

**MINISTRY OF EDUCATION  
AND TRAINING**

**MINISTRY OF  
CONSTRUCTION**

**HANOI ARCHITECTURAL UNIVERSITY**

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**CHARACTERISTICS AND SPATIAL STRUCTURE OF  
HANOI OLD QUARTER**

**SPECIALIZATION : REGIONAL AND URBAN PLANNING**

**CODE : 62.58.01.05**

**SUMMARY OF DOCTORAL THESIS**

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## INTRODUCTION

### 1. Rationale

The process of Urbanization following the Early Modern model affected by Western Style formed since the French colonial period. The neighborhoods in this period in Vietnam are all valuable urban heritage with important historic value and contributed to creating the "East-West" interference between the two French - Vietnamese cultures.

The architectural characteristics of this period can be seen in many urban areas such as Ha Noi, Ho Chi Minh City, Hai Phong, Da Nang, Sa Pa, Da Lat, etc. Nowadays, these cities all become urban centers with their own heritage and characteristics, imbued with urban memory.

Currently, a pressure of the urbanization process puts these regions at risk of losing their inherent values. There have been studies and projects on conservation and redevelopment of works in Hanoi Old Quarter. However, there is no research to identify and evaluate the value in terms of urban space structure.

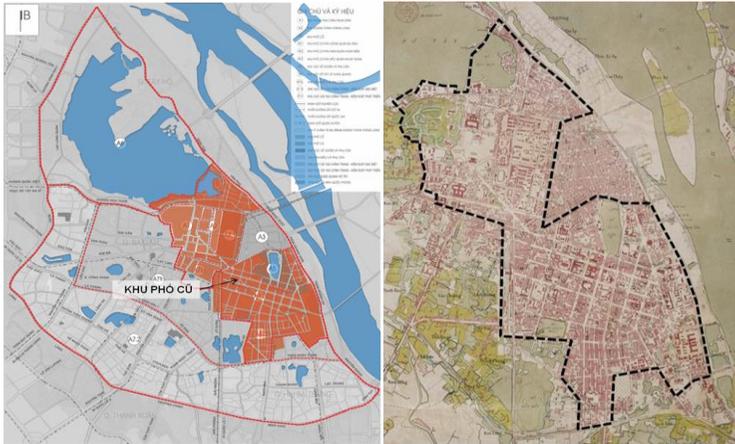
This is the aim of the topic, by studying the characteristics and process of space structure change in Hanoi Old quarter. Assessing the value of urban space structures and dealing with them in the contemporary period, in order to learn from experience to promote and inherit the preeminent values, retain memories for future generations.

### 2. Research objective

- Recognize space structure changes of Hanoi Old quarter in the urbanization process since the end of the 19<sup>th</sup> century, in the 20<sup>th</sup> century until now.
- Identify characteristics and space structure of Hanoi Old Quarter value.
- Propose orientations to preserve and promote the value of the space structure of Hanoi Old quarter in modern urban life.

### 3. Research subject and scope

- Research subject: Space structure of Hanoi Old quarter.
- The area of Hanoi Old quarter covers an area of about 750 ha; the boundary as the following routes and streets.



*Image 1. The area of Hanoi Old quarter in the historic capital.*

- Research the characteristics and changes of the space structure of Hanoi Old quarter from 1875 - present (2019); orient to preserve and promote values till 2030.

### 4. Research methodology

The thesis uses 3 methods including document research method: map overlaying and comparison methodology; expert method.

### 5. The scientific and practical significance of the topic

- Theoretical significance: Systematize the history of formation - the development of the space structure of Hanoi Old quarter; Assess unique organizational values of the major space structures in the urban transformation process of Hanoi Old Quarter; Make scientific bases to apply in planning, urban design, and management; Develop the theoretical behavior in the preservation and promote value in renovation, embellishment, and rebuilding at Hanoi Old quarter.

- Practical significance: Contribute to completing the research values of landscape planning and architecture; supply reliable scientific data to research, training, renewal planning, and Hanoi Old quarter space management.
- 6. New contributions of the thesis.** There are 03 new contributions:
- Evaluate changes of space structure of the old quarter in Hanoi on the basis of analyzing economic, cultural and social impacts since 1875, as follows: (1) changes of space structure from a traditional city to a modern one, more specifically, from the formation of new axis and urban center in the east the city to form new centers and replace ancient walls then finally completed urbanization for the city based on applying the paradigm of space structure in western cities for Hanoi. (2) Changes in location and features of major spaces, transferring from structures of suburban streets, and traditional formations to the main spatial axis associated with complexes and network blocks. (3) Changes of traditional structures in spaces at Sword lake, Hanoi Citadel and rural villages. (4) Changes of functions of 5 featured places: Hanoi Cathedral, National Library, Cultural Palace and Ly Cong Uan Statue; showing overlap, crisscross, and continuity.
  - Identify 04 features of space structure of Hanoi Old quarter, deepen the values of Hanoi Old quarter in history through urban design tactics. They are (1) Features and values of space structure of Hanoi Old quarter – the image of a garden city with checkers and landmarks based on indigenous conditions intertwined with traditional structures. (2) Neighborhoods with 06 areas with different morphologies that reasonably harmonize. (3) The assemblies of major spaces include axes and combination patterns at the nodes - squares. (4) Characteristics of landscape spatial structure with river surround and links with urban garden type neighborhoods.

