



AN ARCHITECTURAL STUDY OF HUE IMPERIAL CITY - NGUYEN
DYNASTY (1802-1945), VIETNAM



A Thesis Submitted in Partial Fulfillment of the Requirements
for Doctor of Philosophy HISTORY OF ARCHITECTURE
Department of Architecture and Related Arts

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By
Mrs. Chau Ngoc Quynh TRUONG



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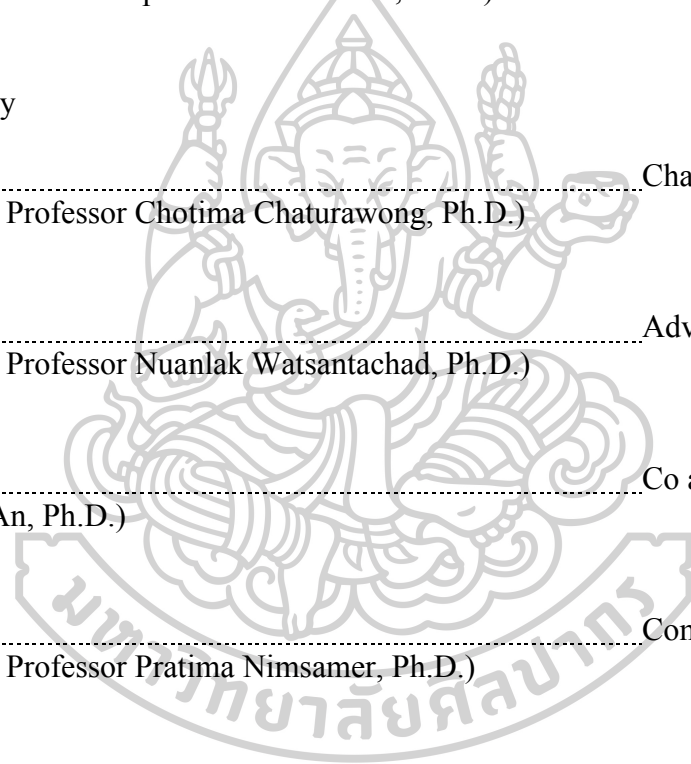
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Mrs. Chau Ngoc Quynh TRUONG : An Architectural Study of Hue Imperial City - Nguyen Dynasty (1802-1945), Vietnam Thesis advisor : Associate Professor Nuanlak Watsantachad, Ph.D.

Hue Imperial City (HIC), which contains most of the imperial architecture of the Nguyen Dynasty - the last feudal monarchy of Vietnam (1802-1945) - is now located in Hue City, Vietnam. The HIC is part of the Complex of Hue Monuments, where a large amount of tangible and intangible cultural heritage is preserved. UNESCO recognized it as Vietnam's first World Cultural Heritage site in December 1993. From 1945 to 1975, war and natural disasters heavily damaged the buildings. About 40% of the buildings have been restored, but many significant buildings remain lost, and many areas lack sufficient study for complete reconstruction. Previous studies on the HIC architecture have mainly focused on restoring individual buildings or studying the characteristics of the traditional wooden framework in the remaining buildings. There has not yet been a comprehensive study on the architecture of the HIC.

This thesis focuses on a comprehensive study of the HIC architecture through methods including collecting and classifying literature, surveying buildings and sites, analyzing the obtained data, interviewing scholars, and establishing tables and diagrams. As a result, it identifies three key findings: (1) the buildings on the HIC site plan underwent five periods, including the Gia Long period (1802-1820), Minh Mang period (1820-1841), Thieu Tri - Tu Duc periods (1841-1883), Thanh Thai - Duy Tan periods (1889-1916), and Khai Dinh - Bao Dai periods (1916-1945). Among these, the Gia Long - Tu Duc period marked the formation and development of original Nguyen Dynasty architecture and served as the golden era for studying and identifying traditional Nguyen architecture; (2) the study established three criteria for classifying the HIC architecture: functions and uses; building information (name-function-location); and building hierarchy. Based on these criteria, the HIC architecture was classified into four functional groups, twenty building name types, and eight hierarchical levels. The study also developed a typology diagram and identified the architectural characteristics based on two types: square (Type A) and rectangular (Type B); (3) the design principles of the HIC site plan were clarified based on a specific 12×10-rod grid system, using the traditional Nguyen Dynasty unit of measurement, where one rod equals 4.24 meters. The site plan was shaped by integrating two axes: the design axis (used for measurements) and the spatial axis (used to determine building scale and spatial composition).

The findings provide a scientific foundation for future comprehensive studies on the HIC architecture. They contribute valuable insights to the preservation and restoration of the HIC architectural heritage and serve as a knowledge resource for the education of architectural history in Vietnam.

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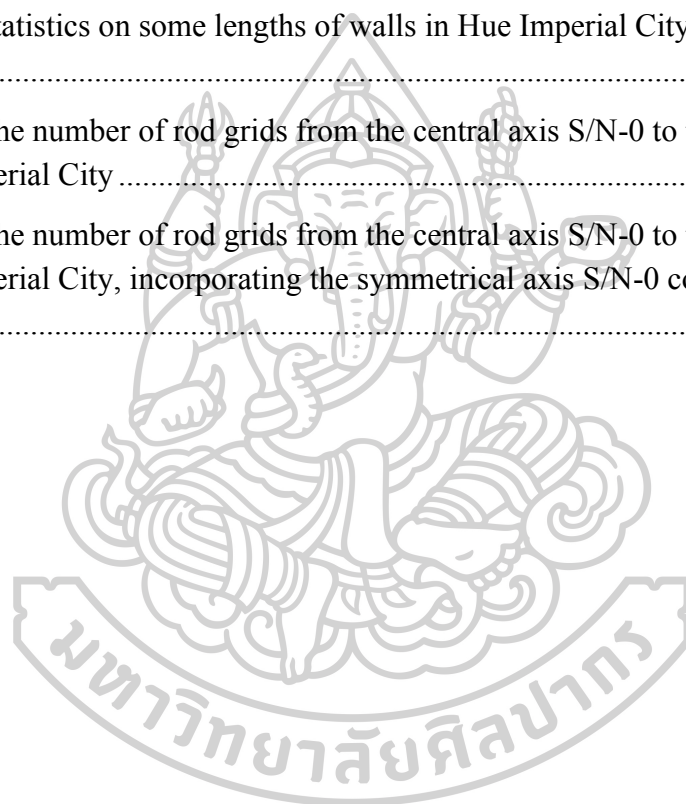
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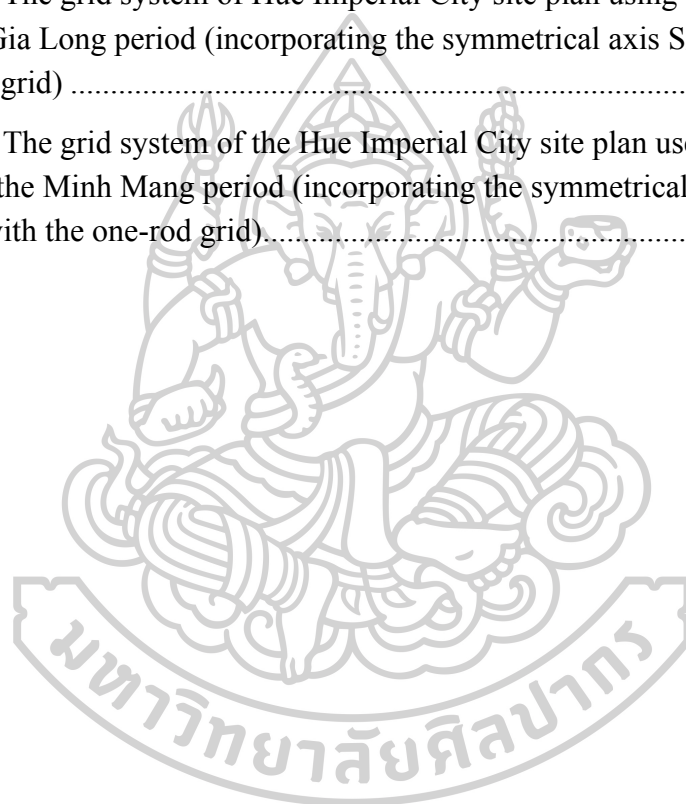
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Chapter 1

Introduction

1.1 Thesis background and significance

The Nguyen Dynasty, the last feudal dynasty of Vietnam, chose Hue City (in Thua Thien Hue province), a city in central Vietnam, as its capital from 1802 to 1945 (Figures 1-2). This dynasty left behind the Complex of Hue Monuments, arranged in an outstanding natural environment, which was recognized as Vietnam's first UNESCO World Cultural Heritage site in December 1993.

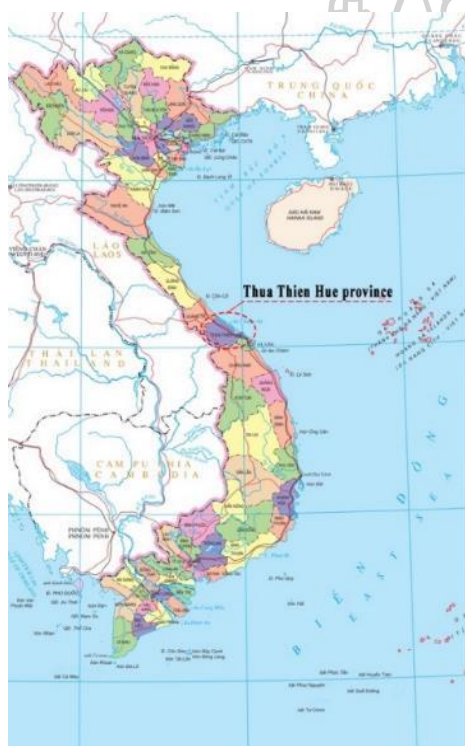


Figure 1: Location of “Thua Thien Hue” province on the map of Vietnam, published in 2017 (Source: <https://bandovn.vn/vi/page/mau-ban-do-hanh-chinh-nuoc-cong-hoa-xa-hoi-chu-nghia-viet-nam-181?AspxAutoDetectCookieSupport=1>)

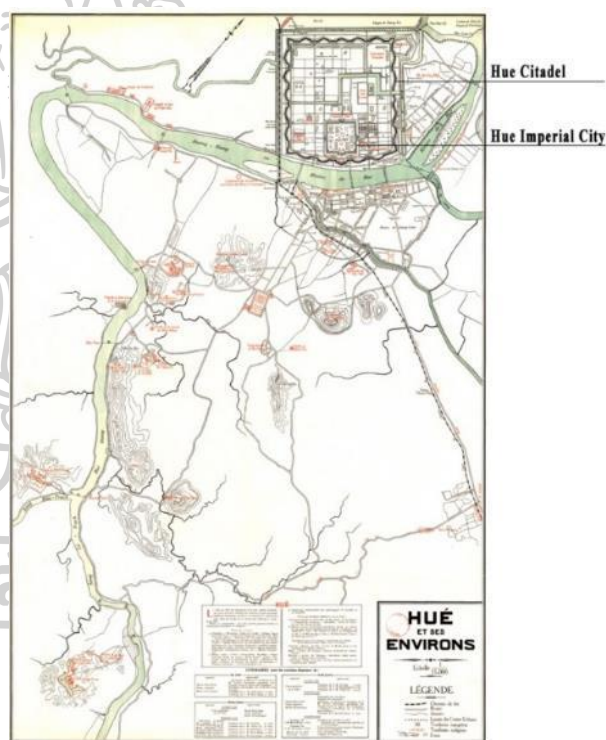


Figure 2: Location of Hue Citadel on the map, published in 1930 (Source: <https://www.flickr.com/photos/13476480@N07/50396694363/>)

According to historical documents, the Nguyen Dynasty began with

Emperor Gia Long's ascension to the throne in 1802. It ended with Emperor Bao Dai's abdication in 1945, lasting 143 years and spanning 13 Emperors across seven generations (Vietnam Academy of Social Sciences & Institute of History, 2017d, p. 55). The Nguyen Dynasty experienced many significant historical events, particularly the French invasion in 1858. As a result, Vietnam's history under the Nguyen Dynasty can be divided into two main periods (Quynh & Do, 2009, pp. 334-378): the period of independence (1802-1883), from Gia Long to Tu Duc period, and the period of French colonization (1883-1945), from Tu Duc to Bao Dai period.

Hue was chosen as the capital due to its central location in Vietnam. Additionally, it had previously served as the Prefecture of Dang Trong during the Nguyen Lords period (1558-1777) and the Tay Son Dynasty (1788-1802), distinguishing it from the Prefecture of Dang Ngoai, which was controlled by the Le Dynasty (1428-1788) (Tran, 2018, pp. 259, 318, 388, 408). The Nguyen Dynasty constructed three layers of enclosed walls within Hue, including the Citadel, Imperial City, and Forbidden City.

Hue Citadel is the area enclosed by the first wall, designed in the "Vauban" style. It has a perimeter of 10.571 kilometers and an area of 520 hectares. This citadel housed key governmental and military offices of the Nguyen Dynasty, such as departments, institutes, and residences for mandarins and citizens. The area within the second rectangular wall, located inside the citadel, is Hue Imperial City (HIC). The HIC has a perimeter of 2.452 kilometers and covers an area of approximately 37.5 hectares. It served as the residence and administrative center for the Emperors and their royal families, as well as the setting for major court ceremonies. At the core of the HIC is the Forbidden City, with a perimeter of 1.228 kilometers and an area of around 9.4 hectares. This area was the private residence for the Emperors and their royal families. (Phan, 2013, pp. 8-12, 107-110, 214-217) (Figures 3-4)

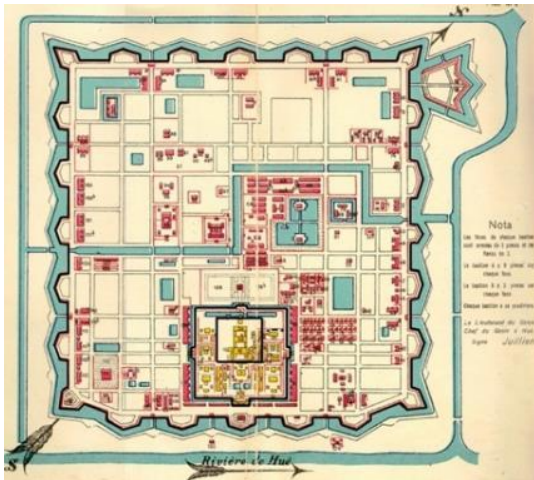


Figure 3: Hue Citadel, published in 1933
(Source: *The map VIII in Cosserat (1933)*)

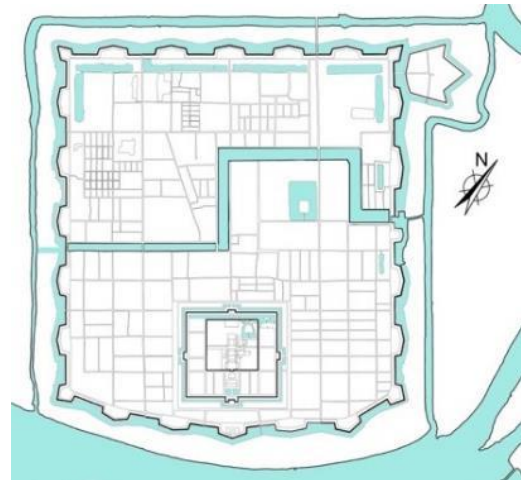


Figure 4: Hue Citadel in 2019
(Source: *The author updated the map from Vo and Nguyen (2014)*)

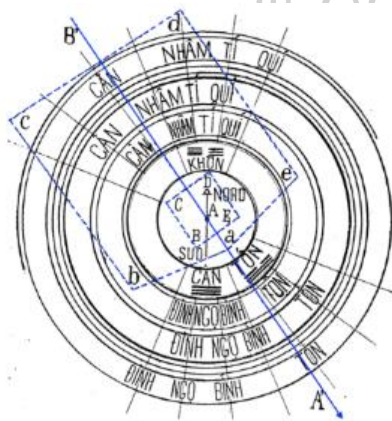


Figure 5: The favorable direction for building the Hue Citadel according to the Feng Shui compass
(Source: *Cadière (1914, p. 325)*)

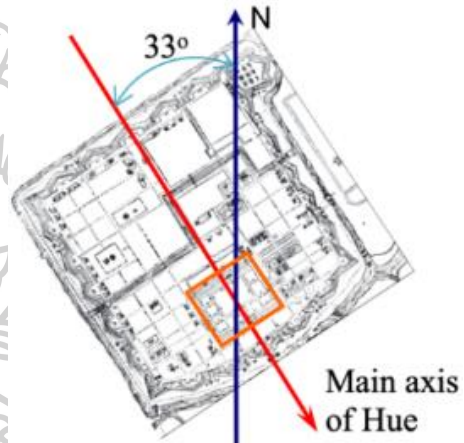


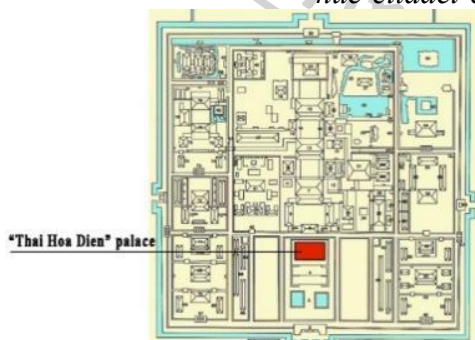
Figure 6: Axis and direction of the Hue Citadel and Imperial City
(Source: *Le (2018)*)

The HIC represents the highest authoritative power of the Nguyen Dynasty. Therefore, it contains the majority of majestic architecture and the artistic essence of HIC architecture. It includes various functional buildings such as palaces, temples, shrines, halls, pavilions, or houses. The architecture was characterized by a combination of several kinds of construction materials, such as stone and brick for foundations and hardwood for structures (depending on the level of the building) (Ngo, 2013, pp. 213-219). Both the interiors and exteriors were exquisitely decorated with various expensive luxury materials that could last over time. These buildings were planned and built in a reliable manner

that was based on the “I Ching” philosophy and “Feng Shui” doctrines, reflecting the influence of ancient Chinese civilization (Figures 5-6). This architectural approach also incorporates traditional Vietnamese thought regarding spatial organization, utilizing indigenous techniques and local materials while harmonizing artificial and natural elements within the ecological landscape (Institute for Conservation of Monuments (ICM), 2020, p. 5) (Figure 7).



a) The aerial photograph of Hue Imperial City viewed from the South in 2019
(Source: Tang Trung Kien, <https://www.shutterstock.com/image-photo/aerial-view-hue-citadel-city-vietnam-1463937368>)



b) Location of “Thai Hoa Dien” palace on the site plan, published in 1928
(Source: *The map CXXXVII in Laborde (1928, pp. 153-162)*)



c) “Thai Hoa Dien” palace viewed from the South (2020)
(Source: Author)

Figure 7: The photographs of Hue Imperial City in 2019-2020

These buildings were gradually destroyed or ruined due to natural disasters and the Vietnam War (1945-1975). As a result, the remaining buildings comprise only about 25 percent of the originals from the prime of the Nguyen Dynasty. Since the Complex of Hue Monuments was recognized as a World Cultural Heritage site by UNESCO in 1993, the HIC has become the focus of numerous archaeological surveys and restoration efforts by both Vietnamese and international experts. Despite many unrestored buildings, Hue Citadel remains one of the few citadels that retain tangible and intangible cultural values.

When studying the architecture of the Nguyen Dynasty, researchers usually rely on the historical documents of the Nguyen Dynasty compiled and published by two official records: the National Department of History of the Nguyen Dynasty and the Cabinet of the Nguyen Court. These two agencies recorded from 1802 to 1923, including a section on buildings in the HIC. In addition, valuable information from archaeological reports produced by the Vietnam National Museum of History, Hue Monuments Conservation Center (HMCC), and the research cooperation program between the Institute of UNESCO World Heritage (Waseda University, Japan) and HMCC from 1994 to 2010 has helped to verify the information in historical documents.

Besides, several domestic studies related to the HIC are worth referencing, such as Phan Thuan An, Thai Van Kiem, and Nguyen Dinh Dau. The study reports by these authors include descriptions of Hue Citadel and the HIC during specific historical periods, making them valid for comparison with historical documents. Among foreign research, a notable collection is a magazine written in French titled “Bulletin des Amis du Vieux Hue” (Friends of the Ancient Capital of Hue), which consists of 31 volumes published from 1914 to 1944. In particular, there are several articles on the architecture of the Hue Citadel and HIC. However, since the authors are priests, mandarins, and scholars, these study reports cannot be developed into architectural analyses.

Additionally, several doctoral theses by graduates of Waseda University have been published, including those by Le (2009), Hideaki (2010), and Kenta (2015). Focusing on architecture, these theses relate to the design methodology of traditional wooden architecture of the Nguyen Dynasty and a reconstruction method for a specific building. However, they are hardly relevant to the chronology, typology of architecture, and design principles of the HIC site plan. There has not been any comprehensive study classifying the historical buildings in the HIC according to architectural typologies and building levels. Therefore, this thesis aims to rediscover the architectural values of the Nguyen Dynasty, characterized by architectural typologies and design principles of the HIC site plan. Subsequently, the study results could be helpful for the restoration of buildings from this glorious historical period under the Nguyen Dynasty and provide an essential database for education in the field of architectural history and architectural preservation work at the HIC.

1.2 Previous study

1.2.1 Historical document

There were two official agencies of the Nguyen Dynasty responsible for compiling, publishing, and archiving documents, including administrative papers and historical records: the National Department of History of Nguyen Dynasty (Quoc Su Quan/國史館), which operated from 1821 to 1945, and the Cabinet of Nguyen Court (Noi Cac/內閣), which functioned from 1829 to 1945. The contents of these historical documents pertain to geography, history, economy, politics, laws, policies, culture, architecture, or construction. Some published documents provided valuable research data for the thesis, as follows:

(1) The National Department of History of the Nguyen Dynasty:

- “Dai Nam Thuc Luc” (大南寔錄): This book comprises three sets: (1) “Dai Nam Thuc Luc” consists of ten volumes that record all the Emperor’s activities from Gia Long to Dong Khanh periods (1802-1888), published by Giao Duc (2002, 2007), (2) “Dai Nam Thuc Luc Chinh Bien De Luc Ky Phu Bien” includes one volume, recording the Emperor’s activities from Thanh Thai to Duy Tan periods (1889-1916), published by Van Hoa – Van Nghe (2012), and (3) “Dai Nam Thuc Luc Chinh Bien De That Ky” consists of one volume, recording the activities of Khai Dinh period (1916-1925), also published by Van Hoa - Van Nghe (2012) (Figure 8). This source serves as a primary historical document, containing significant historical information about the Nguyen Dynasty, written in a chronological format. Therefore, the contents are organized not by headline records but in chronological order, reflecting the daily routines of the Nguyen Court. By studying this historical document, accurate details can be obtained regarding the times and imperial decrees related to the construction history of the HIC.



a) “Dai Nam Thuc Luc” book (1558-1888)

b) “Dai Nam Thuc Luc Chinh Bien De Luc Ky Phu Bien” book (1889-1916)

c) “Dai Nam Thuc Luc Chinh Bien De That Ky” book (1916-1925)

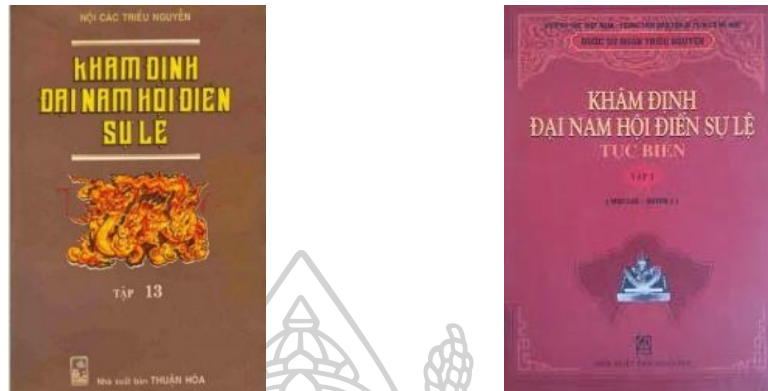
Figure 8: Three sets of the “Dai Nam Thuc Luc” book series
(Source: Author)

- “Dai Nam Nhat Thong Chi” (大南一統志): Volume 6, published by Nha Van Hoa, Bo Quoc Gia Giao Duc in 1960, contains written records during from 1802 to 1906. This geographical document describes the location, construction history, and concept of “Kinh Su” (京師), Citadel (京城), Imperial City (皇城), and Forbidden City (紫禁城). It is a crucial resource for distinguishing the scope of these areas.
- “Minh Menh Chinh Yeu” (明命政要): Volumes 1-6, published by Bo Van Hoa Giao Duc and Thanh Nien in 1972 and 1974, document the significant activities of Emperor Minh Mang from 1820 to 1841.
- “Dong Khanh, Khai Dinh Chinh Yeu” (同慶啟定政要): This work includes one volume, published by Thoi Dai, Trung Tam Van Hoa Ngon Ngu Dong Tay in 2010. It records the significant activities during the Dong Khanh period (1885-1888) and the Khai Dinh period (1916-1923).

(2) The Cabinet of Nguyen Court:

“Kham Dinh Dai Nam Hoi Dien Su Le” (欽定大南會典事例) (abbreviated: KDDNHDSL) consists of two series: (1) KDDNHDSL includes fifteen volumes, published by Thuan Hoa (1993) and (2) KDDNHDSL Tuc Bien consists of ten volumes, published by Thuan Hoa (2012), containing records from 1802 to 1889 (Figure 9). All records of various decrees, edicts, or mandates ordered and executed between 1802 and 1851 were compiled in the KDDNHDSL. These documents are categorized according to government offices such as Ministries or Institutes, with the most important being the “Cong Bo” (Ministry of Construction of the Nguyen Dynasty). This includes records of construction work on Hue Citadel, detailing construction regulations of palaces (describing the names, locations, and measurements of buildings located within the HIC, the Forbidden City, and various palaces, as well

as gardens and lakes, construction history, and maintenance and destruction of the buildings). “Cong Bo” is mainly covered in volumes 13 of KDDNHDSL and 9 of KDDNHDSL Tuc Bien.



a) KDDNHDSL book (1802-1851) b) KDDNHDSL TB book (1852-1889)

Figure 9: Two sets of the “Kham Dinh Dai Nam Hoi Dien Su Le” book (KDDNHDSL) series

(Source: Author)

These records were written in two formats: chronicle and headline records. This research uses these documents to compare and determine the construction timelines. In terms of architecture, the historical records are primarily descriptive and simply list critical information, such as the number of compartments or wings, height, roofing materials, and the number of floors. However, there is little to no information regarding architectural techniques. The historical documents mainly focus on the primary buildings, often mentioning subsidiary buildings only briefly or by name. As a result, no historical document fully details all the buildings, diagrams, drawings, or maps of the HIC.

1.2.2 Archaeological research

The research was conducted based on the archaeological research results, including the restoration project of the monument “Hien Lam Cac” pavilion by Hue Monuments Conservation Center (HMCC) and Institute for Building Science and Technology (IBST) (1998), results of archaeological exploration and the project restoration and embellishment

of the overall monument of “Dien Tho Cung” residence area by Vietnam National Museum of History and Hue Monuments Conservation Center (HMCC) (1999), monument profile of “Can Chanh Dien” palace by Hue Monuments Conservation Center (HMCC) and Research Room (2000), result of archeological investigation and survey of “Truong Sanh Cung” residence area by Vietnam National Museum of History and Hue Monuments Conservation Center (HMCC) (2001), the system of corridors in the Forbidden City by Hue Monuments Conservation Center (HMCC) (2002), “Thieu Phuong Vien” royal garden area by Vietnam National Museum of History and Hue Monuments Conservation Center (HMCC) (2002), results of surveying the foundation of “Can Chanh Dien” palace – “Dai Cung Mon” gate Hue Monuments Conservation Center (HMCC) (2008).

The results presented the geographical and historical construction context of the surveyed areas within the HIC, assessed the current state of the relics, and described the location and structure of the archaeological excavation pits and artifacts. The findings aimed to confirm the construction dates of buildings in the area compared to historical records, determine the composition of foundation layers, uncover traces of previously built structures, and provide dating results for objects found beneath the foundation of the surveyed pits.

1.2.3 Domestic studies

Domestic studies mainly provide general information about Hue monuments to promote tourism. However, some researchers have approached this topic from a historical science perspective, and several valuable books have been published, as follows:

- The book “Nghien Cuu Dia Ba Trieu Nguyen – Thua Thien” (Cadastral Registers Study of Nguyen Dynasty – Thua Thien) by Nguyen

(1997) focuses on the historical geography of Thua Thien prefecture (Figure 10). It includes maps of Thua Thien prefecture and its districts, tracing the history from Ly Chau to Hoa Chau and eventually to the present-day Thua Thien-Hue province—notably, a map of the HIC from 1848 to 1889 features a list of clearly numbered buildings. Nguyen Dinh Dau is the leading researcher in Vietnam’s geography history, and his research provides geographic maps of the provinces during their formation and development based on historical data. The object of study in the Cadastral Registers Study of Nguyen Dynasty – Thua Thien is the geography of Thua Thien, including Hue Capital and its six districts. His findings contribute valuable knowledge about the geography and location of the HIC. However, since the researcher is not an architect, the study lacks information about the architectural details of the buildings within the HIC. Additionally, the map is primarily introductory and covers the period from 1848 to 1889. Therefore, this map serves mainly as a reference, with its primary value being in geographical history.

- The book “Kien truc Co Do Hue” (Monuments of Hue) by Phan (2016b), provides a general description of several architectural structures, including their locations, basic dimensions, old photographs, and simple plans. These include Hue’s cultural heritage, walls and palaces, the HIC and the Forbidden City, the “Ngo Mon” gate, and the “Thai Hoa Dien” palace (Figure 11).

- The book “Hue - Kinh thanh va Cung dien” (Hue – Citadel and Palace) by Phan (2013): It covers topics related to Hue Citadel, its gates, Hue flag tower, HIC, “Ngo Mon” gate, “Thai Hoa Dien” palace, “Thai Mieu” temple, and “The Mieu” temple. It provides descriptions of Hue Citadel, HIC, the Forbidden City, and several critical internal buildings, focusing on the year of construction, dimensions, and construction materials. In general, the book includes descriptions alongside both old

and new photographs. However, this study does not offer an in-depth analysis from an architectural perspective.

- The book “Co Do Hue – Lich su – Co tich – Thang canh” (Hue Ancient Capital – History – Legend - Landscape) volume 8 by Thai (1960): describes the location and basic architecture of the HIC (Figure 12). In the section related to the HIC, the book effectively groups the buildings by area, and including the buildings' names in Chinese characters facilitates searching. However, it provides only basic descriptions of the locations and years of construction.

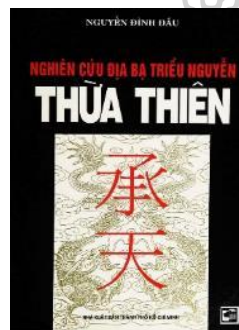


Figure 10: Nguyen Dinh Dau, Cadastral Registers Study of Nguyen Dynasty – Thua Thien, 1997

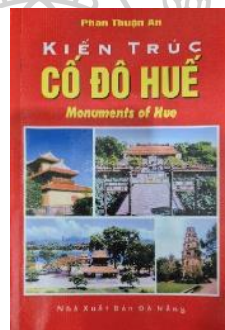


Figure 11: Phan Thuan An, Monuments of Hue, 2016
(Source: Author)

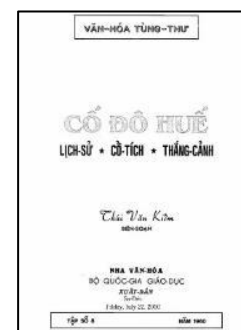


Figure 12: Thai Van Kiem, Hue Ancient Capital – History – Legend – Landscape, 1960

- The book “Thuat Ngu Kien Truc Truyen Thong Nha Ruong Hue” (The Terminology on Traditional Architecture of “Ruong” House of Hue) by T. T. V. Nguyen et al. (2010), may not focus on the HIC. Still, it is a valuable resource for studying traditional timber structures in Hue. The book contains extensive information on architectural techniques, clarifying the components of timber structures and framing, manufacturing, and erection techniques used in traditional houses in Hue.

- The book Royal Hue: Heritage of the Nguyen Dynasty of Vietnam by Vu (2015) primarily focuses on images, presenting the historical process of the Nguyen Dynasty through visual representation.

Phan Thuan An and Thai Van Kiem are notable historians who specialize in the ancient capital of Hue. Their studies examine Hue's tangible and intangible heritage, primarily using historical sources from the Nguyen Dynasty and archaeological findings. Their research offers a wealth of information about the history of Hue, introducing its architectural heritage and traditional culture. However, architectural analysis concerning function, aesthetics, and structure is not thoroughly addressed. In these books, the research primarily introduces Hue's heritage and provides basic historical information.

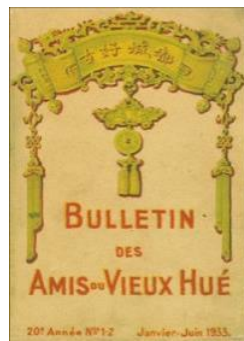
In addition, several notable domestic articles were published, including Measurement System of the Nguyen Dynasty by Phan (2003), Re-construction study of “Chieu Kinh Dien” temple – Imperial ancestral temple – Hue Citadel by Le and Nguyen (2014), Spatial structure of Hue Citadel Vo and Nguyen (2014), The rampart architecture of the Nguyen Dynasty by Nguyen et al. (2018), and The reconstruction study of Muc Tu Temple by Nguyen and Le (2021). In terms of architectural research, the article by Le and Nguyen (2014 and 2021) delves into the theory and practice of architecture, focusing on the restoration of worship buildings that have been ongoing in the HIC since 2011. The other researchers primarily discuss their study object's historical and social context, providing valuable information about the history and functions of the buildings, landscape, culture, art, and royal life within the HIC.

