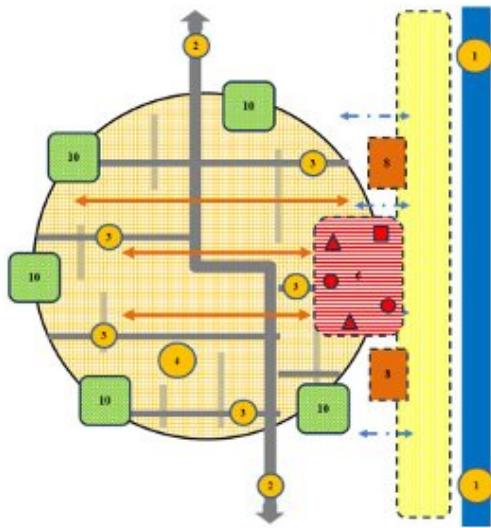


Figure 3.8. Solution for craft village space along the river with a concentrated development structure

Figure 3.9. Solution for purely residential village space along the river with a concentrated development structure

- |                               |   |                              |                               |
|-------------------------------|---|------------------------------|-------------------------------|
| 1 SÔNG NHỰ                    | 4 LÃNG XÓM HIỆN HỮU                       | 7 DỊCH VỤ PHỤC VỤ SẢN XUẤT   | 10 BỔ SUNG CÂY XANH NGĂN CÁCH |
| 2 ĐƯỜNG GIAO THÔNG TRỰC CHÍNH | 5 ĐỒNG RUỘNG                              | 8 DỊCH VỤ PHỤC VỤ THƯƠNG MẠI | KHU VỰC CẢNH QUAN VEN SÔNG    |
| 3 ĐƯỜNG NGÕ XÓM               | 6 CTCC TRUYỀN THỐNG (ĐÌNH, ĐỀN, CHÙA,...) |                              |                               |
- ← · · · → GIAO THÔNG LIÊN KẾT      ↔ TUYẾN THAM QUAN DU LỊCH

• **Non-riverside villages with a concentrated development structure**

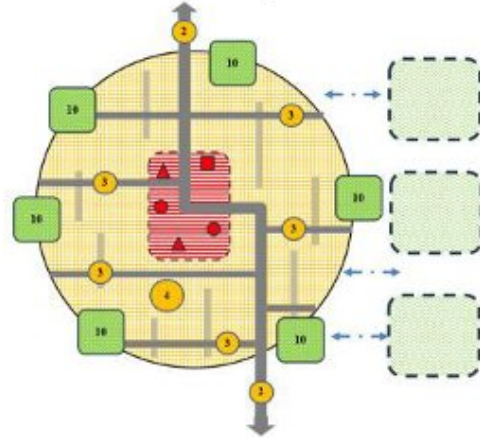
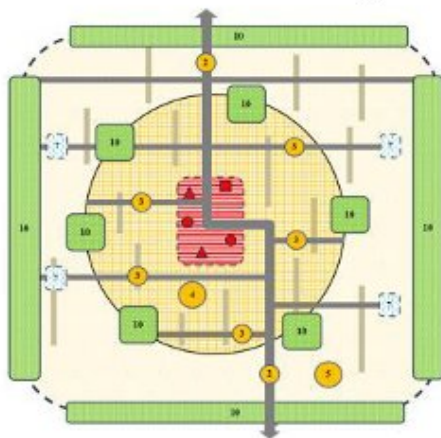


Figure 3.10. Solution for agricultural village space not adjacent to the river with a concentrated development structure

Figure 3.11. Solution for purely residential village space not adjacent to the river with a concentrated development structure