- Propose opinions, conservation orientation and promote the value of Hanoi Old quarter by 2030. Including: (1) Orient overall urban design of space structure of Hanoi Old quarter by allocating 6 areas of landscape architecture to protect space structure, key space complexes with public heritage construction. (2) Orient urban design to 03 typical areas in Hanoi old quarter: around Hoan Kiem lake, Thang Long imperial citadel and Ba Dinh political center. (3) Solutions about management and promotion of values.

**7. Concepts and terms.** The thesis refers to 3 main concepts:

- Old quarter: is the concept of a Western-style urban development area on French colonial areas and streets.
- Urban space structure is a combination of 5 rules components: (1) road network, (2) land plot - lot; (3) Construction works (solid), (4) Non-construction space (empty), (5) natural landscapes.
- The transformation of urban spatial structure is the process of changing the components that make up the structure, through the stages of urbanization. The transformation of urban spatial structure shows in four aspects: (1) time - historical context, (2) location, (3) scale. (4) architecture - urban art.

**8. Structure of the thesis.** The thesis includes 3 parts: Introduction, Content and Conclusions – Recommendations. In particular, the content consists 3 chapters.

*Chapter I: Overview of the space structure of the historic central quarters in the world and Hanoi old quarter in urbanization process*

*Chapter II: Scientific basis for identifying characteristics and changes of spatial structure of Hanoi Old Quarter*

*Chapter III: Characteristics, changes of spatial structure of Hanoi Old Quarter and conservation orientation and promotion of values*

## CONTENT

### **CHAPTER I: OVERVIEW OF THE SPACE STRUCTURE OF THE HISTORIC CENTRAL QUARTERS IN THE WORLD AND HANOI OLD QUARTER IN URBANIZATION PROCESS**

#### **1.1. Overview of the space structure of the historic central quarter in the world**

##### *1.1.1. The historic central quarter in urbanization process*

The historic central quarter formed and transformed during urbanization on the basis of operational functions. The West in the process of urbanization tends to delineate central functional areas in a relatively well-organized order, meanwhile, the East tends to combine and blend.

##### *1.1.2. Colonial urban areas around the world*

All empires imposed the principles of contemporary European and national planning for the construction of new colonies. However, the characteristics of the new cities in Asia differed, reflecting the cultural ideology of each empire in dealing with the colony as well as the interaction of each colony.

#### **1.2. Vietnam urban areas in colonial period**

##### *1.2.1. Some typical cities*

- Ha Noi: The capital of Indochina – Paris in the Far East: the appearance of the Old quarter next to ancient city and the disappearance of Thang Long Citadel.
- Hue: The area of Europeans appearing in the south of the Huong River has a grid pattern, stretching along the banks of the river with new constructions smaller than Hue citadels and palaces.
- Hai Phong City: In Hai Phong old quarter, the "water" element became the space frame for the grid to change direction, connecting railways and seaports.

- Nam Dinh City: At the same time with the disappearance of feudal strongholds was the mixture of Old Quarter and French Street.
- Da Nang City: Harbor and wide roads shaped the chessboard for the French zone in the city center along the West bank of the Han River.
- Da Lat City: It is very different from the green pine forests with the old French architecture villas.
- Ho Chi Minh City: An urban administrative - commercial service on diverse structures. Important trade port in the Far East

#### *1.2.2. Location, development perspective, scale and urban function*

- Viewpoint: choose an area near a local resident; build based on its existing tradition; urban areas must be firmly constructed. Newly built areas in the style of modern urban in France.
- Urban areas are often located in places with mountains, rivers, near roads and beach; have conditions for economic development and resource exploitation.
- Big urban area: 3000 - 5000 people, area of 50 - 100ha. Small – medium urban area: 1000 - 2000 people, area of 25 - 35ha, sometimes up to 45ha...
- Function: administrative urban area along with garrison, mining urban area, industrial and port urban center, tourist and research center.

#### *1.2.3. Basic characteristics of urban space structure*

- The spatial structure is both traditional and colonial in Barocco style from France and more modern.
- Technical Infrastructure works, public works such as schools, hospitals, markets, entertainment areas, etc. were built in sync.
- Many nice locations in urban space structure were used to build public works, villas, palaces have artistic and architectural value.

### **1.3. Hanoi old quarter space structure**

#### *1.3.1. The establishment of space structure of Hanoi Old Quarter*

- The end of 19<sup>th</sup> century to 1920s: transition from a traditional city to a modern city.
- The period from 1921 to 1954: Steady development towards completion.
- The period from 1955 till now: Increase the density.