1.2.4 International studies

1.2.4.1 Published papers, magazines, and books

“Bulletin des Amis du Vieux Hue” (B.A.V.H) magazine, also known as the magazine of the Friends of the Ancient Capital of Hue, is a collection of 31 volumes featuring various articles related to the Hue ancient capital and the Complex of Hue

Monuments, published from 1914 to 1944 (Figure 13). The contributors include French and Vietnamese researchers, such as priests, militants, or Vietnamese scholars who were interpreters or the Nguyen court officials exposed to European culture.



- a) B.A.V.H, French version, Publisher: Imprimerie D'Extreme Orient (I.D.E.O), Hanoi
- b) B.A.V.H, Vietnamese version, Publisher: Thuan Hoa, Vietnam

Figure 13: "Bulletin des Amis du Vieux Hue" (B.A.V.H) magazine, presented in both French and Vietnamese versions

(Source: Author)

Contents of the study comprehensively address the society, politics, economy, culture, architecture, and arts of Hue Capital, with a significant focus on the Hue Citadel and HIC. However, these articles primarily describe the study subjects and provide information related to the background of the architectural heritage within the HIC and its associated activities. The research materials include the historical documents from the Nguyen Dynasty and ancient bibliographies detailing interactions between Vietnamese and French sources, illustrated with sketches and black and white photographs. While these materials are primarily valuable for reference, they can also serve as historical evidence, as they were compiled and published between 1914 and 1944.

1.2.4.2 Foreign studies

The study results include master theses, Ph.D theses, and articles from Waseda University, published between 1995 and

2015. These are outcomes of the collaborative study program between the Institute of UNESCO World Heritage, Waseda University, and Hue Monuments Conservation Center (HMCC), conducted from 1994 to 2010. Some notable theses include the master thesis of Kogure (1998), "Twin-Ridge Beams Building Type of Architecture of the Nguyen Dynasty," master thesis by Ichinose (2001), "Architectural Structure of Nguyen Dynasty," and the master thesis of Yamaguchi (2001) "The study on the spatial composition and structural framework of the Imperial Palaces of Nguyen Dynasty in Hue, Vietnam." These are valuable reference materials related to terminology and architectural structure, as well as the analysis and proposal of hypotheses regarding the architectural proportions of the "Double Ridge Beam" type in Hue palace architecture.

Ph.D thesis of Le (2009), "Re-construction study on the Plan and Section of the "Can Chanh Dien" main palace of the Nguyen Dynasty," mainly refers to the re-construction study on the "Can Chanh Dien" main palace in the Forbidden City inside the HIC. "Can Chanh Dien" palace was constructed in 1804 as the main working hall for the successive Emperors and their cabinets. Its wooden frame and roofs were utterly destroyed in 1947 during the Indochina War. Only the platform, which contained its basement stones and other components, has remained. Mainly based on the historical documents study, site surveying, dimensional analysis, investigation of the traditional designing methodology, and old photography analysis, An Vinh Le tried to record the present status, analyze the transformation of the remaining foundation of "Can Chanh Dien" palace and examine the designing methodology of the Imperial Palaces of the Nguyen

Dynasty to do experimental reconstruction study on the Plan and Section of “Can Chanh Dien” palace. The study of An Vinh Le is quite deeply approaching from the viewpoint of architectural technology to do a re-constructional design for the destroyed wooden frame of the “Can Chanh Dien” palace. However, this study focuses on the “Double Ridge Beam” type of the Imperial Palace of Hue to do a comparative study to reconstruct the “Can Chanh Dien” main palace. The other types of remaining buildings inside the HIC have not been considered yet.

Ph.D thesis of Hideaki (2010) “Study on the Design Methodology of the Traditional Wooden Architectures in Central Vietnam” refers to the type of “Nha Ruong” – a typical vernacular architecture used for living in the central area of Vietnam. Based on the method of site surveying, sketching, and measuring the remaining vernacular houses, interviewing traditional master carpenters on the designing method, making wooden models in one-fifth scale and full scale of the vernacular house and recording its construction process. Hayashi Hideaki tried to restore the lost design and construction technique of the “Nha Ruong” vernacular house in central Vietnam. This study is also approaching from the viewpoint of architectural technology, profoundly analyzing the designing methodology and traditional construction technique. Nonetheless, the subject of the study is vernacular architecture, only some aspects of which are similar to those of the Imperial Palace. Even though the subject of the study differs from that of this thesis, it is also a helpful reference for the architectural proportions of the remaining buildings inside the HIC.

Ph.D thesis of Kenta (2015), “Fundamental study on the Organizations of Architectural Construction of the Nguyen

Dynasty (Vietnam) through reading Han-Nom documents,” is mainly based on the remaining historical materials of the Nguyen Dynasty and the glossary gathered through the interviews with traditional carpenters. Kitani Kenta aims to grasp the changes and adaptation of the architectural term by comparing the names of the Chinese characters with the names of the Vietnamese-specific language. Through this study, Kitani Kenta has restored the original technical terms related to the architectural conception, timbers' names, and meanings. This study does not directly examine the specific remaining buildings inside the HIC. Still, it provides much helpful information in the architectural vocabulary for this thesis, helping to define concretely the concepts of architectural spacing and the name of each element.

1.2.5 Measurement results of projects

The measurement results used in this thesis were referenced from the outcomes of the research collaboration program between the Hue Monuments Conservation Center (HMCC) and the Institute of UNESCO World Heritage (Waseda University) from 1994 to 2010, which included hand-drawn sketches and some digitized drawings. The research results from these surveys have been published through articles and seminars such as: Analysis of the disposition of the enclosure wall surrounding the Palace and Forbidden City: Studies on the Imperial Palace of Hue, Vietnam, in the Nguyen Dynasty by Nakazawa et al. (1995), Analysis of the measurement in planning of disposition (IV): Studies on the Imperial Palace of Hue, Vietnam, in the Nguyen Dynasty by Nakazawa et al. (1997), A Study on the Size Plan of Long Duc Dien at Hue Royal Palace in Nguyen Dynasty by Shirai and Nakagawa (2009), A Study on the Architectural Technique of Long Duc Dien at Hue Royal Palace in

Nguyen Dynasty by Shirai and Nakagawa (2010), A Study on the Measurement Plan of The To Mieu at Hue Royal Palace in Nguyen Dynasty by Shirai and Nakagawa (2014), or The Name of Each Components of the Imperial Palace on the Documents Granted by the Emperor in Nguyen Dynasty by Kitani and Nakagawa (2015a), as well as in master's and doctoral theses (see Section 1.2.4.2).

The outcomes of this project were floor plans and sections of the HIC's existing buildings. These served as the primary data source for the thesis's analysis of the dimensions within the HIC. To supplement the missing floor plans, sections, and elevations, the author utilized the measurement results of Le Vinh An from 2004 to 2014. Some drawings were further studied and modified by the author, and the author conducted site survey results in the HIC from 2019 to 2023.

In summary, most studies on the HIC were conducted by the historical researchers, while some papers and theses by the architects focus only on specific architectural aspects, as previously mentioned. This indicates a lack of in-depth and comprehensive research on the HIC architecture. Key issues that remain to be clarified include: What buildings are located within the HIC? What are the construction dates of each building? What functions do they serve? How can they be classified and graded? What modifications have been made to the site plan and architectural features throughout historical periods? What are the design principles of the HIC site plan? Therefore, this thesis aims to gather and analyze data on the historic buildings within the HIC, identifying and classifying these types according to the architectural typology (based on function, plan shape, section, elevation, or structural characteristics). It will also establish an architectural chronology and highlight the key architectural characteristics of each period. Additionally, it seeks to trace the changes and transformations over time and determine the buildings' function, architectural features, and original structures. These findings will provide a clear understanding of the hierarchy of

the buildings, regulations governing the use of each building type, the rules of functional layout in architectural space, characteristics of architectural typologies within the HIC, and design principles of the HIC site plan. The study will serve as a scientific basis for identifying architectural features in the research of the architecture of the Nguyen Dynasty, contributing to architectural education and conservation in Vietnam.

1.3 Thesis problems and assumptions

The following practical issues shape the thesis:

- Previous studies have not provided a comprehensive investigation into the architectural transformation of the HIC site plan during the Nguyen Dynasty. This gap has hindered the exploration of the original architecture within the HIC;
- Domestic literature and research have not systematically documented and classified the various types of architectural structures that existed during the original phase of the Nguyen Dynasty's architecture. Consequently, there is a lack of comprehensive studies focusing on identifying all architectural types within the HIC;
- No study has clarified the measurement unit used in the design or principles guiding the establishment of the HIC site plan, nor the correlation between the main buildings and the overall site layout;
- In terms of architectural history education and conservation, there is a need to develop a comprehensive database and guidebook for identifying the various architectural types within the HIC. This will help researchers quickly access and study the nation's traditional architecture.

For the reasons mentioned above, the thesis is formulated to assert the following:

- Through historical records and archaeological results, the research elucidates the main developmental periods of the Nguyen Dynasty architecture, with particular emphasis on the original period during the Gia Long to Tu Duc periods, which corresponds to the period of the Nguyen Dynasty's independence.
- Through examining historical records and survey results within the HIC, the architecture reveals a uniformity in design, adhering to a distinct hierarchical order in terms of arrangement, decoration, structure, materials, and building height. This demonstrates that the Nguyen Dynasty followed consistent principles in architectural design. The thesis clarifies the principles of site arrangement and functional zoning in the main areas of the HIC, as well as the hierarchical organization of structures and architectural styles based on name, function, location, or relational levels. This contributes to developing a comprehensive diagram of architectural typology within the HIC.
- Through the analysis of measurement results on the HIC site plan, the study affirms that the design principles governing the site plan were established during Gia Long to Minh Mang periods. The thesis outlines a method for forming the site plan during these periods, utilizing the traditional measurement unit of the Nguyen Dynasty.

1.4 Thesis objectives

The findings are expected to achieve the following results:

1. To clarify the evolution of the HIC site plan during the 143 years of the Nguyen Dynasty and determine the original period of the HIC

architecture;

2. To identify the main functional areas of the HIC and list the buildings within them. The study will classify and systematize the types of HIC architecture based on building names, technical terms, functions, types, or hierarchies. The analysis results could be used to make a database on the architectural typology and to create a shape diagram of the HIC architecture during the original period;
3. To determine the principles of the HIC site planning based on the traditional measurement unit of the Nguyen Dynasty and to clarify the relationship between the locations of the main buildings and the HIC site plan.

1.5 Thesis scopes



The study content includes architecture in the HIC (main buildings and auxiliary buildings, excluding gates, podiums, corridors, awnings, and small shrines). The content focuses on finding the original architectural period of the Nguyen Dynasty. Furthermore, the study systematizes the architectural typology in the HIC and the design principle of the HIC site plan of the Nguyen Dynasty.

The location of the study is within the HIC, divided into ten main areas: Gates and Podiums; “Ngoai Trieu” court; “Thai Mieu” temple; “The Mieu” temple; “Tu Cam Thanh” Forbidden City; “Noi Vu Phu” royal treasury; “Phung Tien Cung” residence; “Co Ha Vien” royal garden; “Dien Tho Cung” residence; and “Truong Sanh Cung” residence.

The study of the HIC's architecture focuses on the period from Emperor Gia Long to Tu Duc (1802-1883), a period that is considered the HIC's golden age based on historical records.

1.6 Thesis methodology

The research will use a combination of multi-approach methods, including:

(a) collecting and classifying literature:

- collecting historical documents, magazines, books, reports of archaeological studies, previous publications, master theses, or Ph.D theses to prepare a comprehensive database;
- categorizing the collected literature into the following groups:
 - + group 1: Historical document;
 - + group 2: Archaeological reports;
 - + group 3: Previous studies;
 - + group 4: Drawing and field survey reports.

(b) surveying buildings and sites:

- sketching the HIC site plan as well as the plan and section of each historic building;
- measuring plans, sections, and elevations of each building using appropriate measuring tools and equipment;
- creating AutoCAD drawings by digitizing the surveyed data;
- recording the current conditions of buildings through digital photography.

(c) analyzing the obtained data:

- analyzing the dimensions of the digitized AutoCAD drawings to create drawings of each building and the site plan;
- identifying the measurement units used in the design of buildings;

- conducting comparative analyses of buildings;
 - analyzing modifications to the site plan throughout the study period based on the collected literature and digitized AutoCAD drawings.
- (d) interviewing scholars, including traditional carpenters and conservation experts in Hue City, to learn the principles of constructing conventional wooden structures and architectural terms.
- (e) establishing tables and diagrams, including creating chronological tables and diagrams to outline architectural features, original structures, and functions, highlighting significant architectural characteristics, and identifying processes of change or transformation over time.

1.7 Thesis content

To achieve the thesis objectives mentioned in Section 1.4, the study needs to clarify the following main contents:

- (a) The evolution of the HIC site plan during 143 years based on the study results, including:
- the factors affecting the architecture of the Nguyen Dynasty: geographical characteristics, location of the HIC, social context and culture of the Nguyen Dynasty, history of Hue ancient capital, history of the Nguyen Dynasty, and the HIC and construction context;
 - the chronology of the buildings based on the historical documents;
 - the architectural category based on construction period and basic architectural features such as construction materials, architectural style, and construction techniques;

- the evolution of the HIC site plan based on the architectural categorization and analysis results.
- (b) The typology of the HIC buildings of the Nguyen Dynasty based on the following study contents:
- the main functional areas on the HIC site plan according to name, function, construction year, location, and layout principles on the site plan;
 - the list of buildings that existed in the main areas during the original architectural period and the criteria to identify the architectural typology (building name, function, location, hierarchy, or technical term);
 - the diagram of architectural typology and characteristics of the architecture in the HIC.
- (c) The design principles of the HIC site plan of the Nguyen Dynasty based on the following analysis results:
- the square gridding system method used in researching ancient capitals;
 - the traditional measurement units of the Nguyen Dynasty applied for the gridding method;
 - the options for arranging the planning grid system in the HIC site plan and the selected option;
 - proportional relation between vertical and horizontal directions of the HIC areas;
 - geographical relation between the main buildings and the axes;
 - the design principle of the HIC site plan and layout of the main buildings.

1.8 The theoretical framework of the thesis

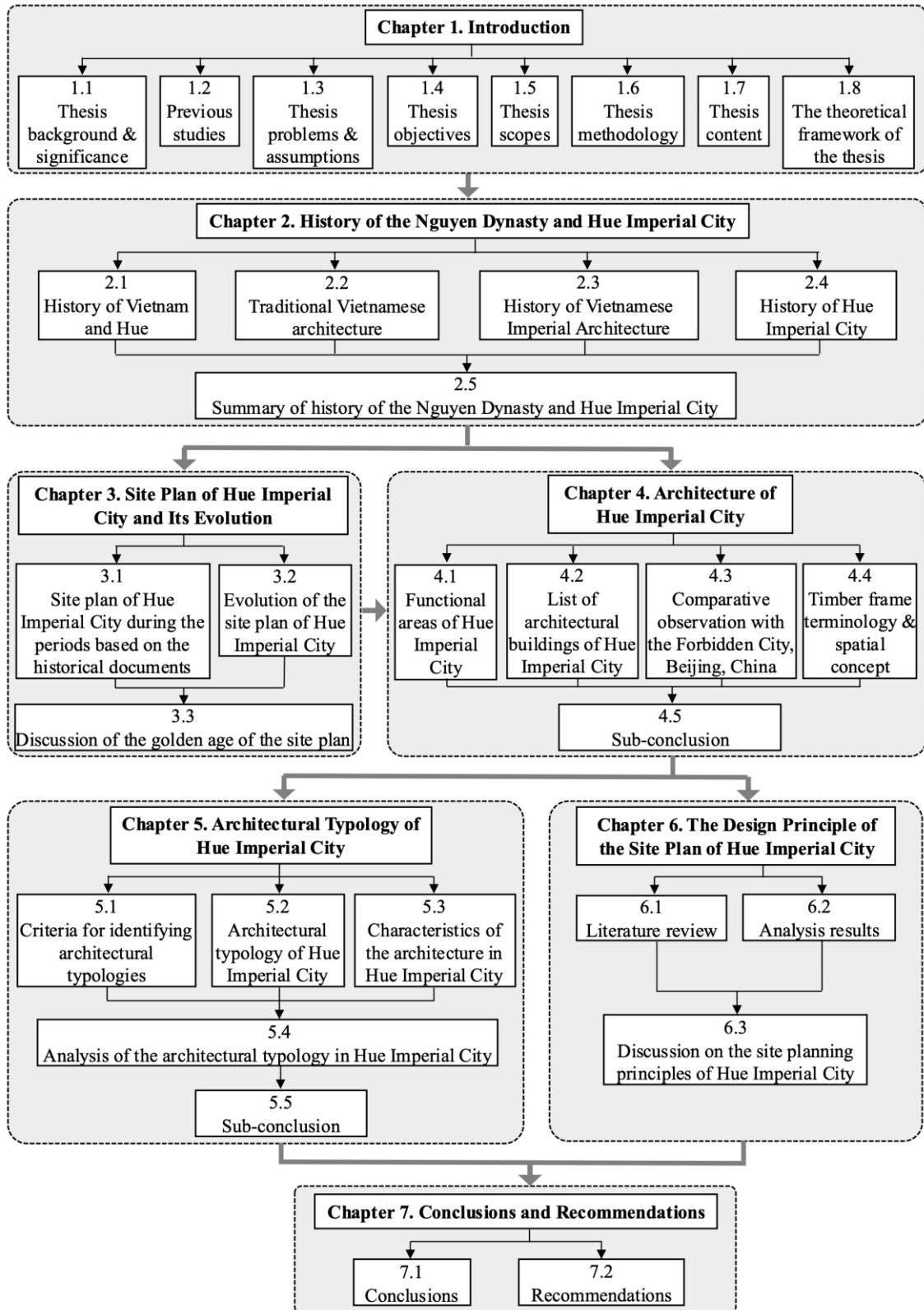


Figure 14: The theoretical framework of the thesis
(Source: Author)

Chapter 2

History of the Nguyen Dynasty and Hue Imperial City

This chapter provides an overview of Vietnam's history and Hue, thereby clarifying the context in which the Nguyen Dynasty was established and the construction of the Hue Imperial City took place. It outlines key historical milestones and periods that influenced the formation and transformation of architecture throughout the 143 years of the Nguyen Dynasty. In addition, the chapter presents an overview of traditional Vietnamese architecture and royal architecture, offering a comprehensive perspective on Vietnamese architecture while also highlighting the position and significance of Hue architecture within the broader system of Vietnam's traditional architecture.

2.1 History of Vietnam and Hue

2.1.1 History of Vietnam

Vietnam's history spans over 4,000 years of nation-building and preservation. According to the Vietnam Academy of Social Sciences and Institute of History (2017d), it can be summarized into five periods: (1) the primitive period; (2) the ancient period (2879 - 111BCE); (3) the Northern domination period (111BCE—938CE); (4) the feudal monarchies period (939 - 1945); and (5) the early modern and modern periods (1858 to the present) (Figure 15).

The first two periods mark the emergence of humanity, the development of wet rice civilization, and the formation of the first Vietnamese state. The next period was one of 1,000 years of Chinese domination in Vietnam. China had a significant influence on Vietnam's culture, economy, and politics during this era. Notably, Confucianism and Chinese characters were systematically introduced to Vietnam,

significantly influencing the Vietnamese people's language, customs, and mindset during the subsequent feudal period (Nguyen, 2005, pp. 103-126).

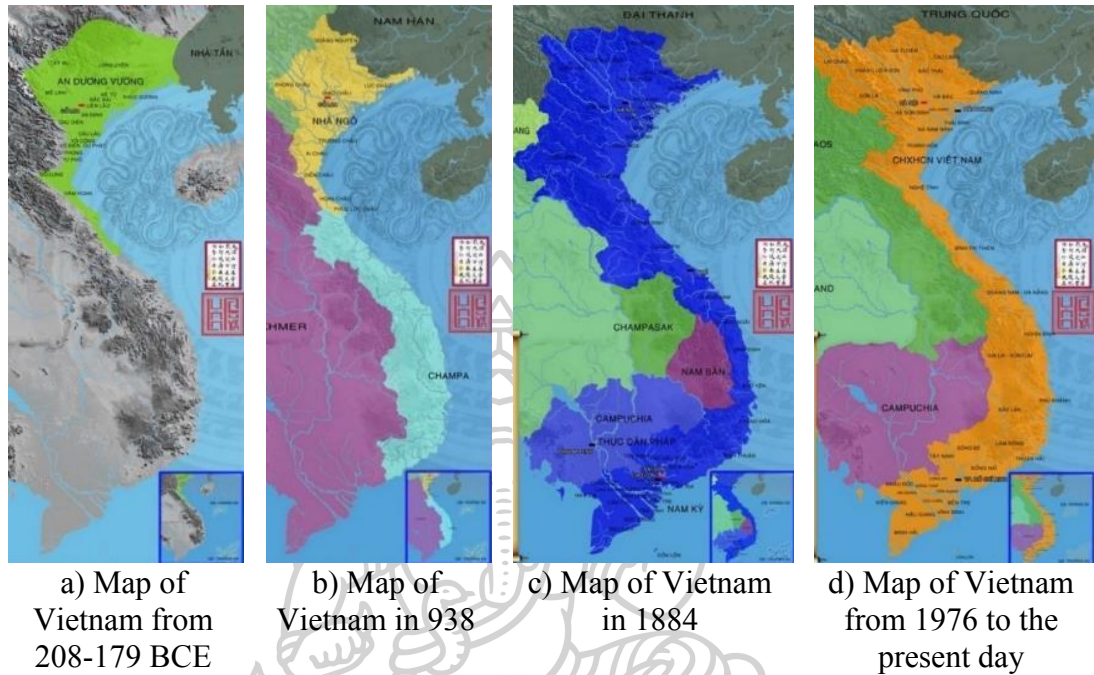


Figure 15: Maps of Vietnam across different eras

(Source: <https://ungdungmoi.edu.vn/ban-do-lanh-tho-viet-nam-qua-cac-thoi-ky.html>)

According to Tran (2018) and Quynh and Do (2009), the feudal monarchies period is divided into the following epochs: (1) the period of independence (939-1409) (including the Ngo Dynasty (939-965), Dinh Dynasty (968-980), Tien Le Dynasty (980-1009), Ly Dynasty (1009-1225), Tran Dynasty (1225-1400), Ho Dynasty (1400-1407), and the Hau Tran Dynasty (1407-1409)); (2) the fourth Northern domination period (1413-1428); (3) the Trung Hung period – Hau Le Dynasty (1428-1527); (4) the Trinh-Nguyen rivalry period (1533-1788); and (5) the period of reunification (including the Tay Son Dynasty (1778-1802) and the Nguyen Dynasty (1802-1945)). During this era, Vietnam experienced many feudal dynasties and faced the impact of invasions by the Northern feudal dynasties (China). Regarding cultural ideology, the Vietnamese

state was built on the foundations of Buddhism and Confucianism. With the fourth Northern domination period, the influence of Confucianism increased significantly, and subsequent dynasties structured their governance, legal systems, literature, and arts based on the Chinese model. (Nguyen, 2005, pp. 162-174, 190-198). By the time of the Nguyen Dynasty, Vietnam had achieved territorial unity, marking its most significant territorial extent in history (Dao, 2005, pp. 210-225).

The early modern and modern periods are considered to have started in 1858 when French colonialists occupied Da Nang, marking the beginning of the invasion period in Vietnam (Tran, 2018, p. 541). In 1884, the Nguyen Dynasty officially recognized French rule (Vietnam Academy of Social Sciences & Institute of History, 2017c, pp. 97, 217). In 1945, Emperor Bao Dai abdicated, concluding the feudal era of the Nguyen Dynasty after 143 years of reign (Vietnam Academy of Social Sciences & Institute of History, 2017b, p. 713). On September 2, 1945, the Democratic Republic of Vietnam was established. However, during this period, the country still had to undergo resistance wars against French and American colonialism. By 1975, the country achieved complete reunification. From 1976 to the present, the government has been renamed the Socialist Republic of Vietnam (Vietnam Academy of Social Sciences & Institute of History, 2017a, p. 101).

2.1.2 History of Hue

The capital of the Nguyen Dynasty was established after the Nguyen regained its old capital in Phu Xuan, Thuan Hoa, in 1802 (The National Department of History of Nguyen Dynasty, 2002b, p. 441). Before that, it was Phu Xuan capital of the Tay Son Dynasty (1788-1802).

According to historical documents (The National Department of History of Nguyen Dynasty, 1960, pp. 7-16), the capital city of the

Nguyen Dynasty belonged to “Kinh su” (京師). The Kinh Su was the political origin of the country. The capital city was in Thua Thien prefecture (in central Vietnam), so the path to the tribute was equal. Also, according to historical documents (The Cabinet of Nguyen Court, 1993b, p. 23), the “Kinh Su” means Thua Thien prefecture (1801-1822, called Quang Duc shire; 1822-1945, called Thua Thien prefecture; and from 1989 to the present, called Thua Thua Hue province), which was the capital of Vietnam during the Nguyen Dynasty (Figures 16-17).

The “Kinh Su” of the Nguyen Dynasty was located on the land of Thuan Hoa prefecture (順化). This land formerly belonged to the Chiem Thanh country (占城/Champa) under the Che Man period (Jaya Simhavarman III). In 1306, King Tran Anh Tong assigned his sister – Princess Huyen Chan, to marry the King of Chiem Thanh, so the King of Chiem Thanh offered Chau O and Chau Ly lands as solemnities. In 1307, King Tran Anh Tong changed Chau O to Chau Thuan, Chau Ly to Chau Hoa (Thai, 1960, pp. 11-16). After that, Chau Thuan and Chau Hoa were merged into Thuan Hoa prefecture.

In 1558, Lord Nguyen Hoang was sent by King Le to govern the Thuan Hoa prefecture. The shire was located in the Ai Tu commune. From 1570 to 1777, the shire of the Nguyen Lords was moved several times, but in general, it always belonged to Thuan Hoa prefecture. In particular, there were two times of shifting the shire to Phu Xuan village (the place where the Tay Son Dynasty and the Nguyen Dynasty established the citadel in later periods) (Thua Thien Hue Provincial People’s Committee, 2005, p. 79).

In 1802, Lord Nguyen Phuc Anh (Emperor Gia Long) overthrew the Tay Son Dynasty and placed the capital city of the Nguyen Dynasty in Phu Xuan. It can be said that the capital city of the Nguyen Dynasty

was established in Thuan Hoa prefecture as a result of the exploration and fighting that lasted over 200 years by the Nguyen Lords.

In the historical document, only the historical book – Quoc Trieu Chan Bien Toat Yeu (國朝正編撮要), compiled in 1908 and translated into the national language in 1925, recorded the capital city of the Nguyen Dynasty as “Hue Capital City” (The National Department of History of Nguyen Dynasty, 1972, p. 5). According to the Vietnam Su Luoc book (Tran, 2018, p. 454) – The first history book of Vietnam was written in the national language, the author used the word “Hue Citadel” to explain the position of “the Capital City in Phu Xuan” of the Nguyen Dynasty. Thus, the Nguyen Dynasty’s capital, or Hue capital city, was the city of “Kinh Su,” formerly belonging to the Thuan Hoa prefecture. Therefore, Emperor Gia Long chose this land to establish the capital city for several reasons: the position of the land was in central Vietnam; its geography and posture were suitable for feng shui and defensive ability; this land was associated with the ancestral history of the Nguyen royal family. After 1945, Thua Thien Prefecture (Kinh Su) changed its name to Thua Thien Province, and from 1988 to the present, it has been called Thua Thien Hue Province (Figure 18). Nowadays, the Hue capital city is called Hue ancient capital city (see Appendix).






Figure 16: Map of Vietnam in the period of Emperor Minh Mang, drawn around 1838
 (Source: <https://web.archive.org/web/20120806031050/http://biengioilanhto.gov.vn/vie/dainamnhathongtoando-nd-d02979b0.aspx>)



Figure 17: Map of Thua Thien prefecture (Kinh Su) (1822-1945)
 (Source: Ngo et al. (2003, p. 297))



Figure 18: Map of Thua Thien Hue province in the late XX century
 (Source: Ngo et al. (2003, p. 296))

2.1.3 History of the Nguyen Dynasty

The Nguyen Dynasty and Hue citadel were formed by exploring and expanding the realm from the Nguyen's ancestors (including nine generations of Nguyen Lords) in the period 1558-1777 (Table 1) (The National Department of History of Nguyen Dynasty, 2002b).

Table 1. Chronology of the Nguyen Lords (1558-1777)

No.	Posthumous Name	Given Name	Date	Reign
01	Thai To Gia Du Hoang De	Nguyen Hoang	Chua Tien	1558-1613
02	Hy Tong Hieu Van Hoang De	Nguyen Phuc Nguyen	Chua Sai/ Chua But	1614-1635
03	Than Tong Hieu Chieu Hoang De	Nguyen Phuc Lam	Chua Thuong	1636-1648
04	Thai Tong Hieu Triet Hoang De	Nguyen Phuc Tan	Chua Hien	1649-1687
05	Anh Tong Hieu Nghia Hoang De	Nguyen Phuc Tran	Chua Nghia	1688-1691
06	Hien Tong Hieu Minh Hoang De	Nguyen Phuc Chu	Chua Minh	1692-1725
07	Tuc Tong Hieu Ninh Hoang De	Nguyen Phuc Chu	Chua Ninh	1726-1738
08	The Tong Hieu Vu Hoang De	Nguyen Phuc Khoat	Chua Vu	1739-1765
09	Due Tong Hieu Dinh Hoang De	Nguyen Phuc Thuan	Chua Dinh	1766-1777

The appearance of the Nguyen family in the land of Thuan Hoa began with Lord Nguyen Hoang – a great respected general of the Le Dynasty (1542-1788), who was allowed by King Le to move to Thuan Hoa in 1558 to govern the land (The National Department of History of Nguyen Dynasty, 2002b, p. 21). At first, Lord Nguyen Hoang built a palace in Ai Tu commune (also in the land of Thuan Hoa).

In the later period (1558-1777), the Nguyen Lords constantly built up into an independent force, becoming a great concern of the Trinh Lords (a feudal lord controlling the Le Dynasty's power from 1573 to 1786). In addition to the domestic political situation with many civil wars for

power, the Nguyen Lords continued to expand their borders to the South and invaded the country of Chiem Thanh (占城/ Champa) from 1611 to 1697 (Tran, 2018, p. 364), recruited poor people to explore and expand many new lands, thereby shaping the territory of Vietnam today (Figures 19-21).

Because of the Nguyen Lords' growth in Thuan Hoa prefecture, the Trinh Lords waged war and forced the Nguyen Lords to move to the South in 1774. In 1777, Lord Nguyen Phuc Thuan (the 9th lord of the Nguyen Dynasty) died, ending the nine generations of the Nguyen Lords in Thuan Hoa prefecture.

From 1778 to 1802, Lord Nguyen Phuc Anh – a grandson of Lord Nguyen Phuc Khoat (who later became Emperor Gia Long, who established the Nguyen Dynasty) built up an estate to prepare for regaining the government and unifying the country. Also during this time, the political situation in the country saw a significant change when the Tay Son Dynasty rebelled to take power (the Tay Son army was an army from the masses that revolted to take control, led by the Nguyen Nhac brothers and Nguyen Hue brothers, established in 1778). The Tay Son Dynasty, after overthrowing the Trinh Lords (1786) and the Le Kings (1788), once again chose Phu Xuan, Thuan Hoa prefecture, as a capital (Tran, 2018, pp. 400, 407, 411). This historical context created the opportunity for Nguyen Phuc Anh to return to conquer the Phu Xuan capital, a significant land and the old capital of the Nguyen ancestors.



Figure 19: Map of Vietnam in the second half of the 16th century



Figure 20: Map of Vietnam in the 17th-18th century to 1782



Figure 21: Map of Vietnam in the 17th to 18th century

(Source: Pluvier (1995, pp. 21, 27, 28))



Figure 22: Map of Vietnam in the first half of the 19th century



Figure 23: Map of Vietnam in the second half of the 19th century

(Source: Pluvier (1995, pp. 29, 43))

Lord Nguyen Phuc Anh ascended the throne in 1802, set the reign as Gia Long, founded the Nguyen Dynasty, and ruled for 143 years. The Nguyen Dynasty established many regulations and institutions to govern

the unified country. During the periods, Vietnam had two official names: Vietnam/越南 (1804-1838) and Dainam/大南 (1838-1945) (The National Department of History of Nguyen Dynasty, 2007b, pp. 276-277) (Figures 22-23).

