

MINISTRY OF EDUCATION AND TRAINING

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**PROMOTING THE VALUE OF FRENCH COLONIAL
LANDSCAPE ARCHITECTURE IN DA LAT URBAN
ARCHITECTURE SPACE**

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SUMMARY OF DOCTORAL DISSERTATION

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The dissertation can be found at the National Library of Vietnam and the Library of Hanoi Architectural University.

INTRODUCTION

1. The urgency of the topic

Da Lat is one of the rare urban areas in our country developed from the land of "primitive nature". Although it is only about 130 years old, Da Lat has its own marks, different from other cities. From the urban planning that was carried out methodically from the beginning, the rich architectural heritage and landscape architecture of the French colonial period, as well as the process of forming the settlement model of Da Lat urban area. Through the process of rapid urbanization and development, Da Lat is gradually losing its image and brand as "eco-city" and "city in the forest". With the perspective of identifying the values of French colonial landscape architecture in the development process of Da Lat, from there, the mission to making solutions to promote those values in the contemporary Da Lat urban architectural space are necessary and practical.

2. Research objectives

- * Objective: To promote the value of Da Lat landscape architecture during the French colonial period in the contemporary Da Lat urban architectural space.
- * Goals: (1) Identify the values of Da Lat's urban landscape architecture during the French colonial period. (2) Build a system of criteria to evaluate the value of landscape architecture, thereby evaluating the value of landscape architecture spaces in Da Lat during the French colonial period. (3) Propose solutions to promote the value of Da Lat landscape architecture during the French colonial period in the urban architectural space of Da Lat today.

3. Research subjects and scope

- * Subjects: The value of Da Lat's landscape architecture during the French colonial period.
- * Scope: Spatial scope according to the spatial boundary of the historic urban center (existing urban area), based on the scope of adjustment of administrative planning of Da Lat city and surrounding areas to 2030 and vision to 2050.
- * Timeframe: From the time Da Lat was discovered in 1893 until 2030 and a vision to 2050.

4. Research methods

The dissertation utilizes the following methods: (1) Survey method; (2) Map overlay method; (3) Historical method; (4) Expert methods; (5) Analysis - synthesis method; (6) Forecasting method.

5. Research content

- The process of formation and development of Da Lat landscape architecture from the early period to the contemporary period and into the future.

- Identify the values of Da Lat's urban landscape architecture during the French colonial period.
- Develop criteria to evaluate the value of Da Lat's landscape during the French colonial period based on existing sets of criteria to evaluate the value of urban heritage.
- Evaluate the value of Da Lat's landscape during the French colonial period (component and spatial factors) using expert methods.
- Assess the value of typical architectural buildings from the French colonial period that still exist in the landscape spaces that the thesis has chosen to zone for research.
- Propose solutions to promote the value of Da Lat's landscape during the French colonial period in the urban architectural space of Da Lat today.

6. Scientific significance of the topic

The results of research on building criteria to evaluate the values of Da Lat's urban landscape during the French colonial period, as well as the identification, summary and publication of the values of Dalat's urban landscape during the French colonial period, will contribute to supplementing the results. Theoretical system specialized in planning and architecture of tourist and resort urban areas in mountainous areas in our country. The research results are useful reference documents for consulting on planning, architecture, and urban management in Da Lat as well as for urban areas with similar resort properties.

7. Results of the dissertation and New contributions

- Identify the values of Da Lat's urban landscape architecture during the French colonial period.
- Develop criteria and evaluate the value of Da Lat landscape architecture during the French colonial period.
- Propose solutions to promote the value of Da Lat landscape architecture during the French colonial period in the urban architectural space of Da Lat today.

8. Some concepts and terms used in the dissertation

The dissertation uses 18 concepts and terms, including prominent ones such as: landscape architecture, value promotion, urban architectural space, tangible and intangible values, indigenous architecture, urban image...

9. Dissertation structure

The dissertation consists of 3 parts: Introduction, Content, Conclusion-Recommendations, and 08 Appendices. The research content is presented in 3 chapters following the common structure of architectural dissertations.

CHAPTER 1. OVERVIEW OF URBAN LANDSCAPE ARCHITECTURE OF DA LAT DURING THE FRENCH COLONIAL PERIOD

1.1. An overview of landscape architecture of resort cities during the French colonial period

1.1.1. In Vietnam and Indochina

The French have especially emphasized the issue of finding lands with climate and altitude similar to France in Indochina to serve the needs of rest and convalescence on the spot. Leading to the birth of a series of high-altitude resort locations in Vietnam, most of which are still exploited to this day. The North has Mau Son, Sa Pa, Tam Dao, Ba Vi; The Central region has Ba Na and the South has Da Lat.

1.1.2. Around the world

In the process of choosing and building the Da Lat rest station, the French learned similar models from other colonial governments. For example, a rest station in Indonesia (Dutch colony); in India and Malaysia (British colonies); in the Philippines (American colony); in Brazil (Portuguese colony).

1.2. The process of formation and development of landscape architecture in Da Lat

Researcher divides the process of formation and development of Da Lat's urban landscape into 4 periods: Early period (before 1906); formation period (1906-1954); the transition period (1954-1975) and the contemporary period (from 1975 to present). In addition, the researcher also analyzed settlement elements, which are inseparable from the formation and development process of Da Lat.

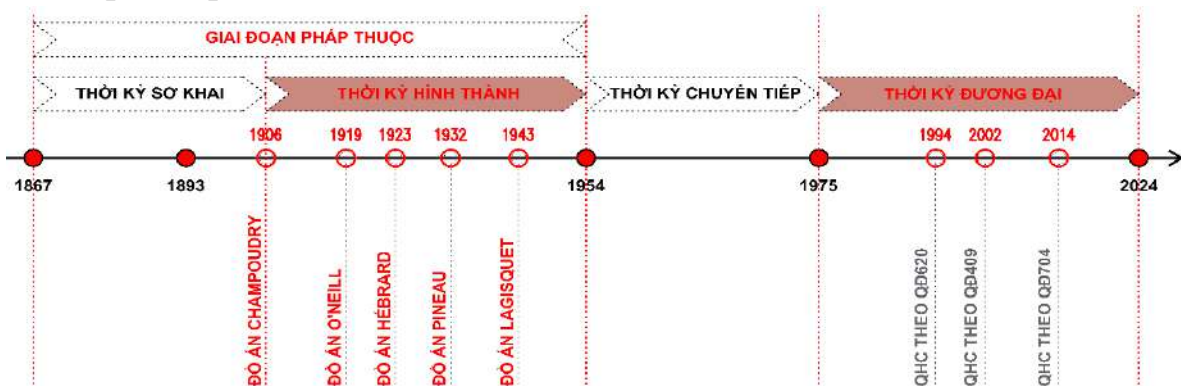


Figure 1.8: Milestones in the formation and development of Da Lat

1.2.1. Early period (before 1906)

Before the first plans, Da Lat's landscape in the early period was mainly a natural landscape of forests and grasslands; In addition, the only artificial landscape elements are the villages of the K'Ho people on the northern edge of

the Lang-Bian plateau, which, although ancient, only consist of a few dozen stilt houses and trails. lying among the grass and trees.

1.2.2. The formation period (1906-1954)

The formation period of Da Lat can be divided into 4 small periods: 1906-1919, 1919-1932, 1932-1943 and 1943-1954. These periods mark milestones of political, economic and social change. important Da Lat; and is shown through 5 foundation planning projects of Da Lat urban area today; that is Champoudry's 1906 project; O'Neill's 1919; Hébrard's 1923; 1932 by Pineau and 1943 by Lagisquet.

1.2.3. The transition period (1954-1975)

In 1945, Da Lat was an urban area of more than 25 thousand people, serving as an important educational center and an attractive tourist city. In 1954, the French left Indochina, Da Lat entered a new stage of development. Lagisquet's project continues to be applied, with some edited to suit actual conditions. Landscape architecture during this period had the presence of many modern architectural works, catching up with international trends.

1.2.4. The contemporary period (from 1975 to present)

The masterplan of Da Lat city and surrounding areas to 2030 and vision to 2050 is adjusted according to Decision No.704/QD-TTg dated May 12, 2014; clearly stated, Da Lat in the future will be an urban center that functions as an administrative center, high-class resort, and preserves architectural heritage. The spatial development orientation of Da Lat follows a belt model and radial axes in a fan shape, connecting with axes of water landscape, forest landscape, terrain landscape and green park system; with the goal of preserving and developing Da Lat to establish a unique urban area in terms of planning, architecture, culture, history, and natural landscape; making Da Lat into a tourist - cultural - scientific, green and modern urban area of international class.