#### *1.3.2. Actual status of spacial structure of Hanoi old quarter*

- Natural conditions: stable terrain; complex geological structure; a humid subtropical monsoon climate, large rainfall.
- The North - South railway passes through the city center. The road network has 2 models: checkerboard, and polygon with multiple intersections.
- How to divide land lots - subdivision: In the regular space structure of the streets, the network structure of plots still has many very different sizes.
- Construction works (solid): public construction works, villas or terraced houses. The buildings are intercropped, increasing the density of construction in the land plots.
- Non-construction space (empty): apart from valuable squares, the free space in the land plots - plot of land in the old town is greatly reduced during urbanization.
- Natural scenery and landscape creation during construction: Hanoi old quarter is still an area of many trees, lakes, Bach Thao park and small-scale flower gardens.

#### *1.3.3. Assessment*

- Many heritage areas, natural landscapes, streets, and cultural centers of the old quarter still retain their original importance.
- The landscape of the old quarter is degraded, especially the streets. The old quarter's distinctive image is gradually obscured by high buildings.

- Architectural space - landscape of Hanoi old quarter has the appearance as the presence of European cities.
- Diversified and diverse urban activities, intertwined in the urban spatial structure are enriching the cultural identity of the region.

#### **1.4. The position of the space structure of the Old Quarter in the current urbanization process in Hanoi**

##### *1.4.1. Socio – Cultural History*

The history of formation and development of the old quarter marks the integration of Hanoi culture with Western culture through the reception of how to create urban space and develop architectural art based on French experience applied to Hanoi.

##### *1.4.2. Construction planning*

It can be said that the old quarter is the beginning of important institutions that make Hanoi become the Capital of Vietnam.

Hanoi old quarter has an open road network in the form of a "chess board" with few squares, but it is very valuable because they create a wide view to highlight the main heritage works.

##### *1.4.3. Space landscape*

So far, this is still one of the areas with the most green space in the city. Trees have become a "living" heritage giving the old quarter a romantic setting for Hanoi.

##### *1.4.4. Architecture - Art*

The special characteristic of the neighborhood is reflected in the diverse architectural styles, and interwoven in the old quarter.

#### **1.5. Scientific research works related to the dissertation's topic**

##### *1.5.1. Science research topic*

Since 1995, there have been 02 state-level scientific research projects and 01 city-level topic related to the thesis

- Affirming the urgency of preserving and upgrading the Old and Aged Quarter in some traditional cities in Vietnam.
- Integrated research on urbanization, summarizing historical experience.
- Research, review and evaluate the fund value of more than 150 architectural works in the period of 1954 - 1986 in Hanoi capital.

### *1.5.2. Doctoral thesis*

Since 1996 there has been 7 theses related to the topic.

- To research identifying Hanoi Old Quarter; To build a scientific and theoretical basis: spatial structure for urban development and formation and development of spatial structure for urban centre development and heritage preservation.
- To propose the conservation and promotion of the architectural heritage value of Hanoi urban centre development; To discover discoveries to adapt to natural conditions, indigenous elements to colonial architecture works.

### *1.5.3. Project and Plan*

From 1992, there have been four general master plans, six master plans at 1/2,000 scale and two specific research projects for Old Town:

- To acknowledge Old Town as a specific function of the Capital; zoning embellishment conservation and development. To restrict high-rise development and control the mechanical population growth.
- To survey and evaluate more than 400 heritage works, 1540 French villas; Vietnam's heritages in Old Town.

### *1.5.4. General Evaluation on researched issues*

This is the area where has many studies that create the basis for projects and practical projects through the identification of Old Quarter values. To prevent changes of landscape architectural space. There are some shortcomings due to the characteristics performance analysis and evaluation of the value of urban spatial structure that has not been implemented. It's able to continue deep study on architecture and urban design

## **1.6. Determination of required studied issues**

The Thesis selects 2 main contents approaching to (1) Analyze and identify the characteristics and value of the spatial structure of the Old Town; (2) Research the changes of spatial structure of the Old Town through times mathematical representation in Hanoi over time.

**CHƯƠNG II: SCIENTIFIC BASIS FOR  
ACKNOWLEDGMENT OF  
CHARACTERISTICS AND CHANGES ON  
SPATIAL STRUCTURE OF HANOI**

***2.1 Factors affecting the characteristics and changes of spatial structure of Hanoi Old Quarter in the process of urbanization***

***2.1.1. Area – Population***

- In the French colonial period, there is a large and continuous growth in area, population, and the increasing diversity of ethnic groups.
- Since 1954, Hanoi has adjusted the administrative boundary 4 times. The population especially increased rapidly in the first years of Renovation (Doi Moi).

***2.1.2. Economy***

- The Economy in French colonial period: the emergence of a capitalist economic model, bringing remarkable changes compared to feudal times.
- The Economy after 1954: before 1975 - there was a certain development. From 1976 to 1986, the socio-economic crisis was very serious. After 1986 - present, the economy grew rapidly following the socialist-oriented market economy model.