There were 13 Emperors during the Nguyen Dynasty (Tables 2, 3) (The National Department of History of Nguyen Dynasty, 2002a):

Table 2. Chronology of the Nguyen Dynasty (1802-1945)

No.	Temple Name	Personal Name	Regnal Name	Reign (Solar calendar)
01	The To Cao Hoang De	Nguyen Phuc Anh	Gia Long	1802-1820
02	Thanh To Nhan Hoang De	Nguyen Phuc Dam	Minh Mang	1820-1841
03	Hien To Chuong Hoang De	Nguyen Phuc Mien Tong	Thieu Tri	1841-1847
04	Duc Tong Anh Hoang De	Nguyen Phuc Hong Nham	Tu Duc	1848-1883
05	Cung Tong Hue Hoang De	Nguyen Phuc Ung Chan	Duc Duc	1883 (3 days)
06	---	Nguyen Phuc Hong Dat	Hiep Hoa	1883 (4 months)
07	Gian Tong Nghi Hoang De	Nguyen Phuc Ung Dang	Kien Phuc	1884
08	---	Nguyen Phuc Ung Lich	Ham Nghi	1885
09	Canh Tong Thuan Hoang De	Nguyen Phuc Ung Ky	Dong Khanh	1886-1889
10	Hoai Trach Cong Hoang De	Nguyen Phuc Buu Lan	Thanh Thai	1889-1907
11	---	Nguyen Phuc Vinh San	Duy Tan	1907-1916
12	Hoang Tong Tuyen Hoang De	Nguyen Phuc Buu Dao	Khai Dinh	1916-1925
13	---	Nguyen Phuc Vinh Thuy	Bao Dai	1926-1945

Note: The year of ascension is recorded according to the historical year recognized as the "first year" in the solar calendar.

Table 3. Photos of Emperors of the Nguyen Dynasty (1802-1945)

				None
1. Emperor Gia Long	2. Emperor Minh Mang	3. Emperor Thieu Tri	4. Emperor Tu Duc	5. Emperor Duc Duc
				
6. Emperor Hiep Hoa	7. Emperor Kien Phuc	8. Emperor Ham Nghi	9. Emperor Dong Khanh	10. Emperor Thanh Thai
				
11. Emperor Duy Tan	12. Emperor Khai Dinh	13. Emperor Bao Dai		

(Source: <https://honguyenvietnam.org/vi/lich-su/13-vi-vua-trieu-dai-nha-nguyen-342.html> & <https://www.pinterest.com/pin/610871136952012272/>)

During the Nguyen Dynasty, the country underwent two periods (Institute for Conservation of Monuments (ICM), 2020, pp. 4-5): the independent feudal period (1802-1883) and the French colonial period (1883-1945):

- The independent feudal period (1802-1883):

The Emperors took complete control over the country with four Emperors: Gia Long, Minh Mang, Thieu Tri, and Tu Duc.

Emperor Gia Long and Minh Mang developed the country on the foundation of Confucianism and were two Emperors with great merit in creating the institution of the Nguyen Dynasty (Tran, 2018, pp. 454-516). This was the most flourishing period, with many significant administrative reforms and the most construction works of the citadel, palaces, mausoleums, temples, and pagodas. During this period, the Nguyen Dynasty did not trade with foreign countries and banned the spread of Christianity. By the time of Emperor Tu Duc, the government had been stagnant, weak, and backward, leading to the invasion of the French colonists (Tran, 2018, pp. 539-552). Because it was not open to foreign exchange, in addition to a thousand-year history under Chinese rule, the Nguyen Dynasty was influenced by Chinese culture during this period.

- The French colonial period (1883-1945):

The Nguyen Dynasty officially acknowledged French domination, and Dai Nam (Vietnam) became a French colony. Although the Emperors kept the throne, they were only puppets, and the French could dethrone and replace the Emperor Nguyen. During this period, the trading activities of the country expanded; the French opened many ports and traded with other countries. European culture was introduced into the country; in addition to science and technology, building materials also influenced the country's architecture in general (Ngo, 2013, pp. 253-257). In the Hue capital, the Emperors also built more structures in European architecture. The buildings that were previously entirely made of wood gradually changed to ones with brick walls and glass doors.

During this period, the European style had a profound influence on both exterior and interior architecture.

2.1.4 Influence of Chinese culture on Vietnam during the Nguyen Dynasty

Through the history of Vietnam and Hue (Sections 2.1.1 and 2.1.2), the Nguyen Dynasty was established in a context where the country had endured a thousand years of Chinese domination, including the period of Northern rule from 111 BCE to 938 CE and the fourth period of Chinese occupation from 1413 to 1428. During this period, Chinese culture had a profound influence on the governance philosophy of feudal dynasties and the daily lives of the Vietnamese people, particularly through Confucianism, Taoism, and various other religious beliefs. These influences did not disappear immediately after the Nguyen Dynasty unified the country in 1802; instead, they were inherited and maintained through the regulations and laws established by earlier feudal dynasties. Some of the key influences include:

- Confucianism was considered the "national ideology" to consolidate the centralized monarchical state (Ly, 2015). The Confucian moral code of “Tam Cương Ngũ Thường” (三綱五常), a fundamental ethical system in Confucian philosophy, was promoted to uphold social hierarchy and reinforce the absolute authority of the emperor. This system includes the "Three Bonds": ruler–subject, father–son, and husband–wife; and the "Five Constant Virtues": benevolence, righteousness, propriety, wisdom, and faithfulness.

- Classical Chinese was used as the official administrative language of the Nguyen court. Historical records, imperial edicts, and legal documents were all issued in Classical Chinese.

- The Nguyen Dynasty's civil service examination system, from the reigns of Gia Long and Minh Mang, adopted the traditional Chinese examination model, which included “Thi Hương/鄉試”, “Thi Hội/會試”, and “Thi Đình/殿試” (Tran, 2018, p. 482). The content was entirely based on the Confucian canon, namely, the Four Books (四書), the Five Classics (五經), and historical texts (Vu, 2008). This educational model aimed to select officials based on Confucian moral standards. The Imperial Academy was established in the capital, where Confucius was venerated to demonstrate the dynasty's reverence for Confucian learning.

- Governance and legal system: The Gia Long Code, promulgated in 1815, was fundamentally modeled after the Qing Dynasty's legal code in both structure and content (Tran, 2018, p. 463). This code provided detailed regulations on laws, punishments, and codes of conduct across six ministries: the Ministry of Personnel (吏部), the Ministry of Revenue (戶部), the Ministry of Rites (禮部), the Ministry of War (兵部), the Ministry of Justice (刑部), and the Ministry of Public Works (工部);

- Religious culture: The Nguyen Dynasty upheld the “Three Teachings” of Confucianism, Buddhism, and Taoism, with Confucianism occupying a dominant position. The court regularly conducted Heaven Worship ceremonies at the “Nam Giao” Altar to pray for national peace and prosperity and to express the cosmological harmony between Heaven, Earth, and Humanity. These rites closely resembled the Heaven worship rituals performed by Chinese Emperors. They followed ceremonial

standards based on the Book of Rites (禮記) of China, including ancestral sacrifices and offerings to the God of Agriculture. Buddhism, a long-standing religion in Vietnamese society, continued to be officially recognized by the Nguyen Dynasty but was placed under strict state supervision (Thich, 2022). The court sponsored the construction and restoration of major temples such as the Thien Mu” Pagoda and the “Giac Hoang” Pagoda. Taoism (道教), as practiced in Vietnam, was primarily in the form of ritual or magical Taoism, often associated with folk beliefs and spiritual practices (Vu, 2017, p. 39). Similar to its approach to Buddhism, the Nguyen Dynasty imposed restrictions on Taoism. However, in royal ceremonies and deity worship, the court placed great importance on feng shui and astronomy, practices rooted in the concepts of yin-yang, the Five Elements, and Taoist cosmology. This influence was evident in the construction of Taoist palaces and temples, such as the “Tran Vu Dien” palace, the “Quan Cong Mieu” temple, and the “Ngu Cong Mieu” temple, all dedicated to deities believed to protect the nation. Additionally, a system of temples dedicated to various deities, including tutelary spirits, mountain gods, river gods, and other local guardian spirits, exists.

Given the broader context outlined above, the planning and architectural design of the Hue Citadel were inevitably influenced by traditional Chinese models. Emperor Gia Long consulted feng shui principles when selecting the construction site, determining the orientation, and adopting a layout consisting of three enclosed layers of defensive walls: the Citadel, the Imperial City, and the Forbidden City. The naming of buildings (in Chinese) was also followed by the naming conventions used for buildings in the Forbidden City in Beijing (see Sections 2.4.2 and 4.3).

Although Vietnam was heavily influenced by Chinese culture, it is essential to note that these cultural elements had already undergone a long process of localization within Vietnamese tradition. As a result, the Nguyen court made several adaptations to reconcile Chinese elements with Vietnamese realities, from the administrative system to urban spatial organization and court rituals. Within the scope of this thesis, the study does not delve deeply into analyzing Chinese cultural influences, particularly feng shui or Confucian ideology, in architectural planning and design. Therefore, this section offers a concise overview of the key historical and cultural characteristics that help clarify the broader national and dynastic context during the formative period of HIC architecture.

2.2 Traditional Vietnamese architecture

Based on previous studies (Institute of History, 2020; Ngo, 2013; Nguyen, 2014), the formation and development of Vietnamese architecture can be divided into three main periods: (1) Vietnamese architecture from the establishment of the Van Lang state to the end of the Tien Le period (from the primitive period to the Northern domination period); (2) Architecture during the feudal period (939 – 1945); (3) Architecture in the modern and contemporary periods.

In the first period, ancient Vietnamese urban areas were formed, and now only archaeological sites remain, showing construction materials made of bricks and lightweight materials such as bamboo or rattan (Nguyen, 2014, pp. 16-25). The architecture of the third period is distinct in terms of materials and construction techniques compared to the previous two periods. It can be said that traditional Vietnamese architecture primarily formed and still largely exists today from the second period, particularly during the flourishing feudal dynasties. During this time, architecture developed in various forms, from citadels and palaces to religious and folk architecture (Ngo, 2013, pp. 105-242; Nguyen, 2014, pp. 27-171). The primary construction materials were wood and

roof tiles. During this period, Vietnamese architecture blended Northern and Southern cultures, shaped by different construction techniques, materials, and climates specific to each locality, creating its unique characteristics.

Traditional Vietnamese architecture during the second period was highly diverse, with each region possessing its unique architectural characteristics. However, a common feature was the use of wooden frame structures and meticulous decorative carvings. Each region had its distinctive wooden framing system. To provide an overview of traditional Vietnamese architecture during this period, here are some notable examples found in historical documents or from existing buildings:

(1) Citadel architecture: some Citadels from the feudal architectural period, such as the Hue Citadel (Figure 24) and the Thang Long Citadel (Figure 25). Typically, these Citadels have square, rectangular, or “Vauban”-style shapes, which are suitable for symmetrical planning and defensive requirements. The walls were constructed from various materials, including earth, brick, or stone. The Citadels feature multiple layers of walls surrounded by moats.

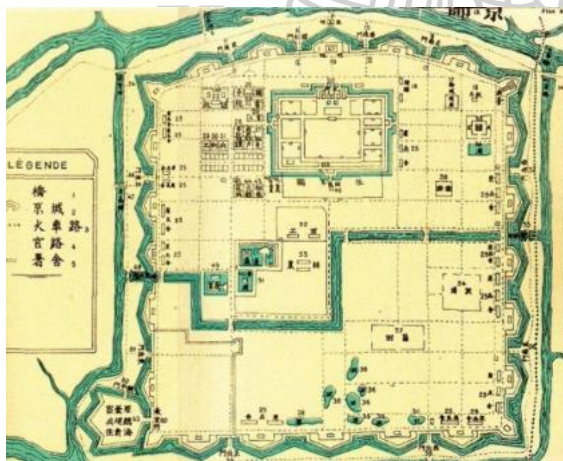


Figure 24: Map of “Hue” citadel according to B.A.V.H magazine (published in 1933)

(Source: *The map XIX in Cosserat (1933)*)

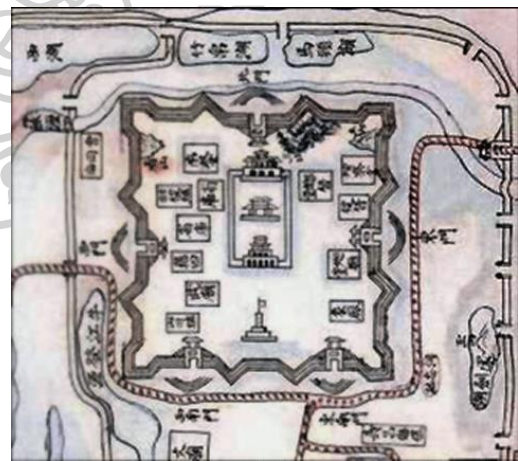


Figure 25: Map of “Thang Long” citadel under “Dong Khanh” period 1886-1889

(Source: <https://baotanglichsu.vn/vi/Articles/3099/14197/nhan-dien-gia-tri-khu-di-tich-hoang-thanh-thang-long.html>)

(2) Royal architecture:

(2.1) Palace: Several palace buildings that still exist today are primarily located within the Hue Citadel, such as “Thai Hoa Dien” Palace (Figure 26) and the “Ngo Mon” main gate (Figure 27). These buildings feature symmetrical layouts, timber structural systems, tiled roofs with upturned corners, and intricate decorative details. Columns are slender, lacquered in red and gilded with gold, and adorned with carvings of the four sacred animals: dragon, qilin, tortoise, and phoenix.



Figure 26: “Thai Hoa Dien” palace in Hue Imperial City, built in 1805
(Source: http://vietnam.lah-waseda.jp/history_4.html)



Figure 27: “Ngo Mon” main gate of Hue Imperial City, built in 1833
(Source: The photo taken by the author in 2020)

(2.2) Mausoleum architecture: The mausoleums are harmoniously integrated into the natural terrain, with Emperors selecting locations based on feng shui, such as positioning them with their backs against mountains and facing rivers, lakes, or plains. Two notable mausoleums of the Nguyen Dynasty that remain today are the Minh Mang Mausoleum (Figure 28) and the Tu Duc Mausoleum (Figure 29). The buildings within are arranged in an orderly, symmetrical layout along a vertical axis. The buildings on the main axis are aligned in a sequence that follows ceremonial order. The architectural style is consistent, featuring traditional wooden frameworks, tiled roofs, and proportions that harmonize with the surrounding landscape.

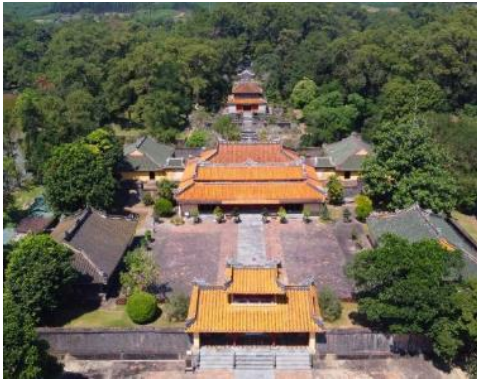


Figure 28: “Minh Mang” tomb, built in 1840

(Source: <https://mia.vn/cam-nang-du-lich/tim-hieu-lich-su-lang-mo-vua-minh-mang-ben-bo-song-huong-5340>)



Figure 29: “Tu Duc” tomb, built in 1866

(Source: *Institute for Conservation of Monuments (ICM) (2020, p. 111)*)

(3) Folk architecture:

(3.1) Housing architecture: According to the research by Tran (2008, p. 45), traditional Northern Vietnamese houses were built with a two-sloped roof and symmetrical floor plans. There are six types of wooden frame cross-sections found in Northern houses (Figure 30). Figure 31 shows a house of Type II, built in 1686. This form was quite common and appeared in houses of various sizes, ranging from large to small.

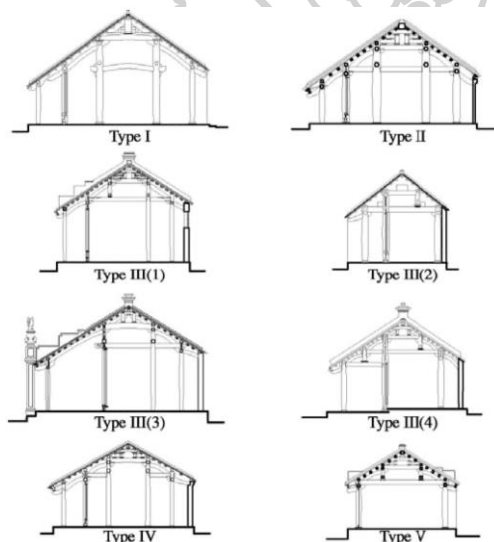


Figure 30: Some typical sections of the wooden frame system in Northern Vietnam
(Source: *Tran (2008, p. 45)*)

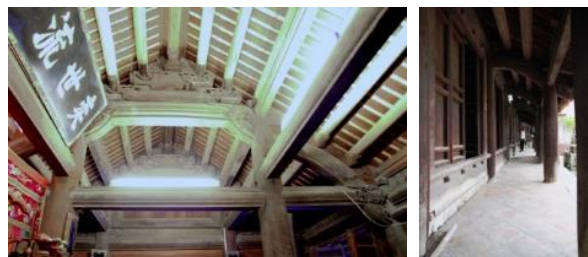


Figure 31: House of the Nguyen Thac family, Bac Ninh province, built in 1686
(Source: <https://vnexpress.net/ngoi-nha-go-lim-300-tuoi-vung-kinh-bac-3003401.html>)

According to the same research, houses in Central and Southern Vietnam feature four types of wooden frame cross-sections (Figure 32). Two well-preserved representative examples are the “An Hien” garden house in Central Vietnam (Figure 33) and the “Kiet family” house in the Mekong Delta region (Figure 34).

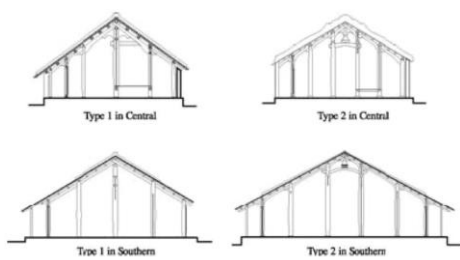


Figure 32: Some typical sections of the wooden frame system in Central and Southern Vietnam (Source: Tran (2008, p. 49))



Figure 33: An Hien garden house, Hue City, Central Vietnam (Source: <https://baoquangninh.vn/thien-duong-thu-nho-giua-long-co-do-hue-3211531.html>)



Figure 34: The old house of the Kiet family, Tien Giang province, Southern Vietnam, built in 1838 (Source: <https://thamhiemmekong.com/thong-tin-du-lich-mien-tay/nha-co-ong-kiet-ngoi-nha-co-doc-dao-o-tien-giang.html>)

(3.2) Community architecture: communal houses, pagodas, and Confucian temples.

The village communal house serves both as a community gathering place and as a site of worship, typically dedicated to a tutelary deity who contributed to the founding of the village, governed it, and protects its inhabitants. A representative example of this building type is the village communal house in the Hong River Delta region (Figure 35), which developed between the 16th and 19th centuries (Vu, 2020). The architecture is symmetrical along a central axis,

featuring a wooden structural system and tiled roofs. Notably, the roof is grand in proportion, making up two-thirds of the building's height, with four corners that curve upward and flare outward. The structure features large columns, typically left unpainted and with a smooth, planed finish. Decorative motifs often include the Four Sacred Creatures (dragon, qilin, turtle, phoenix) or the Four Noble Plants (pine, plum blossom, chrysanthemum, bamboo), interwoven with folk themes and depictions of rural village life.

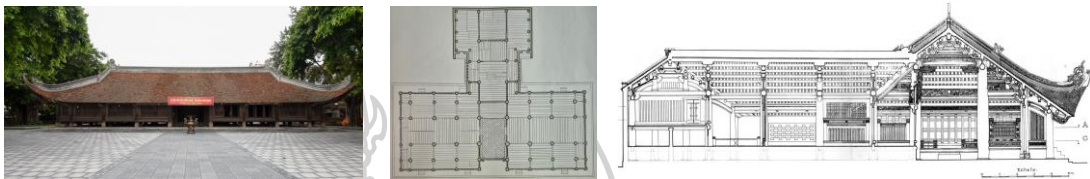
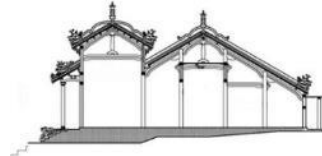


Figure 35: “Dinh Bang” communal house, Bac Ninh province, built in 1736
 (Source: *Institute for Conservation of Monuments (ICM)* (2019, pp. 171-178),
<https://www.orientalarchitecture.com/sid/1377/vietnam/bac-ninh-province/dinh-bang-communal-house> &
<https://fudozon.com/chi-tiet-album/cac-ban-ve-dinh-chua-mien-ba--69.html>)

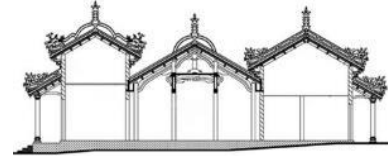
Regarding Buddhist architecture in Vietnam, the development of pagoda architecture occurred between the 10th and 19th centuries (Phan, 2024). Notably, during the 18th century, the Nguyen Lords commissioned the construction of numerous pagodas, giving rise to the distinctive architectural style of Hue pagodas. According to the study by Nguyen et al. (2019), the main hall's façade features a symmetrical layout along a central axis, supported by a wooden structural framework. There are three main structural types of the main hall (Figure 36). The architecture reflects a blend of influences from both vernacular traditions and royal palace design.



a) “Dong Thuyen” pagoda, built in the 18th century, Hue City, Thua Thien Hue province
(Source: <https://lendang.vn/destination/chua-dong-thuyen-dong-thien.html>)



b) “Bao Quoc” pagoda, Hue City, Thua Thien Hue province, built in 1807
(Source: https://en.m.wikipedia.org/wiki/File:Ch%C3%B9a_B%E1%BA%A3o_Qu%E1%BB%91c.jpg)



c) “Tay Thien” pagoda, Hue City, Thua Thien Hue province, built in the 1902-1911 period
(Source: <https://chonhieng.com/dia-diem/chua-tay-thien-di-da-chua-tay-thien-thanh-pho-hue-thua-thien-hue/>)

Figure 36: The main hall of pagoda architecture in Hue City during the Nguyen Dynasty has three basic sections
(Source: Nguyen et al. (2019))

The temple architecture dedicated to Confucius and other Confucian sages was established in the imperial capital as early as 1070. Representative examples of this architectural form include the Temple of Literature in Hanoi and Hue (Figures 37, 38). Common features of this building type include a wooden structural framework, tiled roofs, symmetrical layout, and upturned roof corners with ornamental finials.



Figure 37: “Dai Thanh Dien” palace, the area dedicated to Confucius, “Van Mieu - Quoc Tu Giam” temple of literature, Hanoi, built in 1070
(Source: <http://vanmieu.gov.vn/en/di-tich/>)



Figure 38: “Quoc Tu Giam” temple of literature of the Nguyen Dynasty, Hue City, built in 1908
(Source: <https://www.congluan.vn/dau-an-van-hoa-gia-tri-lich-su-cua-di-tich-quoc-tu-giam-trieu-nguyen-o-hue-post209517.html>)

From the architectural characteristics described above, it can be seen that the Nguyen Dynasty belongs to the second period of Vietnamese architecture, a period during which the style became clearly defined, and a large portion of the existing architectural heritage and sites primarily date back to this period. The Nguyen Dynasty ruled during the final feudal period, but is significant historically because it marked the unification of Vietnam from North to South. Therefore, the traditional Vietnamese architecture of this period had many advantages for development, especially in the location of the Nguyen Dynasty's capital (present-day Hue City), where both grand royal buildings and folk architecture flourished. Studying the architecture of the Nguyen Dynasty also means exploring the valuable characteristics of traditional Vietnamese architecture during this special period in Vietnamese history.

2.3 History of Vietnamese Imperial Architecture

According to the research results S. Q. Nguyen et al. (2010, pp. 27-51), Vietnam has had the following main capitals: Phong Chau (Van Lang State, 2879-207 BCE); Co Loa (Au Lac State, 208-179 BCE); Hoa Lu (Dinh Dynasty, Tien Le Dynasty, 968-1009); Thang Long/Dong Do/Dong Kinh (existing during various periods of the Ly, Tran, Ho, and Le Dynasties from 1010-1788); Tay Do (Ho Dynasty, 1400-1407); Lam Kinh/Tay Kinh (Hau Le Dynasty, 1428-1527); Phu Xuan (Tay Son Dynasty, 1788-1802); Hue (Nguyen Dynasty, 1802-1945). Among the capitals mentioned above, the feudal architectural period predominates. It can be said that the history of Vietnamese imperial architecture is closely linked to the formation and transformation of the feudal dynasties.

The shape of the fortress walls evolved from a spiral form that took advantage of the natural terrain for defense (Figure 39), made of earth, to walls with regular layouts aligned along the North–South axis, constructed from brick or stone (Figures 40, 41). During the Nguyen Dynasty, the fortress walls were built in the “Vauban” style, constructed with brick and arranged along the North–

layout and were adorned with intricate decorations, including motifs such as dragons, phoenixes, and lotus flowers (Institute of History, 2020, pp. 79-81, 102-104, 121-126, 146-150, 371-373; Ngo, 2013, pp. 109-242)



Figure 43: Lam Kinh relic site, Hau Le Dynasty, Thanh Hoa province
(Source: <https://nld.com.vn/thoi-su/ben-trong-chinh-dien-bang-go-lim-lon-nhat-viet-nam-co-gi-dac-biet-20220201003520773.htm>)



Figure 44: Hue Imperial City, Nguyen Dynasty, Hue City
(Source: <https://vietnamnet.vn/en/unesco-accompanies-vietnam-in-protecting-cultural-heritages-610845.html>)

Most of the palace architecture in the ancient citadels no longer remains due to many historical changes and the passage of time. At some sites, only a few remnants, such as stone gates, foundations, or later architectural layers, had replaced the original buildings. Among the aforementioned palace relics, the Hue Imperial City is the most representative and well-preserved imperial architecture complex, comprising various types such as palaces, temples, and mausoleums. It can be said that Hue imperial architecture is a typical case of Vietnamese imperial architecture, which has preserved many cultural, historical, and architectural values to the present day.

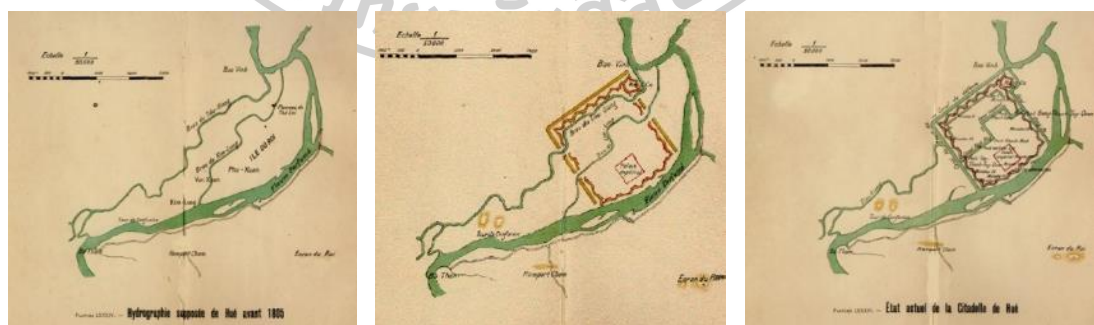
2.4 History of Hue Imperial City

2.4.1 History of the construction of Hue Imperial City

Hue Imperial City was built after Emperor Gia Long ascended the throne in 1802. Emperor Gia Long personally supervised the design and construction method from 1803 (The National Department of History of

Nguyen Dynasty, 2002b, p. 552). Building materials were from many different provinces in Vietnam, such as ironwood from Nghe An, wooden planks from Gia Dinh, paving stones from Thanh Hoa, bricks and tiles from Quang Nam; vermilion, paint, and yellow litmus from Bac Thanh (Institute of History, 2020, p. 365).

Under Emperor Gia Long (1802-1820), the construction area was expanded compared to Phu Xuan Citadel (the previous Citadel under the Tay Son Dynasty (1788-1801)). To rebuild the citadel, Emperor Gia Long relocated the villages to expand the area, improved the natural rivers, and directed the river flow to establish a continuous waterway system in the Citadel (Figure 45). The shaping of the scale and direction of the Citadel, the Imperial City, and the Forbidden City was formed under Emperor Gia Long, initially laying the foundation for architectural planning and establishing construction regulations of the Nguyen Dynasty (The National Department of History of Nguyen Dynasty, 2002b, p. 552). However, the country faced many economic and political difficulties under the new reign. Hence, it mainly focused on building essential buildings for the Nguyen Dynasty's cabinet and the area where the Emperor lived.



a) Hydrograph of Hue Citadel before 1805

b) Hydrograph of Hue Citadel after 1805

c) Hydrograph of Hue Citadel after renovation

Figure 45: Hydrograph of Hue Citadel, published in 1924
(Source: *The map LXXXIV-LXXXVI in Par (1924)*)

During the Minh Mang period (1820-1841), especially during the administrative revolution (1820-1833), design and construction activities

intensified and were carried out on a large scale. Emperor Minh Mang built numerous buildings encompassing various architectural types, such as palaces, temples, shrines, pavilions, halls, stores, and kitchens. These developments profoundly transformed the appearance of the HIC. (Nguyen, 2014, pp. 141-158)

The later reigns of the Nguyen Emperors saw the Hue Citadel as the highest administrative center of the Nguyen Dynasty from 1841 to 1945. Based on several maps collected of the Hue Citadel (Figures 46-48), it can be observed that the overall scale of the Hue Citadel and the HIC remained unchanged from the Gia Long period; only the number of constructions increased. To this day, the Hue Citadel and the HIC have preserved their original form (Figure 48). It can be said that the site holds significant cultural values dating back to the Gia Long period and offers substantial research potential.

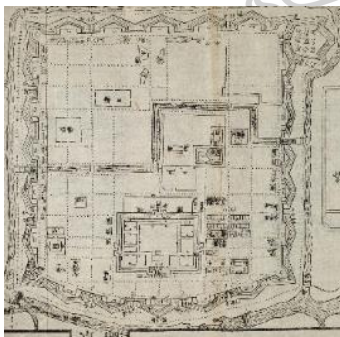


Figure 46: Hue Citadel, according to the “Dai Nam Nhat Thong Chi” document (published in 1910)
(Source: *The map XIX in Cosserat (1933)*)



Figure 47: Hue Citadel, according to B.A.V.H magazine (published in 1933)
(Source: *The map VIII in Cosserat (1933)*)

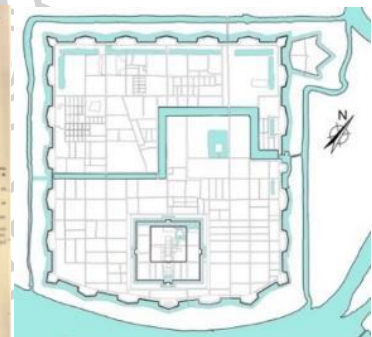


Figure 48: Hue Citadel in 2019
(Source: *The author updated the map from Vo and Nguyen (2014)*)

Through this study, the thesis clarifies that the design and construction of the HIC began in 1803, comprising a three-layered structure: the Citadel, the Imperial City, and the Forbidden Purple City. The overall scale of the three enclosures, as well as the location, main

axis, and orientation of the HIC, were determined by Emperor Gia Long. The construction and architectural completion of the Citadel and Imperial City extended from the Gia Long period through to the Minh Mang period. To explain the location and axial orientation of the HIC, the following chapter of the study clarifies key Feng Shui elements that influenced Emperor Gia Long's planning decisions. These findings form the basis for understanding the axial alignment and spatial organization principles of the HIC site plan.

2.4.2 Components of the Feng Shui concept applied to Hue Citadel

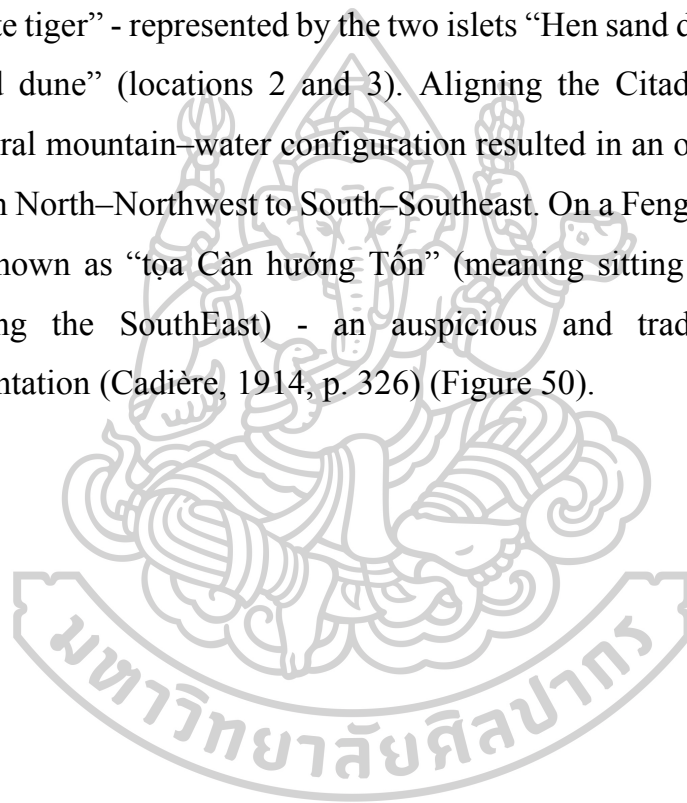
As shown in the study findings above (Section 2.4.1), Emperor Gia Long planned and designed the HIC as a complete model with three enclosed layers of fortress walls, each with clearly defined scale, form, principal axis, and orientation. To establish such a layout, Emperor Gia Long considered various factors, among which Feng Shui played a crucial role in shaping the overall design.

Regarding its location, the Hue Citadel was built on a site surrounded by three major rivers (Figure 45). From this foundation, Emperor Gia Long modified the landscape to create the formation known as “Tứ thủy triều quy” (四水朝归), meaning waters converging from all four directions, a setting in which the site is encircled by water on all sides (Phan, 2008, p. 26).