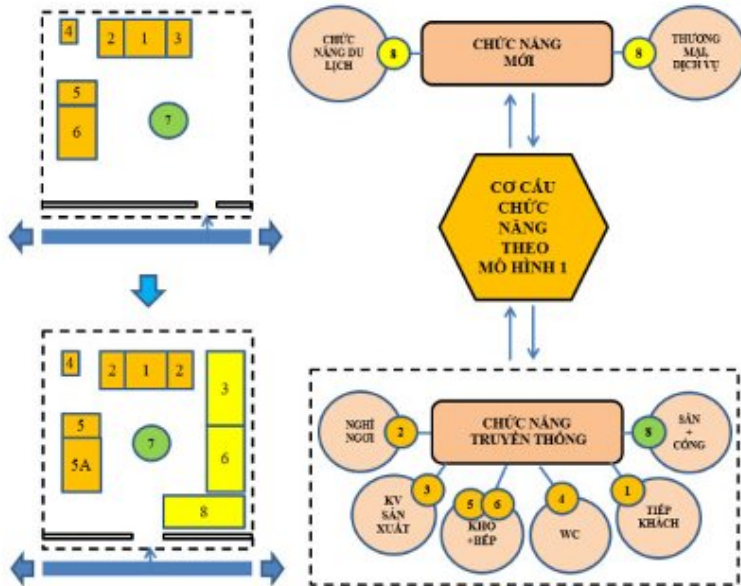
- |  |                     |   |                               |
|--|---------------------|---|-------------------------------|
| 2 ĐƯỜNG GIAO THÔNG TRỰC CHÍNH          | 4 LÃNG XÓM HIỆN HỮU | 7 DỊCH VỤ PHỤC VỤ SẢN XUẤT                | 10 BỔ SUNG CÂY XANH NGĂN CÁCH |
| 3 ĐƯỜNG NGÕ XÓM                        | 5 ĐỒNG RUỘNG        | 6 CTCC TRUYỀN THỐNG (ĐÌNH, ĐỀN, CHÙA,...) | ← · · · → GIAO THÔNG LIÊN KẾT |
| CẢNH QUAN NN CHUYỂN ĐỔI SANG CÔNG VIÊN |                     |   |                               |



• **Non-riverside villages with a longitudinal structure**

**3.3.2. Solutions for Organizing Residential Landscape Architecture**

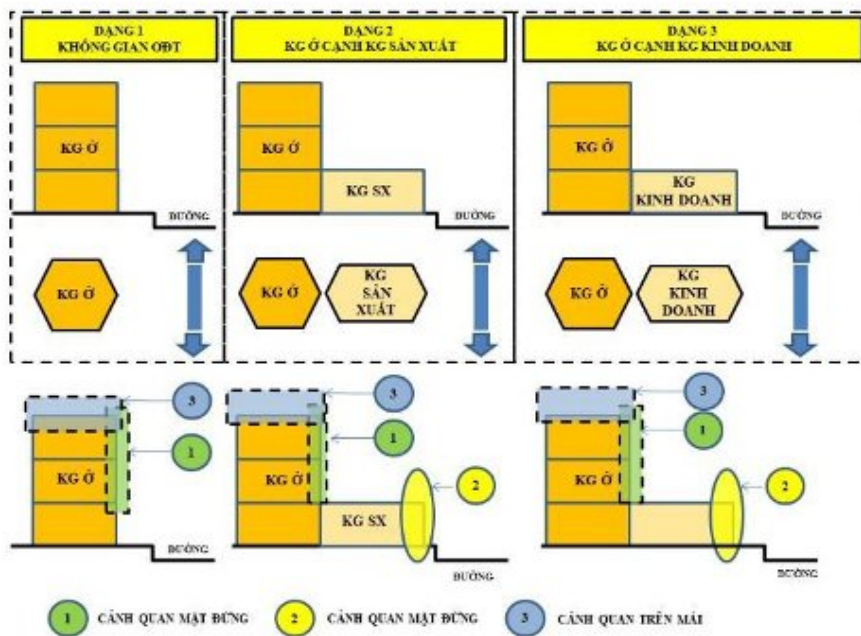
• **Houses with gardens**



- The researcher proposes two models for houses with gardens: (1) Model 1: Conservation of LA of houses combined with tourism; (2) Model 2: Renovation of houses in a modern direction while promoting traditional values.

Figure 3.12. Functional structure according to model 1

• **Terraced houses**



- (1) Proposed building height not exceeding 12m should combine with tile roofs; (2) Increase the green landscape area in the vacant spaces; For types of houses combined with production or commerce: (1) Small area combined with

Figure 3.13. Landscape influencing factors for terraced houses

production can arrange production space on the ground floor, from the second floor for living space; (2) Larger area enough to arrange production

space outside, separating the living area. All three models should consider the facade of the house, proposing the use of local natural colors and materials, maximizing the use of greenery in interior and exterior design. The fence area is built with local materials or green plant fences, 2.7 to 3m high.