***2.1.3. Socio- Culture***

The French war in Vietnam created a strong "collision", creating profound changes. From 1954 to now: the socio-cultural situation in Hanoi has gradually develops new steps.

***2.1.4. Urban management Authority***

- Colonial period and period of temporary occupation (before 1954): Chief Architect and Central Dept. of Architecture and Urban Planning.
- Current period: Department of Planning - Architecture.

**2.2 Theory of recognition of change of Spatial Structure for Hanoi Old Quarter**

***2.2.1. Urban morphological theory***

- Research on physical form and evolution of urban space. The thesis uses 3/5 methods to analyze of the theory: (1) Method Analysis transformations, (2, 3) Method overlap, stratified map layers.

### 2.2.2. *The theory of urban spatial structure change*

- Dialectics and urban development rules: urban spatial structure is the process of change and formation.
- Urban discourse transformations: Mentioning many aspects of urban life. In particular, the issue of space change is more focused.
- Urban spatial change: With 2 trends: (1) based on the morphological analysis of historical urban spatial structure pedagogical history to develop; (2) research and development of urban spatial structure based on urban image analysis.

## 2.3 Theory of identifying characteristics of spatial structure for Hanoi Old Quarter

### 2.3.1 *Three theories on spatial design of R. Trancik*

- The thesis on Figure – Background Relation: is an effective tool to determine the structure and shape of the city.
- The theory on Connection: focus on "roads" that are streets, sidewalks, empty spaces along routes, or other forms of contact.
- The theory of places concerned with human needs as well as natural, cultural and historical factors.

### 2.3.2 *Theory on Urban Image of Kevin Lynch*

- Image of Urban Characteristic helps in spatial structure acknowledgement through 5 components: "Paths, District, Edges, Nodes and Landmarks".

### 2.3.3 *Intangible culture characteristics*

- Intangible elements can be seen as necessary identities in a world of cultural conflicts or integration trends.

## 2.4 Methodology to identify characteristics and change of spatial structure of Hanoi Old Quarter in urbanization process

### 2.4.1 *Factors and method for spatial structure characteristic and changes identification*

To identify the formation and development of urban spatial structure by three factors in each historical period as table bellows:

*Table 2.1: Identification the formation of urban zones by historical period*

Historical periods	Border/ Urbanized area	Roads/Streets Network newly formed	Function/ New Construction Works	Diagram of urban development process
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Through five factors mentioned in the table below, we can identify the areas, the changes of spatial structure through periods .

*Table 2.2: Identification of element zones*

No	Identification Characteristic					Zone	
	Location	The dominant factor	Basic Figure	Transport Network	Main function	Diagram	Item

To separate and set up diagrams of seven layers of spatial structure to identify characteristics of urban spatial structure in each region as in the following table:

*Table 2.3: Identification of spatial structure layers in urban area*

Transport Network	Street square	Zoning method	Green area and density	Architectural heritage	Landmarks
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#### *2.4.2 European urban spatial structure model applying in Hanoi Old Town*

- Hyppodamus chess square: chess square streets and zones.
- Barocco Town (1568 - 1700): The main axis of the street goes through the places of strong attraction, creating perspective chains.
- To organize space in the traditional French visual style: The magnificent public works is a vision project at important intersections.
- New viewpoint on functional zoning of the French urban planning in the early twentieth century (zooning), so that the city becomes a tightly organized structure.

## **2.5 Vietnamese and Overseas legal basis**

### *2.5.1 Orientation for preservation and development of Hanoi Old Quarter to 2030*

- To preserve the urban spatial structure in that was planned under the French colonial period; valuable constructions.
- To renovate and embellish existing cultural centers of the region.
- To limit the development of high-rise buildings, reducing construction density and residential density, and preserving typical characteristics of urban spatial structure.

### *2.5.2 Orientation to preserve urban planning in Hanoi Old Quarter*

- To prioritize cultural, tourism, office, banks and public functions, green works.

- To limit: building more housing projects; Minimize the construction of new high-rise houses; No intercropping new high rise buildings.

### 2.5.3 *International Convention on the conservation and promotion of historic town neighborhoods*

Chapters and International Conventions those contents are increasingly broadening, to consider cultural diversity and basic principles for conservation with the concept of cultural heritage as a whole and integration.

### 2.5.4 *Legal basis for architectural planning management for Hanoi Old Quarter*

- Urban planning law: Hanoi Old Quarter is the area governed by the provisions related to planning of renovation and embellishment; Urban design; the establishment of management regulations with the project.
- Architectural law: Regarding Hanoi Old Quarter, the Law on Architecture has mentioned the requirements for urban architecture, valuable architectural works management, and Architecture Management Regulations.

## 2.6 **International Experience**

### 2.6.1 *Spatial Structure Change in colonial countries in the worlds:*

The neighborhoods are gradually being added with new functions, new transport systems connecting and overlapping with the old network. Increasing urban density and height of new works.

### 2.6.2 *Spatial Structure Characteristics of colonial streets in the current time*

Urban spatial Structure in the colonial cities in the world have diverse transport networks; Density varied from low to high; In some urban areas, there is no high-rise construction works in urban areas.