According to the researcher Phan (2016a), Emperor Gia Long paid close attention to the principles of the I Ching (Book of Changes) and Feng Shui. First and foremost was the orientation of the Hue Citadel. Following the principle “Thánh nhân nam diện nhi thính thiên, hướng minh nhi trị” - which may be translated as “The sage faces south to listen to goodness and governs by facing the light” - the Emperor was to sit in

the North, facing due South to rule the realm. Accordingly, the main axis of the Hue Citadel was ideally to follow a North-South orientation, with the Emperor seated in the North, facing the South.

However, another significant consideration was the front protective element of the Hue Citadel: Ngu Binh mountain (Figure 49, location 1), which lies slightly to the Southeast. Accompanying this are two additional Feng Shui elements known as “left azure dragon, right white tiger” - represented by the two islets “Hen sand dune” and “Da Vien sand dune” (locations 2 and 3). Aligning the Citadel’s axis with this natural mountain–water configuration resulted in an orientation that runs from North–Northwest to South–Southeast. On a Feng Shui compass, this is known as “tọa Càn hướng Tốn” (meaning sitting in the NorthWest, facing the SouthEast) - an auspicious and traditionally accepted orientation (Cadière, 1914, p. 326) (Figure 50).



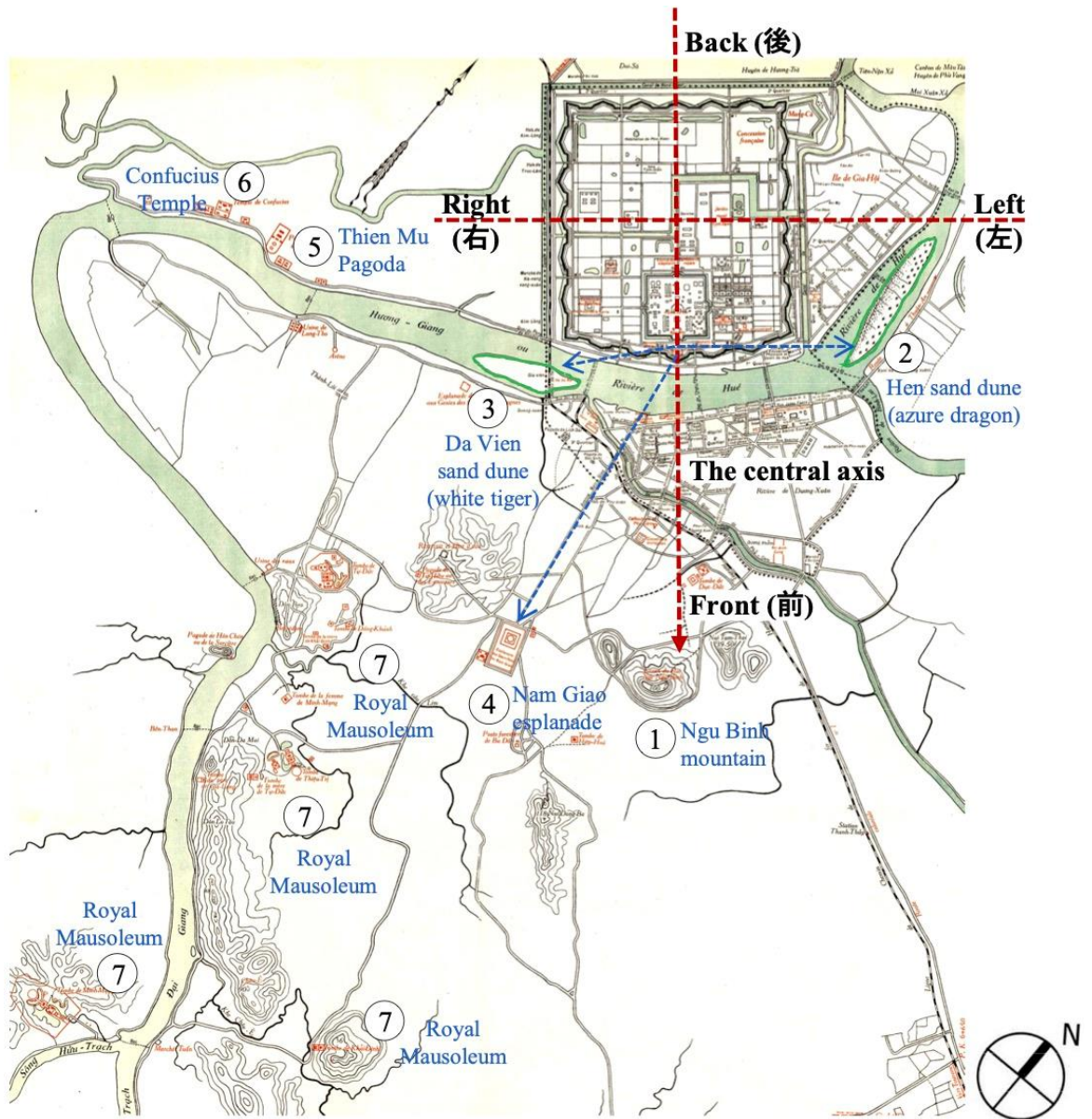


Figure 49: Location of the Hue Citadel and Feng Shui elements
 (Source: <https://www.flickr.com/photos/13476480@N07/50396694363>)

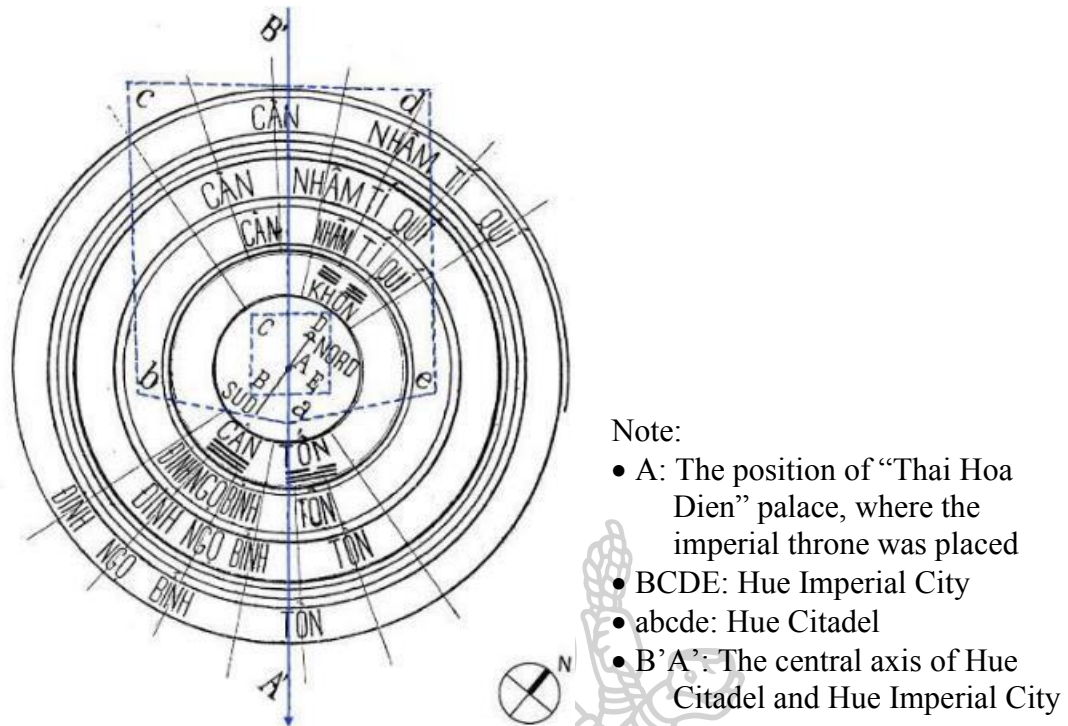


Figure 50: The favorable direction for building Hue Citadel according to the Feng Shui compass

(Source: Cadière (1914, p. 325))

In addition, the Hue Citadel has another orientation, due South (Figure 49, location 4), which serves to connect the Citadel with the “Nam Giao” Esplanade, where the Heaven Worship Ceremony, a major ritual rooted in Confucian thought, was conducted (Phan, 2008, p. 26). Pagodas (location 5), ancestral temples (location 6), and royal mausoleums (location 7) are situated to the West and SouthWest. Markets and residential areas are mainly located within the Citadel and to the East, following the principles of the Five Elements, in which the Yin area is reserved for the dead and the Yang area for the living. The “Huong” River serves as a transverse watercourse, flowing in front of the Citadel, and functions as a spatial axis linking the Citadel to the royal mausoleums.

Thus, Emperor Gia Long determined the orientation and central axis of the Hue Citadel based on principles of Feng Shui. At the same time, he carefully considered the natural topography, which resulted in a slight deviation of the citadel’s central axis from an exact North–South

alignment, thereby reconciling both elements. As a result, although the actual geographical orientation of the central axis runs from North-NorthWest to South-SouthEast, historical documents consistently describe the Imperial Citadel, the Imperial City, and their internal structures using the four cardinal directions—south, north, east, and west—following Feng Shui. These directions are used to refer to the front (South), back (North), left (East), and right (West) sides of structures. For instance, the main gate of the HIC is named “Ngọ Môn” (午門), which can be translated as the “Southern Main Gate” (Figure 51).

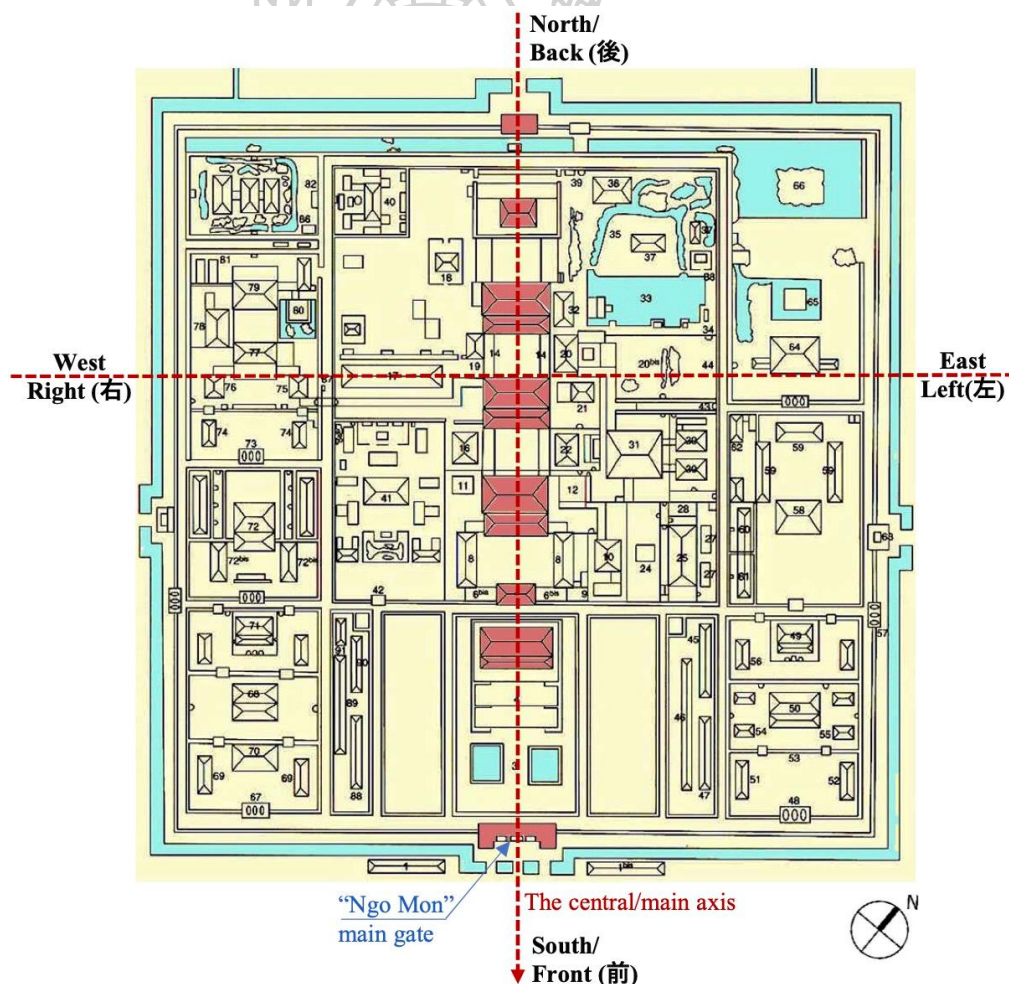


Figure 51: The central/main axis and directions of Hue Imperial City
(Source: *The map CXXXVII in Laborde (1928, pp. 153-162)*)

Furthermore, an examination of the layout of the three enclosed walls of the Hue Citadel shows that they share the same central axis and

orientation. The internal spatial organization is orderly and symmetrical along this axis, reflecting the Confucian notion of a “cosmic order”, in which power is centralized in the Emperor. This corresponds with the Confucian model of state governance. Thus, the central axis plays a crucial role in the overall planning of the HIC and the Forbidden City, the administrative core of the Nguyen Dynasty (Figure 51). Accordingly, the Dynasty’s most important buildings were placed along this axis (in red color, Figure 51), facing South. At the same time, the functional zones to the left and right were arranged symmetrically across it.

2.5 Summary of the history of the Nguyen Dynasty and Hue Imperial City

In this chapter, the study clarifies the historical context of the Nguyen Dynasty within the development of the country’s history, thereby elucidating important content related to the research on the HIC:

(1) Two significant historical periods of the Nguyen Dynasty include the independent feudal period (1802–1883) and the French colonial period (1883–1945). During the independent Nguyen period, the HIC was primarily designed and constructed in two phases under Emperors Gia Long and Minh Mang;

(2) The Nguyen Dynasty was influenced by Confucian ideology and Feng Shui principles in the design of the HIC, which established the important role of the North–South central axis in the overall layout and the main orientation of the HIC;

(3) An overview of traditional Vietnamese architecture, in which the Hue royal architecture represents the imperial architecture of independent feudal Vietnam and has preserved many values to the present day.

The study results provide a theoretical foundation for further in-depth examination of the traditional architecture of the Nguyen Dynasty and the principles of spatial layout in the HIC site plan.

Chapter 3

Site Plan of Hue Imperial City and Its Evolution

Based on the data collected in Section 1.2, this study synthesizes all relevant information about the buildings within the Hue Imperial City (HIC), including their construction timelines, locations, functions, main structural characteristics, materials, and architectural style. However, the HIC architecture evolved during 143 years, spanning 13 Emperors and two distinct historical periods (Section 2.1.3). How did the number of buildings, their locations, or dominant architectural styles evolve over different dynastic periods? Clarifying the developmental periods and assessing the architecture in each period is crucial for identifying the original period of Nguyen Dynasty architecture. Therefore, this chapter analyzes and evaluates the architectural transformations of the HIC site plan through illustrated maps showing the presence of buildings. The study results provide a comprehensive evaluation of architectural changes across the site plan for 143 years and identify the golden age of traditional architecture within the HIC. This is a scientific foundation for determining the study period and database for studying traditional architecture in the HIC.

3.1 Site plan of Hue Imperial City during the periods based on the historical documents

To study the buildings that once existed in the HIC, this study primarily relies on historical data documented by the Nguyen Dynasty, which serves as the most reliable scientific basis. For certain missing information or records not documented and published by the Nguyen Dynasty, this study incorporates prior research findings, including the archaeological results, previous studies (both domestic and international), historical photographs, and verification through digitized drawings from research projects in collaboration with the Hue

Monuments Conservation Center (see Section 1.2), along with site surveying by the author.

Based on the above data, the study conducted a comprehensive statistical analysis to examine the locations of buildings and their construction period of 143 years. The initial results reveal that the principle of spatial organization remained consistent in concept from the first to the thirteenth reign. The majority of buildings were constructed during the second reign - the Minh Mang period. Later reigns contributed to this period by constructing buildings in vacant areas (such as Figure 52, positions 81, 82, 106–110, 60–65) or by building new structures on the foundations of previous ones (such as positions 2, 72, 86, 87, 91, 117, and 122).

The Thieu Tri and Tu Duc periods share similarities in that both focused on adding buildings, thereby making the HIC site plan more complete. As such, this study categorizes these two reigns as part of a single architectural development period. After the Tu Duc period, the Nguyen Dynasty entered the French colonial period. During the reigns of Duc Duc to Dong Khanh, historical records indicate that there were no significant architectural changes due to political instability, resulting in a lack of focus on construction. From the reign of Thanh Thai to Bao Dai, architecture underwent a shift to new styles and construction materials. The Thanh Thai to Duy Tan period marked the beginning of this stylistic transition and is therefore grouped into a single period. In contrast, the Khai Dinh to Bao Dai period represents a complete transformation.

Figure 52 provides a comprehensive overview of the positions of all buildings that once existed within the HIC throughout its key historical periods.

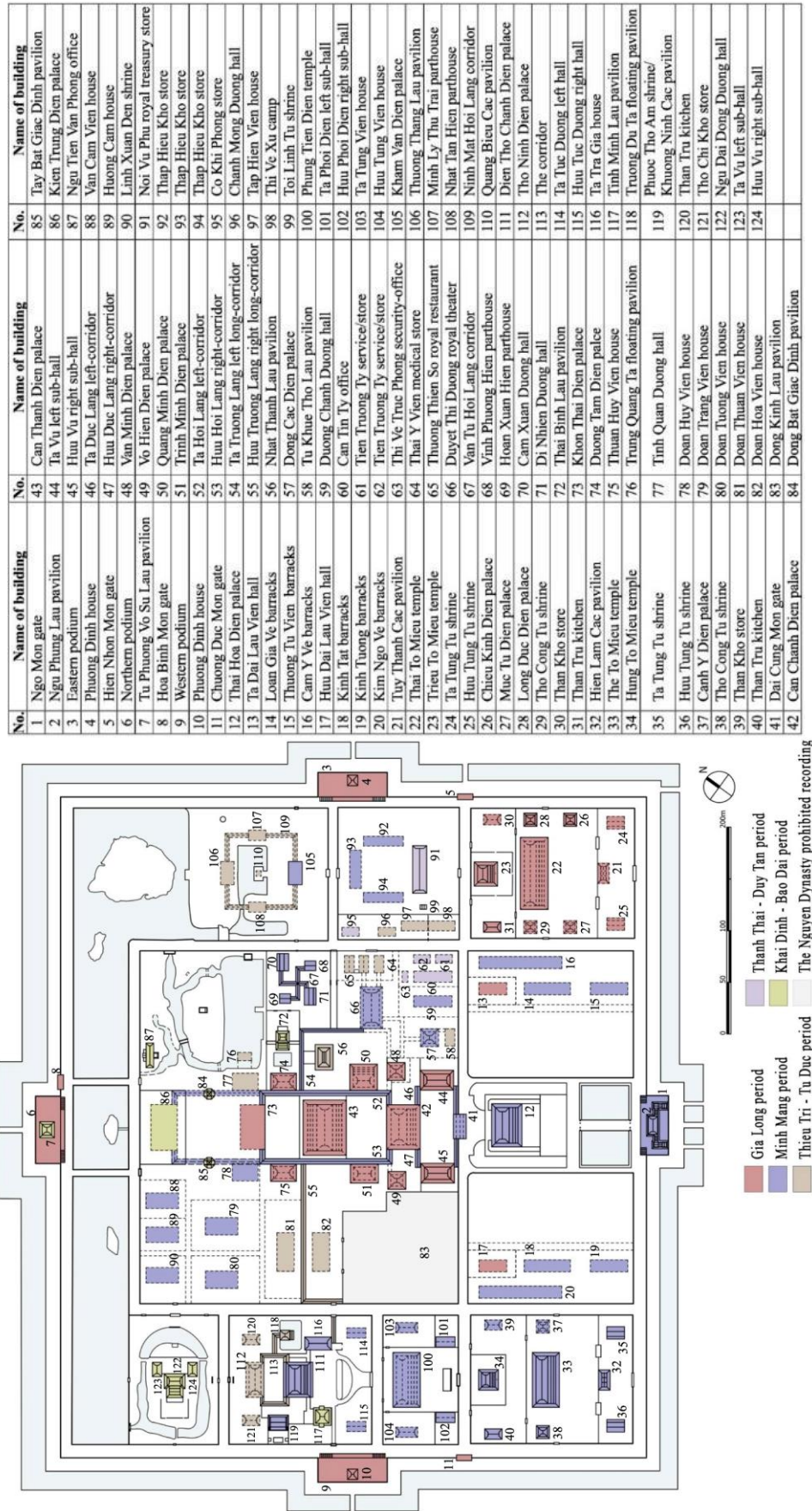


Figure 52: The modification of Hue Imperial Architecture through the periods (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Note: According to historical documents, the buildings shown with dashed lines once existed in the HIC but have since been destroyed or fallen into ruin, so their exact location and dimensions are uncertain (except for locations 22, 24, 25, 27, 41, 42, 43, 48, 57, 75, 99, 100, and 101, where the foundations of the structures remain).

3.1.1 Gia Long period (1802-1820)

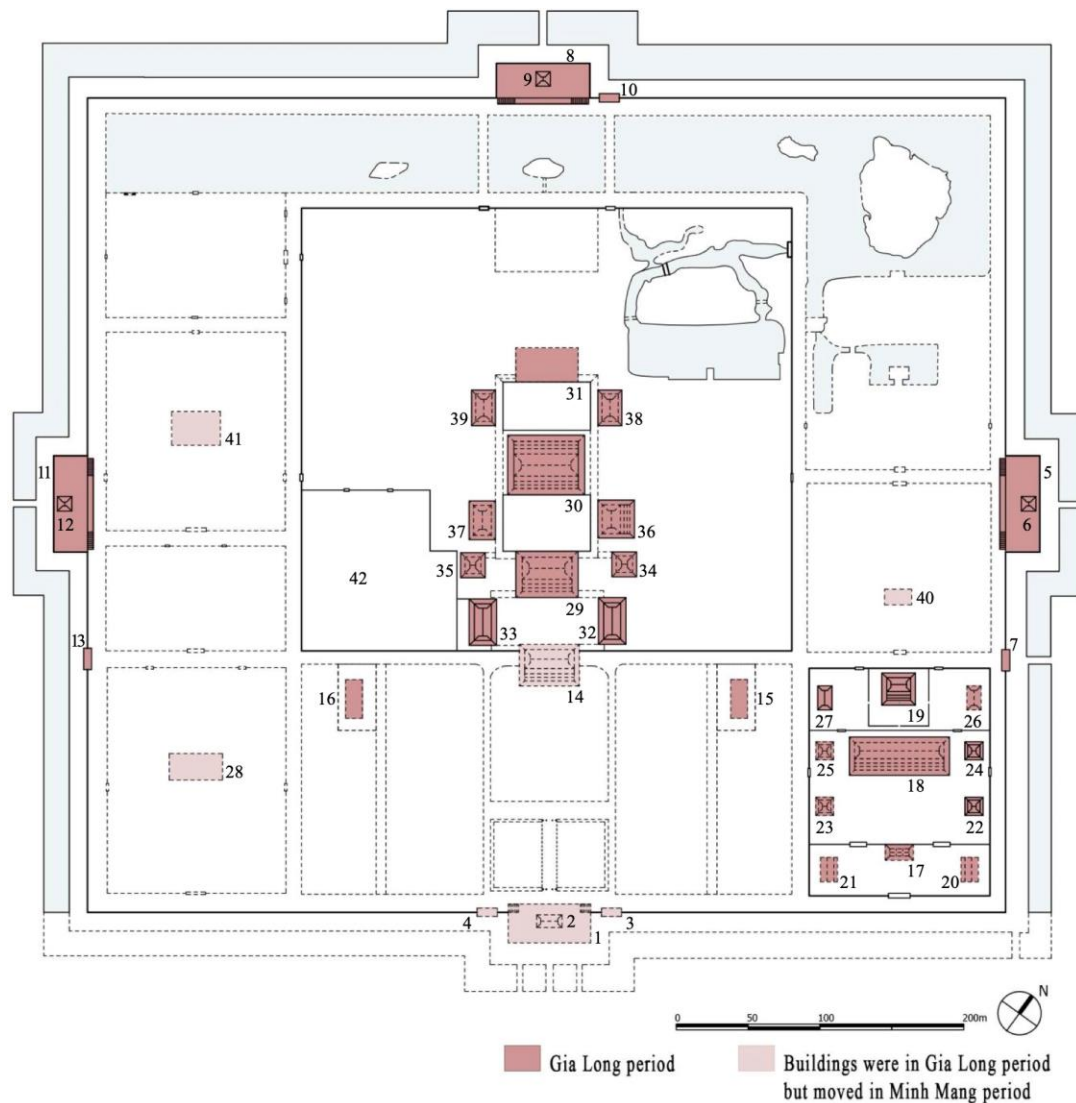
The HIC was shaped in size and position by Emperor Gia Long in 1803. The central axis ran in a North-South direction, with the primary orientation facing South. Approximately 42 large and small buildings were built during this period (Figure 53) (The Cabinet of Nguyen Court, 1993a, pp. 20-37). Notably, the ancestral worship area of the Nguyen Dynasty (dedicated to the nine Nguyen Lords) in the “Thai Mieu” temple area, from positions 17 to 27 (Figure 53), was the most fully built and completed section, consisting of 11 buildings (The National Department of History of Nguyen Dynasty, 1960, pp. 25-26). Other worshiping areas were built by later Emperors following the specifications of the “Thai Mieu” temple area’s specifications (The National Department of History of Nguyen Dynasty, 2007a, pp. 124, 129, 700).

During this period, the Forbidden City established the size and location of the main buildings along the central axis, including the “Thai Hoa Dien” palace (position 14, which was later relocated about 50 meters forward during the Minh Mang period) (The Cabinet of Nguyen Court, 1993a, p. 40), “Can Chanh Dien” palace (position 29), “Can Thanh Dien” palace (position 30), and “Khon Thai Dien” palace (position 31). Although some areas in the HIC were not fully built during the Gia Long period, and the exact perimeter remains unknown, the functions of certain areas were already defined, such as the area with position 41, which was designated as the residence for the Emperor’s mother, and the area with position 28, which was arranged as a site for worshiping Emperor Gia Long’s parents and later became a place for worshiping deceased Emperors of the Nguyen Dynasty.

At the center of each of the four HIC walls, four podiums were designed with rectangular plans, elevated foundations, and projected

outward from the HIC walls (positions 1, 5, 8, 11). The main gates on the East, West, and North sides were placed close to these podiums (positions 7, 10, 13), while the Southern side featured two main gates (positions 3, 4). Guardhouses were built on the Eastern, Western, and Northern podiums (positions 6, 9, 12). On the Southern podium stood the “Can Nguyen Dien” palace (position 2), where the Emperor attended major ceremonies and could observe the front courtyard where troops and civilians assembled.





No.	Name of building	No.	Name of building	No.	Name of building
1	Southern podium	15	Vo Cong Thu hall	29	Can Chanh Dien palace
2	Can Nguyen Dien palace	16	Van Cong Thu hall	30	Can Thanh Dien palace
3	Ta Doan Mon left gate	17	Tuy Thanh Cac pavilion	31	Khon Nguyen Dien palace
4	Huu Doan Mon right gate	18	Thai To Mieu temple	32	Ta Vu left sub-hall
5	Eastern podium	19	Trieu To Mieu temple	33	Huu Vu right sub-hall
6	Phuong Dinh house	20	Ta Tung Tu shrine	34	Ta Phuong Duong hall
7	Hien Nhon Mon gate	21	Huu Tung Tu shrine	35	Huu Phuong Duong hall
8	Northern podium	22	Chieu Kinh Dien palace	36	Quang Minh Dien palace
9	Tu Thong Dinh house	23	Muc Tu Dien palace	37	Trinh Minh Dien palace
10	Hoa Binh Mon gate	24	Long Duc Dien palace	38	Duong Tam Dien palce
11	Western podium	25	Tho Cong Tu shrine	39	Thuan Huy Vien house
12	Phuong Dinh house	26	Than Kho store	40	Hoang Nhan Dien temple
13	Chuong Duc Mon gate	27	Than Tru kitchen	41	Truong Tho Cung residence
14	Thai Hoa Dien palace	28	Hoang Khao Mieu temple	42	Dong Kinh Lau pavilion

Figure 53: The site plan of Hue Imperial City during the Gia Long period
 (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

3.1.2 Minh Mang period (1820-1841)

Almost all the buildings in the HIC were built and shaped during the Minh Mang period. Emperor Minh Mang also followed Emperor Gia Long's layout principle: the main direction was South, and both the HIC and each specific area had a main axis running North-South. (The Cabinet of Nguyen Court, 1993a, pp. 29-30). The main buildings were always arranged along the main axis in each area, while auxiliary buildings were built in the East and West (Figure 54).

With around 63 additional constructions built during the Minh Mang period (Figure 54) (The Cabinet of Nguyen Court, 1993a, pp. 37-41; The National Department of History of Nguyen Dynasty, 1960, pp. 17-29), especially in 1833, the “Ngoai trieu” court area and the “Nam Khuyet Dai” southern podium were the most significant changes. “Thai Hoa Dien” palace, originally located at the central edge of the south wall of the Forbidden City during the Gia Long period (Figure 53, position 41), was moved further south to position 12 (Figure 54), thereby separating the “Ngoai Trieu” court area into an independent area from the Forbidden City. The old position of the “Thai Hoa Dien” palace was replaced by the “Dai Cung Mon” gate (Figure 54, position 41). “Nam Khuyet Dai” southern podium and “Can Nguyen Dien” palace, along with the main gate facing the South (Figure 53, positions 3-4), were removed and replaced by the “Ngo Mon” gate and the “Ngu Phung Lau” pavilion (Figure 54, positions 1-2) (The National Department of History of Nguyen Dynasty, 2007c, pp. 460-461).

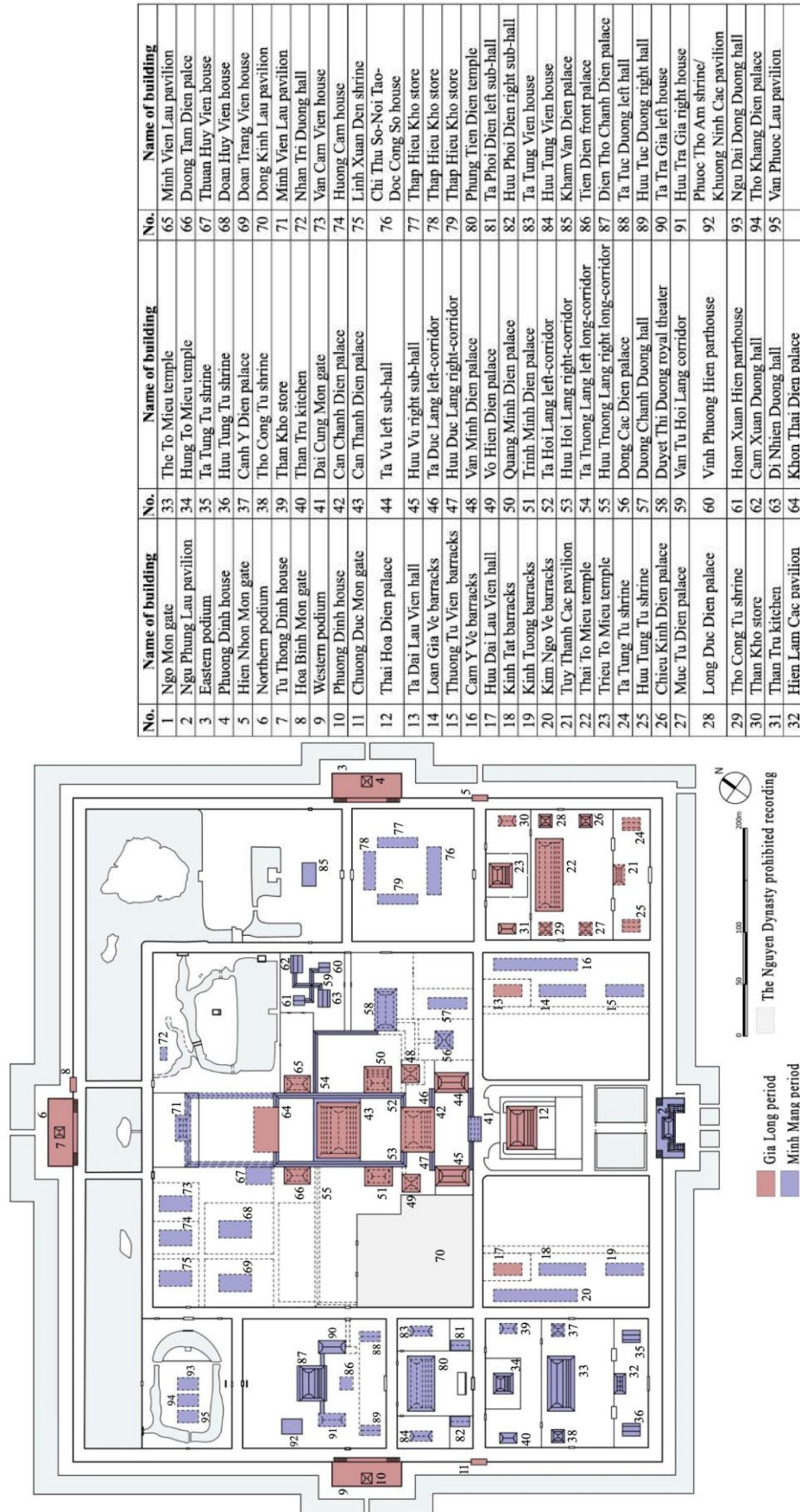


Figure 54: The site plan of Hue Imperial City during the Minh Mang period
 (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

The central layout of the HIC wall during the Gia Long period conformed to the rule of arranging four podiums (Figures 53, positions 1, 5, 8, 11, and Figure 55). However, by the Minh Mang period, the form of the HIC wall consisted of three podiums and one main gate, known as the “Ngo Mon” Gate (Figure 54, position 1, and Figure 56). This transformation could be explained by the historical context: during the early Gia Long period, when the country had just gained independence and was still plagued by internal conflicts, the design of all four sides of the HIC wall adhered to military and defensive principles. By the Minh Mang period, as the country had become more stable, the original main façade of the HIC wall no longer suited the architectural character of an imperial court. Therefore, Minh Mang changed both its form and its designation.



a) East podium

b) West podium

(Source: <https://giaoducthoidai.vn/hoan-thanh-bao-ton-di-tich-dong-khuyet-dai-post238091.html>)

(Source: Hieu Truong (google map 2023))



c) North podium

(Source: <http://huetourism.gov.vn/chiem-nguong-bon-cua-vao-hoang-thanh-hue/?pid=MjMzNzJ8Y3NkbGRs0>)

Figure 55: Type of podium of Hue Imperial City

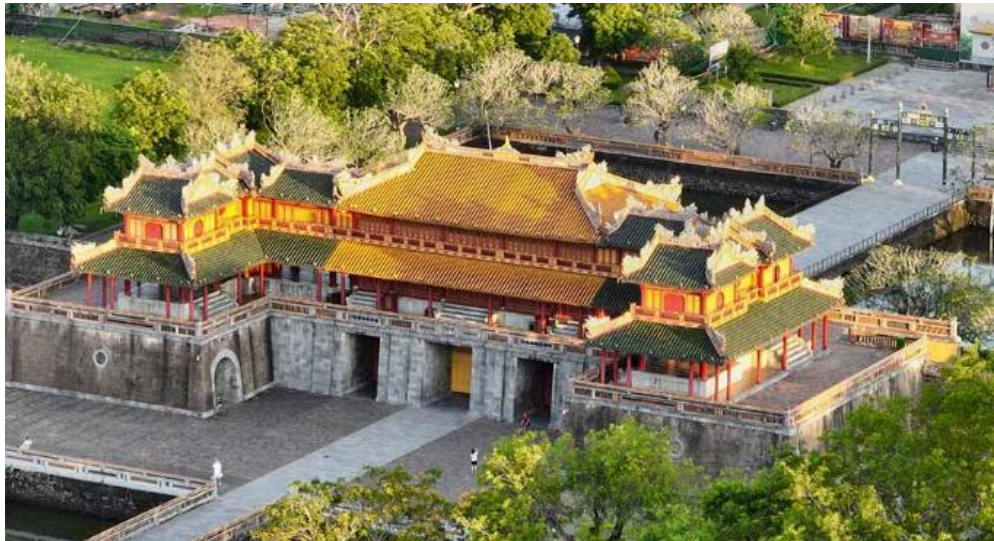


Figure 56: Type of main gate of Hue Imperial City – “Ngo Mon” gate
 (Source: <https://newasiatours.com/hue-imperial-city.html>)

Thus, after the two periods of Gia Long and Minh Mang, approximately 105 buildings were built within the HIC. The main functional areas were clearly defined in scale and building layout principles. It can be said that the HIC was conceptualized and functionally shaped during the Gia Long period, while the Minh Mang period marked the time when design and construction became standardized.