### 3.3.3. Solutions for organizing public landscape architecture

(1) LA for traditional space areas; (2) LA for modern public space areas; (3) LA for community activity spaces; (4) Traffic areas, alleys.

### 3.3.4. Solutions for Organizing Natural Landscape Space

- **Solutions for agricultural space organization**

The organization of space for agricultural land areas will be based on factors such as landscape structure, architectural space, and natural space.

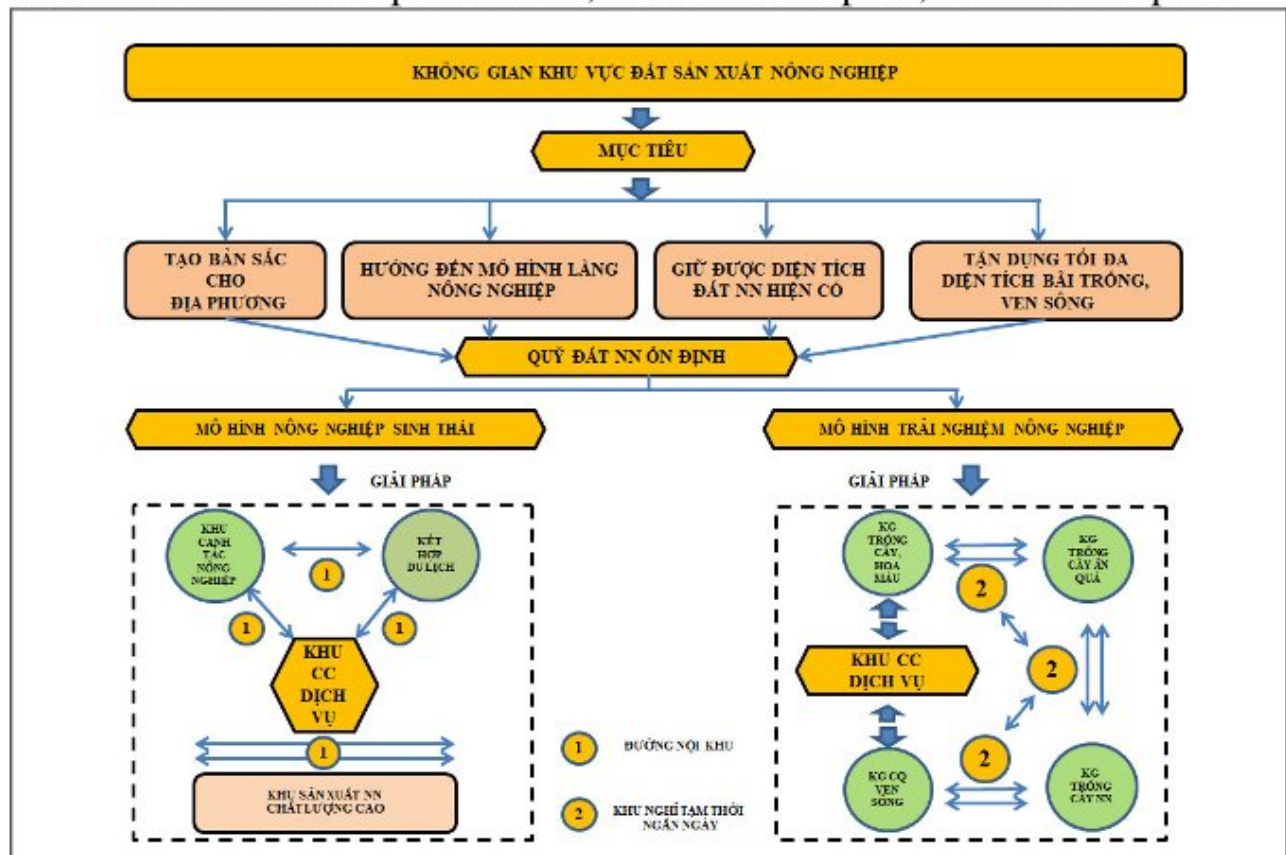


Figure 3.14. Solution for agricultural land area space

- **Riverside landscape (applied to riverside villages with a longitudinal structure)**

*Renovation principles:* (1) Respect the natural riverbank path; (2) Renovate and organize the riverbank in necessary areas; (3) Organize spaces for water access.