1.3. Current status of architectural space and urban landscape in Da Lat

1.3.1. General situation of spatial organization of landscape architecture

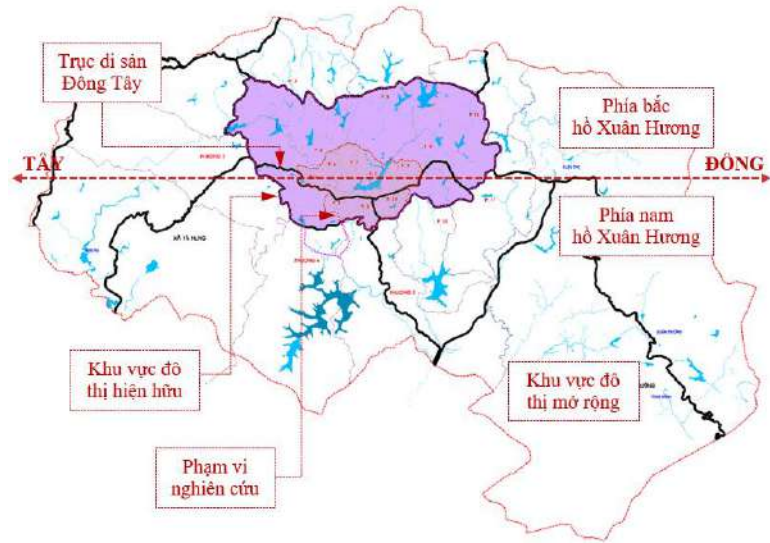
In Figure 1.19, it is clear that the urban expansion is many times larger than the core area of Da Lat's urban center during the French colonial period. The rapid growth in both space and urban function has caused many inadequacies for Da Lat urban area today.

1.3.2. Current state of natural landscape

In recent years, the natural landscape of Da Lat in particular and the Lang-Bian plateau in general has been clearly degraded. The simultaneous decline of all

elements of the natural landscape, especially trees and water, has made the urban environment polluted, Da Lat's climate hotter and tourism attractiveness reduced.

Figure 1.19: Overall space of research scope



1.3.3. Current status of artificial landscape

* *Current status of architecture:* After surveying the current status, the researcher found that many architectural heritage are being degraded and used for wrong purposes. The villa fund has decreased, the situation of villas being degraded and wiped out continues.

* *Current street situation:* Some of the main traffic routes today used to be internal roads in the past, still maintaining the same width from the beginning so they are no longer suitable, causing Da Lat to often fall into traffic jams.

1.3.4. Positive changes

Although the current state of Da Lat's urban landscape architecture is still chaotic, there are beginning to be some encouraging signs of change. Among them, the trend of restoring indigenous architecture and the preservation of landscape architecture began to flourish.

1.4. Research related to the dissertation

1.5. Research orientation of the dissertation

1.5.1. Research directions have not overlapped

- Research directions on French villa architecture and urban structure of Da Lat have been exploited quite a lot. However, the topic of Da Lat landscape architecture during the French colonial period has not been fully researched.
- Although a number of experts have summarized the geometric elements that make up Da Lat's landscape architecture as well as researched urban morphology, the research has only stopped at an overview level.
- There is no dissertation identifying the architectural landscape values of Da Lat during the French colonial period from both the perspective of tangible and

intangible values; As well as not evaluating the architectural value of Da Lat's landscape during the French colonial period in a specific and in-depth way.

- There is no dissertation or research that proposes to promote the value of Da Lat's landscape architecture during the French colonial period in the contemporary Da Lat urban architectural space.

1.5.2. Problem orientation requires research focus

- Identify the architectural landscape values of Da Lat during the French colonial period.

- Develop a set of criteria to evaluate the value of Da Lat's landscape architecture during the French colonial period.

- Evaluate the value of Da Lat's landscape architecture during the French colonial period in the contemporary Da Lat urban architectural space.

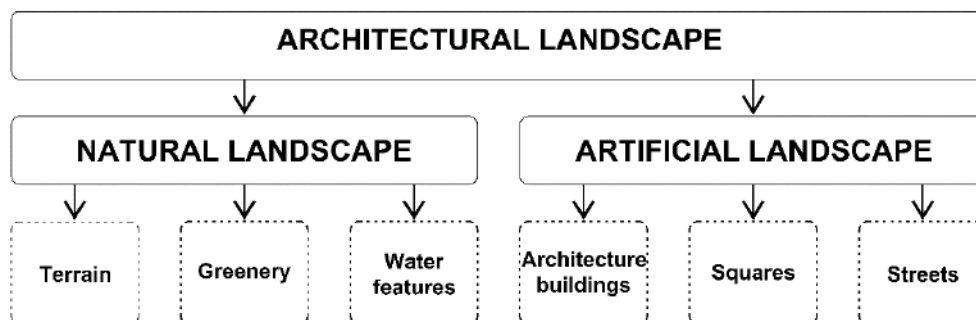
- Propose solutions to promote the value of Da Lat's landscape architecture during the French colonial period in the current and future Da Lat urban architectural space.

CHAPTER 2. SCIENTIFIC BASIS OF PROPOSING THE VALUE OF FRENCH COLONIAL LANDSCAPE ARCHITECTURE IN THE URBAN ARCHITECTURE SPACE OF DA LAT

2.1. Theoretical foundations

2.1.1. Theory of Landscape Architecture

Table 2.3: Elements that create the landscape architectural image of Da Lat during the French colonial period



2.1.2. Urban Design Theory

* *Theory of Urban Morphology*

* *The Image of the City*: five elements of city imageability include: paths, nodes, edges, districts, and landmarks.

* *Theory of shaping urban space*

* *Theory of Place-making*

2.1.3. Conservation theory

* *Method to evaluate the potential for preserving architectural and urban heritage*: based on 5 criteria:

1. Characteristics and boundaries of the research urban area
2. Uniqueness of place and sense of place
3. Proportion and internal relationships (space, shape...)
4. Style and architectural features of the area
5. Specific materials and construction methods

* *Related conservation concepts:* Main concepts include: status quo conservation, adaptive conservation, reconstruction conservation...

* *Concept of traditional settlement models:* The formation and development of traditional settlement models depends on four basic factors: Resources; Methods of resource exploitation; Methods of foreign transportation and Administration and organization of life.

2.2. Practical foundations

2.2.1. Natural conditions and characteristics of Da Lat's landscape

* *Geographical location:* Da Lat is 394.64 km² wide, located on the Lam Vien plateau, south of the Central Highlands, northeast of Lam Dong province, average altitude of 1,500m above sea level.

* *Terrain - geomorphology:* Da Lat's terrain is divided into two types: mountain terrain and mountain plain terrain with elevations varying from 200m - 2,200m.

* *Climate - hydrology:* Located in the tropical savanna climate zone, Da Lat has two distinct seasons: rainy season and dry season. The average monthly temperature in Da Lat is below 20°C. Notable weather phenomenon is fog, which occurs 80 to 85 days a year. In recent years, climate change has directly impacted Da Lat. The most obvious manifestations are rising temperatures, flooding, landslides in the rainy season and drought in the dry season.

2.2.2. Economic - Cultural - Social Conditions of Da Lat

* *Socio-cultural conditions:* Western culture and lifestyle converge with the culture of many regions in the country, creating beautiful things in the typical style of Da Lat people. That style can be summarized in three main characteristics: Gentleness; elegant; hospitality.

* *Socio-economic conditions:* Da Lat and its surrounding areas will play an important role in trade - services (mainly tourism) and agriculture in the future. Da Lat has just attracted mass tourism, a form of tourism that puts pressure on infrastructure but does not generate large economic benefits. Most tourists coming to Da Lat have low spending levels, and the number of tourists is showing signs of decreasing.