3.1.3 Thieu Tri period to Tu Duc period (1841-1883)

By the Thieu Tri period, most of the buildings in the HIC had been completed, thereby forming the overall architectural appearance of the HIC. Only a few minor areas needed auxiliary buildings and repairs to renovate the degraded buildings (The Cabinet of Nguyen Court, 1993a, pp. 41-44). A notable feature of the Thieu Tri period was the construction and completion of the “Co Ha Vien” royal garden area (positions 97-100) (The Cabinet of Nguyen Court, 1993a, pp. 31-32). During the Minh Mang period, only the “Kham Van Dien” palace was built (position 97). During the Thieu Tri period, numerous auxiliary buildings were constructed to

cater to the Emperor's needs for sightseeing and relaxation, showcasing a variety of architectural styles, including pavilions, halls, houses, and corridors (Thai, 1960, pp. 60-62). The buildings included “Quang Bieu Cac” pavilion (position 102), “Thuong Thang Lau” pavilion (position 98), “Minh Ly Thu Trai” parthouse (position 99), “Nhat Than Hien” parthouse (position 100), and a corridor around the buildings called “Ninh Mat Hoi Lang” corridor (position 101) (Figure 57).

During the Tu Duc period, the HIC architecture was completed, and efforts continued to repair and restore damaged and degraded buildings (The Cabinet of Nguyen Court, 1993a, pp. 44-45). Some additional auxiliary buildings were constructed on vacant land, including the “Thai Y Vien” medical store and the “Thuong Thien So” royal restaurant (positions 60, 61) (The National Department of History of Nguyen Dynasty, 1960, p. 25). The notable architectural change during this period was the renovation of the Empress Dowager's residence. While buildings on the main north-south axis remained unchanged, an additional main building was constructed to the north, named “Tho Ninh Dien” palace (position 104), serving as the living and resting place of the Empress Dowager. Other auxiliary buildings were constructed, including the “Than Tru” kitchen and “Tho Chi Kho” store (positions 112, 113) (The Cabinet of Nguyen Court, 1993a, pp. 30-31), and the “Truong Du Ta” pavilion (position 110) (a resting place for the Empress Dowager). A system of long corridors (position 55) connected the “Can Thanh Dien” palace in the Forbidden City, allowing the Emperor to visit the Empress Dowager without exposure to the sun and rain. Thus, most of the architectural appearance of this residence and the remaining extended corridor system were formed during the Tu Duc period.

No.	Name of building	No.	Name of building	No.	Name of building
1	Ngo Mon gate	40	Than Tru kitchen	79	Dong Kinh Lau pavilion
2	Ngu Phung Lau pavilion	41	Dai Cung Mon gate	80	Minh Vien Lau pavilion
3	Eastern podium	42	Can Chanh Dien palace	81	Nhan Tri Duong hall
4	Phuong Dinh house	43	Can Thanh Dien palace	82	Van Cam Vien house
5	Hien Nhon Mon gate	44	Ta Vu left sub-hall	83	Huong Cam house
6	Northern podium	45	Huu Vu right sub-hall	84	Linh Xuan Den shrine
7	Tu Thong Dinh house	46	Ta Duc Lang left-corridor	85	Chi Thu So-Noi Tao-Doe Cong So house
8	Hoa Binh Mon gate	47	Huu Duc Lang right-corridor	86	Thap Hieu Kho store
9	Western podium	48	Van Minh Dien palace	87	Thap Hieu Kho store
10	Phuong Dinh house	49	Vo Hien Dien palace	88	Thap Hieu Kho store
11	Chuong Duc Mon gate	50	Quang Minh Dien palace	89	Chanh Mong Duong hall
12	Thai Hoa Dien palace	51	Trinh Minh Dien palace	90	Tap Hien Vien house
13	Ta Dai Lau Vien hall	52	Ta Hoi Lang left-corridor	91	Thi Ve Xu camp
14	Loan Gia Ve barracks	53	Huu Hoi Lang right-corridor	92	Phung Tien Dien palace
15	Thuong Tu Vien barracks	54	Ta Truong Lang left long-corridor	93	Ta Phoi Dien left sub-hall
16	Cam Y Ve barracks	55	Huu Truong Lang right long-corridor	94	Huu Phoi Dien right sub-hall
17	Huu Dai Lau Vien hall	56	Nhat Thanh Lau pavilion	95	Ta Tung Vien house
18	Kinh Tat barracks	57	Dong Cac Dien palace	96	Huu Tung Vien house
19	Kinh Tuong barracks	58	Tu Khuc Tho Lau pavilion	97	Kham Van Dien palace
20	Kim Ngo Ve barracks	59	Duong Chanh Duong hall	98	Thuong Thang Lau pavilion
21	Tuy Thanh Cac pavilion	60	Thai Y Vien medical store	99	Minh Ly Thu Trai parthouse
22	Thai To Mieu temple	61	Thuong Thien So roval restaurant	100	Nhat Tan Hien parthouse
23	Trieu To Mieu temple	62	Duyet Thi Duong royal theater	101	Ninh Mat Hoi Lang corridor
24	Ta Tung Tu shrine	63	Van Tu Hoi Lang corridor	102	Quang Bieu Cac pavilion
25	Huu Tung Tu shrine	64	Vinh Phuong Hien parthouse	103	Dien Tho Chanh Dien palace
26	Chieu Kinh Dien palace	65	Hoan Xuan Hien parthouse	104	Tho Ninh Dien palace
27	Muc Tu Dien palace	66	Cam Xuan Duong hall	105	The corridor
28	Long Duc Dien palace	67	Di Nchien Duong hall	106	Ta Tuc Duong left hall
29	Tho Cong Tu shrine	68	Thanh Ha Tho Lau pavilion	107	Huu Tuc Duong right hall
30	Than Kho store	69	Khon Thai Dien palace	108	Ta Tra Gia left house
31	Than Tru kitchen	70	Duong Lam Dien palce	109	Huu Tra Gia right house/Thong Minh Duong hall
32	Hien Lam Cac pavilion	71	Thuan Huy Vien house	110	Phuoc Tho Am shrine/Truong Du Ta floating pavilion
33	The To Mieu temple	72	Trung Quang Ta floating pavilion	111	Phuoc Tho Am shrine/Khuong Ninh Cac pavilion
34	Hung To Mieu temple	73	Tinh Quan Duong hall	112	Than Tru kitchen
35	Ta Tung Tu shrine	74	Doan Huy Vien house	113	Tho Chi Kho store
36	Huu Tung Tu shrine	75	Doan Trang Vien house	114	Ngu Dai Dong Duong hall
37	Canh Y Dien palace	76	Doan Tuong Vien house	115	Tho Khang Dien palace
38	Tho Cong Tu shrine	77	Doan Thuan Vien house	116	Van Phuoc Lau pavilion
39	Than Kho store	78	Doan Hoa Vien house		

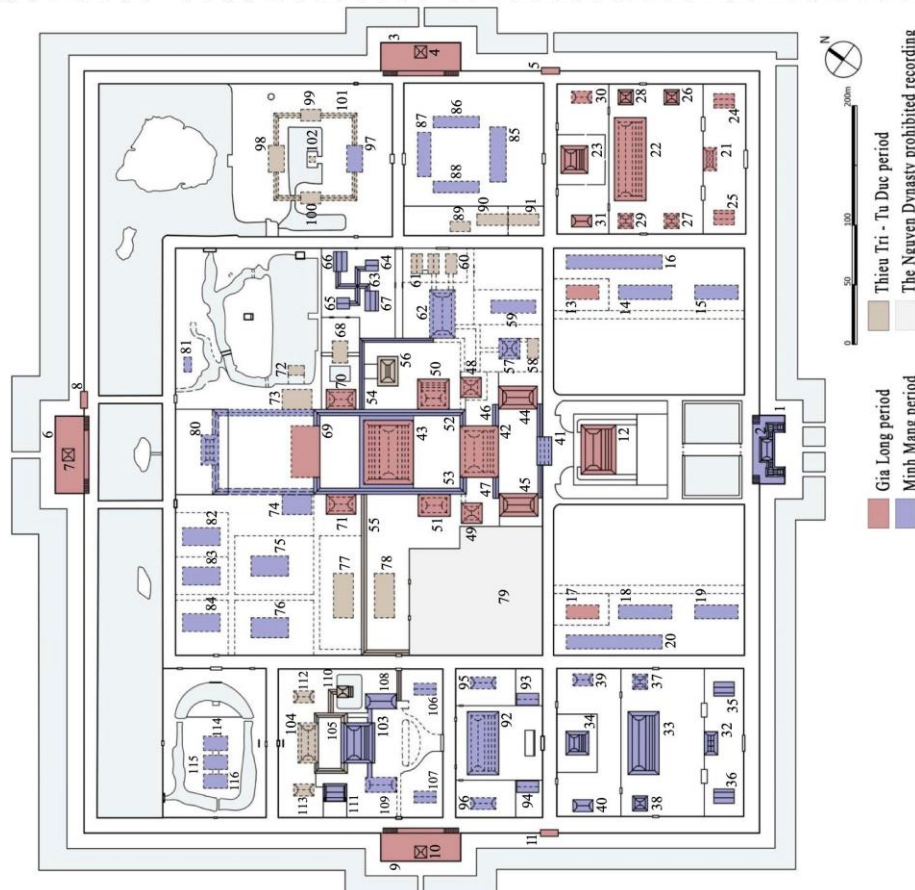


Figure 57: The site plan of Hue Imperial City during the Thieu Tri - Tu Duc period (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

3.1.4 Thanh Thai period to Duy Tan period (1889-1916)

In 1884, the Nguyen Dynasty officially recognized the French rule over the country, leading to political instability during the period of Duc Duc to Dong Khanh (1883–1889). The reigning Emperors during this time ruled for very short periods: Emperor Duc Duc reigned for only three days, Emperor Hiep Hoa for four months, Emperor Kien Phuc for eight months, Emperor Ham Nghi for eleven months, and Emperor Dong Khanh for three years. As a result, architecture during this period saw no significant changes, and therefore, this period was not included in the study. Notable architectural changes in the HIC resumed during the Thanh Thai – Duy Tan period (1889–1916). However, the prolonged instability of the Nguyen dynasty also led to the suspension of construction activities. Buildings in the HIC were rarely repaired or renovated, and some were even removed, including notable buildings such as the “Tuy Thanh Cac” pavilion (Figure 57, position 21), “Tho Khang Dien” palace (position 115), “Van Phuoc Lau” pavilion (position 116), and “Co Ha Vien” royal garden area (positions 98-102) (The National Department of History of Nguyen Dynasty, 1960, pp. 23-26).



Figure 58: The site plan of Hue Imperial City during the Thanh Thai – Duy Tan period (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Overall, the number of new buildings in this period was very small, totaling about six buildings on the old sites (Figure 58, positions 59, 60, 61, 62, 83, 88), resulting in minimal changes to the HIC site plan. The number of buildings removed was greater, resulting in a reduced total number of buildings on the site plan. The building that marked the architectural transformation during this period was the “Noi Vu Phu” royal treasury store (Figure 59), which featured a design style, materials, and structure that shifted to European style (The National Department of History of Nguyen Dynasty, 1960, pp. 71-72). This building still exists, although it has significantly deteriorated, while the other buildings have been destroyed.



Figure 59: “Noi Vu Phu” royal treasury store (2020)
(Source: Author)

3.1.5 Khai Dinh period to Bao Dai period (1916-1945)

During the Khai Dinh period, there were not many new constructions, approximately eight buildings (Figure 62, positions 7, 71, 83, 84, 85, 113, 114, 115) (Nguyen, 1997, pp. 102-105; Thai, 1960, pp. 45-71). The most typical one was “Kien Trung Dien” palace (position 85), formerly “Minh Vien Lau” pavilion under the Minh Mang period and “Du Cuu Lau” pavilion under the Duy Tan period, featuring European-style interior and exterior designs (Phan, 2013, pp. 226-231; Thai, 1960, pp.

66-67) (Figure 60). This building marked a shift in architectural style along the main axis of the HIC compared to the traditional period of the Nguyen Dynasty. However, there were no changes in the position layout within the HIC site plan.

During the Bao Dai period - the last period of the Nguyen Dynasty, many auxiliary buildings gradually disappeared; while the main buildings were still maintained, only about two new buildings (Figures 60, 61, and Figure 62, positions 86, 108) were built, primarily out of functional necessity (Phan, 2013, p. 111; Vietnam National Museum of History & Hue Monuments Conservation Center (HMCC), 1999, p. 13). These buildings also featured European architectural style. However, techniques and details were not as elaborate as those of the “Kien Trung Dien” palace in the Khai Dinh period (Figure 60).



Figure 60: “Kien Trung Dien” palace (1930s)

(Source: <https://kienthuc.net.vn/kho-tri-thuc/anh-hiem-ve-cung-dien-khung-cua-vua-khai-dinh-1270021.html>)



Figure 61: “Tinh Minh Lau” pavilion (2020)

(Source: Author)

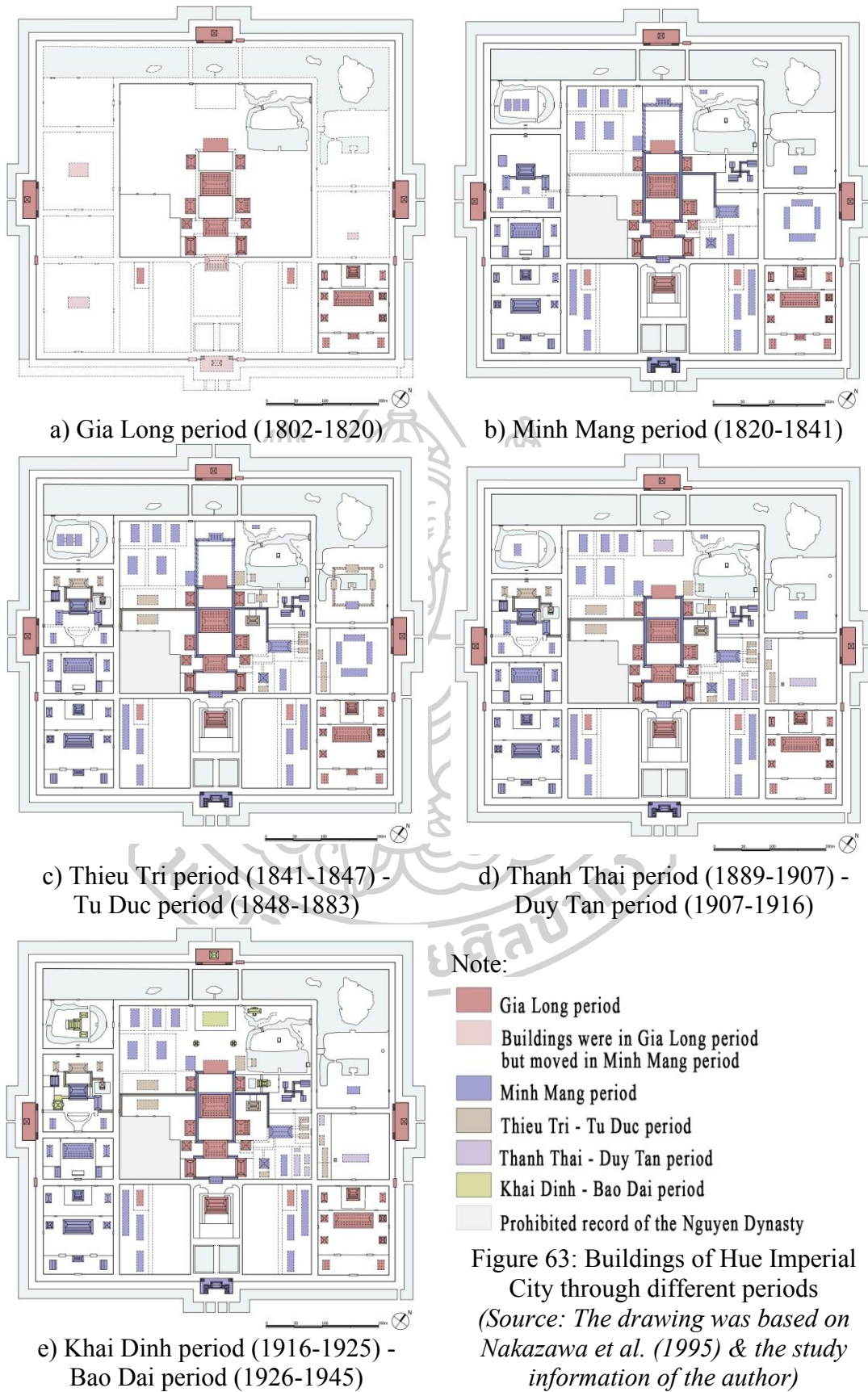


Figure 62: The site plan of Hue Imperial City during the Khai Dinh - Bao Dai period (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Thus, approximately ten new buildings were constructed during the period from Khai Dinh to Bao Dai. These buildings were built on the foundations of older structures, resulting in minimal changes to the site plan compared to previous periods. However, both the architectural style and construction techniques underwent a complete transformation.

To comprehensively compare the different periods, Figure 63 once again summarizes the five main transformation periods of the buildings on the HIC site plan. This reveals a significant increase in the number of buildings from the Gia Long period to the Minh Mang period, with this strong development forming the main foundation, followed by additional buildings during the Thieu Tri – Tu Duc period. Subsequently, there was a decline in the number of buildings and a shift in architectural style. These changes closely align with the historical developments of the Nguyen Dynasty. This analytical result serves as a scientific basis for evaluating the architectural development on the HIC site plan.





3.2 Evolution of the site plan of Hue Imperial City

Based on the analysis results in section 3.1, it can be seen that the area of the HIC and the Forbidden City has not changed; only the number of buildings in each area has varied. Some areas to the East, West, and South of the Forbidden City have had clear boundaries since the Minh Mang period. However, the central North-South axis and the South orientation of the HIC have remained unchanged since the Gia Long period.

The site plan of the Nguyen Dynasty remained consistent throughout these five periods, including the scale, axis, orientation, and arrangement of the ancestral worship areas set by Emperor Gia Long. Historical records show that the most coordinated and numerous constructions occurred during the Minh Mang period. Thereafter, the site plan was expanded, completed, and reached its highest number of buildings during the Tu Duc period. From the Gia Long to Tu Duc period, the country remained unified and largely unaffected by European influences, resulting in uniformity in architectural style, materials, and decoration. During the Thanh Thai to Duy Tan periods and Khai Dinh to Bao Dai periods, architectural design styles transformed, though the positioning of buildings still followed the earlier principles. It can be said that understanding the layout principles of the HIC site plan is essentially a rediscovery of the design concepts established during the Minh Mang period, which were based on the foundational ideas and scale-shaped during the Gia Long period.

Thus, the HIC site plan had undergone five periods of modification, including:

- *First*, the Gia Long period (1802-1820), which shaped the site plan and overall scale;
- *Second*, the Minh Mang period (1820-1841), which involved reforms and large-scale construction;

- *Third*, the Thieu Tri – Tu Duc periods (1841-1883), during which the overall scale was completed and buildings were restored;
- *Fourth*, the Thanh Thai – Duy Tan periods (1889-1916), which introduced European architectural style and reduced the number of traditional buildings;
- *Fifth*, the Khai Dinh – Bao Dai periods (1916-1945) completed the transition to European architectural style.

Due to wars and natural disasters, the number of original buildings in the HIC that still exist is about 25 percent of those from the Tu Duc period. Based on current survey results compared to previous periods, most main building sites still have at least one representative building, which can be chosen as a case study for the HIC architecture system.

3.3 Discussion of the golden age of the site plan

The analyses above indicate that the scale of the area and orientation of the HIC remained unchanged throughout 143 years, and were established by Emperor Gia Long in 1803. However, during the Gia Long period, while playing a crucial role in shaping the design of the HIC, the buildings were not yet entirely constructed. Key characteristics of this period include defining the perimeter and shape of the HIC and the Forbidden City, establishing the central axis of the HIC (where the most important Nguyen Dynasty buildings are located), and determining the orientation of the HIC. Additionally, through the complete construction of the ancestral worship area of the Nguyen Dynasty (Figure 52, positions 21-31), Emperor Gia Long outlined the specifications for the worship areas within the HIC.

The Minh Mang period not only inherited the general plan from the Gia Long period but also expanded the HIC by increasing the number of buildings and establishing detailed layout principles for the architecture system of the

Nguyen Dynasty. Thus, studying the layout principles of the HIC reveals the design concepts established during the Minh Mang period, which were based on the area scale and ideas from the Gia Long period. Subsequently, site planning was further developed, resulting in the highest number of buildings during the Tu Duc period. Historical documents indicate that the structures built from the time of Emperor Gia Long to Tu Duc featured traditional wooden frameworks and tiled roofs, creating a cohesive architectural style throughout this period.

After the Tu Duc period, particularly following the invasion of the French colonialists beginning in 1858, the political situation of the Nguyen Dynasty underwent significant upheaval, resulting in no architectural changes from the Duc to the Dong Khanh period. The Thanh Thai – Duy Tan period marked the beginning of a transition in construction techniques within the HIC, shifting from traditional wooden structures to reinforced concrete buildings. As a result, from the Thanh Thai to Bao Dai period, there was a gradual move towards European architectural styles, accompanied by a decline in the number of traditional wooden buildings due to deterioration.

Thus, in terms of the architectural style of the HIC, it can be divided into two categories: the traditional Vietnamese style (from the Gia Long to Tu Duc periods) and the adapted European style (from the Thanh Thai to Bao Dai periods). The golden age of architecture occurred during the Tu Duc period when buildings exhibited a unified style and reached their highest quantity. To fully understand the original architecture of the Nguyen Dynasty, it is essential to study the periods from the Gia Long through Minh Mang to Tu Duc. This thesis focuses solely on the typology of the original Nguyen Dynasty architecture, limiting the architectural study to the period from 1802 to 1883, with an emphasis on traditional wooden structures. Consequently, architectural typology after the Tu Duc period will be excluded from the scope of the study.

Chapter 4

Architecture of Hue Imperial City

This chapter explores information about the architecture of Hue Imperial City (HIC) during the Tu Duc period (the time when the buildings reached their largest scale and during the original architectural period of the Nguyen Dynasty). Firstly, the study clarifies the main functional areas, their names, locations, and years of construction. Next, it delves into the study of structures that existed during this period, including details such as names, year of construction, functions, locations, and descriptions based on historical records, archaeology, drawings (if available), and the main structural features of the buildings. Based on this database, the thesis characterizes the structural features of Hue Imperial Architecture and examines the architectural terms used in the traditional wooden architecture of the Nguyen Dynasty. Thus, the result of this chapter is the establishment of significant architectural data valuable for identifying the typological features of the original architecture of the Nguyen Dynasty.

4.1 Functional areas of Hue Imperial City

The HIC has an almost square layout, with the southern and northern walls measuring approximately 640 meters, and the eastern and western walls around 570 meters. The HIC is divided into a checkerboard pattern, with distinct zoning between different areas. Based on historical documents from The Cabinet of Nguyen Court (1993a, pp. 20-45, 71-75, 98-103); The National Department of History of Nguyen Dynasty (1960, pp. 17-31), the previous studies by Laborde (1928, pp. 152-163); Nguyen (1997, pp. 98-105); Phan (2013, pp. 107-254); Thai (1960, pp. 45-71); and the current site survey conducted by the author, it is possible to divide the HIC site plan into ten main functional areas (Table 4 and Figures 64-65).

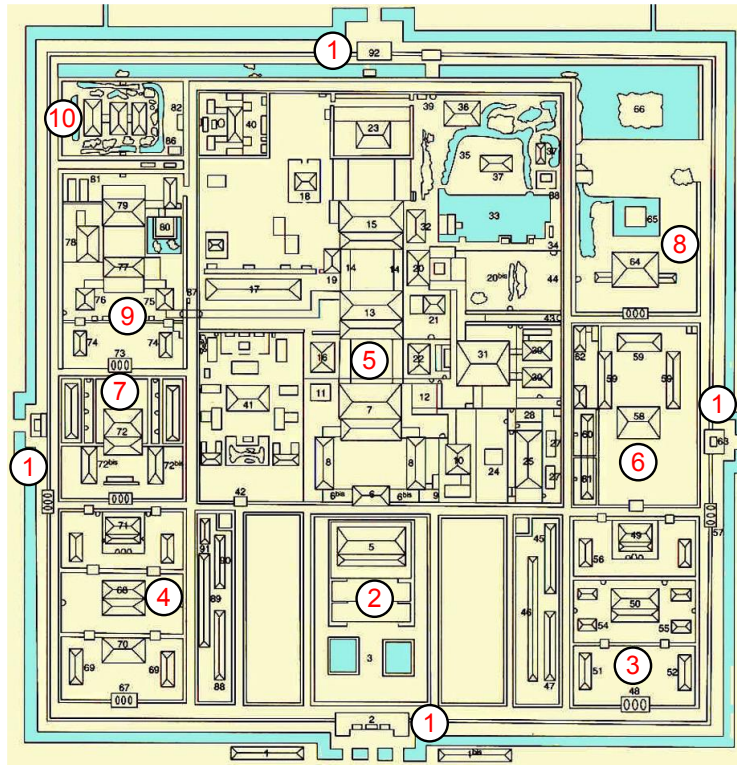
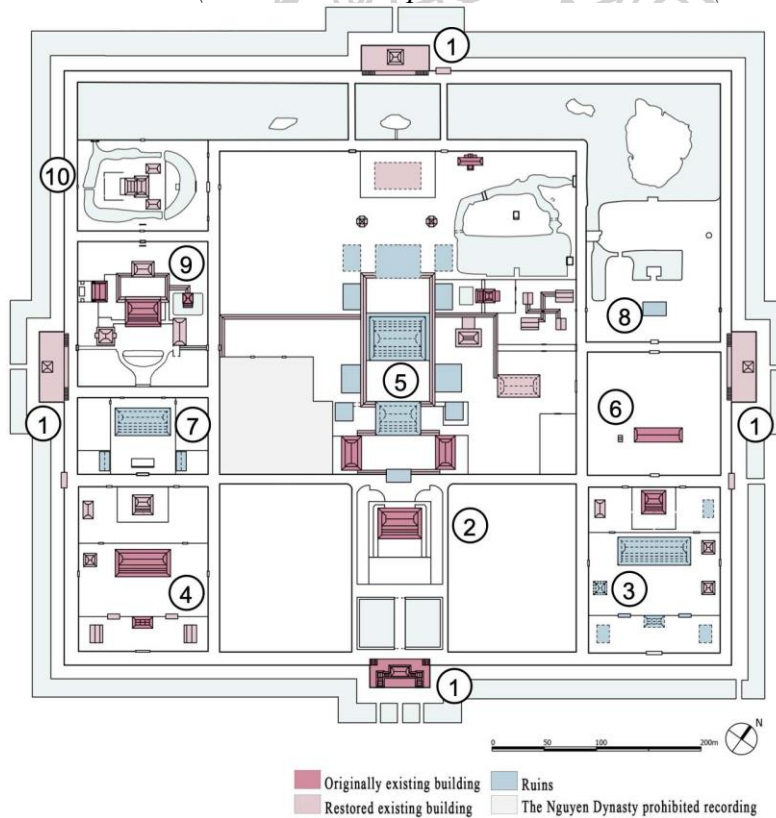


Figure 64: The site plan of Hue Imperial City, published in 1928
 (Source: *The map CXXXVII in Laborde (1928, pp. 153-162)*)



- Note:
- ① Gates and podiums
 - ② “Ngoai Trieu” court area
 - ③ “Thai Mieu” temple area
 - ④ “The Mieu” temple area
 - ⑤ “Tu Cam Thanh” forbidden city
 - ⑥ “Noi Vu Phu” royal treasury store
 - ⑦ “Phung Tien Cung” residence
 - ⑧ “Co Ha Vien” royal garden
 - ⑨ “Dien Tho Cung” residence
 - ⑩ “Truong Sanh Cung” residence

Figure 65: The site plan of Hue Imperial City in 2021
 (Source: *The drawing was based on Nakazawa et al. (1995) & the study information of the author*)

Table 4. Names and functions of the areas in Hue Imperial City

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
1	Môn và Khuyết Đài	門, 闕台	Gates and Podiums	1804	- Gate: entrance and exit; - Podium: to observe and defend.
2	Ngoại Triều	外朝	“Ngoai Trieu” Court Area	1823	Holding Grand meetings
3	Thái Miếu	太廟	“Thai Mieu” Temple Area	1804	Worship the nine Lords and the parents of the first Lord
4	Thế Miếu	世廟	“The Mieu” Temple Area	1821	Worship the Nguyen Emperors and Empresses and the parents of the first Emperor
5	Tử Cấm Thành	紫禁城	“Tu Cam Thanh” Forbidden City	1804	- A workplace for the Emperor & mandarins; - A private place for the Emperor and the royal family to live.
6	Nội Vụ Phủ	內務府	“Noi Vu Phu” royal treasure store	1839	Royal treasury and workshops
7	Phụng Tiên Cung	奉先宮	“Phung Tien Cung” Residence Area	1820	- Worship the Nguyen Emperors and Empresses; - A living area for the Emperor’s concubines after the Emperor died.
8	Cơ Hạ Viên	幾幾園	“Co Ha Vien” Royal Garden Area	1837	- A garden to relax; - Buildings for the Emperor or princes to read books or study.
9	Diên Thọ Cung	延壽宮	“Dien Tho Cung” Residence Area	1804	A living area for the Empress Dowager
10	Trường Sanh Cung	長生宮	“Truong Sanh Cung” Residence Area	1822	A living area for the Grand Empress Dowager

Except for Area 1 – Gates and Podiums and Area 2 – the “Ngoai Trieu” court area, the remaining eight functional areas are enclosed by four surrounding walls, with gates opened on all four sides: south, north, east, and west. Figure 66

illustrates the zoning of the functional areas, the orientation of the HIC, and the principles of left–right and front–back arrangement on the HIC site plan, as per the Nguyen Dynasty's compositional rules. It should be noted that the main axis of the HIC is slightly misaligned from the true north–south direction based on actual measurements; however, this orientation was still officially recognized and recorded in historical documents by the Nguyen Dynasty as having the cardinal directions of north, south, east, and west (see section 2.4.2).