## **CHAPTER III: CHARACTERISTICS & CHANGES IN STRUCTURE OF HANOI OLD QUARTER, ORIENTATION FOR PRESERVATION AND CORE VALUE IMPROVEMENT**

### **3.1. Principle**

#### *3.1.1. Principles for acknowledgement of changes in Hanoi Old Quarter Space Structure*

The thesis proposes three (03) principles for acknowledgement of changes in Hanoi Old Quarter Space Structure

### 3.1.2. Principles for acknowledgement of characteristics in Hanoi Old Quarter Space Structure

The thesis proposes three (03) principles for acknowledgement of characteristics in Hanoi Old Quarter Space Structure

## 3.2. Changes of Hanoi Old Quarter space structure by periods

### 3.2.1. Changes of Space structure from traditional town to modern town

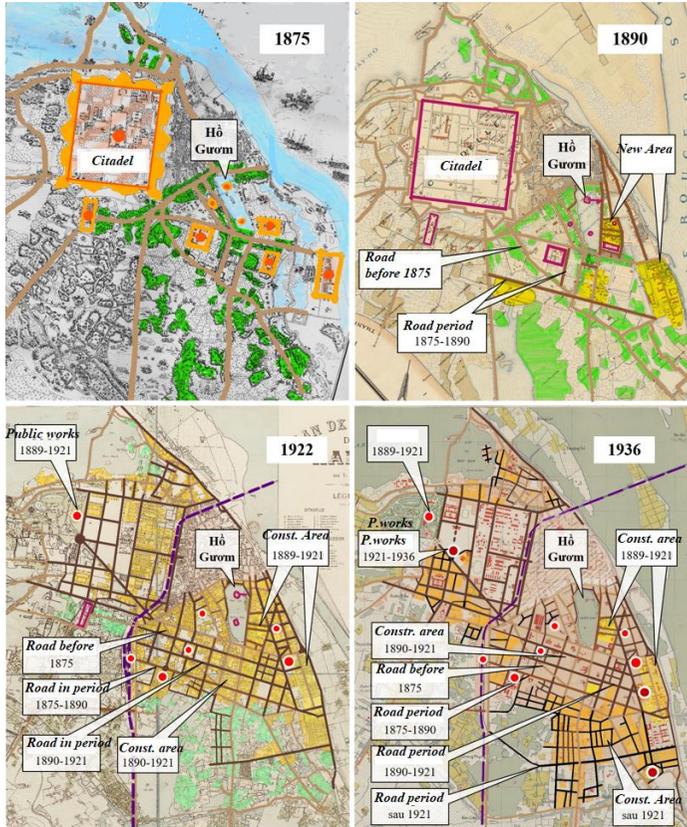


Figure 3.1: Transform of Space Structure in French Colonial Period in Hanoi Old Town

Hanoi Old Quarter is made up through the process of formation and simultaneous development of six component structures; From "The citadel has not been broken down in structure, the public places and traditional villages nearby Ho Guom and the river bank are

transformed into new urban axes and centers in the eastern part of the city". Then "the space structure of Hanoi urban quickly changed with the breaking down of feudal fortifications, to form a political center in Ba Dinh, urban areas in the west, north and south of the city were shaped to expand city space with new Center at Ho Guom ". Further, "Overall space structure of Hanoi Old Quarter is completed through the development of a large-scale construction works. The component construction works will be completed and expanded".

### 3.2.2. *Transform of location and characteristics of key space*

- To transform from "streets structure to suburban structure" → "Main axis and urban cluster complex" in the East of Hanoi Old Quarter.
- To transform from "Traditional cluster complexes" → "Town – chess network" in the East and West of the city.
- To develop "Town - Nature" – in the North of Ba Dinh, and extend the structure "Town - chess network" to the south of Hanoi Old Quarter.
- Arising of the public works will be space objects at many locations in the city, replacing the Citadel - the only space object in the past.
- The trend of breaking out of Space Structure in urban historical landmarks after 1986, the factors such as highlight, works (solid), void (empty) are affected.

### 3.2.3. *Participation and change of traditional structures in the process of forming Hanoi Old Quarter*

- Ho Guom, from "village pond", became a representative image for the modern city of Hanoi, demonstrating the "Vietnamese spirit in the East-West meeting".
- Traditional villages blend into new streets.
- Traces of ancient citadel are interwoven, overlapping with new structure of Ba Dinh political center.

### 3.2.4 *Functional transform of typical locations*

In some locations, the construction works are inherited, continued and followed functions; changed in characteristic and meaning as they had before.

### **3.3. Characteristic and value of Hanoi Old City Space Structure**

#### *3.3.1. Characteristic and value of integrated space structure*

- Hanoi Old Quarter Space Structure is a collection of 6 urban space structure components that are all similar and different simultaneously, stay together and naturally interfere with each another; They demonstrate a harmonious continuity between periods, through golden events and moments of history.