Solutions:

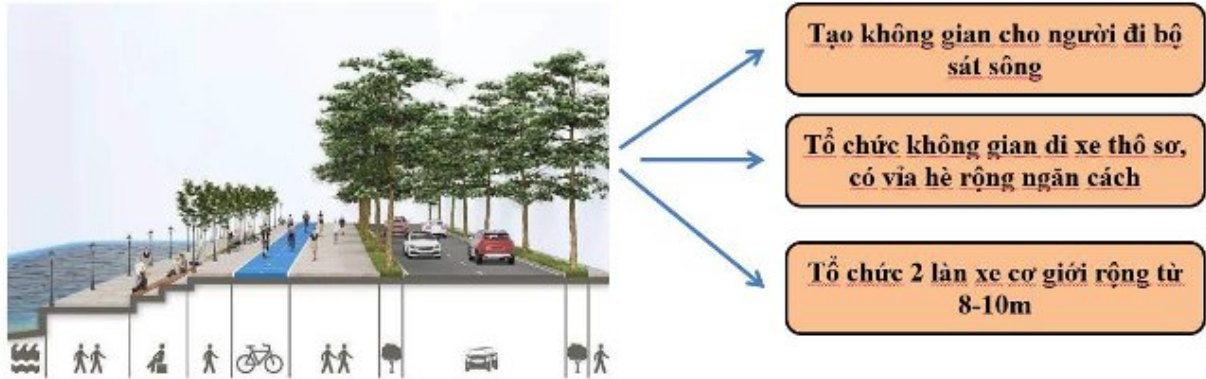


Figure 3.15. Solution for renovating the riverside axis for riverside villages with a longitudinal structure

- **Riverside landscape** (applied to riverside villages with a concentrated development structure)