2.2.3. Legal foundations

2.2.4. Related projects and projects

CHAPTER 3. PROMOTING THE VALUE OF FRENCH COLONIAL LANDSCAPE ARCHITECTURE IN DA LAT URBAN ARCHITECTURE SPACE

3.1. Viewpoints and principles

3.1.1. Viewpoints

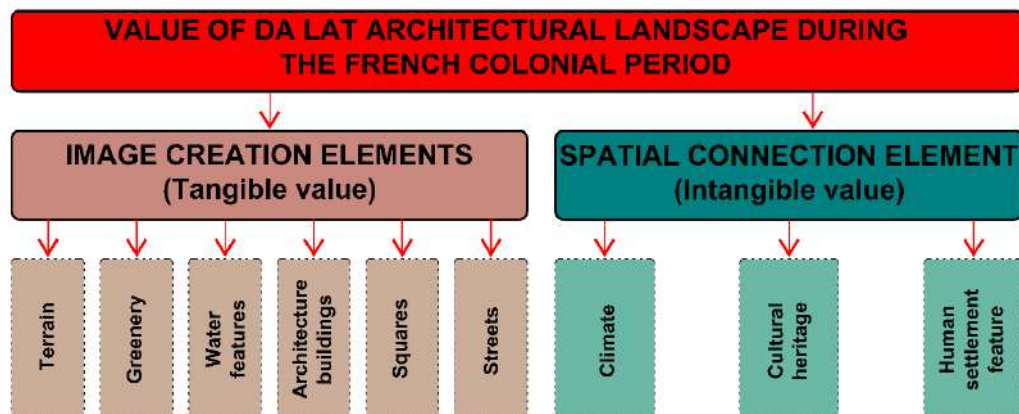
- * Viewpoint 1: Promoting the elements that created Da Lat's urban landscape during the French colonial period
- * Viewpoint 2: Promoting elements of cultural identity
- * Viewpoint 3: Promoting public space spaces whose value has been assessed

3.1.2. Principles

- * Principle 1: Identify values, set criteria, and systematically evaluate architectural spaces, thereby making choices about preserving and promoting architectural elements valuable landscape.
- * Principle 2: Maximize the value from evaluated landscape architectural spaces to apply to renovation, embellishment and new construction projects.
- * Principle 3: Promoting the value of landscape architecture requires maximum respect for Da Lat's natural landscape elements, requires sustainable design solutions, uses local and environmentally friendly materials, consistent with Da Lat's urban eco-resort criteria.
- * Principle 4: Distill the indigenous cultural and architectural values of the K'Ho people to restore and bring back contemporary Da Lat urban life.
- * Principle 5: Rely on local community groups in place creation and best promote the values of French colonial landscape architecture in contemporary Da Lat life.
- * Principle 6: Comply with current construction and planning design standards.

3.2. Identifying the value of Dalat landscape architecture during the French colonial period

Table 3.1: Identifying the values of Da Lat's urban landscape during the French colonial period



In **Section 2.1.1**, the researcher has drawn out 06 main factors that have value in creating Da Lat's urban image (tangible value): Topography; Greenery; Water; Constructions; Squares and Streets and 03 elements with spatial connection value (intangible values) such as: Climate, Local Culture and Settlement Factors.

3.2.1. Identifying elements that create the image of Da Lat's landscape architecture during the French colonial period

* *Topography*: Terrain is one of the factors that made the French choose the Lang-Bian plateau to set up a high-altitude resort. Terrain characteristics caused Da Lat plans from the French colonial period to focus on the basin of Cam Ly valley. Instead of the urban center being in high locations like conventional plans, Da Lat planning takes the low location at Xuan Huong Lake as the center. That Asian-centric water-centered approach, along with the plateau terrain, makes Da Lat more unique than other cities in Vietnam.

* *Greenery*: Da Lat is a city formed in the middle of a pine forest. The green color of the pine forest is always associated with the image of the city, enhancing the architectural works of the French colonial period, creating a poetic landscape architecture space typical of Da Lat. Da Lat's ecosystem of forests, trees and flowers is extremely rich, contributing along with the terrain to make landscape architecture spaces continuously transform.

* *Water*: In the city center, in the middle of the basin area is the Cam Ly stream system - the element that created Da Lat urban area from the beginning. In 1900, the French had the initiative to build a dam downstream of the stream, both to store water to prevent floods and to help connect traffic across the stream and create landscape for the city. Xuan Huong Lake and Cam Ly stream are water landscape spaces that have important meanings for Da Lat urban area.

* *Constructions*: Da Lat once had more than 1,900 villas from the French colonial period. Over time, although they have decreased, there are still about 1,300 villas; Of which 136 are on the State's conservation list. These works are diverse in scale, function and style; from public (administrative, educational, commercial, religious) to residential (hotels, villas). French villas with diverse styles but still maintaining unity and harmony with nature have contributed to enriching the landscape and creating attractive features of the city.

Table 3.2: Illustration of 5 main villa architectural styles in Da Lat

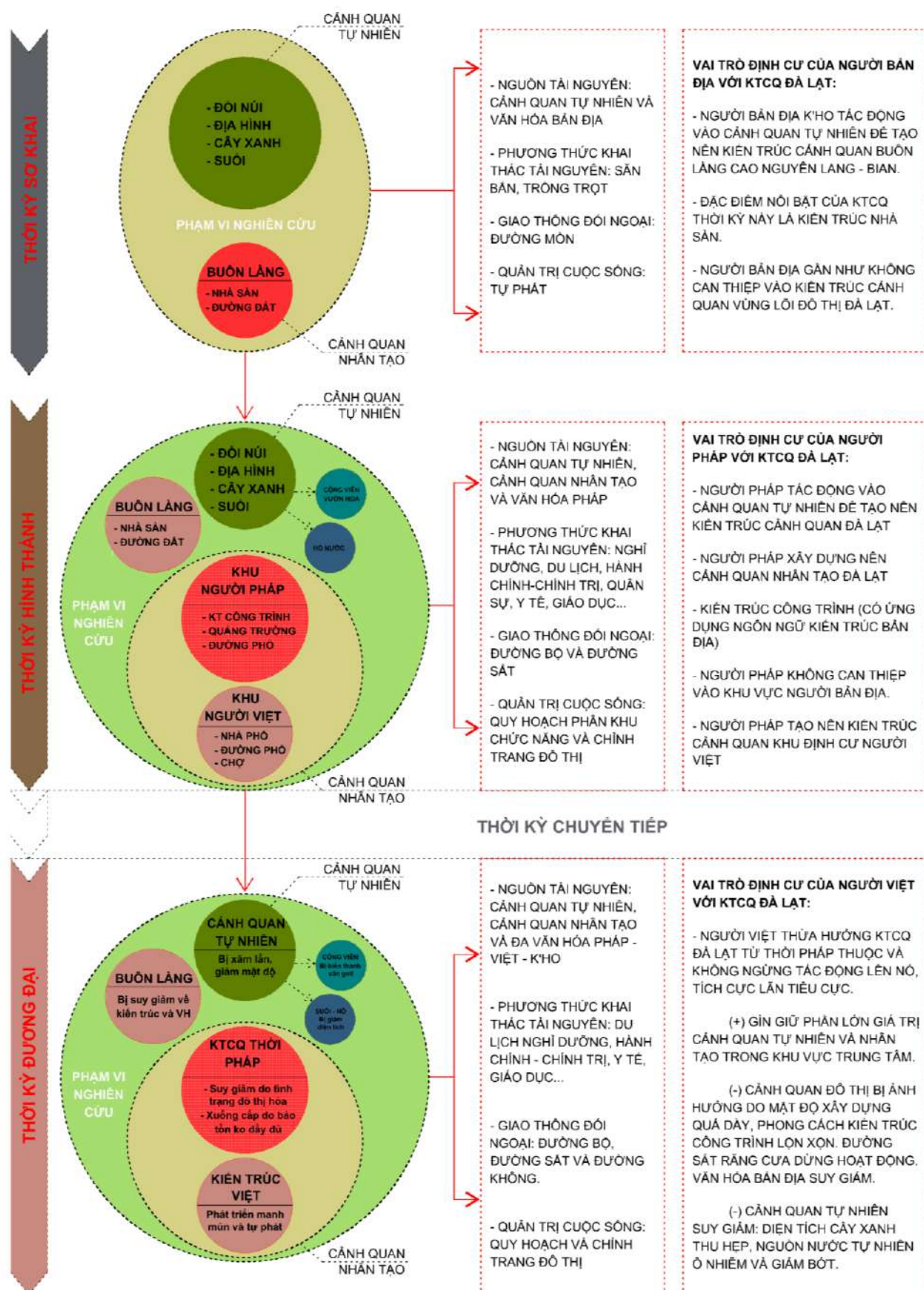
				
Normandy architecture: The villa has 1-2 floors, the house's frame is made of good wood, built with bricks, the wall under the window sill is sometimes built of split stone or small bricks left bare without plaster. The house's frame has symmetrical proportions based on a simple rectangular floor plan. These villas usually have two or four roofs, which are covered with small flat tiles, steep slopes and corners, decorated with triangular roof windows.	Brittany's architecture: Villas often have a horizontal shape. Construction materials are sourced locally, the side roofs use lithographic tiles, the main doors and windows often have large split stone frames. Gable walls are triangular in shape, covering the sloping roof and often attached to the fireplace chimney. Triangular roof windows are responsible for bringing light to the upper floor or attic.	Provence architecture: Provence style houses often have horizontal layouts, free floor plans, tiled or flat roofs. In tile-roofed houses, the slope of the roof is relatively gentle, trough-shaped roof tiles are used in the yin-yang style, the roof does not extend too far and is often decorated with one or two chimneys.	Basque architecture: The Basque architectural style has two uneven roofs, the long roof sometimes almost touching the ground. The roofs extend beyond the gable walls and are supported by wooden beams. The house's walls are brick, painted in light colors with many small dark-colored wooden windows.	Savoie architecture: Savoie-style villas are often built with wooden lower floors and upper floors with long balconies along the wall, moderately sloping roofs and very wide extensions over the gable wall to cover the doors, windows and balconies.