#### *3.3.2. Characteristic and value of space structure in Hanoi Old Town*

- The riverbank area has space structure according to the route along the banks of the Red River, with heritage of public works forming a series of accolades highlighting the main axes.
- Ho Guom and adjacent areas: the place where different space structure of urban town become harmonized, the place of connection and forwarding, dialogue and intersection between the two cultures.
- Railway Station and Cua Nam area: Each urban structure is defined by three groups that use traffic clues as a driving force for city development.
- Ba Dinh political center: an exception to the reliance, blending, and overlaying of space by the tactics of creating a Western-style center on an Asian basis
- North Ba Dinh and South Ho Guom areas: Two main residential areas at different sizes, morphologies and spatial networks: one with a soft landscape orientation, and another one with a century square characteristics.

#### *3.3.3. Characteristics of key space*

In the aspect of visual art, Hanoi Old Quarter spatial structure is valued by the key spatial complexes that make up the connection between architectures by routes and axes; and is organized into a continuous network with each another, communicated with each another (3 spatial axes, 9 axes leading to 13 points of 8 types of combinations forming nodes).

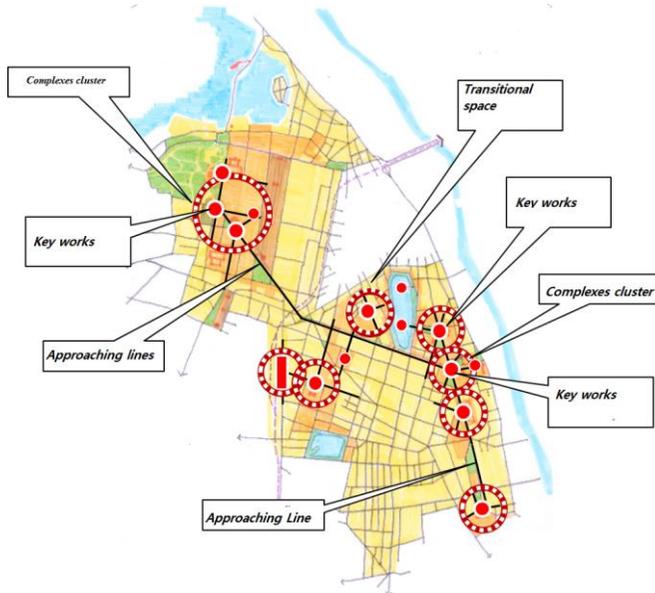


Figure 3.2: Key special complexes in Hanoi Old Town

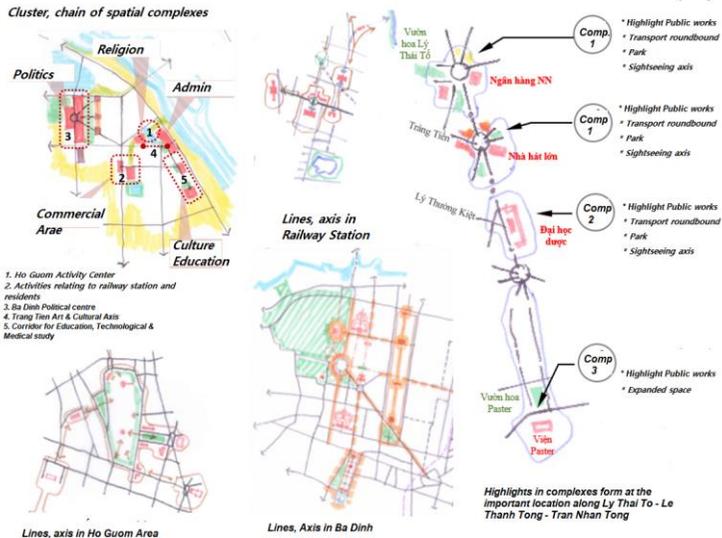


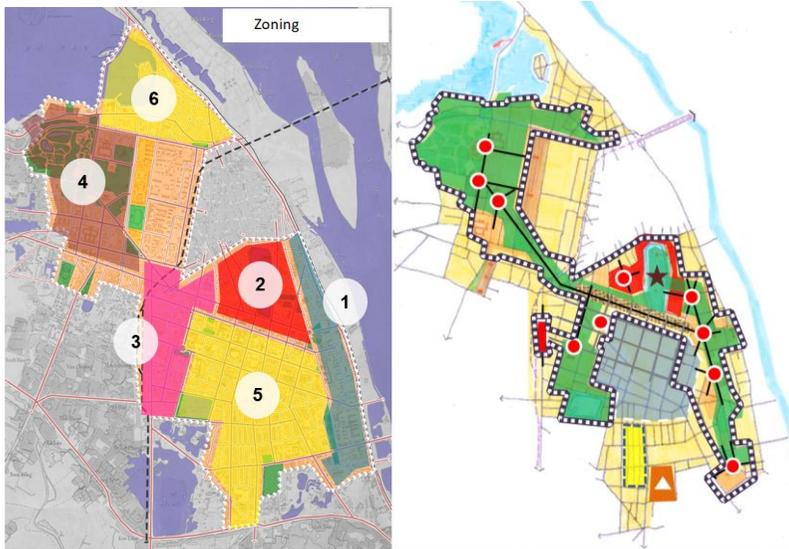
Figure 3.3: Clusters, Chains and routes, spatial axis in Hanoi Old Town

Landscape spatial structure of Hanoi Old Quarter contributes to create a town that still preserves traces of nature as well as promotes its value during the formation and development process, to create a valuable feature of an area in the city - garden and water.