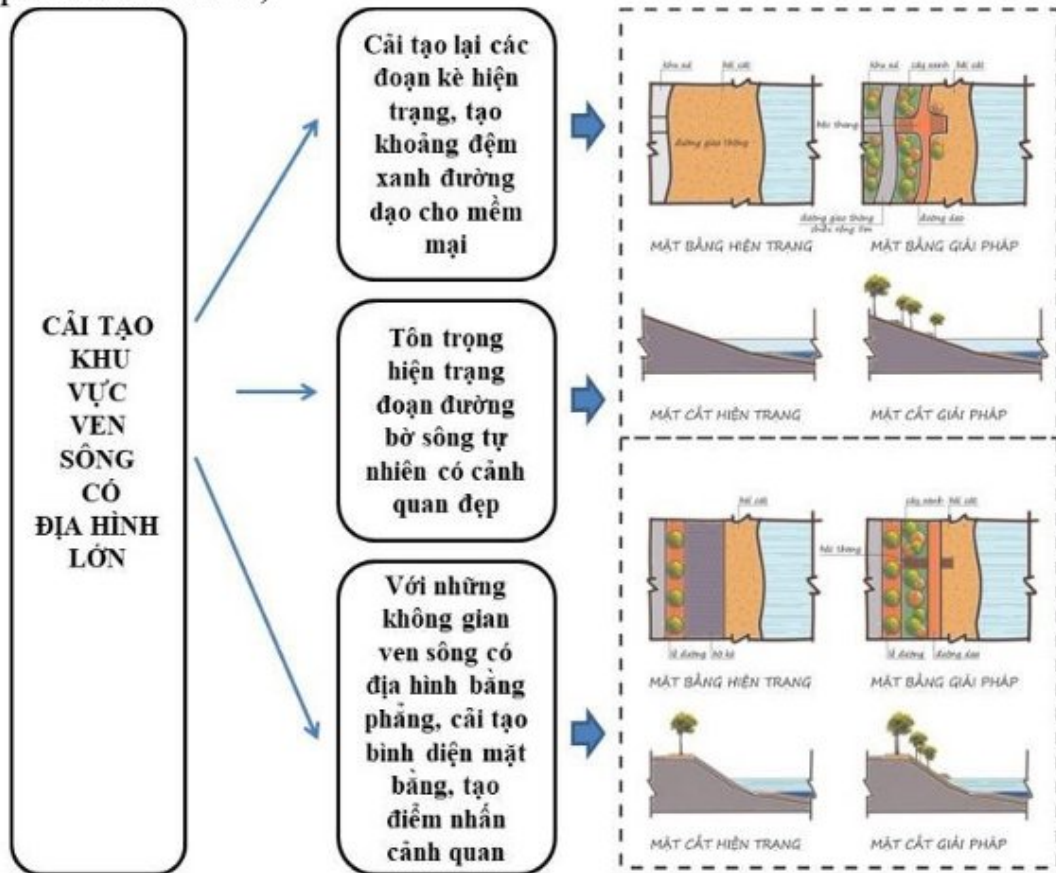


Figure 3.16. Landscape solution for riverside villages with a concentrated development structure

- **Village pond and well landscape e. Greenery area**

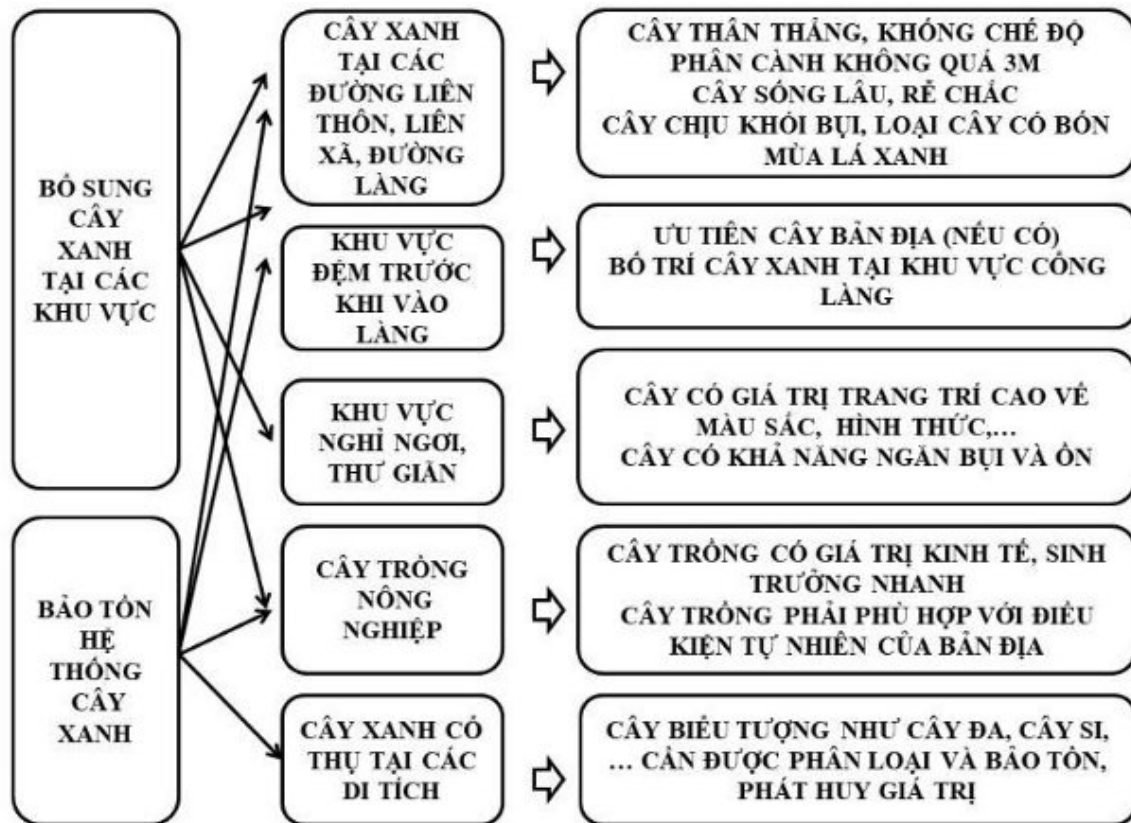


Figure 3.17. Functional zoning for different types of greenery

**3.4. Study on the Organization of LA in Hữu Village** Through surveys and analysis of the current state of villages within the Green Belt (GB) of Hanoi city, it can be seen that these villages possess sufficient landscape architecture values that need to be conserved and developed according to the models proposed in the thesis. The candidate chose Hữu Village, which has many landscape architecture values but has almost not been studied. Hữu is an abbreviation for three small villages: Hữu Trung, Hữu Từ, and Hữu Lê, combined.