* *Indigenous stilt houses:* K'Ho ethnic group includes 3 ethnic groups: Lach, Chil and Sre; has simple housing architecture, close to nature and suitable for lifestyle. The housing architecture of Da Lat's indigenous residents today still exists in two types that Vietnamese people often call stilt houses and land houses. In particular, this type of stilt house is recently less common than real estate, especially in the suburbs of the city. However, stilt houses are still a typical type of traditional architecture of ethnic minorities.

* *Squares:* Square spaces are an element that has created Da Lat's urban landscape since the French colonial period. Although few in number and small in area, today they still play an important role in increasing urban identity, and are Urban voids and public spaces help increase social connection.

* *Street:* It can be said that traffic routes are the first elements that form Da Lat's urban landscape architecture. Today, large and small traffic routes from the French colonial period still exist in the central area of Da Lat and have become names and places associated with the city's creation process. They also contribute to shaping the urban image, creating the brand of the highland city today.

Table 3.5: The transformation of Da Lat's landscape architecture from a settlement perspective



3.2.2. Identifying elements connecting the architectural landscape space of Da Lat during the French colonial period

* *Climate*: A climate similar to France is an extremely important value that helps Da Lat be chosen to build a resort city. In addition, fog is also a highly appreciated factor when it comes to the landscape of this highland city. Da Lat is branded "foggy city"; fog softens architectural shapes, making them blend into the urban landscape.

* *Cultural identity*: Da Lat has a short but extremely vibrant and lively formation process. During the French colonial period, Da Lat was a multi-racial and multicultural city in Indochina. Thanks to that foundation, despite being a mountainous city, Da Lat has a cultural identity that is rare for any resort city of the same period to have. It can be said that Da Lat's cultural identity is a blend of European culture and indigenous culture, between the culture of the French, Vietnamese and highland minorities, creating an extremely unique urban culture.

* *Settlement factors*: The formation of Da Lat depends on four original settlement factors: resources, resource exploitation methods, foreign transportation methods and governance, and living organization. However, the settlement model of Da Lat urban area is different from most urban areas in Vietnam in that there is no transition "from village to city". Therefore, identifying the architectural value of Da Lat's urban landscape with the influence of the settlement process is quite clear (See Table 3.5).

3.3. Building a set of criteria to evaluate the value of Da Lat's landscape architecture during the French colonial period

3.3.1. Basis for proposed criteria

The dissertation closely follows the theoretical and practical bases summarized in Chapter 2; from there, there is a basis for proposing a set of criteria to evaluate the value of Da Lat's landscape architecture during the French colonial period.

3.3.2. Proposed set of criteria

Table 3.7: Set of criteria for evaluating the value of Da Lat's landscape architecture during the French colonial period

Criteria	Targets	Score
1. Overall characteristics and boundaries of landscape architectural space (max score: 20)	1.1. Landscape architectural space has clear and stable boundaries	5
	1.2. Coherent spatial structure, showing the stages of historical development	5
	1.3. Outstanding features of space contain landscape architectural values (Topography, Trees, Water Surface...)	5
	1.4. Easy and convenient accessibility for experience and perceived value	5
2. The uniqueness of landscape	2.1. The architectural space of the urban landscape is unique, creating an unmistakable sense of place	5

architectural space in relation to the tangible and intangible values of the location (max score: 20)	2.2. Urban landscape architectural space symbolizes the community/place	5
	2.3. The urban landscape architectural space is where the typical public activities of the location take place.	5
	2.4. Urban landscape architectural space can change flexibly, suitable for diverse cultural activities of the community	5
3. Proportions and internal relationships of elements that create landscape architectural space (max score: 20)	3.1. Urban image elements (Routes, Nodes, Landmarks, Edges, Areas) are clear and easy to identify	5
	3.2. Reasonable proportions between elements create urban landscape architectural space	5
	3.3. Landscape architectural elements have a unified relationship but are still independent.	5
	3.4. The elements that create landscape architecture connect diversely and create attractive landscape spaces	5
4. Architectural style and urban cultural characteristics in landscape space (max score: 20)	4.1. There are typical architectural styles for each historical period of urban development	5
	4.2. Has unique urban architectural heritage and/or indigenous cultural value	5
	4.3. In areas with urban architectural heritage, the heritage plays a dominant role in the landscape space	5
	4.4. There are landscape architectural elements that are favorable for promoting the value of urban landscape space	5
5. Harmony between natural/man-made landscape elements and adaptability (max score: 20)	5.1. Natural landscape elements and artificial landscapes have a close and harmonious relationship with each other	5
	5.2. There is a system of perennial trees that is suitable for landscape architectural spaces and requires little care	5
	5.3. There are diverse and attractive flower gardens	5
	5.4. Artificial landscape spaces have the ability to adapt to environmental changes (natural disasters, floods, unusual climate...)	5
TỔNG		100

3.4. Assessing the value of landscape architecture during the French colonial period in the urban architectural space of Da Lat

3.4.1. Research zoning

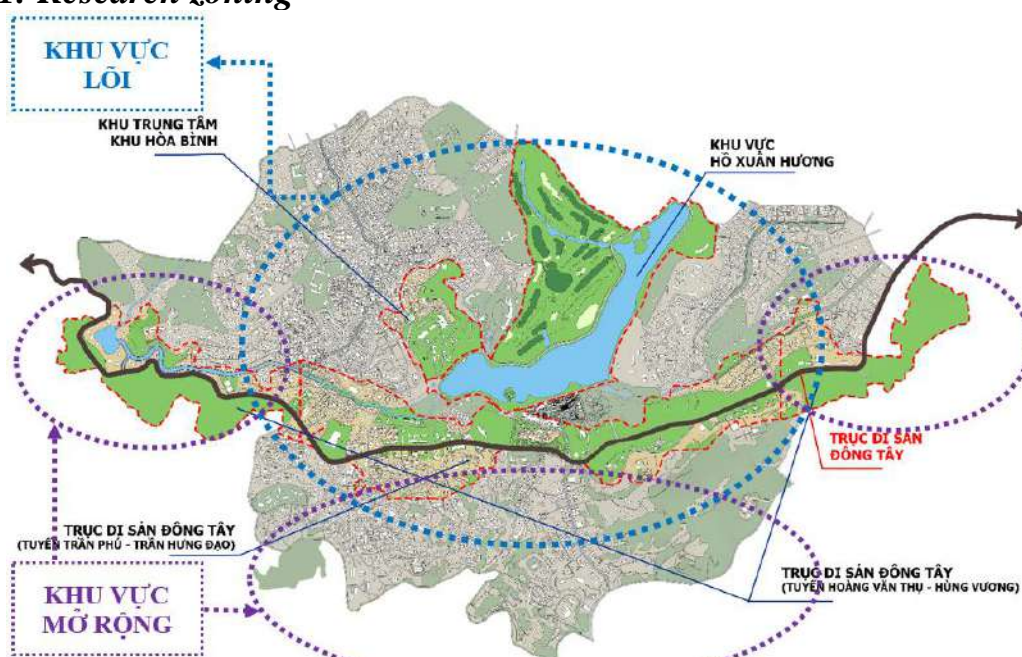


Figure 3.17: Research zoning and location of valuable landscape spaces

Within the scope of the dissertation, the researcher divided the research into Core Area and Extension Area to evaluate the value of typical landscape spaces, as well as provide clear solutions to promote the value of landscape architecture during the French colonial period.

3.4.2. Evaluate the values of component landscape architecture

From **Section 3.2**, the dissertation identifies the landscape architecture of Da Lat during the French colonial period according to 2 groups of values: Tangible values include 6 elements that create an urban image and Intangible values include 3 spatial connection elements. Each of those values is clarified by landscape architectural elements with typical values of Da Lat's urban architectural space, shown in the table below.