### 3.4. Orientation for Preservation and Development of spatial structure for Hanoi Old Quarter

#### 3.4.1. Viewpoint

The thesis proposes 4 viewpoints on conservation and promotion of the value of Hanoi Old Quarter Spatial Structure: (1) Paying attention to preserving and promoting the characteristics of the French colonial



*Picture: Hanoi Old Town – Spatial structural works subject to preservation*

period; overcome disadvantages caused by change. (2) Strictly preserving the important spatial works. (3) Gradually restore the image of the Green Garden City. (4) Hanoi Old Quarter will be harmoniously integrated with the surrounding area.

### 3.4.2. Target

The thesis sets out two goals of the orientation to preserve and promote the value of Hanoi Old Quarter Spatial Works: (1) Enhance the image and identity of Hanoi Old Quarter based on the characteristics and value of spatial works from French colonial period. (2) Proposing principles to control the change of Old Town Spatial Works.

### 3.4.3. *Orientation for Hanoi Old Quarter Urban Design for old streets*

- Based on research the changes and characteristics of spatial works, it's divided Hanoi Old Quarter to six areas of landscape architectural areas for urban design orientation.
- To preserve the valuable spatial structural components and leading spatial complexes.
- The main routes and axes that have been formed in history have created a framework to connect the majestic public works that need urban design in term of spatial structural works protection and vision to the highlight.
- To apply urban design to promote the value of the functions used for 6 spatial structural components in combination with new suitable functions.
- Use the "small green belt" as a urban design method in order to premise for restoring the image of a green city with many trees.
- To supplement urban facilities in combination with renovating spaces in potential areas to serve tourism development.

### 3.4.4. *Urban Design Orientation for typical highlight areas*

- The Ho Guom Area: to preserve typical landscape architecture. To control the scale of new development and create spaces connecting with Ho Guom. Restore architectural form of Thang Long time.
- Thang Long Imperial Citadel: to preserve as a special form applied for project. Restore a part of the boundary of Thang Long Citadel area into to be a new center.
- Ba Dinh political center area: to preserve special works over times. To renovate the superficial and dignified urban spatial structural construction work with national symbols and

monuments on axes and squares. To connect with the West Lake space and adjacent areas.

#### *3.4.5. Solution for Value Improvement Solution*

The management solution to promote the value of Hanoi Old Quarter Spatial Structural Works focused on conservation management in combination with new inheritance development; Encourage the creation of regular routes, development of private airports and creation of underground and floating links; Link with space nearby; TOD development at Hanoi station.

### **3.5. Discussion**

#### *3.5.1. Discussion on Hanoi Old Quarter Spatial Structure Change in history*

To research the formation of Hanoi Old Quarter through the variable and immutability factors of space change regulation. To create important design works, and transform of traditional structure into Hanoi Old Quarter is valuable lessons in the planning work.

#### *3.5.2. Discussion on characteristics of Hanoi Old Quarter Spatial Structure*

Spatial Structural Characteristics of the six areas; with a large number of combined axes and highlights that make the unique values of the Hanoi Old Quarter which already has many values.

#### *3.5.3. Discussion on preservation and value improvement Hanoi Old Quarter Spatial Structural works*

The thesis proposes through the orientation of urban design and management to protect the features of common values, and the areas, axes, and places those have special value and in accordance with the objectives of master Plan.

### **CONCLUSION – PROPOSAL**

Hanoi Old Quarter has always been acknowledged in many historical and artistry studies for its beauty and position. Hanoi Old Quarter has many representative value and unique value for urbanization, architecture, scenery and urban culture... those are reserved quite well in structural integrity. There also fore, apart from special value of position, aesthetic value, remarkable value on architectural heritage, it

also has one more value, an integrity of a heritage – the first modern town in South East Asia.

Experiencing nearly 100 years of fluctuations, Hanoi Old Quarter also cannot avoid the threat of the urbanization current trend, which always aiming to build high-rise buildings and occupy more space, changing the historical structure.

This is the reason for the thesis to study further on the overall pedagogical work, covering the specific structural layers that create the unique beauty of Hanoi Old Quarter, as well as to find an explanation for the preservation and continuation of an urban heritage. – a brilliant landmark of East-West cultural exchange in history.