#### 3.4.1. Current Characteristics

\* Location: The study area of Hữu Trung – Hữu Từ - Hữu Lê covers about 40ha and includes 3 villages: Hữu Lê, Hữu Từ, and Hữu Trung. To the North, it borders Kiến Hưng ward, Hà Đông district. To the South, it borders Thanh Oai district. To the East, it is adjacent to the Nhue River, opposite the village of Tó, Tả Thanh Oai. To the West, it borders Kiến Hưng ward and Phú Lương ward, Thanh Oai district.

\* Current Land Use Structure:





The study area is in a very favorable location in terms of natural conditions for urban construction development. However, the current foundation of the rice field area is low, so leveling would be quite costly.

Figure 3.18. Land of Hữu Village

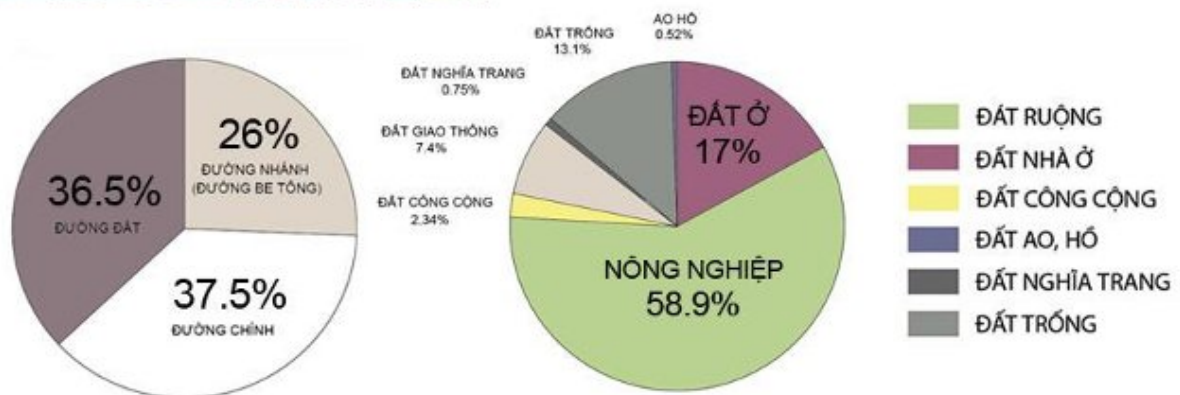


Figure 3.19. Land use structure of Hữu Village

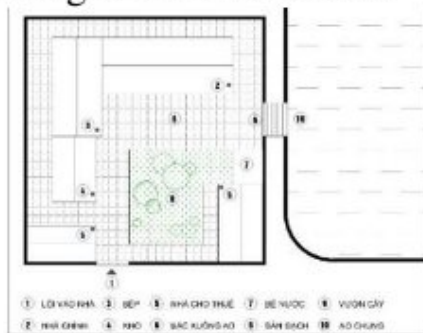
### 3.4.2. Model and Solutions for the Organization of LA

- **Model:** Hữu Village fits the model of an agricultural village along the river with a longitudinal structure.

- **Solutions for Organizing Village Space** The agricultural village model has 4 main landscape zones: (1) Heritage area, cultural area within the village; (2) Residential area, houses within the village; (3) Green space, water bodies, traffic, alleys, etc.; (4) Agricultural production land area.

- **Solutions for Organizing LA of Residential Areas** The house of Mr. Nguyễn Văn Thượ (in Hữu Trung village), with a total area of about 400m<sup>2</sup>, still retains the traditional 3-section tile-roofed house, auxiliary kitchen house, and a front garden with fruit trees. The location of the house, right next

to the village pond, fully complies with the model of modern renovation while promoting traditional values.