Table 3.9: Evaluation of component landscape architectural values in urban Da Lat during the French colonial period

Values	Valuable landscape architectural elements	Interpret specific values
TOPOGRAPHIC	Lang-Bian Mountain	Urban highlight, all of Da Lat can be seen towards the top of the mountain
	Central Valley	Valleys with lakes and streams are a typical urban image
	High points	Are attractive landscape areas that need to be preserved (Nguyen Huu Hao Mausoleum)
GREENERY	Forest	The three-needle pine forest is the main feature
	Park	The park is associated with hunting activities in the past and recreation in the present
	Vegetation	Natural grassland
	Garden/flowers	Trees and flowers imported from France grow well in Da Lat's climate
WATER	Lake	Xuan Huong Lake is the central landscape
	Waterfall	Cam Ly and Prenn waterfalls are attractive landscapes
	Heating	Cam Ly Stream forms a highlight water axis
CONSTRUCTION	Housing projects	Diverse styles, with 5 main architectural styles
	Public construction	Vietnamese residential area: Hoa Binh area, area near the station
	Indigenous stilt houses	K'Ho people's houses: Lach, Chil, Sre
SQUARE	Large square	For large festivals, entertainment, sports...
	In front of spiritual areas	For Christmas, church ceremonies, temple ceremonies...
	Barracks grounds	Military training, garrison...
	Campus	For educational purposes only
STREET	East-West heritage axis	Main street landscape axis of Da Lat
	Prenn Mountain Pass Road	Closely combined with the terrain and trees, creating a beautiful landscape leading into the city
	Railway	Attractive landscape for heritage tourism
CLIMATE	Cool temperature	Pleasant for residents and tourists
	Highland weather	Suitable for varieties of trees and flowers to grow
	Foggy	Making Da Lat's landscape architecture more poetic
CULTURAL IDENTITY	Diverse culture	Many cultural backgrounds from Europe to Asia
	The local culture	The imprint of the indigenous culture of the plateau is still bold

SETTLEMENT PROCESS	The settlement process fluctuated according to Da Lat's urban history	The settlement process clearly influenced the architectural landscape values of Da Lat from the French colonial period until today (Table 3.5).
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The dissertation also evaluated architectural works located in the research areas that have value in contributing to the general landscape architectural space of Da Lat urban area.

Table 3.10: Statistics of valuable architectural works by each region

TT	Constructions	Address	Style	Location characteristics	Value assessment	Score
1.1	Thuy Ta restaurant	2 Tran Quoc Toan	Modern	Low cote, lake surface	Unique, urban image identity	5
1.2	Cong Doan Hotel	1 Yersin	France	On the hillside	The works create valuable architectural complexes	5
1.3	Grand Lycée Yersin	109 Yersin	Colonial	On the hillside	Unique, urban image identity	5
1.4	Map factory	102 Yersin	Modern	Located at the foot of the hill	Unique, but damaged	4
1.5	Cu Hill Golf Club	2 Tran Nhan Tong	France	On the hillside	Only building at Cu Hill in the past	4
1.6	Pontifical Academy Pio X	9 Dinh Tien Hoang	Modern	On the hillside	Religious architecture, unique and large scale	4
2.1	Da Lat Market	21 Nguyen Thi Minh Khai	Modern	On the hillside	Unique but has been changed	4
2.2	Hoa Binh Theater	23 Hoa Binh area	Modern	On top of the hill	Unique but has been changed	3
2.3	Governor's Palace	Ly Tu Trong Street	France	On top of the hill	Unique, urban image identity	4
3.1	Cadasa resort	Tran Hung Dao Street	France	On top of the hill	Success conservation works	5
3.2	Palace II	1 Khoi Nghia Bac Son	Modern	On top of the hill	Unique, urban image identity	5
3.3	Dalat Palace Hotel	2 Tran Phu	France	On top of the hill	Unique, urban image identity	5
3.4	Du Parc Hotel	15 Tran Hung Dao	Colonial	On top of the hill	Unique, urban image identity	4
3.5	Lam Dong TV Center	14-16-18 Tran Phu	Modern	Same cote with neighboring	Historical but has been changed	3
3.6	Grand Cathedral	13 Tran Phu	Colonial	On the hillside	Unique, urban image identity	5
3.7	Thanh Tam Church	40 Tran Phu	Modern	Same cote with neighboring	Inspired by indigenous architecture	4
3.8	Dalat train station	7A Nguyen Trai	France	Same cote with neighboring	Unique, urban image identity	5
3.9	Phi Anh Villa	24 Quang Trung	Colonial	Located on the hill	Unique, urban image identity	5
3.10	Dalat Pasteur Institute	16 Le Hong Phong	Modern	Same cote with neighboring	Unique, historical value	4
3.11	Palace III	1 Trieu Viet Vuong	Modern	On top of the hill	Unique, urban image identity	5
4.1	Nam Phuong Palace	4 Hung Vuong	France	On top of the hill	Unique, urban image identity	5
4.2	Palace I	1 Tran Quang Dieu	France	On top of the hill	Unique, urban image identity	5
4.3	Lam Vien Notre Dame Cathedral	2 Huyen Tran Cong Chua	Indochina	At the top of the slope	Religious architecture, unique and large scale	4

4.4	Mausoleum of Nguyen Huu Hao	Hoang Van Thu Street	Nguyen Dynasty	On top of the hill	Unique, urban image identity	5
4.5	Ana Mandara Villa	2 Le Lai	France	On the slope	Success conservation works	5
4.6	Domaine de Marie church	1 Ngo Quyen	Colonial	On top of the hill	Religious architecture, unique and large scale	5
Rating scores: 5 points - great value 4 points - much value 3 points - valuable 2 points - little value 1 point - very little value						