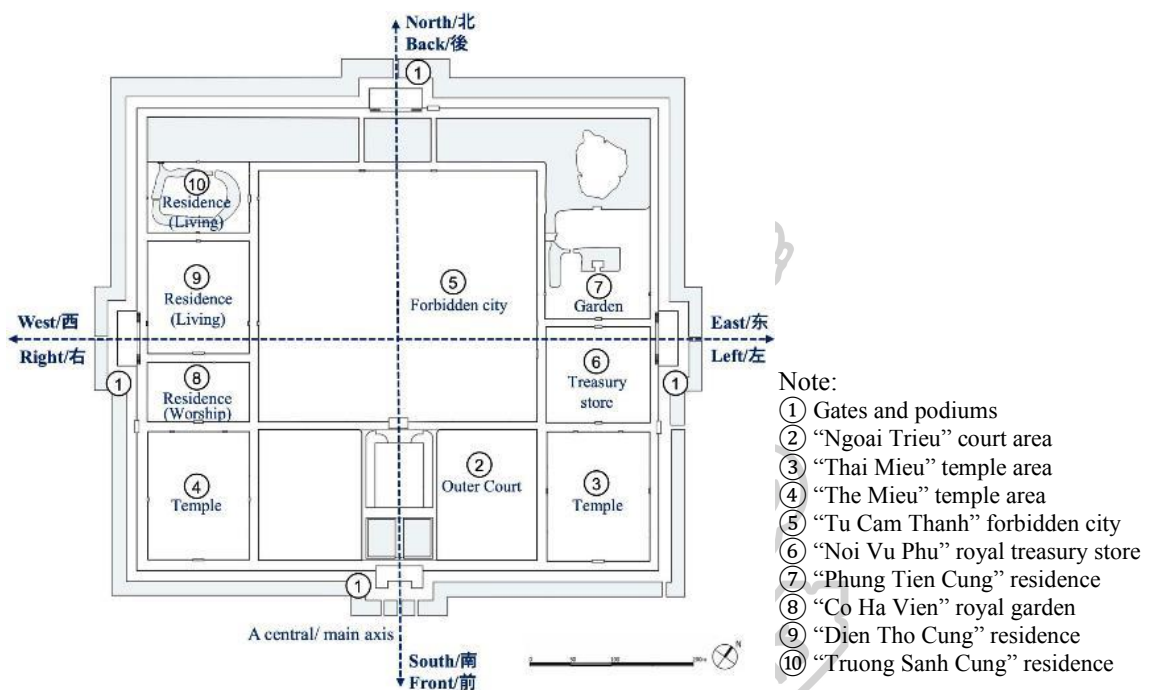


Figure 66: The main areas, central/main axis, and directions of Hue Imperial City (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

The HIC site plan divided the areas according to a checkered grid, with all functional areas enclosed by walls. The main axis of the HIC aligned with the main axis of the “Ngoai Trieu” court area (zone 2) and the Forbidden City (zone 5), along which the most important buildings were arranged on a north-south axis. Key buildings (Figure 67) included the “Ngo Mon” gate (A), “Thai Hoa Dien” palace (where important ceremonies were held) (B), “Dai Cung Mon” gate (the main gate of the Forbidden City) (C), “Can Chanh Dien” palace (the main buildings for the Emperor and his cabinet) (D), “Can Thanh Dien” palace (the

Emperor's residence) (E), “Khon Thai Dien” palace (the Empress’s residence) (F), “Kien Trung Dien” palace (a working or residential place for the Emperor and his royal family) (G), and the north podium (H). Other areas, such as those for worship, the Empress Dowager’s residence, or royal gardens (zones 3, 4, 6, 8, 9, 10) were arranged in the two areas east and west of the central axis.

Following the same principle of the central axis as in the HIC, Area 3 also demonstrates a repetition of this compositional rule. On the site plan of Area 3 (Figure 68), a central axis is found, aligned with key buildings such as the “Thai To Mieu” temple (dedicated to the worship of the Nguyen Lords) (I) and the “Hung To Mieu” temple (dedicated to the worship of parents of the first Nguyen Lord) (J). Auxiliary buildings related to ancestral worship are arranged along two parallel axes symmetrically mirrored across the central axis.

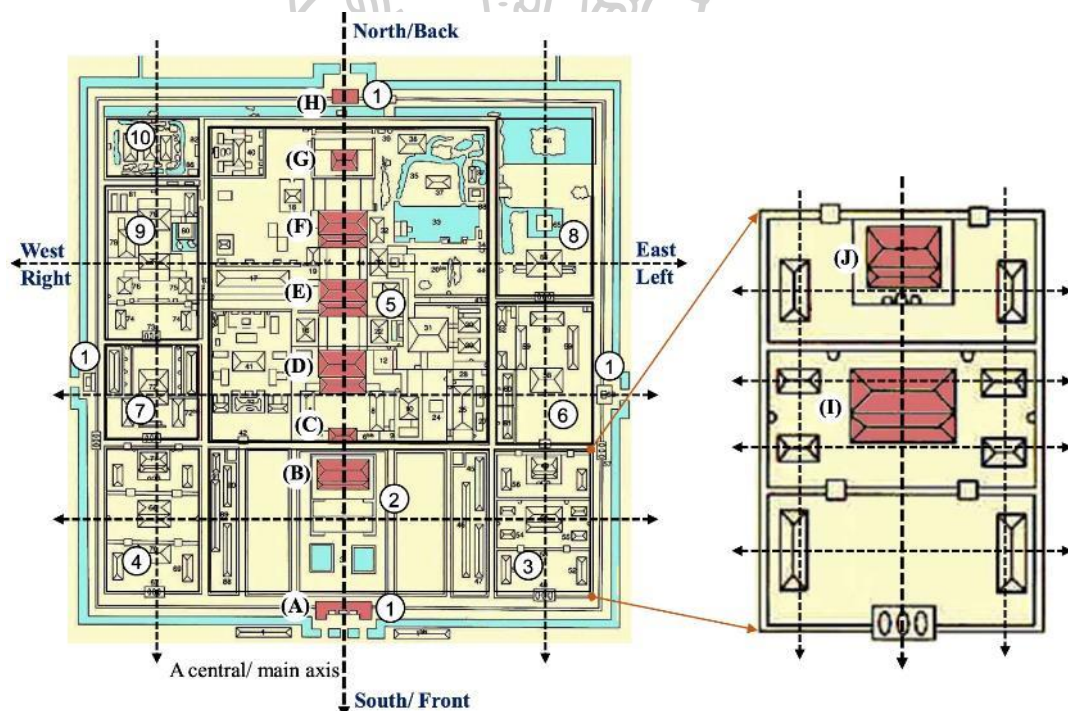


Figure 67: The central axis of Hue Imperial City

Figure 68: The central axis of “Thai Mieu” temple area

(Source: *The map CXXXVII in Laborde (1928, pp. 153-162)*)

Through data analysis and comparison with current survey data, the main functional areas also follow the principle of the main axis and direction, similar to the HIC. Each area has one main axis in the north-south direction, except for

the “Truong Sanh Cung” residence area (zone 10, and see section 4.2.10), which was oriented east-west. The main gate of the area is located on the main axis and faces south, and most buildings also have their main entrances facing south. The main buildings are arranged along the main axis, with the main buildings for activities such as work, guest reception, and worship located in the south, while those for accommodation and rest are placed in the north. Clusters of auxiliary buildings are positioned to the east and west. In the “Truong Sanh Cung” residence area, the main axis is oriented east-west (zone 10) (Vietnam National Museum of History & Hue Monuments Conservation Center (HMCC), 2001, p. 7), yet still adheres to the general principle of placing primary buildings along the east-west axis and auxiliary buildings to the north and south.

4.2 List of buildings of Hue Imperial City

This study will clarify the buildings in the ten main functional areas in terms of location, name, year of construction, and changes on the site plan in each area. The results of this study provide a basis for identifying the main architectural groups in the HIC, which will help select a typical architectural case study for each group. These results also form the foundation for research on the architectural typology of the HIC in the next chapter.

Based on the previous studies (in Section 1.2) and study results (in Section 3.1 and Figures 53, 54, 57), this study excluded the architecture built after 1883, resulting in the establishment of a list of buildings by area. Figure 69 illustrates the buildings on the HIC site plan during the Tu Duc period.

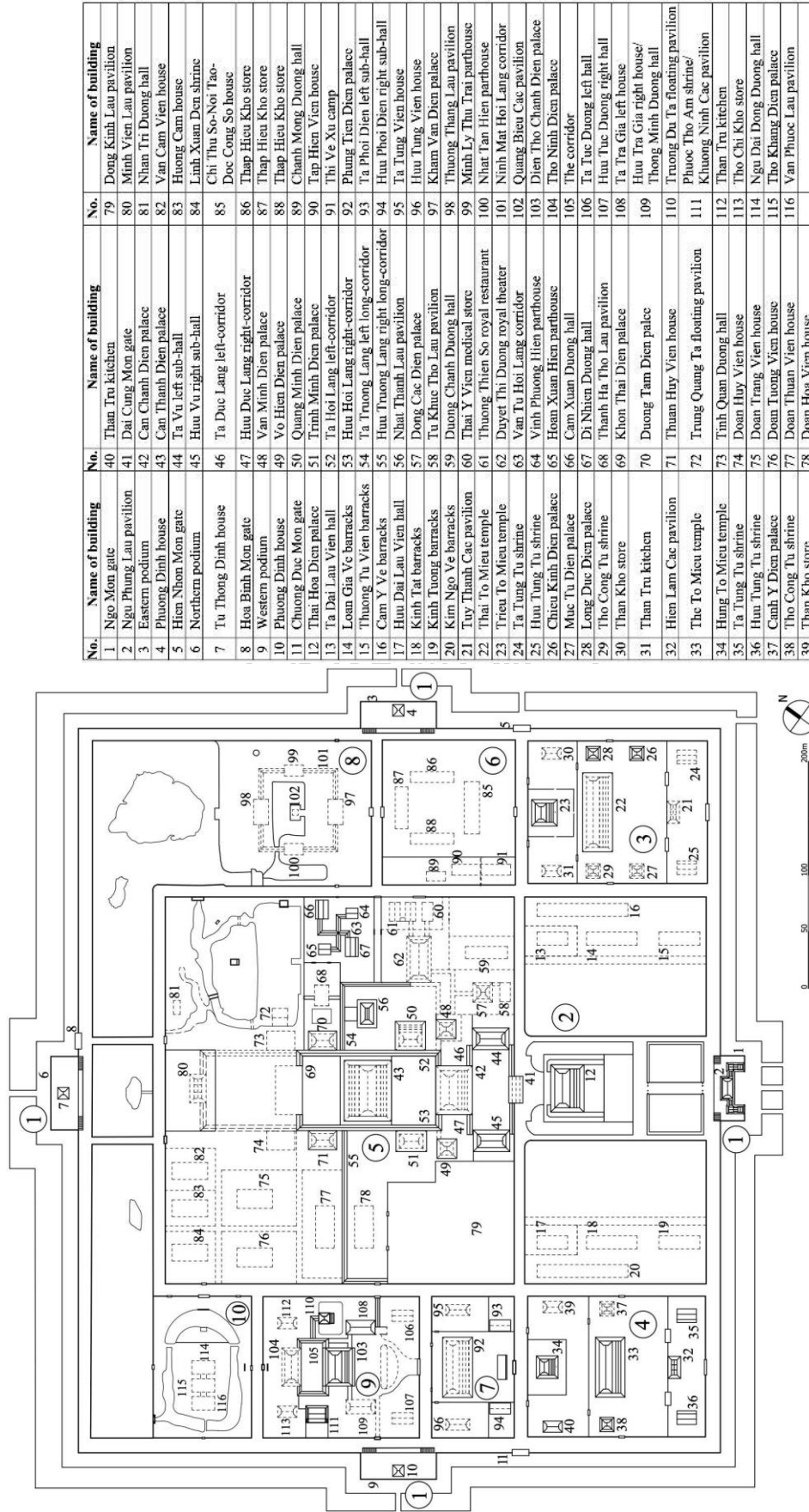


Figure 69: The site plan of Hue Imperial City during the Tu Duc period
 (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Note: The dashed lines represent the positions of structures that once existed, according to historical records, but have been destroyed or ruined

4.2.1 Gates and podiums

According to current site surveys, each wall of the HIC has a gate used as an entrance: the main gate, located in the middle of the south wall, is called the “Ngo Mon” gate (location 1) and is used by the Emperor and ambassadors from other countries; to the east is “Hien Nhon” gate (location 5) for Emperor, government affairs officer, and mandarins; to the west is “Chuong Duc” gate for Grand Empress Dowager, Empress Dowager, Empress, concubines, or ladies-in-waiting (location 11); to the north is “Hoa Binh” gate (location 8), used for the transportation of goods, construction materials, and servants (The National Department of History of Nguyen Dynasty, 1960, pp. 20-21) (Figure 70).

Based on the historical documents, the gates and podiums were built simultaneously with the walls of the HIC (1804). In the middle of each of the four enclosed walls (north, south, east, and west) were four podiums (The National Department of History of Nguyen Dynasty, 1960, pp. 20-21). Each podium's structure consisted of a platform for observation and defense (locations 3, 6, and 9), and another housing security soldiers - “Phuong Dinh” house (square house) (locations 4, 7, and 10).

In the specific case of the south podium (location 1), between 1804 and 1833, the “Can Nguyen Dien” palace was constructed on top of it. This palace was solely for the Emperor and the royal family to attend grand ceremonies. Between 1833 and 1945, the south podium was replaced by the “Ngo Mon” gate and a building called the “Ngu Phung Lau” pavilion (The Cabinet of Nguyen Court, 1993a, pp. 116-117) (locations 1 and 2). This building was used to host important ceremonies, such as military parades, the reading of names for new doctors, “Ban Soc”

(announcing the new year calendar), or ambassadorial receptions (The Cabinet of Nguyen Court, 1993a, pp. 39-40).

Surrounding the wall, there was a system of moats called “Ngoai Kim Thuy” lake. The system of surrounding moats, along with the podiums and closed walls, was designed for observation, defense, and the protection of the HIC.

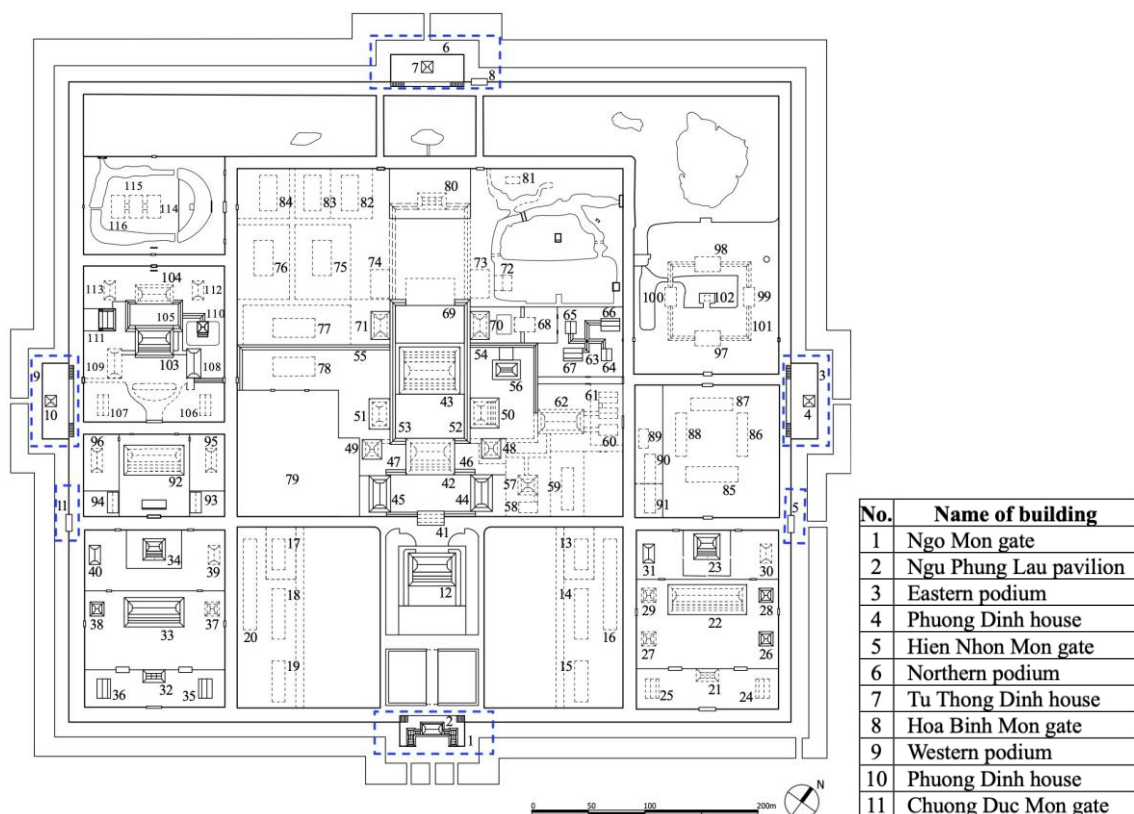


Figure 70: The site plan of the first area - “Gates and Podiums”
(Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Table 5. The buildings in the Gates and Podiums

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
1	Ngô Môn	午門	“Ngo Mon” gate	1833	The main gate of the HIC
2	Ngũ Phụng Lô	五鳳樓	“Ngu Phung Lau” pavilion	1833	Built on the “Ngo Mon” gate, a place for the Emperor to oversee ceremonies
3	Đông Khuyết Đài	東闕台	Eastern podium	1804	A high platform to observe and defend

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
4	Phuong Đình	方亭	“Phuong Dinh” house	1804	A house for soldiers
5	Hiển Nhon Môn	門	“Hien Nhon” gate	1804	The Eastern gate (entrance for the Emperor, government affairs officer, mandarins)
6	Bắc Khuyết Đài	北闕台	Northern podium	1804	A high platform to observe and defend
7	Tứ Thông Đình	四通亭	“Tu Thong Dinh” house	1804	A house for soldiers
8	Hòa Bình Môn	門	“Hoa Binh” gate	1804	The Northern gate
9	Tây Khuyết Đài	西闕台	Western podium	1804	A high platform to observe and defend
10	Phuong Đình	方亭	“Phuong Dinh” house	1804	A house for soldiers
11	Chuong Đức Môn	門	“Chuong Duc” gate	1804	The Western gate (entrance for Grand Empress Dowager, Empress Dowager, Empress, concubines, ladies-in-waiting)

Some photographs and drawings of this area are as follows: The main southern gate, known as the “Ngo Mon” Gate, was constructed in 1833 and consists of two parts: the gate and the structure built on top of it, the “Ngu Phung Lau” Pavilion (Figures 71–72, 76a).

Name: “Ngo Mon” gate, “Ngu Phung Lau” pavilion	Year of Construction: 1833	Type: Gate, Pavilion	Floor area: 1,430 m ² (Building: 624.6 m ²)
Location: 1, 2	Restoration: 1891, 1899, 1970, 1992, 2013, 2019	Status: Restored/ Date of investigation: 01/2020	
Exterior photo (2020)			
Interior photo			
<p>Source: Author</p>			
<p>Source: https://codohue.vn/ngo-mon-cong-chinh-di-vao-hoang-thanh-hue/</p>			

Figure 71: Inventory of “Ngo Mon” gate and “Ngu Phung Lau” pavilion
(Source: The drawing was based on Phan (2018) and the author’s modifications)



a) The photo of “Ngo Mon” gate (1920-1929)

(Source: <https://www.flickr.com/photos/13476480@N07/50812911402/in/photostream/>.
Date of access: September 2021)



b) The photo of “Ngo Mon” gate (1924)

(Source:

<https://www.flickr.com/photos/13476480@N07/albums/72157690690817375/with/27124232679>. Date of access: September 2021)

c) The photo of “Ngo Mon” gate (1942)

(Source:

<https://jenikirbyhistory.getarchive.net/media/fetes-du-nam-giao-en-1942-1-le-palanquin-ou-se-tient-sm-bao-dai-sort-du-palais-77e8d4>. Date of access: May 2023)

Figure 72: The historical photos of “Ngo Mon” gate

Each podium area consists of a solid platform and a square house built on top. Currently, the square pavilions have been reconstructed on the eastern and western podiums (Figures 73–75).

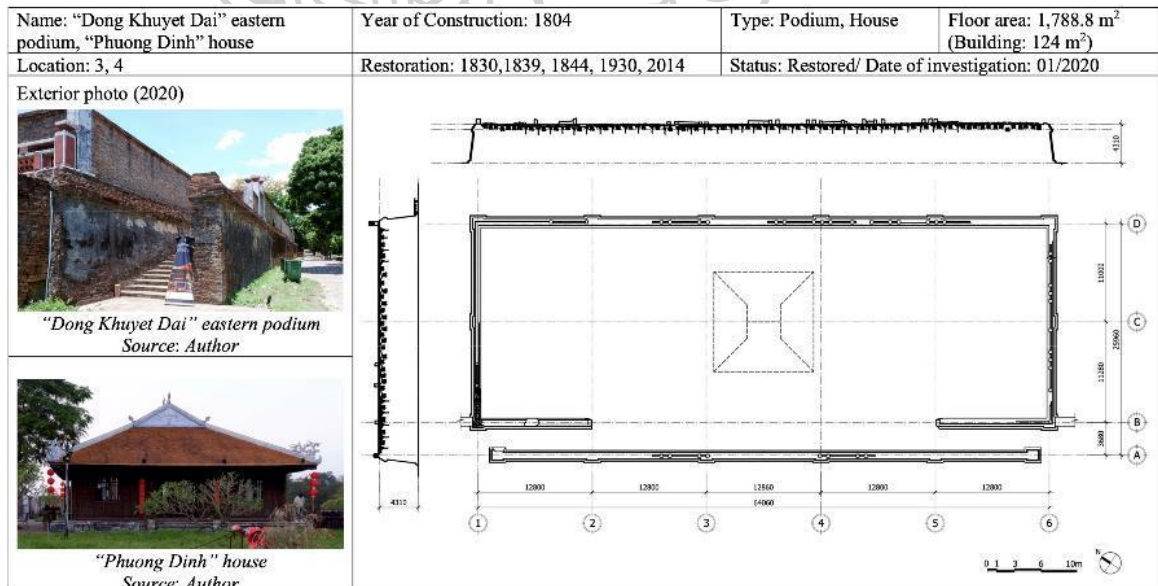


Figure 73: Inventory of “Dong Khuyet Dai” eastern podium and “Phuong Dinh” house
(Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

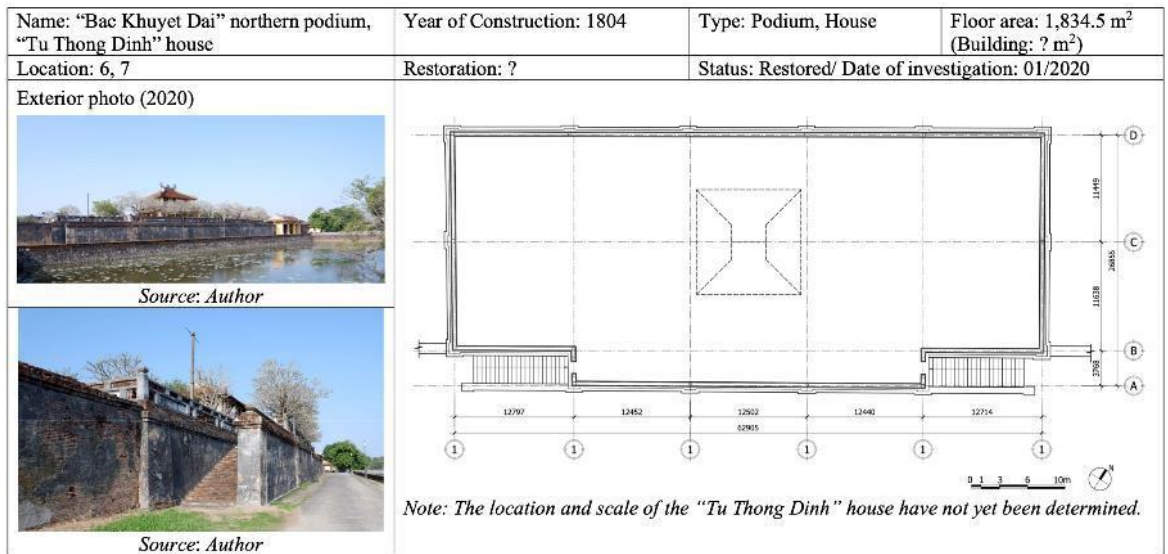


Figure 74: Inventory of "Bac Khuyet Dai" northern podium and "Tu Thong Dinh" house
 (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

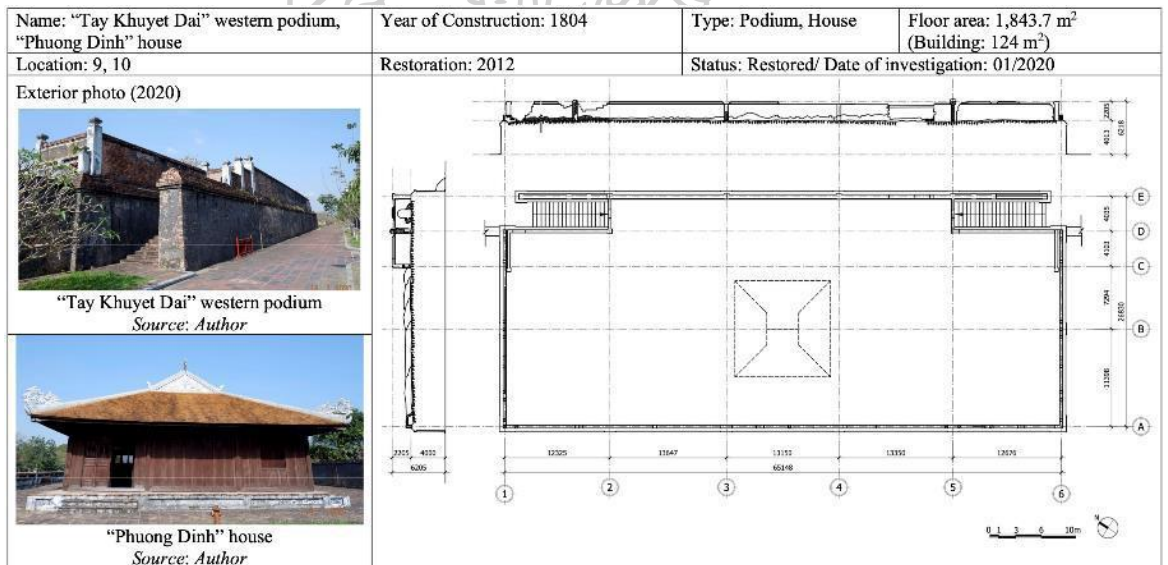


Figure 75: Inventory of "Tay Khuyet Dai" western podium and "Phuong Dinh" house
 (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Some current photographs of the four gates of the HIC are as follows:

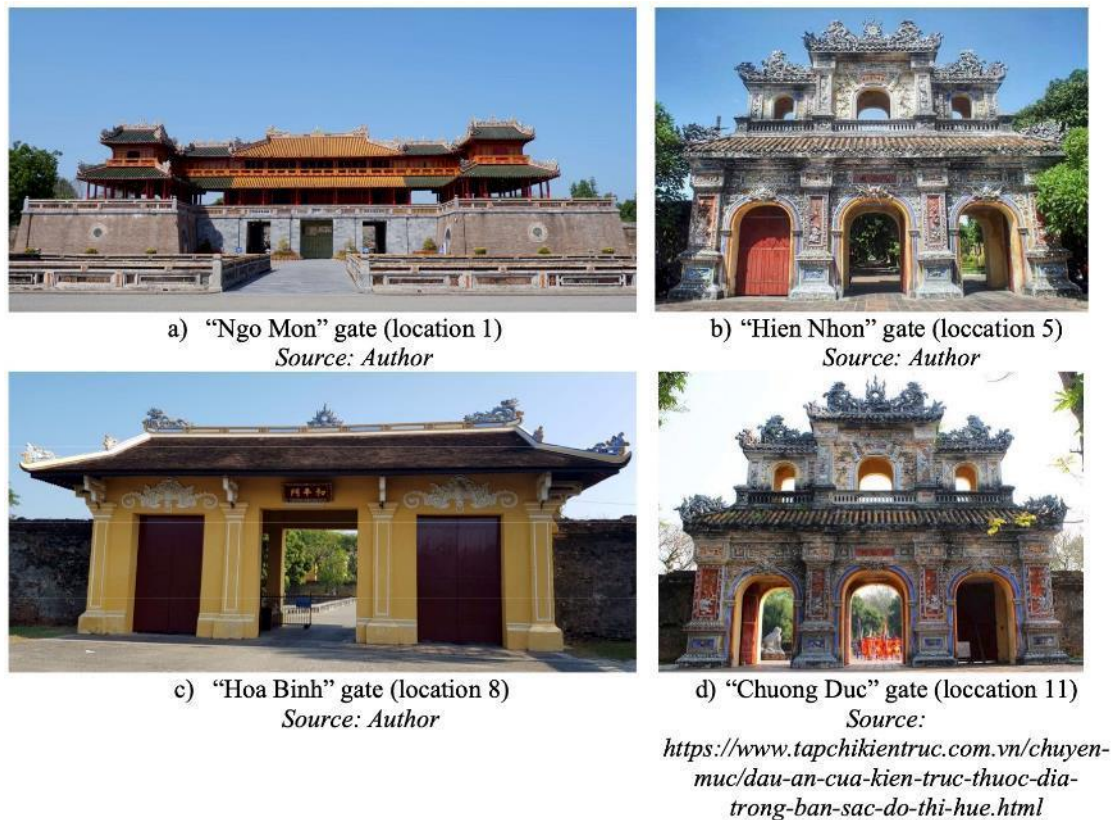


Figure 76: Photographs of the gates of Hue Imperial City (2020)

4.2.2 “Ngoai Trieu” court area

“Ngoai Trieu” court was a large area located on the main axis of the HIC. Its southern side was the “Ngo Mon” gate, the northern side was the “Tu Cam Thanh” Forbidden City, the eastern side was the “Thai Mieu” temple area, and the western side was the “The Mieu” temple area. The function of this area was to host grand ceremonies of the Nguyen Dynasty, such as coronation ceremonies, the Emperor’s birthday anniversary, ambassador interviews, or grand meetings held bi-monthly according to the lunar calendar. The “Thai Hoa Dien” palace was the main building where the Emperor's throne was located; its function was to host the ceremonies mentioned above, which were restricted to court mandarins, royal families, emissaries, and ambassadors. On the eastern

and western sides of “Ngoai Trieu” court area, there were buildings used for mandarins and soldiers in the service of the Emperor, such as “Ta-Huu Dai Lau Vien” hall (a waiting hall for mandarins), barracks for soldiers, and facilities for horses or elephants (The Cabinet of Nguyen Court, 1993a, p. 29).

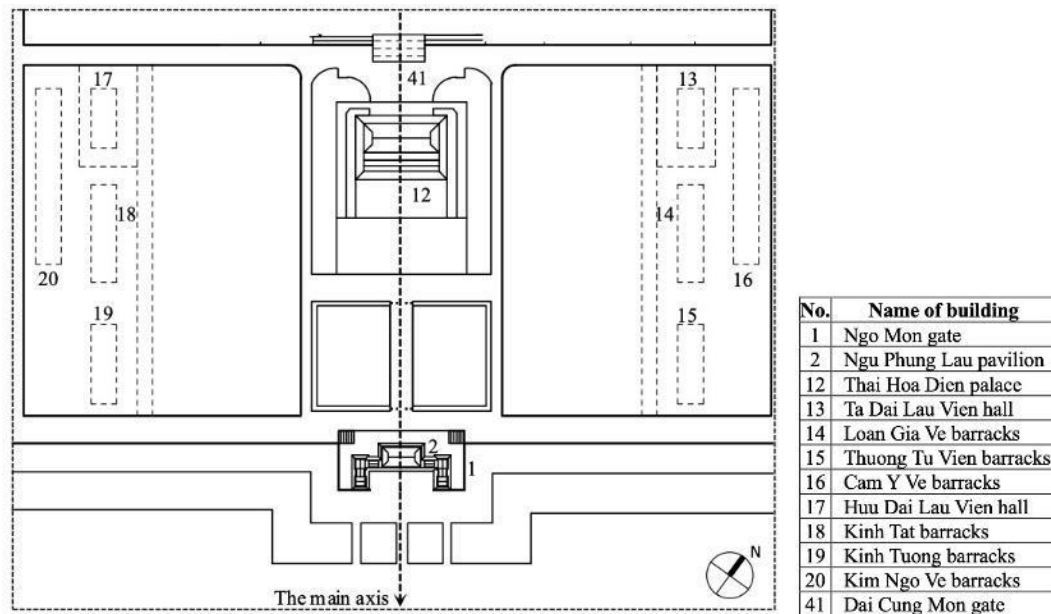


Figure 77: The site plan of the second area - “Ngoai Trieu” court area
(Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

There were two locations of the “Thai Hoa Dien” palace: first, at the center of the southern side of the Forbidden City (1802-1833), where the coronation ceremonies of Emperor Gia Long (1806) and Emperor Minh Mang (1820) took place; second, at its current position (1833-1945), where the coronation ceremonies of the other Emperors were held (The Cabinet of Nguyen Court, 1993a, pp. 28-29, 37, 40). This change occurred in 1833 when Emperor Minh Mang re-planned the site layout of the HIC. Similar to the case of the “Ngo Mon” gate, the “Thai Hoa Dien” palace underwent two significant changes on the main axis of the HIC, which helped define the boundaries and functions of the “Ngoai Trieu” court area and the Forbidden City. With a total of nine buildings in the

“Ngoai Trieu” court area during the Minh Mang period (1820-1841), only the “Thai Hoa Dien” palace remains today. Despite many restorations, it still retained the architectural characteristics of the Nguyen Dynasty, while the other components of the buildings were destroyed or ruined during the Vietnam War after 1945.