Current layout



Renovation plan



Main house and auxiliary house



Illustration of the renovation plan

Figure 3.20. Renovation plan for LA of Mr. Thượ's house

The candidate proposes the following LA renovation plan:

- Preserve and tidy up the main house (keep the interior space including the ancestral altar, living room).

- The current kitchen area is rebuilt into a two-story concrete and steel house, using traditional colors and materials, in the form of a three-section house with a tiled roof (including kitchen and dining area, toilet on the first floor; bedroom and toilet on the second floor).

- Demolish two rental house rows, build a two-story rental house at position number 5, with architectural style similar to area number 3.

- Move the current water tank to position number 7, while also arranging many green planting areas.

- For the area adjacent to the common pond, propose to create a buffer landscape around the common pond, developing a landscape and pedestrian paths around the pond.

- **Solutions for Organizing Agricultural Areas**



- Utilize and exploit the available agricultural potential, organize an ecological agricultural park with a model of clean agriculture.

- Organize several bicycle paths, rest stops interspersed within the landscape production space, creating diverse recreational and entertainment spaces.

- Organize service points to provide services for the park, including homestay accommodations to enhance the experience and exploration for tourists.

### • Solutions for Exploiting the Landscape Management Space to Develop Tourism

- Exploiting the landscape management space to develop green services and tourism based on existing agricultural land and spiritual tourism axes (temples, shrines, pagodas, etc., along the Nhue River). The main tourist route is accessed from along the Nhue River and from the direction of Kien Hung, or the main northern route adjacent to Huu Le village. Along the access route are service areas for production and tourism.



Figure 3.21. Functional Zoning

Tourist exploitation points are divided into two sides along the routes:

Cultural and spiritual tourism exploitation points combined with public facilities such as agricultural markets, entertainment areas (if any).

Tourism exploitation points with rice fields (seasonal), or converted to flower cultivation, lotus planting, etc.

Interspersed among the tourism exploitation points are auxiliary service areas that will be convenient for tourists and enhance the value of these auxiliary areas.

### 3.5. Discussion of Research Results

#### a. Perspectives, objectives, and principles for organizing landscape architecture in villages within the green belt of Nhue River, Hanoi City

(1) Regarding perspectives: Emphasizes the development of village landscapes in harmony with the green environment and the general planning orientation of Hanoi City.

(2) Regarding objectives: Four objectives proposed for organizing landscape architecture in villages within the green belt of Nhue River are established to meet the needs of sustainable development, preserve cultural heritage, and improve the quality of life for the community.

(3) Regarding principles: Reflects a comprehensive and sustainable approach to urban planning and development. This includes protecting and restoring natural ecosystems, maintaining green spaces, and controlling development to minimize negative impacts of urbanization. These principles emphasize the conservation of heritage and cultural values through the identification and protection of historical sites, developing sustainable residential areas, and enhancing the quality of life for residents.

**b. Models for organizing landscape architecture in villages within the green belt of Nhue River, Hanoi City**

Models include: (1) Riverside villages with a longitudinal structure; (2) Riverside villages with a concentrated development structure; (3) Non-riverside villages with a concentrated development structure; (4) Non-riverside villages with a longitudinal structure. The landscape planning models for villages within the green belt of Nhue River reflect the diversity and richness of the area, from riverside villages with longitudinal or concentrated structures to non-riverside villages. Each model focuses on integrating landscape and natural environment, developing local economy and culture, and enhancing community interaction. These models emphasize a balance between conservation and development, aiming to create a harmonious and sustainable living environment, adaptable to climate change, and respectful of cultural heritage.

**c. Solution groups for organizing landscape architecture in villages within the green belt of Nhue River, Hanoi City**

Solution groups include: (1) Overall structure solutions for each type of village; (2) Solutions for organizing residential landscape architecture; (3) Solutions for organizing LA in public spaces; (4) Solutions for organizing natural landscape spaces. The solutions for organizing landscape architecture in villages within the green belt of Nhue River aim to preserve and enhance traditional values as well as meet modern development needs. The solutions



are divided into several parts, including overall village structure, residential space organization, public space, and natural landscape space. Riverside and non-riverside villages are specifically analyzed with conservation, renovation, and new construction strategies, emphasizing the combination of traditional preservation and modern innovation. The proposed solutions include optimizing green spaces, using environmentally friendly materials, energy-efficient design, and sustainable development.