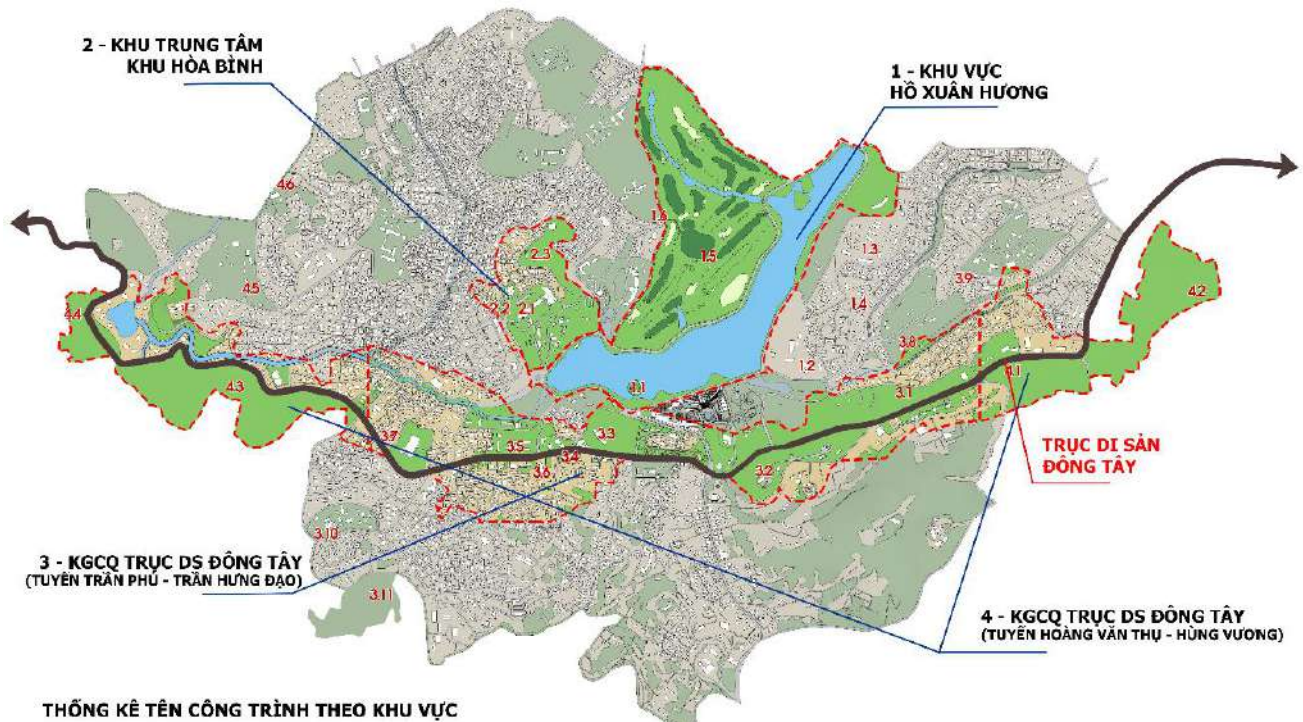


Figure 3.18: Location of valuable French colonial economic works by region

3.4.3. Assess the value of landscape spaces in the core area

* *Landscape architecture of Xuan Huong Lake*

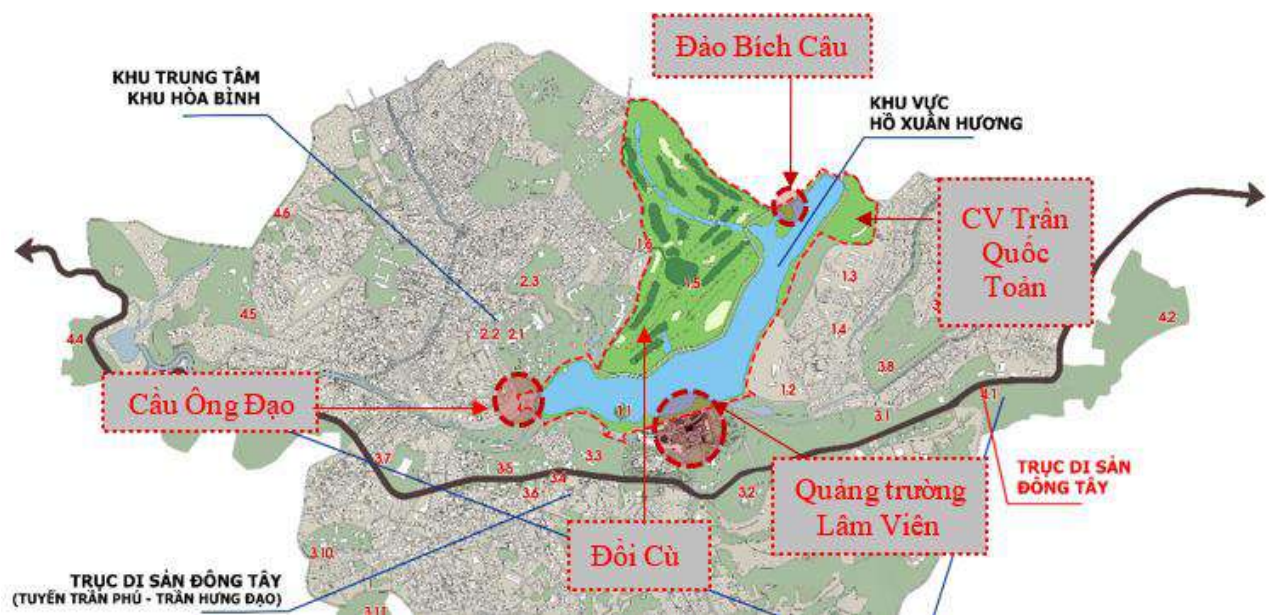


Figure 3.19: Limitation on scope at Xuan Huong Lake

* *Landscape architecture of Hoa Binh area*

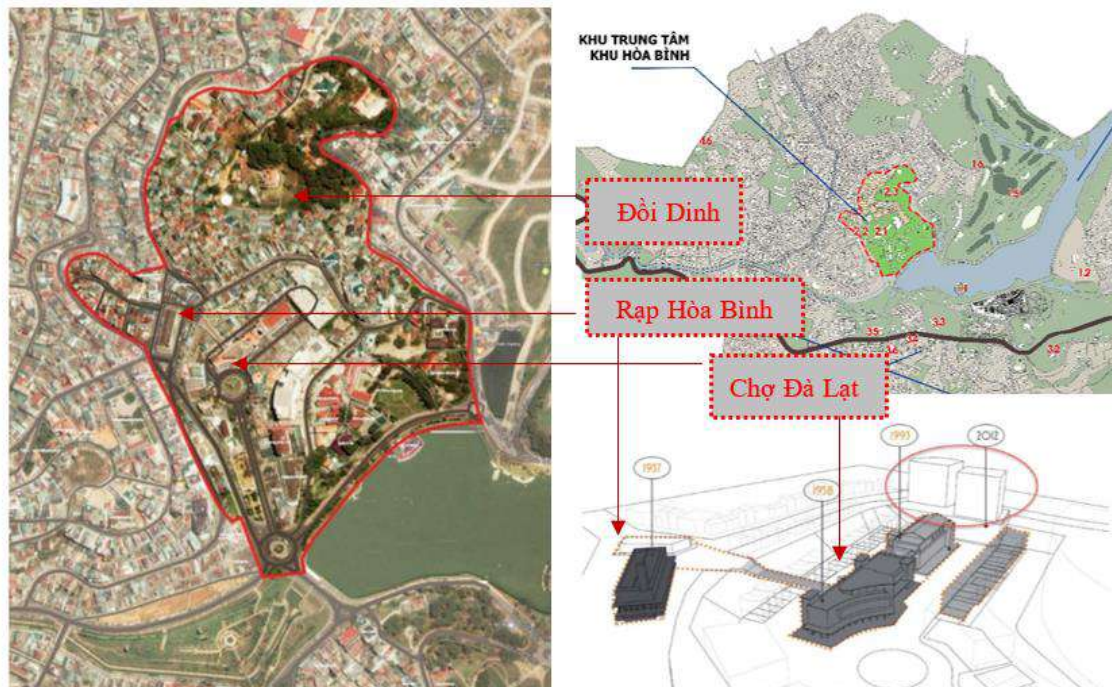


Figure 3.20: Limitation on scope at Hoa Binh area

* *Landscape architecture of East-West axis (Tran Phu - Tran Hung Dao)*

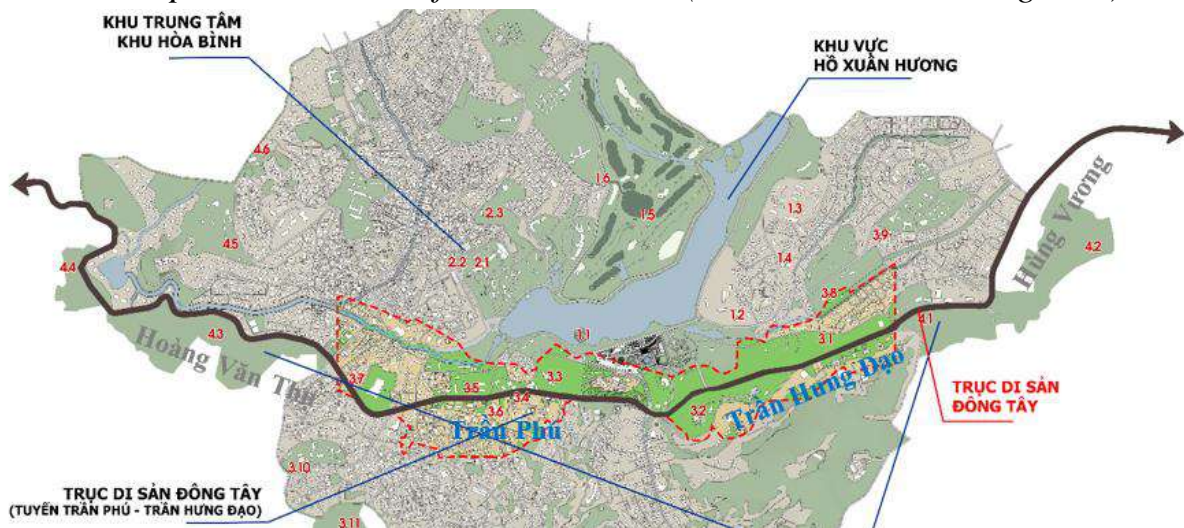


Figure 3.21: Limitation on scope at of East-West heritage axis

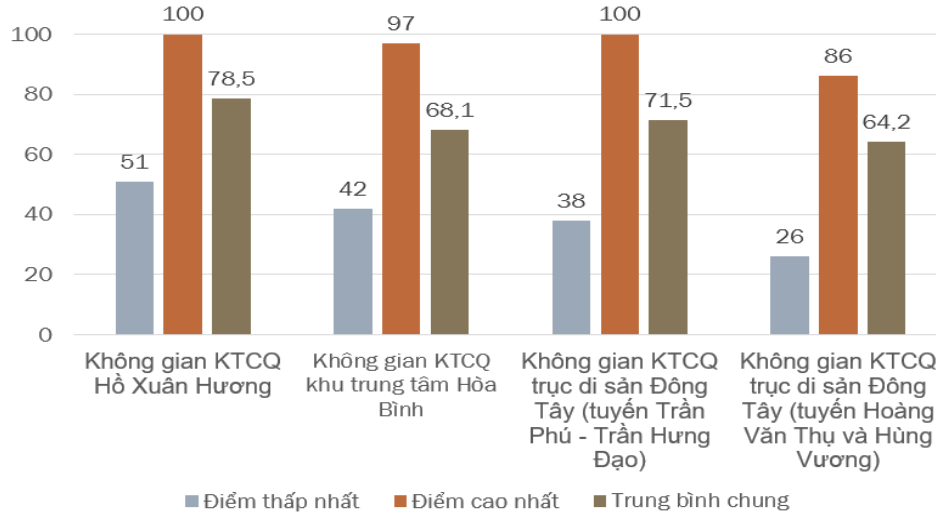
3.4.4. Assess the value of landscape spaces in expanded areas

In addition to spaces with valuable landscape architecture during the French colonial period in the core area, there are many other valuable landscape architectures on Hoang Van Thu and Hung Vuong routes, the inter-agency area on Le Hong Phong street, Palace III, Anna Mandara resort, Da Lat station, Domaine de Marie church... These spaces are not close to the center and are not connected into lines or arrays, so they are not ranked high, but considering each Each space has its own unique landscape architectural value.

It could be the value of the terrain, the trees or the value of the highlight structure of that space.

→ Compiling the evaluation form of NCS values obtained from the expert interview method, it can be seen that the majority of experts (more than 60%) highly appreciate the value of French colonial landscape architecture of landscape spaces. of Da Lat.