Table 6. The buildings in the “Ngoai Trieu” court area

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
12	Thái Hòa Điện	太和殿	“Thai Hoa Dien” palace	1805	Holding grand ceremonies of the Nguyen Court
13	Tả Đãi Lậu Viện	左待漏院	“Ta Dai Lau Vien” left hall	1805	A waiting house for mandarins in charge of administrative work
14	Loan Giá Vệ	鑾駕衛	“Loan Gia Ve” barracks	1823	Barracks of palanquins
15	Thượng Tứ Viện	–	“Thuong Tu Vien” barracks	1832	Barracks of horse carriages
16	Cẩm Y Vệ	–	“Cam Y Ve” barracks	1823	Barracks of Imperial guards
17	Hữu Đãi Lậu Viện	右待漏院	“Huu Dai Lau Vien” right hall	1805	A waiting house of mandarins in charge of military work
18	Kinh Tắt	–	“Kinh Tat” barracks	1823	Barracks of soldiers
19	Kinh Tượng	–	“Kinh Tuong” barracks	1832	Barracks of elephant carriages
20	Kim Ngô Vệ	–	“Kim Ngo Ve” barracks	1823	Barracks of Imperial guards

The inventory drawings and photographs of the buildings in this area are as follows:

Name: “Thai Hoa Dien” palace	Year of Construction: 1805	Type: Palace	Floor area: 1,207 m ²
Location: 12	Restoration: 1819, 1833, 1833, 1839, 1891, 1899, 1923, 1960, 1970, 1981, 1985, 1992, ?	Status: Restored/ Date of investigation: 01/2020	
Exterior photo			
Interior photo			
<p>Source: Điện Thái Hòa (Hoàng thành Huế) – Wikipedia tiếng Việt</p>			

Figure 78: Inventory of “Thai Hoa Dien” palace
 (Source: The drawing was based on Saito and Nakagawa (2012); Sakamoto et al. (2009); and the author’s modifications)

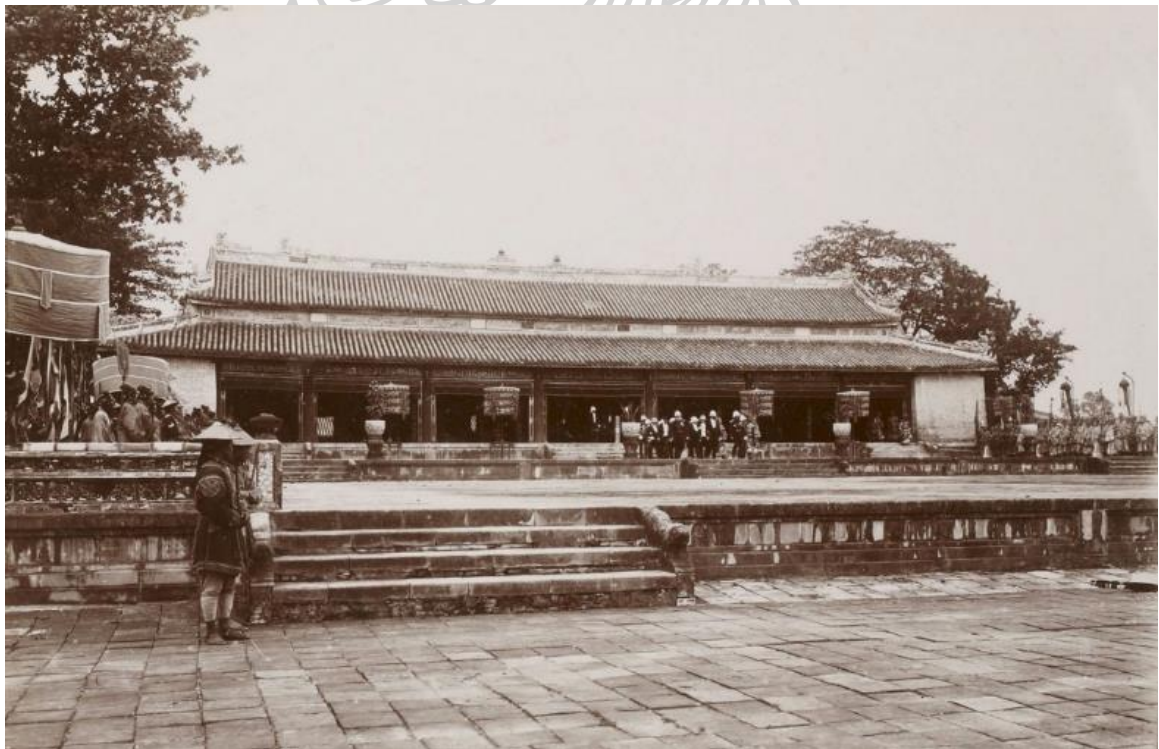


Figure 79a) The photo of “Thai Hoa Dien” palace (1896-1900)
 (Source: <https://www.flickr.com/photos/13476480@N07/12285063883>. Date of access: September 2021)



Figure 79b) The photo of “Thai Hoa Dien” palace (1926)
 (Source: <https://www.flickr.com/photos/13476480@N07/46849682911/in/photostream/>. Date of access: September 2021)

Figure 79: The historical exterior photos of “Thai Hoa Dien” palace



Figure 80a) The interior photos of “Thai Hoa Dien” palace (1920-1929)
 (Source: <https://www.flickr.com/photos/13476480@N07/46849663681/>)
 Date of access: September 2021



Figure 80b) The historical interior photos of “Thai Hoa Dien” palace (1926)

(Source: <https://www.flickr.com/photos/13476480@N07/26993195169>. Date of access: September 2021)



Figure 80c) The historical interior photos of “Thai Hoa Dien” palace (1920-1929)

(Source: <https://www.flickr.com/photos/13476480@N07/39562035265/in/photostream/>. Date of access: September 2021)

Figure 80: The historical interior photos of “Thai Hoa Dien” palace

4.2.3 “Thai Mieu” temple area

The “Thai Mieu” temple area was built in 1804 by Emperor Gia Long to commemorate the Nguyen ancestors (The National Department of History of Nguyen Dynasty, 2002b, p. 589). The “Thai Mieu” temple area was located on the left (east) side of the HIC, with its main elevation facing south. The “Ngoai Trieu” court bordered it to the west, and the “Noi Vu Phu” royal treasury store to the north. This temple area was surrounded by brick walls and featured five gates, with the main southern gate, known as the “Thai Mieu Mon” gate. The area comprised three building groups: first, the “Thai To Mieu” temple; second, the “Trieu To Mieu” temple; and third, the component building group located in front of “Thai To Mieu” temple, which served as the worship area for royal relatives and mandarins who had rendered significant service to the Nguyen Dynasty (The National Department of History of Nguyen Dynasty, 1960, pp. 25-28).

The “Thai Mieu” temple area underwent no significant changes from the Gia Long period until the end of the Thanh Thai period. This area was the first to be constructed during the Gia Long period and held

significant symbolic and spiritual value for the Nguyen Dynasty and Vietnam at that time. The only changes were that Emperor Minh Mang renamed the buildings from Hall to Palace, and the “Tuy Thanh Cac” pavilion and “Canh Y Dien” hall were destroyed during the Thanh Thai period (Thai, 1960, pp. 50-51).

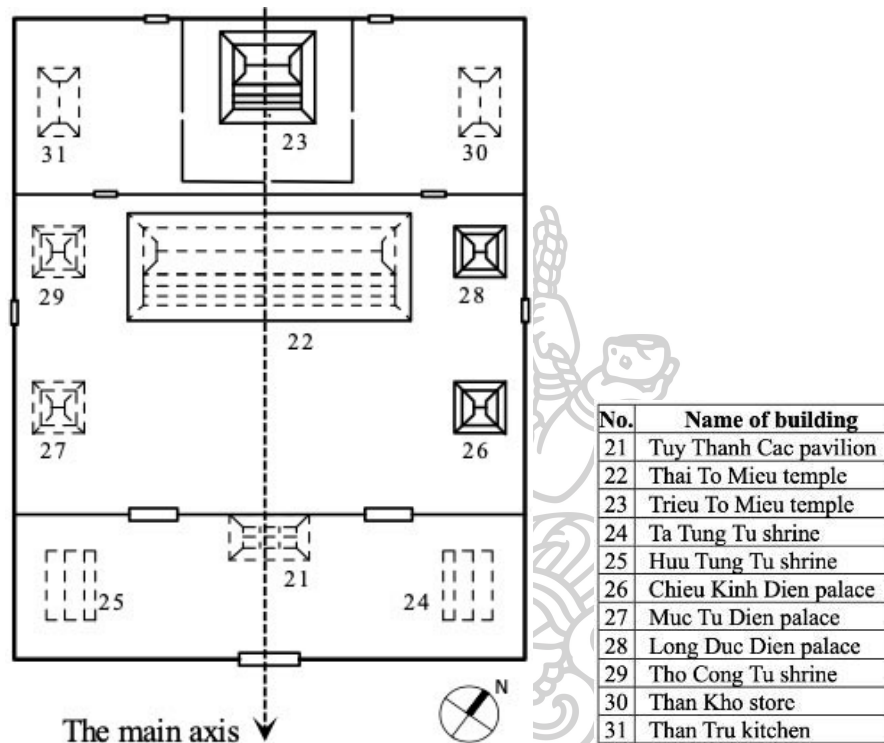


Figure 81: The site plan of the third area - “Thai Mieu” temple area
(Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Table 7. The buildings in the “Thai Mieu” temple area

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
21	Tuy Thành Các	綏成閣	“Tuy Thanh Cac” pavilion	1804	Monument for the “soul” of the Lords
22	Thái Tổ Miếu	太祖廟	“Thai To Mieu” temple	1804	Worship the nine Nguyen Lords and the first ladies
23	Triệu Tổ Miếu	肇祖廟	“Trieu To Mieu” temple	1804	Worship the parents of the first Lord
24	Tả Tùng Tự	左從嗣	“Ta Tung Tu” shrine	1804	Worship the royal relatives who had great merits to the Nguyen Dynasty

25	Hữu Tùng Tụ	右從嗣	“Huu Tung Tu” shrine	1804	Worship the mandarins who had great merits to the Nguyen Dynasty
26	Chiêu Kính Điện/ Tả Tế Sở	昭敬殿 ...	“Chieu Kinh Dien” palace	1804	Prepare items for ceremonies worshipping the second to fifth Lords and their first lady
27	Mục Tư Điện/ Hữu Tế Sở	穆思殿 /...	“Muc Tu Dien” palace	1804	Prepare items for ceremonies worshipping the sixth to ninth Lords and their first lady
28	Long Đức Điện/ Tả Phương Đường	隆德殿 /...	“Long Duc Dien” palace	1804	Prepare items for ceremonies worshipping the first Lord and his first lady
29	Thổ Công Từ/ Hữu Phương Đường	土公祠 /...	“Tho Cong Tu” shrine	1804	Worship the local god
30	Thần Khố	神庫	“Than Kho” store	1812	Store items for worship ceremonies
31	Thần Trù	神廚	“Than Tru” kitchen	1812	Kitchen

The inventory drawings and photographs of the buildings in this area are as follows:

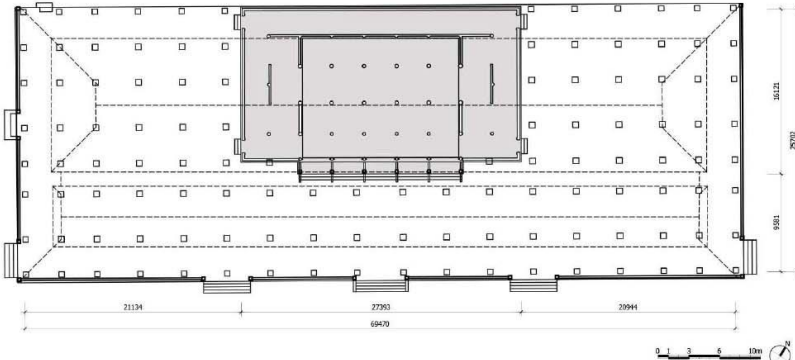


Name: “Thai To Mieu” temple	Year of Construction: 1804	Type: Temple	Floor area: 1891 m ²
Location: 22	Restoration: 1819, 1823, 1830, 1831, 1837, 1839, 1842, 1843, 1889-1907	Status: Ruins/ Date of investigation: 01/2020	
Exterior photo (the year has not been determined yet)	 <p>The current building's foundation was rebuilt on the old foundation around 1971-1972</p>		
 <p>Source: https://lendang.vn/destination/thai-mieu.html#google_vignette</p>			
Interior photo (1972)	 <p>Source: https://www.flickr.com/photos/13476480@N07/32029257238</p>		

Figure 82: Inventory of “Thai To Mieu” temple
(Source: The drawing was based on Rokutanda and Nakagawa (2013), and the author’s modifications)

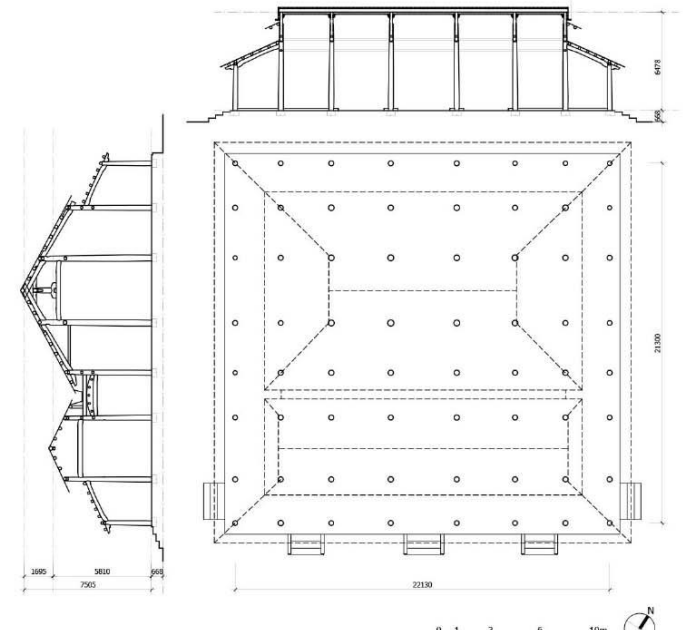


Name: “Trieu To Mieu” temple	Year of Construction: 1804	Type: Temple	Floor area: 526.6 m ²
Location: 23	Restoration: 1814, 1830, 1837, 1842, 1843, 2016	Status: Restored/ Date of investigation: 01/2020	
Exterior photo (2020)			
 <p>Source: Author</p>			
Interior photo	 <p>Source: http://netcodo.com.vn/vi/60/15079/Thu-quan-Hue/Hoan-thanh-cong-trinh-trung-tu-Trieu-To-mieu-trong-dai-Noi-Hue.html</p>		

Figure 83: Inventory of “Trieu To Mieu” temple
(Source: The drawing was based on the Institute for Conservation of Monuments (ICM) (2020, pp. 12-41); Phan (2015) and the author’s modifications)

Name: "Ta Tung Tu" Shrine	Year of Construction: 1804	Type: Shrine	Floor area: 220 m ²
Location: 24	Restoration: (?)	Status: Ruins/ Date of investigation: 01/2020	
Exterior photo			
Interior photo			
None			
None			

Figure 84: Inventory of "Ta Tung Tu" shrine
 (Source: The drawing was based on Nakazawa et al. (1995); Nguyen and Le (2021); and the author's modifications)

Name: "Huu Tung Tu" Shrine	Year of Construction: 1804	Type: Shrine	Floor area: 220 m ²
Location: 25	Restoration: (?)	Status: Ruins/ Date of investigation: 01/2020	
Exterior photo			
Interior photo			
None			
None			

Figure 85: Inventory of "Huu Tung Tu" shrine
 (Source: The drawing was based on Nakazawa et al. (1995); Nguyen and Le (2021); and the author's modifications)

Name: "Chieu Kinh Dien" palace	Year of Construction: 1804	Type: Palace	Floor area: 189.3 m ²
Location: 26	Restoration: 1813, 1830, 1832, 2015	Status: Restored/ Date of investigation: 01/2020	
Exterior photo (2020)			
<p>Source: Author</p>			
Interior photo	<p>Source: https://xjol.info.vn/index.php/ncpt-hue/article/view/18706</p>		

Figure 86: Inventory of "Chieu Kinh Dien" palace
 (Source: The drawing was based on Le and Nguyen (2014), and the author's modifications)

Name: "Muc Tu Dien" palace	Year of Construction: 1804	Type: Palace	Floor area: 190 m ²
Location: 27	Restoration: 1813, 1830, 1843, 1900	Status: Ruins/ Date of investigation: 01/2020	
Exterior photo			
None			
Interior photo	None		

Figure 87: Inventory of "Muc Tu Dien" palace
 (Source: The drawing was based on Nguyen and Le (2021), and the author's modifications)


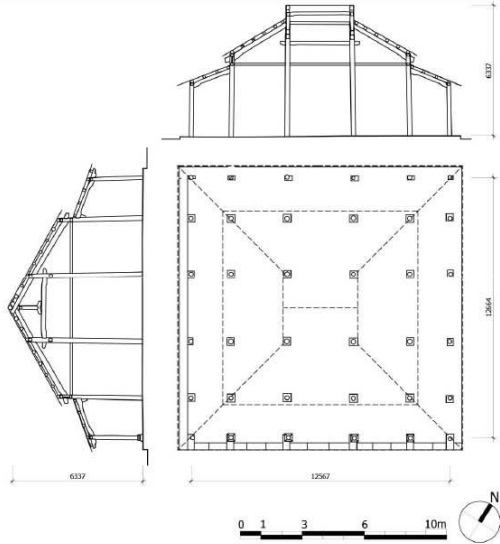
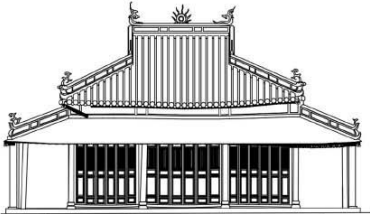
Name: “Long Duc Dien” palace	Year of Construction: 1804	Type: Palace	Floor area: 188.9 m ²
Location: 28	Restoration: 1813, 1830, 1900, 2007	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)  <i>Source: Author</i>			
 <i>Elevation of “Long Duc Dien” palace</i> <i>Source: Hiroyasu et al. (2014)</i>			

Figure 88: Inventory of “Long Duc Dien” palace
 (Source: The drawing was based on Hiroyasu et al. (2014); Shirai and Nakagawa (2009, 2010); Shirai et al. (2015); Shirai et al. (2014); and the author’s modifications)

4.2.4 “The Mieu” temple area

“The Mieu” temple area was located on the right-hand side (west) of the HIC, symmetrically opposite the “Thai Mieu” temple area across the main axis of the HIC. Its main elevation faced south, with the “Ngoai Trieu” court area to the east and the “Phung Tien Cung” residence area to the north of the temple area. The area was surrounded by brick walls and included five gates, with the main southern gate, known as “The Mieu Mon” gate. This area also comprised three main building groups: “The To Mieu” temple, “Hung To Mieu” temple, and “Hien Lam Cac” pavilion (The Cabinet of Nguyen Court, 1993a, pp. 72-74, 100-101).

During the Minh Mang period, this area was entirely constructed between 1821 and 1824 (The National Department of History of Nguyen Dynasty, 1960, pp. 27-29). It included “The To Mieu” temple for worshipping the Emperors and Empresses of the Nguyen Dynasty, the “Hung To Mieu” temple for worshipping the parents of the first Emperor Gia Long, and the “Hien Lam Cac” pavilion, which served as a

worship area for royal relatives and mandarins who had significantly contributed to the Nguyen Dynasty. The arrangement of the buildings was similar to the principle of the “Thai Mieu” temple area during the Gia Long period.

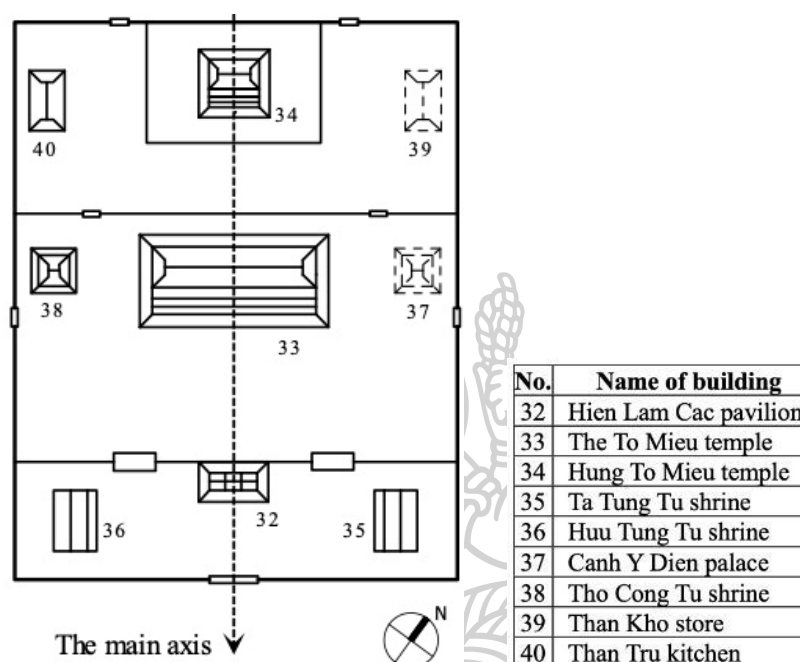


Figure 89: The site plan of the fourth area - “The Mieu” temple area
(Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Table 8. The buildings in the “The Mieu” temple area

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
32	Hiên Lâm Các	顯臨閣	“Hien Lam Cac” pavilion	1821	Monument for the “soul” of the Emperors
33	Thế Tổ Miếu	世祖廟	“The To Mieu” temple	1821	Worship the Emperors and Empresses
34	Hưng Tổ Miếu	興祖廟	“Hung To Mieu” temple	1821	Worship the parents of Emperor Gia Long
35	Tả Tùng Tự	左從嗣	“Ta Tung Tu” shrine	1824	Worship the royal relatives who had great merits to the Nguyen Dynasty
36	Hữu Tùng Tự	右從嗣	“Huu Tung Tu” shrine	1824	Worship the mandarins that had great merits to the Nguyen Dynasty
37	Canh Y Điện	更衣殿	“Canh Y Dien” palace	1821	Changing clothes before worship

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
38	Thổ Công Từ	土公祠	“Tho Cong Tu” shrine	1821	Worship the local god
39	Thần Khố	神庫	“Than Kho” store	1821	Store items for worship ceremonies
40	Thần Trù	神廚	“Than Tru” kitchen	1821	Kitchen

The inventory drawings and photographs of the buildings in this area are as follows:

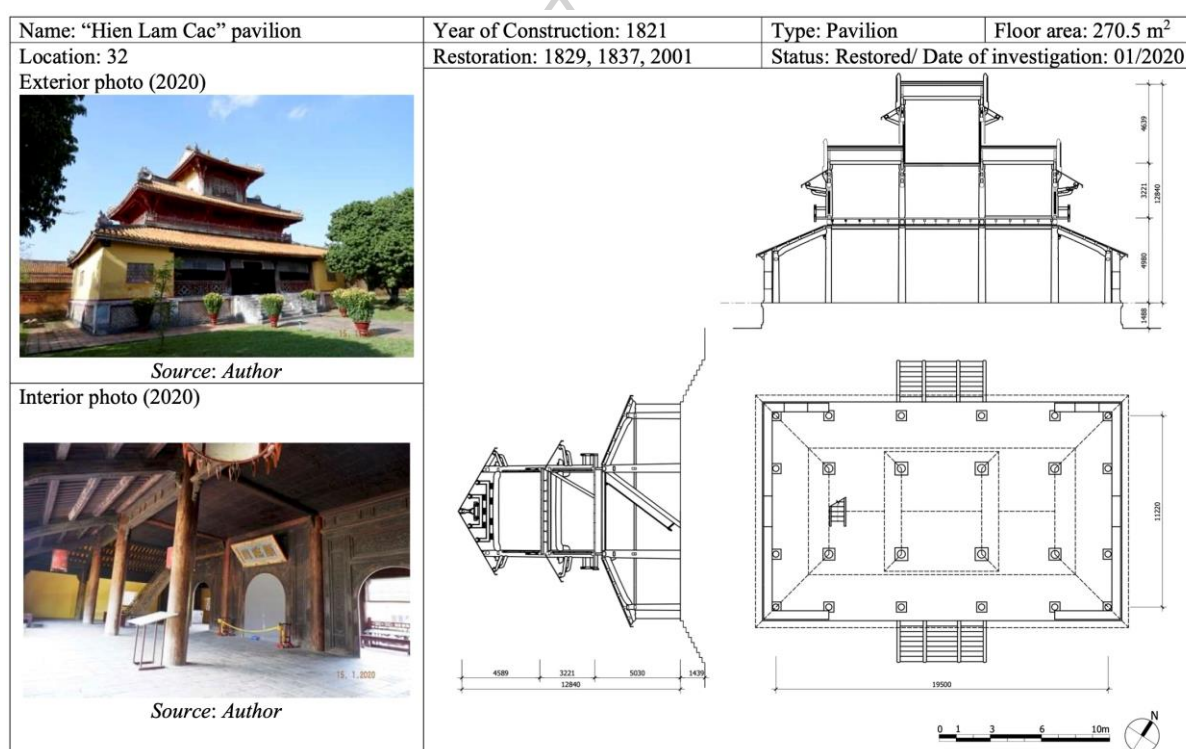


Figure 90: Inventory of “Hien Lam Cac” pavilion
 (Source: The drawing was based on Hue Monuments Conservation Center (HMCC) and Institute for Building Science and Technology (IBST) (1998); Institute for Conservation of Monuments (ICM) (2020, pp. 42-67); and the author’s modifications)



Figure 91: The historical photo of “Hien Lam Cac” pavilion (1925)
 (Source: <https://www.flickr.com/photos/13476480@N07/38088179754/in/album-72157690197417514/>. Date of access: September 2021)

Name: “The To Mieu” temple	Year of Construction: 1821	Type: Temple	Floor area: 1380.4 m ²
Location: 33	Restoration: 1829, 1839, (?)	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)			
 Source: Author			
Interior photo	 Source: https://khamphadisan.com.vn/the-to-mieu-noi-tho-phung-cac-vi-vua-trieu-nguyen/		

Figure 92: Inventory of “The To Mieu” temple
 (Source: The drawing was based on Shirai and Nakagawa (2014), and the author’s modifications)



Figure 93: The historical exterior photo of “The To Mieu” temple
(The date of the photo has not yet been determined)

(Source: <https://www.flickr.com/photos/13476480@N07/38758187412/in/gallery-194262410@N08-72157720026307388/>. Date of access: September 2021)



Figure 94: The historical interior photo of “The To Mieu” temple (1925)

(Source: <https://www.flickr.com/photos/13476480@N07/27196390909/in/gallery-194262410@N08-72157720026307388/>. Date of access: September 2021)

Name: "Hung To Mieu" temple	Year of Construction: 1821	Type: Temple	Floor area: 324.5 m ²
Location: 34	Restoration: 1829, 1838, 1842, 1857, 1868, 1871, 1894, 1904, 1910, 1919, 1947, 1951, 1997	Status: Restored/ Date of investigation: 01/2020	
Exterior photo (2020)			
<p>Source: Author</p>			
Interior photo	<p>Source: https://redsvn.net/chum-anh-hung-to-mieu-ngoi-mieu-dac-biet-cua-trieu-nguyen-ohue2/</p>		

Figure 95: Inventory of "Hung To Mieu" temple
 (Source: The drawing was based on Rokutanda and Nakagawa (2013),
 and the author's modifications)



Figure 96: The historical photo of "Hung To Mieu" temple (1928)
 (Source: <https://www.flickr.com/photos/13476480@N07/32771576130/in/album-72157690197417514>. Date of access: September 2021)

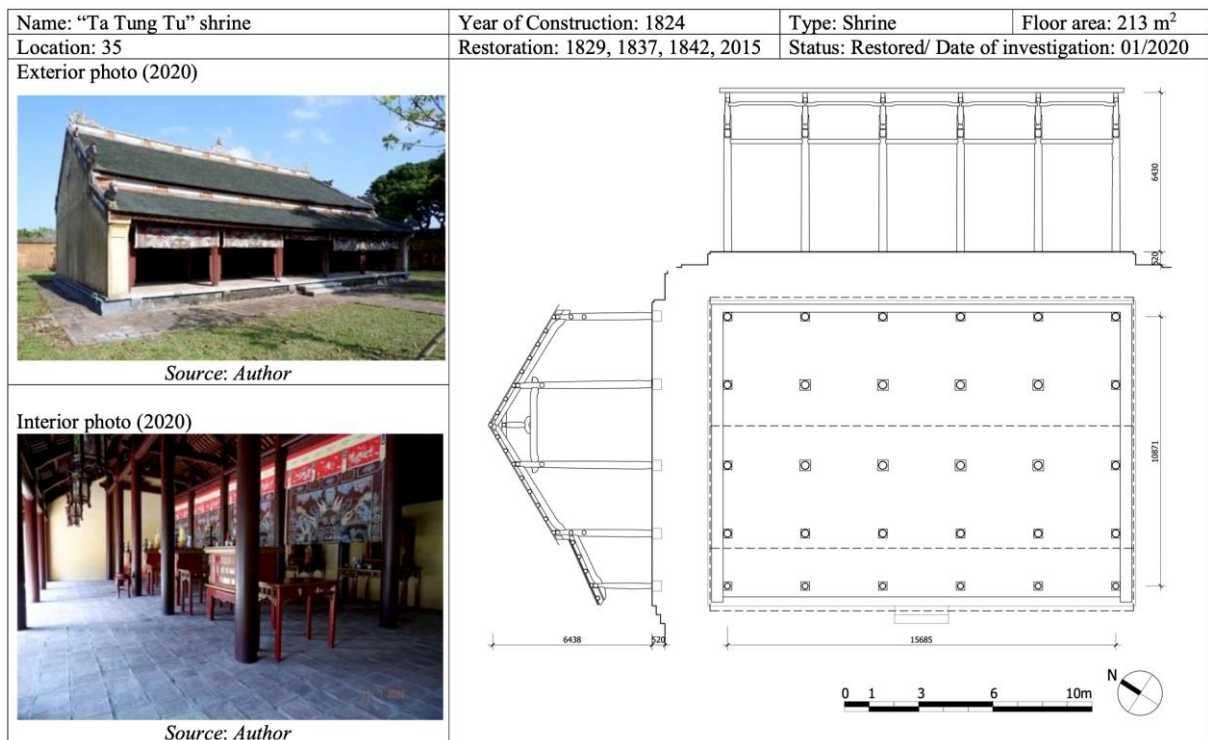


Figure 97: Inventory of "Ta Tung Tu" shrine
 (Source: The drawing was based on Nakazawa et al. (1995),
 and the author's modifications)

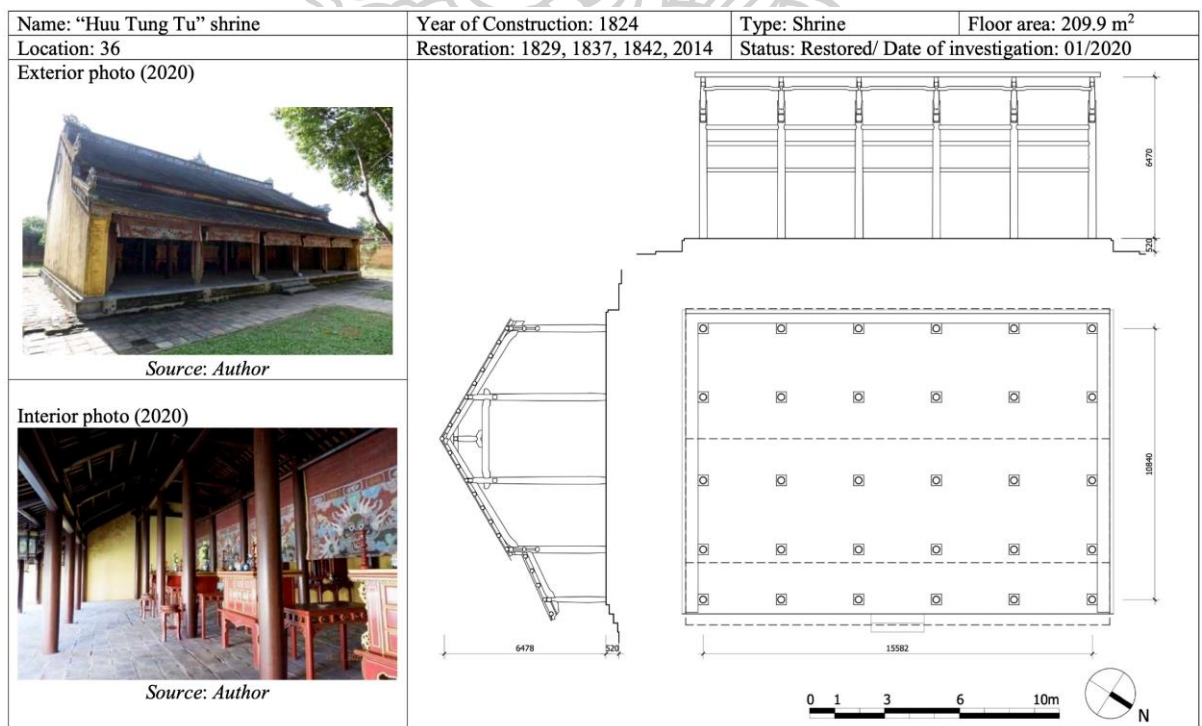


Figure 98: Inventory of "Huu Tung Tu" shrine
 (Source: The drawing was based on Nakazawa et al. (1995)
 and the author's modifications)