#### **d. Discussion on practical results**

1. The thesis proposes a study on Hũu Village, suggesting the application of the model of an agricultural village along the river with a longitudinal structure. Applying the principles and solutions proposed in the thesis, the candidate outlines specific solutions for each type of space.

2. The research results are currently based on theoretical perspectives, models, and solutions, lacking many practical aspects (community role, development policy for villages in the green belt), thus the research findings of the thesis serve as a scientific basis for further specific research directions such as: (1) The role of the community in developing villages within the green belt; (2) The results of the thesis serve as a scientific argument for building planning tasks for villages within the green belt in other urban areas; (3) Serve as a basis for authorities to issue circulars, policies on villages within the green belt.

### **CONCLUSION AND RECOMMENDATIONS**

#### **1. Conclusion**

The thesis proposes models and solutions for organizing landscape architecture in villages within the Nhue River GB sustainably, based on the scientific foundation of theory and law. The proposed solutions for organizing landscape architecture in villages are directed along three main lines: overall village structure solutions, organizing landscape architecture in residential areas, and organizing landscape architecture in public spaces. For each type of model, the thesis presents appropriate landscape architecture organization solutions. The candidate uses survey and overlay methods to identify and analyze 42 existing villages within the Nhue River GB, thereby identifying and classifying villages based on criteria: (1) Location (villages

near the river, villages far from the river), (2) Spatial structure characteristics (longitudinal structure, concentrated development structure), (3) Economic characteristics (purely agricultural, traditional craft villages, purely residential). Identifying and classifying villages to find suitable models and solutions for organizing LA in villages aligns with the development orientation of the Nhue River green belt. The thesis proposes four development models for villages within the Nhue River green belt: (1) Riverside villages with a longitudinal structure; (2) Riverside villages with a concentrated development structure; (3) Non-riverside villages with a concentrated development structure; (4) Non-riverside villages with a longitudinal structure.

## **2. Recommendations**

Green belts worldwide are established in locations with large areas of agricultural, forestry land, where few people live. However, in Vietnam, the Nhue River green belt is established in a densely populated location with existing villages, therefore facing numerous issues, such as high construction density and shrinking agricultural land area due to urbanization impacts. To maximize the function of the Nhue River green belt according to the master plan's direction and based on the research findings of the thesis, the candidate offers the following recommendations: (1) For the Government: Review the planning, issue regulations, and legal documents applicable to construction within the Nhue River green belt area. (2) For Local Authorities: Adhere closely to the state-issued planning, deploy supervision, and implement according to policies, enhance management capacity, and conduct outreach to residents in the area. (3) For Professionals: Conduct more specific research to exploit the functions of the Nhue River green belt without affecting the lives of the local population. (4) For the Community within the Nhue River Green Belt: It is necessary to conduct educational campaigns to understand the importance of the Nhue River green belt. Furthermore, enhancing awareness of the role and responsibility in environmental protection will encourage community participation more actively in preserving the landscape value and architectural landscape space of villages in this area.

**List of Published Scientific Articles by the Author Related to the  
Dissertation Topic**

1. Tran Vu Tho (2019), *The Transformation of Spatial Structure in the Village Areas of the Nhue River Green Belt, Hanoi City*, International Conference on Architecture and Construction 2019, ICACE 2019, Hanoi University of Architecture, ISBN 978-604-67-1456-9
2. Tran Vu Tho (2023), *Conservation and Restoration of Landscape Architectural Heritage in the Villages within the Nhue River Green Belt Area, Hanoi City*, Journal of Construction and Urbanism, Issue 89.2023, Ministry of Construction ISSN 1859-3119.
3. Tran Vu Tho (2023), *Model of Landscape Architectural Space Organization in Riverside Villages within the Nhue River Green Belt Area, Hanoi City*, Journal of Construction and Urbanism, Issue 90.2023, Ministry of Construction ISSN 1859-3119.