Table 3.19: Assessment of the value of Dalat's landscape architecture



In addition, through 04 summary tables of expert opinions, it also shows that the level of value assessment of 04 landscape spaces is quite similar to the assessment of the researcher, ranked in the following order:

- 1, Landscape of Xuan Huong Lake
- 2, Landscape along the East-West heritage axis (Tran Phu - Tran Hung Dao route)
- 3, Landscape space of Hoa Binh area
- 4, Landscape of East-West heritage axis (Hoang Van Thu and Hung Vuong routes)

3.4.5. Assessing the architectural form of Da Lat's urban landscape

* *Evaluate the image value of Dalat urban landscape architecture*

- *Path*: The most prominent flow line of Da Lat's urban space is the East-West heritage axis and the lake chain system, running from East to West. The second important route is the virtual route connecting Pren Pass towards Lang-Bian mountain peak; This route can be called the North-South landscape axis.

- *Node*: located at the intersection between routes. Important intersections are concentrated around the core area, especially around Xuan Huong Lake and intersections of roads across the East-West heritage axis.

- *Landmark*: are highlight works, located at the starting and ending locations of routes, contributing to increasing the urban image of Da Lat. For example, Lang-Bian Palace Hotel and Cathedral.

- *District*: are areas with dense heritage, green areas such as Cu hill, Hoa Binh Market square, Xuan Huong Lake water surface...
- *Edge*: Da Lat during the French colonial period did not have clear, hard edges but rather soft edges, based on nature, such as grasslands and pine forests...

Table 3.20: Location of elements typical of Da Lat's urban image

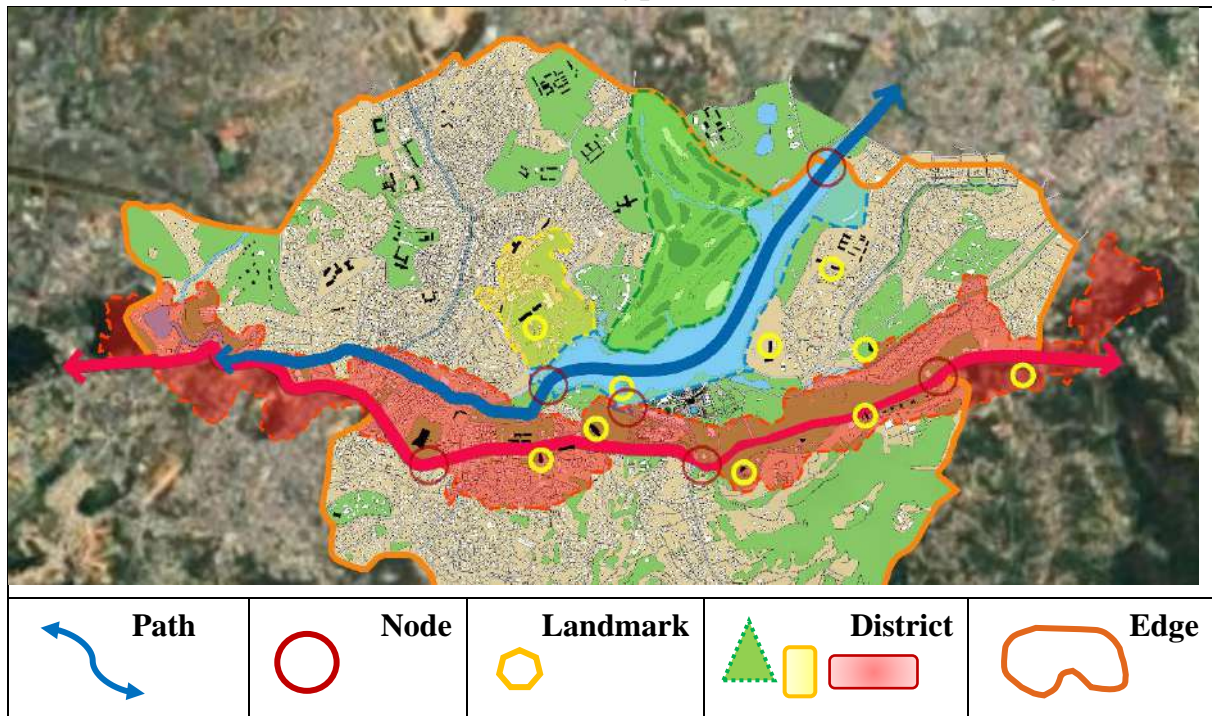


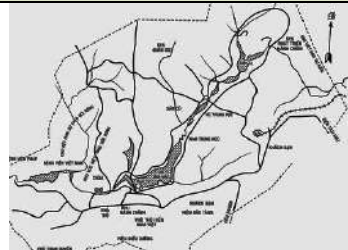

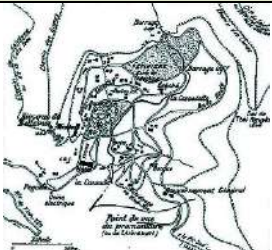
Table 3.21: Evaluation of the image value of Da Lat landscape architecture

TT	Components that create Da Lat landscape architecture	Elements that create urban images				
		Path	Node	Landmark	Edge	District
1	Topography	•	O	O	•	•
2	Greenery	•	O	O	•	•
3	Water	•	O	•	•	•
4	Constructions	•	•	•	•	•
	- France architecture	•	•	•	•	•
	- Indigenous architecture	O	O	O	©	©
5	Square	O	•	©	•	•
6	Street	•	O	O	•	•
Notes:		- No contributions			O	
		- Contributed			©	
		- Contribute a lot			•	

* *Assessing the value of Da Lat's urban spatial structure*: Da Lat's urban spatial structure during the French colonial period was a concentrated structure in the form of a spreading tree branch. This is a type of structure that is radial and radiates in all directions, depending on the natural terrain of Da Lat.

Based on the analysis tables below, it can be seen that Da Lat urban area is much more dominant when compared to other highland resorts in the same period.

Table 3.22: Comparison of Da Lat with other mountain resorts in the same period

	Dalat	Sapa	Tam Dao
French colonial period's planning			
Classification	Completed functional city	Highland resort station	
Spatial structure	The structure is concentrated in the form of a diffuse tree branch.	Parallel linear structure	
1, Elements that create urban landscape architecture			
Topographic	Hills and mountains, gently sloping towards the center	Hills and mountains, the terrain is quite steep	
Greenery	Natural pine forest. Many native trees and flowers	There are no featured trees	
Water	Xuan Huong Lake and Cam Ly stream are the central water surface	There is no central water surface	
Construction	French architecture is dominant. Genres and styles are very diverse.	French + indigenous architecture	
Square	Many in quantity and large in scale	Few in number and small in scale	
Street	Diverse types of transportation: road, rail, air. Rich network of road	Railways not connect to SaPa center. Roads are not diverse	Only road traffic. Small roads, not diverse.
2, Elements connecting urban landscape architectural space			
Climate	Foggy, pleasant mild weather	Fog, high humidity. Winter is very cold	
Cultural identity	Cultural diversity. European culture prevails. Unique and attractive indigenous culture.	The culture of the indigenous people prevails	Indigenous culture is blurred
Settlement factor	Settlement process is very volatile, requiring in-depth research to enrich the urban historical & cultural capital	Only ethnic groups and indigenous Vietnamese people settled	The settlement process is nothing special

3.5. Orientation to promote the value of landscape architecture during the French colonial period on the basis of conservation

3.5.1. General orientation

* *For tangible and intangible values*

3.5.2. Specific orientation

* *Preserve the original state of the core area*

* *Adaptive conservation to the expanding area*

* *Conservation reconstruction with elements that have disappeared*

3.6. Solution to promote the value of landscape architecture during the French colonial period in the urban architectural space of Da Lat

3.6.1. Promoting the value of French colonial landscape architecture in the core area

** Solutions for organizing landscape architecture in the Xuan Huong lake area*

- Landscape architectural spaces on the water surface as well as around Xuan Huong lake need to be preserved for their overall integrity and create conditions for development in today's urban life, including: Thuy Ta floating island ; Bich Cau island; pray to Mr. Dao; Tran Quoc Toan park; Cu Hill; Lam Vien Square.



Figure 3.28: Dalat urban landscape architectural space (toward Lang-Bian peak)

** Solutions for organizing landscape architecture in Hoa Binh zone*

- Beautify the streets, complete the green tree system, add complete urban designs: street lights, benches, signposts...

- Beautifying the street facade: unifying height, unifying advertising signs, embellishing the facades of buildings according to the general style of the entire street.

- There needs to be a plan to restore the architectural form and landscape architectural space around 03 works: Hoa Binh Theater, Da Lat Market and Governor's Palace.

- Relocating encroaching structures, returning areas for urban public spaces... helps reduce construction density throughout the urban area.