**CONCLUSION:** From the study of urban modernization three foundation stages, the thesis has applied urban morphological theory an urban design theory to survey, analyze - identify the change of mathematical representations from traditional urban areas into a modern urban model, marking the formation and development of a comprehensive master plan of historical construction history and current urban movements of KPC Hanoi. From that, these following conclusions can be drawn (06):

- The overall urban infrastructure of Hanoi Old Quarter is made up of six component structures, through the transformation of rural areas to feudal cities and ancient urban centers; it has developed and perfected the structure to become a modern urban model in the early 20th century.
- In the process of formation and development, the transformation of the component structures and the characteristics of space and function are the changes of the road network and the separation - merging of land surpluses, changing the shape. Consciousness - the scale of architectural works, creating non-construction space and natural landscapes. From that, creating specific locations, as well as the nature and arts tactics of Hanoi Old Quarter.

- The traditional structures were adapted to the space of Hanoi Old Quarter through space-changing tactics such as: Ho Guom became the new city center, the ancient citadel was replaced for the overlapping urban structure, interwoven between traditional, near modern and modern constructions. Rural villages transformed into chess board streets. Many important public constructions have been modified to function in specific locations. The above-mentioned changes show the rule of preserving indigenous cultural factors as an invaluable value in urban development, making Hanoi unique.
- The change here also signifies the continuation of structures and activities from the tradition, making Hanoi Old Quarter not only meet the needs of indigenous people, but also catch up with the world civilization in the early 20<sup>th</sup> century. Creating new values brings the prosperity of the neighborhood to this day. This shows that: in urban development, new values must be created for the future, otherwise the city will lose valuable structures in the previous stages.
- The dissertation uses urban theory and method of analysis of space structure to identify the characteristics of Hanoi Old Quarter pedagogical system through surveys and assessment of characteristics of the six components of Hanoi Old Quarter formed over time. history. Since then, considering the organic relationship between architectural heritage fund (which has been studied), associated with areas with specific characteristics of spatial organization, urban design measures. The issues focusing on research have indicated the method of forming urban characteristics to create a complete Hanoi Old Quarter.

The main features of KPC can be summarized as follows:

- + An overlapping urban area, harmonious intersection of space with six areas with different morphological characteristics, naturally harmonizing with the surrounding areas.

- + The "landmarks" aiming to the core Hanoi Old Quarter are created by the urban design key tactics including routes, squares, intersections, complexes and key works in the layout.
- + Road network is based on existing conditions from feudal times. Sword Lake becomes a special landscape center of Vietnamese spirit in the East-West meeting. The space of Ba Dinh political center with typical architecture for each periodic style has a spatial sequence creating a structure of order. Clusters of cultural-educational-medical spaces create famous routes along the Red River. Cua Nam People's Center including Fair, Railway Station, Market, Court, Fireplace creates a southern development motivation for the south of the city.
- Lesson about changes in urban characteristics and values of six component areas; urban design methods are the basis for proposing conservation and promotion orientations for Hanoi Old Quarter as follow:
  - + Urban - architectural heritage fund according to the priority order of outstanding characteristics associated with the urban design methods will serve as a basis for the inclusion of the Regulation on Hanoi Old Quarter management, it might be the urban design experience for the new planning.
  - + Proposal to preserve the original values of urban design for the routes, specific spaces, tactics of organizing the landscape architecture space of Hanoi Old Quarter;
  - + Managing Hanoi Old Quarter embellishment and renovation areas, changing purpose according to the principles that do not affect the original spatial structures and harmonious connection between them; Proposing an adaptive solution to the proposed new urban network in this area;

*The thesis has used methodology and systematic thinking to study the spatial change of Hanoi Old Quarter; Analyzing urban morphology, transforming mathematical representations and training techniques,*

*to identify and evaluate the characteristics - values of overall space structure and areas. This is also a contribution to the approach and development of new scientific content for the study of colonial cities.*

**PROPOSAL:** Based on the research on characteristics and changes of Hanoi Old Quarter's space structure, the thesis proposes the following recommendations (05):

- Facing the increasing trend of urbanization, Hanoi Old Quarter needs to be researched to preserve the overall structure which is still relatively intact, specific structural spaces, combined tactics and urban design and invaluable historical architecture funds.
- The study of planning, regulations on preserving and promoting the value of Hanoi Old Quarter in urban development is necessary to have a basis for building a Regulation on architectural management of Hanoi Old Quarter to replace the Regulation on management of planning Hanoi Old Quarter architecture [51]. In particular, three key academic issues need to be added: (1) the "highlight" project, (2) urban density and (3) the form of construction land parcel.
- Based on the scientific basis of the transformation of Hanoi Old Quarter space structure, it is necessary to study the urban renovation and renovation program in the order of priority for the works and space complexes with representative values, unique values, outstanding value; At the same time, maximized conservation the identifying characteristics of its structure and characteristics.
- The spatial linkage between Hanoi Old Quarter and surrounding areas is the core issue for organizing urban activities (Walking Street, Book Street, community activities ...) that need to be studied as the connection between space-time method, in order to harmoniously develop the typical structures of the whole city, in order to preserve and inherit spatial organization experience in future urban development.

## **REFERENCE LIST OF SCIENTIFIC WORKS BY AUTHOR RELATED TO THE THESIS**

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