** Solutions for organizing landscape architecture in the East-West heritage axis area*

- Beautify the streets, complete the green tree system, add complete urban designs: street lights, benches, signposts...

- Beautifying the street facade: unifying height, unifying advertising signs, embellishing the facades of buildings according to the general style of the entire street.

- Preserve the landscape architectural space surrounding works belonging to the group of works classified as heritage.
- Relocate encroaching structures and return the area of urban public spaces.
- Restore the cog railway from Thap Cham to Da Lat to serve tourism.

3.6.2. Promoting the value of French colonial landscape architecture in the expanded area

* *Promoting terrain elements:* Promoting characteristics, preserving and exploiting landscape elements in steep hill areas. Buildings on steep hills need to have appropriate scale and height, not overwhelming the general landscape of the area. Limit the construction in front from covering the construction behind. Limit leveling to create a level surface, which can easily cause landslides; Encourage step-down construction and construction on columns to preserve the terrain and landscape.

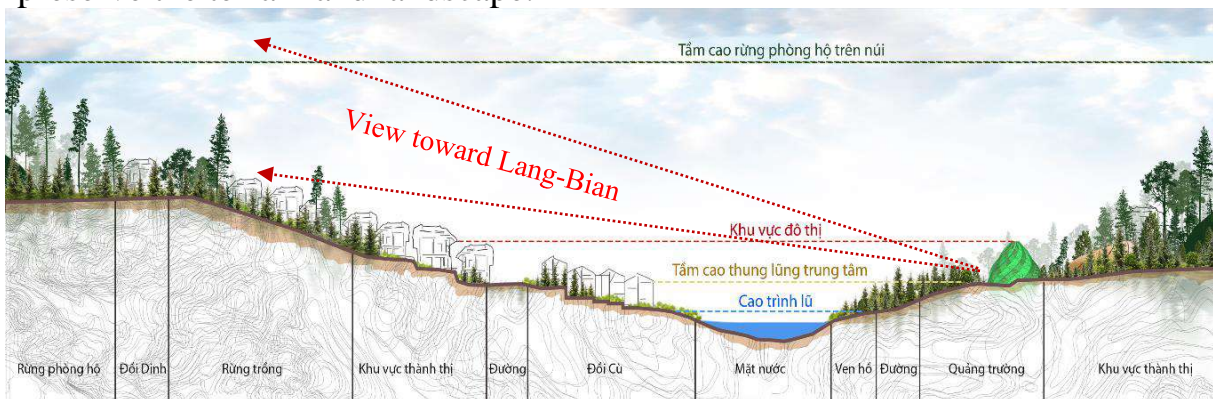


Figure 3.31: Preserving the view towards Lang-Bian mountain

* *Promoting water surface spaces:* Promoting water surface landscape elements (lakes, streams, waterfalls...) associated with the organization of public spaces, green parks and economic structures of the area. Landscape architectural design plans need to limit leveling of ponds, lakes and streams, limit changes and narrow the flow.

* *Promoting park - green tree networks:* Promote existing green parks, and at the same time design additional systems of squares, small gardens, walking paths... Promote the value of tree varieties and native flowers have become the trademark of "Da Lat flower city". Promote the value of parks associated with famous landmarks and natural landscape forest spaces to serve the community and tourists. Water landscape parks need to be connected to tourist attractions to form continuous landscape routes. It is necessary to restore pine forests in peripheral areas, both beautifying the landscape, protecting groundwater and contributing to reducing the urban heat island phenomenon...

* *Flexibly promote the architectural style of the French colonial period:* New constructions need to promote the lines, proportions, materials, and colors of French architecture. Absolutely do not copy, nor should you use outdated construction technology. Urban architecture still needs to be contemporary and in harmony with the common space.

* *Promoting inspiration from indigenous architecture:* The indigenous architecture of the K'Ho ethnic group is characterized by houses with wooden floors, gently sloping roofs, using rustic materials, natural colors, very harmonious. merge with the Lang-Bian mountain and forest landscape.

3.7. Discuss research results

Includes the following contents: Main research results; Compare results with other studies; Suitability with Da Lat's urban spaces; The level of application and exploitation of the solution is similar to similar urban areas.

CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions

The dissertation has achieved the following results:

- Identifying the architectural landscape values of Da Lat during the French colonial period includes two groups of values: Tangible values include 06 elements that create an urban image: Topography, Greenery, Water, Architecture, Square, Street; Intangible values include three spatially connected factors: Climate, Cultural Identity and Settlement Factors.
- Proposing a set of criteria to evaluate the value of Da Lat's landscape architecture during the French colonial period, including 05 criteria and 20 indicators. From that set of criteria, the dissertation evaluates the value of some typical spaces with landscape architectural value during the French colonial period in the urban architectural space of Da Lat.
- Propose solutions to promote the value of Da Lat landscape architecture during the French colonial period in the current and future Da Lat urban architectural space. The promoted solution is implemented in landscape architectural spaces that the dissertation has assessed as valuable using the Criteria Set. The promotion solution is also implemented in the expanded Da Lat urban area by promoting each landscape architectural value that the dissertation has identified and evaluated (topography, water, parks, French architectural style and indigenous architectural inspiration...).

2. Recommendations

During the process of implementing the dissertation, many research issues arose that, with the limited time and framework of the topic, the PhD student could not fully resolve. To avoid waste and duplicate research, the researcher recommends the following:

* *Recommendations to authorities on urban planning management:*

- Relevant departments need to have close links in the work of preserving and promoting the value of French colonial landscape architecture in the contemporary Da Lat urban architectural space.

- Proposal to add the definition of "Urban heritage" and "Heritage urban" to the Cultural Heritage Law.

- Climate change is an urgent issue affecting the sustainable development of urban areas. However, current climate forecasting is not synchronized, and it is difficult to access forecast data for research. Therefore, it is recommended to build a national standard climate database and easy-to-use retrieval software.

** Recommendations to the authorities on the management of urban development investment activities and economic - cultural - social activities:*

- Recommend that relevant departments need support from urban experts and researchers in the process of practical implementation of research topics.

- There needs to be a policy to support resettled indigenous groups along the Cam Ly stream basin, and restore the original indigenous cultural values of ancient Lang-Bian, such as rituals and arts, music... of the Lach, Chil, and Sre.

- Recommend to all levels of government and relevant parties to strengthen heritage education for the community. People need to realize that preserving urban landscape architectural heritage brings long-term benefits to the owner as well as the community in general, not a form of quick profit.

- Recommendations for sustainable exploitation of heritage, balancing income sources and heritage conservation costs. Learn models for effectively exploiting urban heritage.

** Recommendations to research organizations and relevant scientists:*

- The issue of urbanization is affecting the conservation of urban heritage in general and the landscape architectural heritage of the French colonial period in urban areas such as Da Lat in particular. Therefore, more extensive research is needed on this topic.

- To have a common consensus, the researcher hopes that the next studies on assessing the value of French-era landscape architecture in resort cities in the highlands and mountainous areas of Vietnam can inherit the content that the researcher has learned. carried out in this dissertation.

** Propose further research directions*

Within the framework of the dissertation, the research results are stopping at overall perspectives, principles and solutions, so the research results of the dissertation are the basis for further more specific research directions as follows. :

- Design a plan to preserve streets in the core area.

- Exterior design of villas in expanded urban areas.

- Research to restore K'Ho indigenous villages at the foot of Lang-Bian mountain as a community tourism model.

- Research the impact of climate change on mountainous resort cities.

- Research on management orientation for urban development and resort tourism in mountainous areas.

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2. Nguyen Nguyen Thi Hanh, Trang Nguyen Thi Nhu (2023), Urban architectural heritage, not Real Estate, *XII International Scientific and Practical Forum “Environmentally Sustainable Cities and Settlements: Problems and Solutions”*; Vol.403 No.01016 (25 July 2023); E3S Web of Conferences, eISSN: 2267-1242; ESCP-2023; Available online from 25 July 2023; DOI: <https://doi.org/10.1051/e3sconf/202340301016>
3. Nguyen Thi Nhu Trang (2024), Sustainable urban development needs to be associated with preserving and promoting the value of architectural heritage (viewed from Khe Tu relic - Tien Yen - Quang Ninh), *Journal of Architectural Science and Construction*, Hanoi University of Architecture, code ISSN 1859-350X, No52, Feb 2024.
4. Trang Nguyen Thi Nhu, Nguyen Nguyen Thi Hanh (2024), Da Lat's threatened urban heritage: Causes and Solutions, *Recent Advances in Structural Health Monitoring and Engineering Structures*; SHM&ES 2023. Lecture Notes in Civil Engineering, Vol.460; Springer Singapore; eISSN: 2366-2565. Available online from 2nd June 2024; DOI: https://doi.org/10.1007/978-981-97-0399-9_64