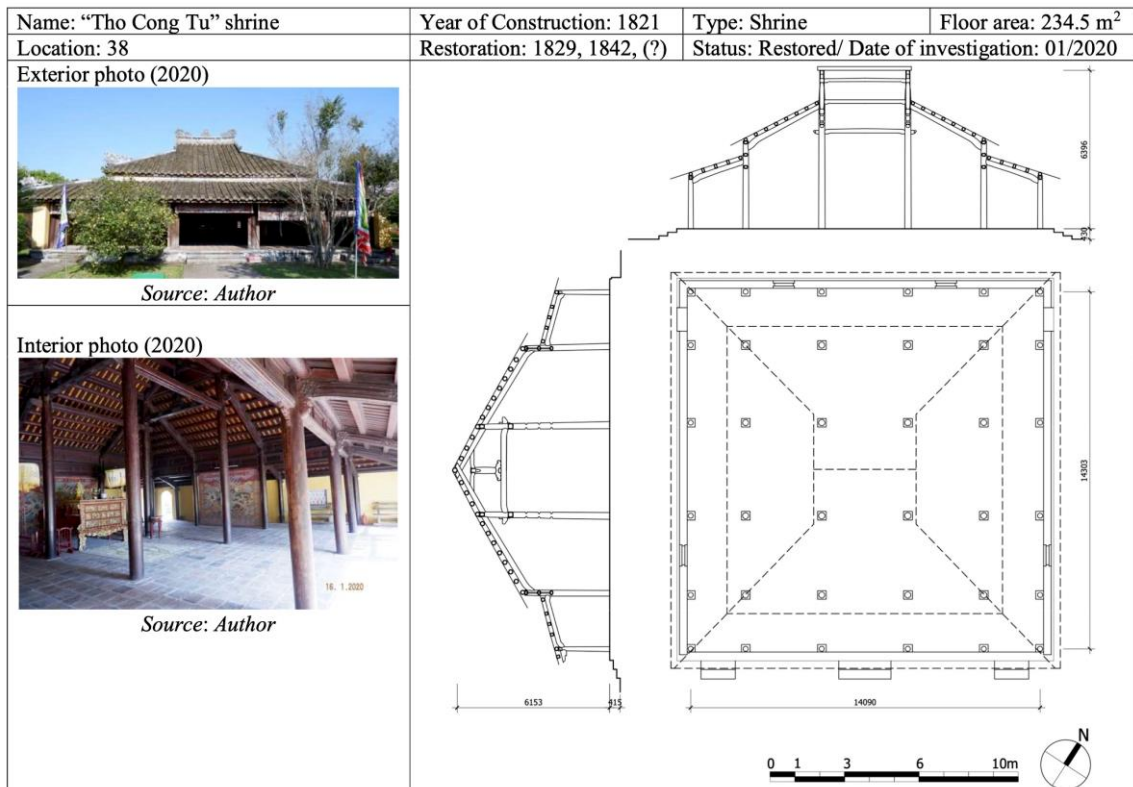


Figure 99: Inventory of "Tho Cong Tu" shrine
 (Source: The drawing was based on Nakazawa et al. (1995)
 and the author's modifications)

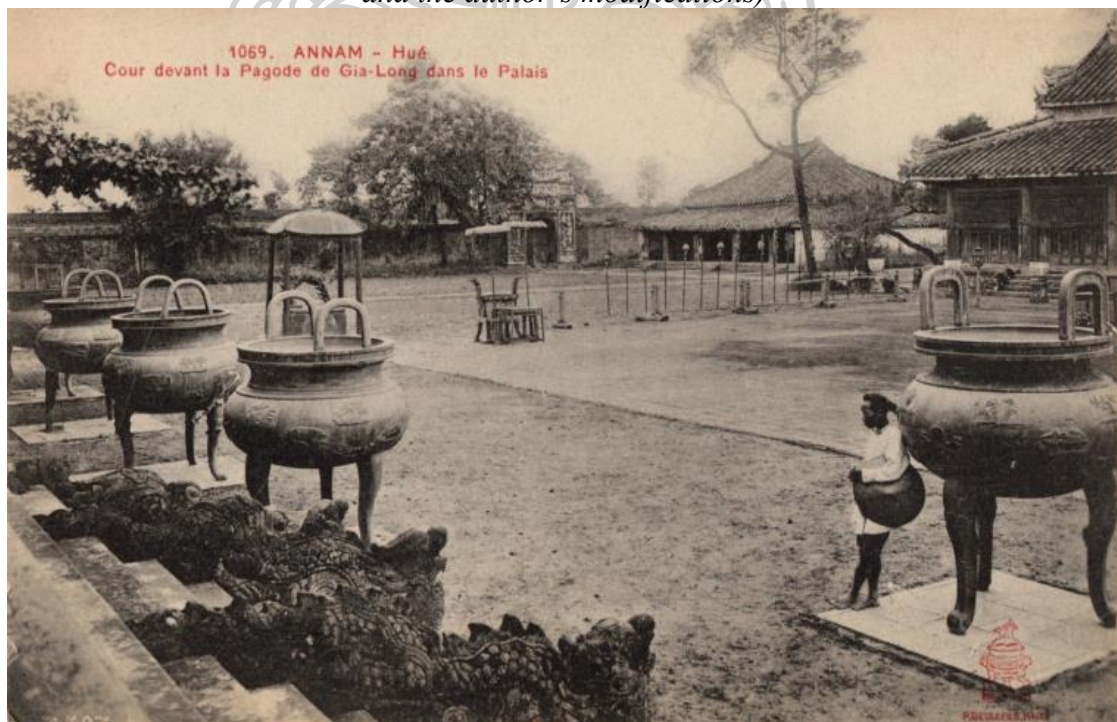


Figure 100: The historical photo of "Tho Cong Tu" shrine (1925)
 (Source: <https://www.flickr.com/photos/13476480@N07/38773732142/>.
 Date of access: September 2021)

Name: “Than Tru” kitchen	Year of Construction: 1821	Type: Kitchen	Floor area: 193.8 m ²
Location: 40	Restoration: 1842, (?)	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)			
<p style="text-align: center;"><i>Source: Author</i></p>			
Interior photo	---		

Figure 101: Inventory of “Than Tru” kitchen
 (Source: The drawing was based on Nakazawa et al. (1995)
 and the author’s modifications)

4.2.5 “Tu Cam Thanh” Forbidden City

The construction of the “Tu Cam Thanh” Forbidden City began in 1804 under the name “Cung Thanh” (宮城). In 1822, Emperor Minh Mang changed the name from “Cung Thanh” to “Tu Cam Thanh” (紫禁城) Forbidden City (The National Department of History of Nguyen Dynasty, 1960, p. 22). Its main direction faced south, with Ngoai Trieu court on the front-southern side, the northern podium on the northern side, “Noi Vu Phu” royal treasury store and “Co Ha Vien” royal garden area on the eastern side, and “Dien Tho Cung” residence area and “Truong Sanh Cung” residence area on the western side. Its main axis was also the main axis of the HIC and the Hue Citadel.

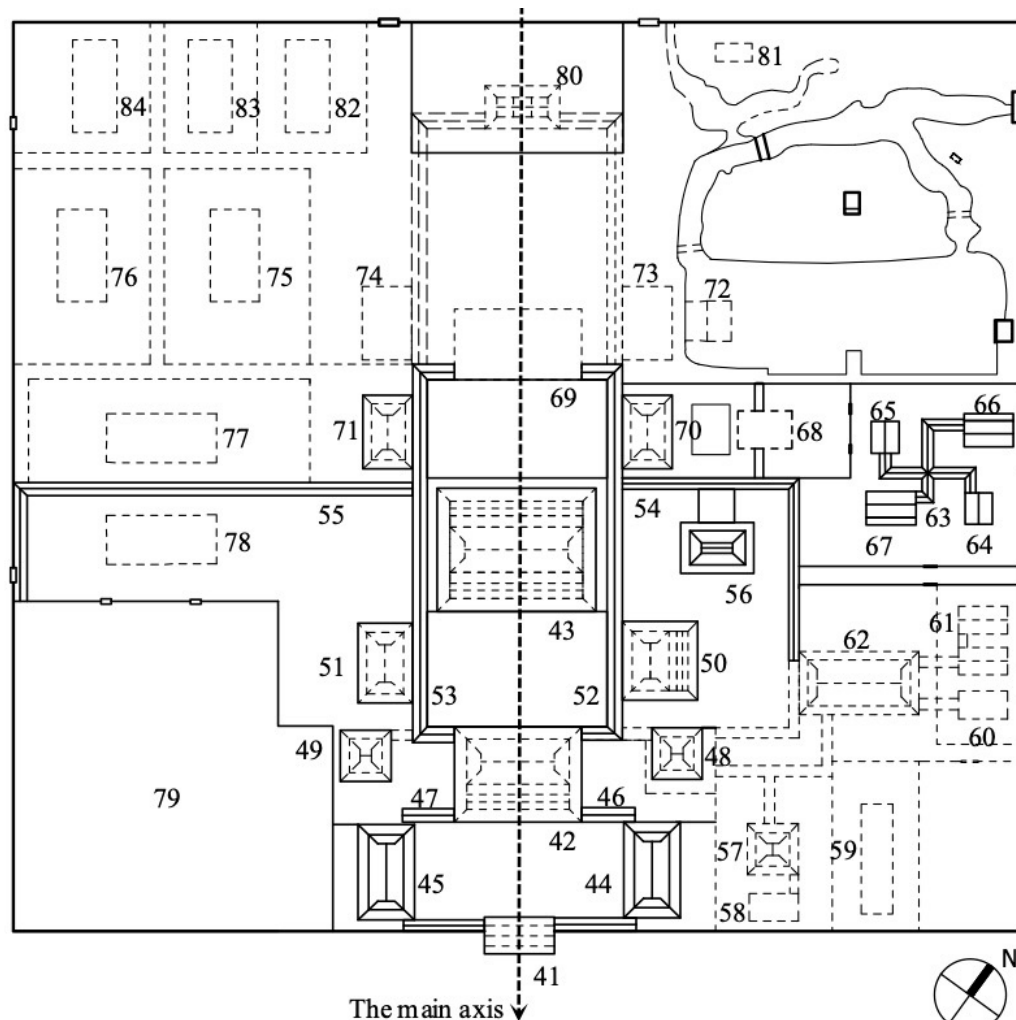
During Gia Long period, “Thai Hoa Dien” palace was built in the middle of the Southern side, flanked by two gates symmetrically placed on either side of the palace, which served as the entrances to the Forbidden City (“Ta Tuc Mon” gate on the left and “Huu Tuc Mon” gate on the right)

(The National Department of History of Nguyen Dynasty, 2002b, p. 593). In 1833, the “Thai Hoa Dien” palace was moved to the south (“Ngoai Trieu” court area), and the two attached gates were replaced by the “Dai Cung Mon” main gate (The Cabinet of Nguyen Court, 1993a, p. 39).

The Forbidden City comprised two main residences: the area from “Can Thanh Dien” palace to “Dai Cung Mon” gate was called “Can Thanh Cung” residence (used for living, working, entertainment, and as a hospital for the Emperor), and the “Khon Thai Cung” residence (for the Emperor, Empresses, and concubines to live, entertain, or read books). Additionally, surrounding these main buildings were other architectural components (such as palace, hall, pavilion, floating pavilion, or sub-hall) to accommodate the living needs of the Emperor and the royal family. The Minh Mang period was the most constructive, with numerous rules enacted regarding the naming of residences, buildings, design, and construction. During the Minh Mang period, there were about 50 buildings in this area, marking the most complete stage of construction of the HIC. From the Thieu Tri to Tu Duc periods, approximately seven additional buildings, such as pavilion, shrine, and hall, were built, alongside repairs and upgrades to existing buildings (Hue Monuments Conservation Center (HMCC), 2002; Hue Monuments Conservation Center (HMCC) & Research Room, 2000; Thai, 1960, pp. 63-71; The Cabinet of Nguyen Court, 1993a, pp. 20-27, 37-45; The National Department of History of Nguyen Dynasty, 1960, pp. 21-25).

There were many architectural types arranged according to their function, such as palaces, halls, pavilions, floating pavilions, parthouses, or corridors (Table 9). These buildings were placed around the main buildings, which included the following groups: the building group of “Can Chanh Dien” palace (with the main building being “Can Chanh Dien” palace; sub-buildings: “Ta Vu” left sub-hall, “Huu Vu” right sub-

hall; and component buildings: “Van Minh Dien” palace, “Vo Hien Dien” palace), the building group of “Can Thanh Dien” palace, and the building group of “Khon Thai Dien” palace.



No.	Name of building	No.	Name of building	No.	Name of building
41	Dai Cung Mon gate	56	Nhat Thanh Lau pavilion	71	Thuan Huy Vien house
42	Can Chanh Dien palace	57	Dong Cac Dien palace	72	Trung Quang Ta floating pavilion
43	Can Thanh Dien palace	58	Tu Khue Tho Lau pavilion	73	Tinh Quan Duong hall
44	Ta Vu left sub-hall	59	Duong Chanh Duong hall	74	Doan Huy Vien house
45	Huu Vu right sub-hall	60	Thai Y Vien medical store	75	Doan Trang Vien house
46	Ta Duc Lang left-corridor	61	Thuong Thien So royal restaurant	76	Doan Tuong Vien house
47	Huu Duc Lang right-corridor	62	Duyet Thi Duong royal theater	77	Doan Thuan Vien house
48	Van Minh Dien palace	63	Van Tu Hoi Lang corridor	78	Doan Hoa Vien house
49	Vo Hien Dien palace	64	Vinh Phuong Hien parthouse	79	Dong Kinh Lau pavilion
50	Quang Minh Dien palace	65	Hoan Xuan Hien parthouse	80	Minh Vien Lau pavilion
51	Trinh Minh Dien palace	66	Cam Xuan Duong hall	81	Nhan Tri Duong hall
52	Ta Hoi Lang left-corridor	67	Di Nhen Duong hall	82	Van Cam Vien house
53	Huu Hoi Lang right-corridor	68	Thanh Ha Tho Lau pavilion	83	Huong Cam house
54	Ta Truong Lang left long-corridor	69	Khon Thai Dien palace	84	Linh Xuan Den shrine
55	Huu Truong Lang right long-corridor	70	Duong Tam Dien palce		

Figure 102: The site plan of the fifth area - “Tu Cam Thanh” Forbidden City
(Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Table 9. The buildings in the “Tu Cam Thanh” forbidden city

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
41	Đại Cung Môn	大宮門	“Dai Cung Mon” gate	1833	The main gate of “Tu Cam Thanh” Forbidden City
42	Cần Chánh Điện	勤政殿	“Can Chanh Dien” palace	1804	The main working hall for the Emperors and their cabinets
43	Cần Thành Điện/ Trung Hoà Điện	乾成殿	“Can Thanh Dien” palace	1811	The private area of the Emperor for living
44	Tả Vu	左廡	“Ta Vu” left sub-hall	1805	For civil mandarins (in charge of policy-making) to prepare for court ceremonies (“Co Mat Phong” office, Cabinet of the Nguyen Dynasty)
45	Hữu Vu	右廡	“Huu Vu” right sub-hall	1805	For military mandarins to prepare for court ceremonies
46	Tả Dực Lang	左翼廊	“Ta Duc Lang” left-corridor	1805	The Eastern corridor of “Can Chanh Dien” area
47	Hữu Dực Lang	右翼廊	“Huu Duc Lang” right-corridor	1805	The Western corridor of “Can Chanh Dien” area
48	Văn Minh Điện/ Tả Phương Đường	文明殿 / ...	“Van Minh Dien” palace	1819	A place for mandarins in charge of administrative works
49	Võ Hiển Điện/ Hữu Phương Đường	武顯殿 / ...	“Vo Hien Dien” palace	1819	A place for mandarins in charge of military works
50	Quang Minh Điện	光明殿	“Quang Minh Dien” palace	1810	A place for the Prince (Emperor’s successor) to study
51	Trinh Minh Điện	貞明殿	“Trinh Minh Dien” palace	1810	A place for Emperor’s concubines
52	Tả Hồi Lang	左回廊	“Ta Hoi Lang” left-corridor	1810	The Eastern corridor of “Can Thanh Dien” area
53	Hữu Hồi Lang	右回廊	“Huu Hoi Lang” right-corridor	1810	The Western corridor of “Can Thanh Dien” area

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
54	Tả Trường Lang	左長廊	“Ta Truong Lang” left long-corridor	1820-1841	The long eastern corridor of the “Can Thanh Dien” area
55	Hữu Trường Lang	右長廊	“Huu Truong Lang” right long-corridor	1820-1841	The long western corridor of the “Can Thanh Dien” area
56	Nhật Thành Lâu	日成樓	“Nhat Thanh Lau” pavilion	1841	Not identified
57	Đông Các Điện	東閣殿	“Dong Cac Dien” palace	1826	The highest office working beside the Emperor
58	Tụ Khuê Thơ Lâu	聚奎書樓	“Tu Khue Tho Lau” pavilion	1852	Store the ancient documents
59	Dưỡng Chánh Đường	養正堂	“Duong Chanh Duong” hall	1825	A place for princes aged 12 to 15 to live and study
60	Thái Y Viện	太醫院	“Thai Y Vien” medical store	1853	The royal hospital
61	Thượng Thiện Sở	尚膳所	“Thuong Thien So” royal restaurant	1853	The royal kitchen
62	Duyệt Thị Đường	閱是堂	“Duyet Thi Duong” royal theater	1826	A theater for Emperors & the Nguyen Court
63	Vạn Tự Hồi Lang	卍字迴廊	“Van Tu Hoi Lang” corridor	1828	The corridors were built in the shape of a swastika (卍)
64	Vĩnh Phương Hiên	.....	“Vinh Phuong Hien” parthouse	1828	A place for relaxation & sightseeing
65	Hoàn/Hàm Xuân Hiên	.....	“Hoan Xuan Hien” parthouse	1828	A place for relaxation & sightseeing
66	Cẩm Xuân Đường	.....	“Cam Xuan Duong” hall	1828	A place for relaxation & sightseeing
67	Di Nhiên Đường	.....	“Di Nhen Duong” hall	1828	A place for relaxation & sightseeing
68	Thanh Hạ Thơ Lâu	.....	“Thanh Ha Tho Lau” pavilion	1844	A place for relaxation & sightseeing

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
69	Khôn Thái Điện/ Cao Minh Trung Chánh/ Cung Khôn Nguyên	坤泰殿 / ...	“Khon Thai Dien” palace	1807	For the Empress to live
70	Dưỡng Tâm Điện	養心殿	“Duong Tam Dien” palce	1810	For Emperor to read books
71	Thuận Huy Viện	順徽院	“Thuan Huy Vien” house	1810	A place of concubines
72	Trùng Quang Tạ	... 榭	“Trung Quang Ta” floating pavilion	1843	A place for relaxation & sightseeing
73	Tĩnh Quan Đường/Viện	靜觀堂	“Tinh Quan Duong” hall	1843	The private theater for the Emperor and Empress, performed by the ladies in the HIC
74	Đoan Huy Viện	端徽院	“Doan Huy Vien” house	1827	A place of concubines
75	Đoan Trang Viện	端莊院	“Doan Trang Vien” house	1821	A place of concubines
76	Đoan Tường Viện	.....	“Doan Tuong Vien” house	1822	A place of concubines
77	Đoan Thuận Viện	.....	“Doan Thuan Vien” house	1843	A place of concubines
78	Đoan Hòa Viện	.....	“Doan Hoa Vien” house	1846	A place of concubines
79	Đông Kinh Lâu	東京樓	“Dong Kinh Lau” pavilion	Unknown	Not identified
80	Minh Viễn Lâu	.....	“Minh Vien Lau” pavilion	1827	For the Emperor to relax
81	Nhan Trí Đường	.....	“Nhan Tri Duong” hall	1821	Not identified
82	Vân Cẩm Viện	.....	“Van Cam Vien” house	1828	Not identified
83	Hương Cẩm Nhà	.....	“Huong Cam” house	1826	Not identified
84	Linh Xuân Đền	.....	“Linh Xuan Den” shrine		Not identified

The inventory drawings and photographs of the buildings in this area are as follows:

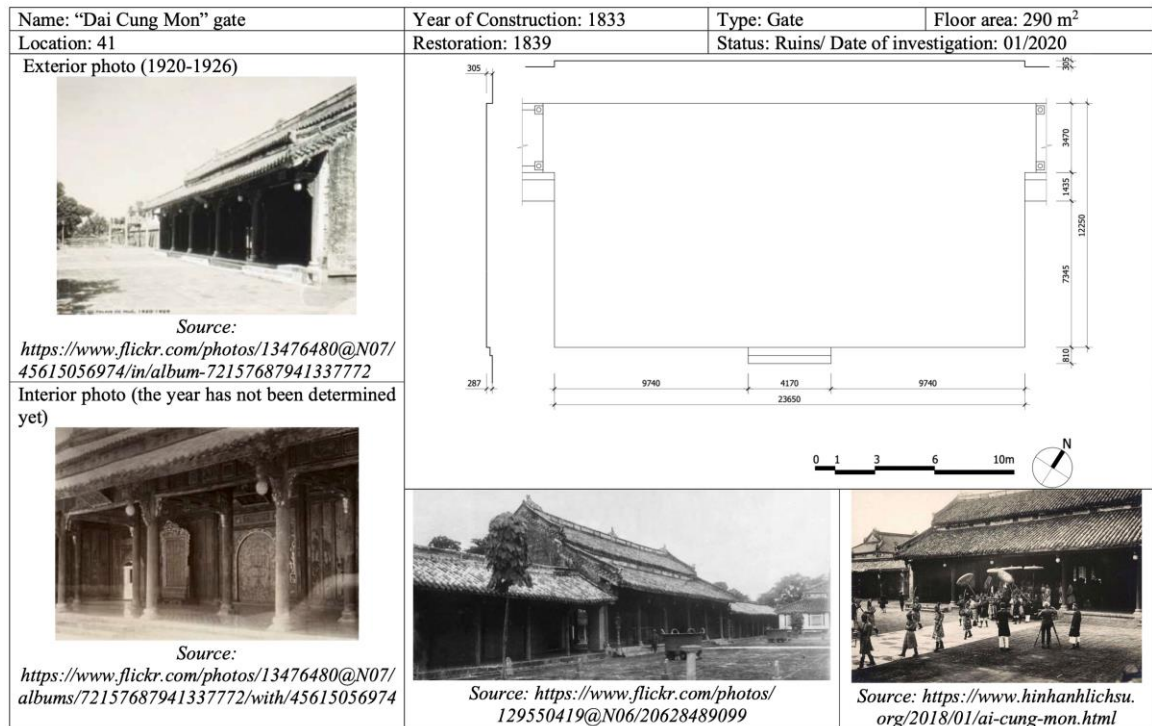


Figure 103: Inventory of "Dai Cung Mon" gate
(Source: The drawing was based on Nakazawa et al. (1997); Nakazawa et al. (1995); and the author's modifications)

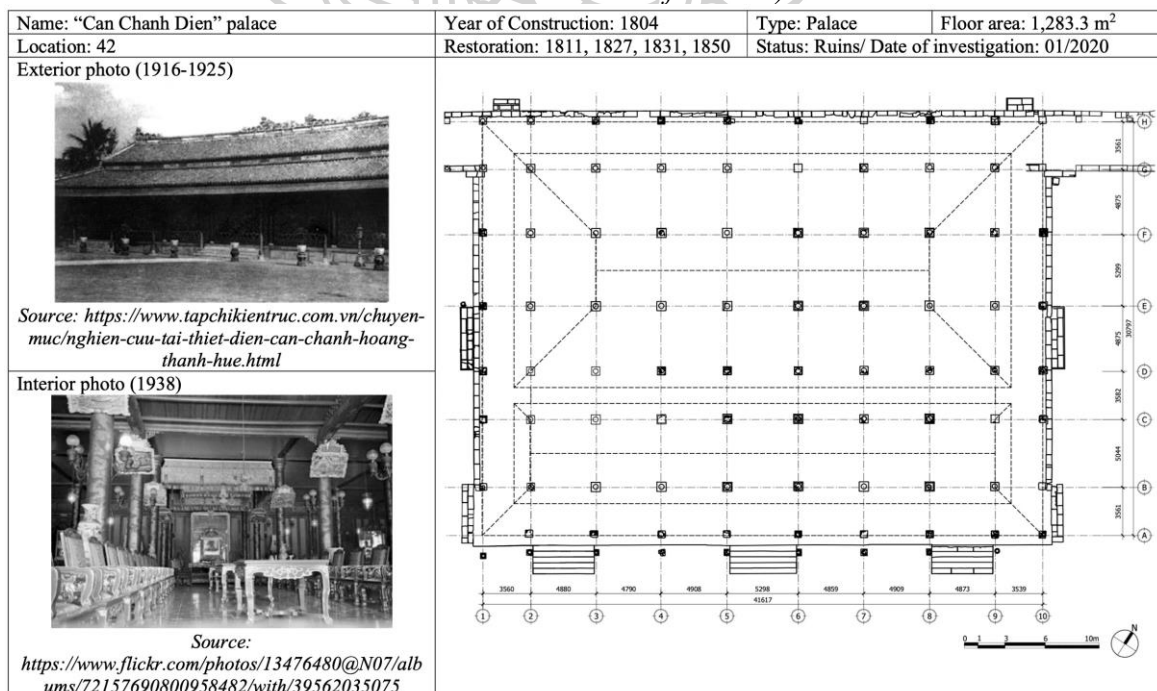


Figure 104: Inventory of "Can Chanh Dien" palace
(Source: The drawing was based on Le et al. (2008) and the author's modifications)



a) The exterior photo of “Can Chanh Dien” palace (1892)
 (Source: <https://hieuco.net/tin-tuc-su-kien/chum-anh-dien-can-chanh-o-co-do-hue-khi-chua-bi-pha-huy-364.html>. Date of access: September 2024)



b) The exterior photo of “Can Chanh Dien” palace (1926)
 (Source: https://commons.wikimedia.org/wiki/File:Enthronement_of_Emperor_Bảo_Đại_001.jpg. Date of access: September 2024)

Figure 105: The historical exterior photos of “Can Chanh Dien” palace



Figure 106: The historical interior photo of “Can Chanh Dien” palace (1930s)
 (Source: <https://www.flickr.com/photos/13476480@N07/26587027158/in/photostream/>. Date of access: September 2021)

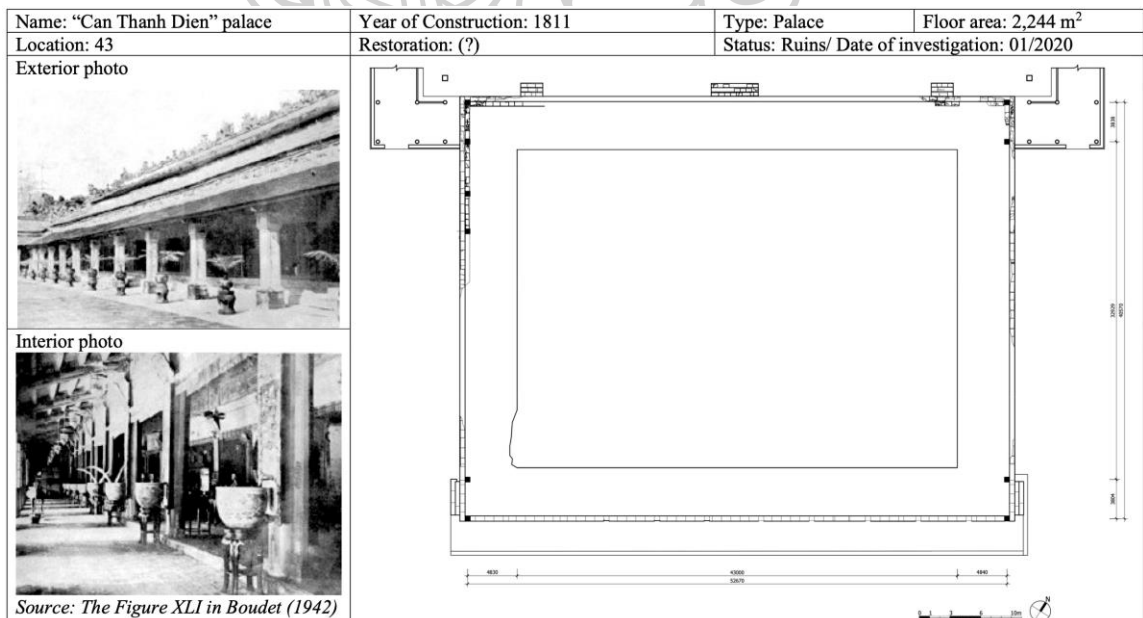


Figure 107: Inventory of “Can Thanh Dien” palace
 (Source: The drawing was based on Nakazawa et al. (1997) and the author’s modifications)

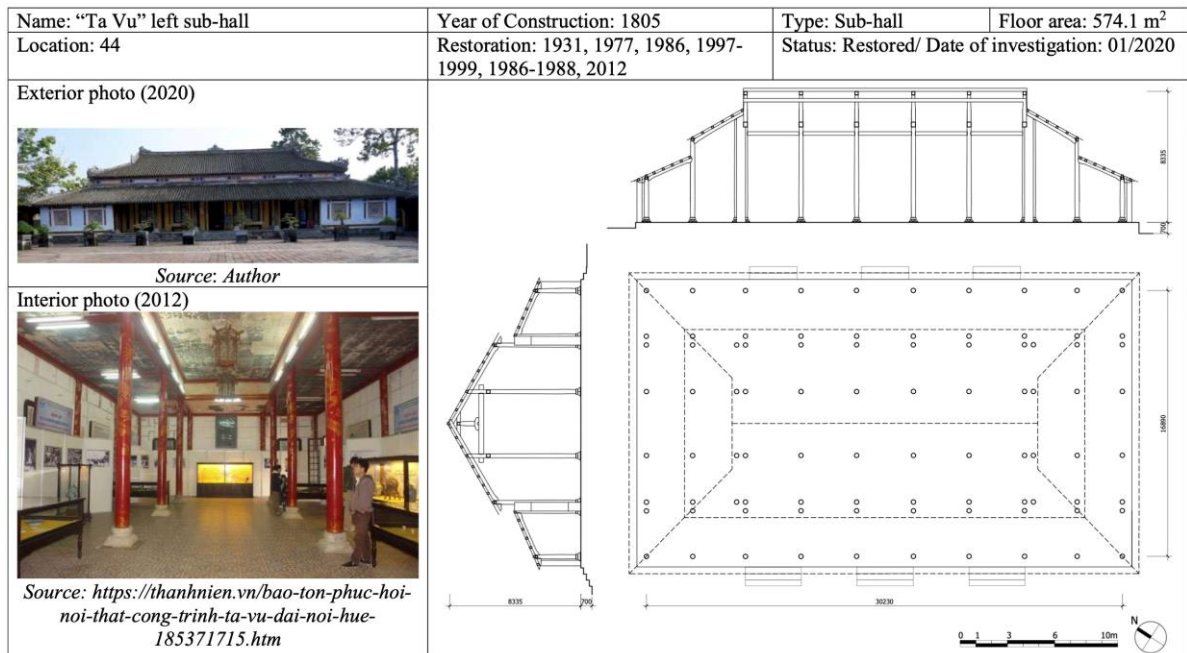


Figure 108: Inventory of "Ta Vu" left sub-hall

(Source: The drawing was based on the Institute for Conservation of Monuments (ICM) (2020, pp. 68-75); Nakazawa et al. (1997); and the author's modifications)



Figure 109: The historical photo of "Ta Vu" left sub-hall (1919-1926)

(Source: <https://www.flickr.com/photos/13476480@N07/38581331612>.

Date of access: September 2021)


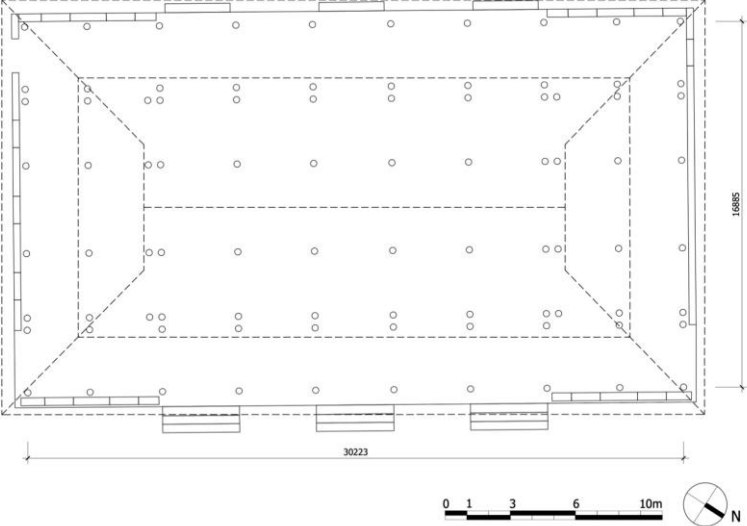

Name: "Huu Vu" right sub-hall	Year of Construction: 1805	Type: Sub-hall	Floor area: 571.2 m ²
Location: 45	Restoration: 1831, 1977, 1986, 1997-1999, 1986-1988, 2012	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)  Source: Author			
Interior photo  Source: https://vi.wikipedia.org/wiki/Hoàng_Thành_Huế			

Figure 110: Inventory of "Huu Vu" right sub-hall
(Source: The drawing was based on Nakazawa et al. (1997) and the author's modifications)



Figure 111: The historical photo of "Huu Vu" right sub-hall
(The date of the photo has not yet been determined)
(Source: <https://www.flickr.com/photos/13476480@N07/5302334390/>.
Date of access: September 2021)

Name: "Van Minh Dien" palace	Year of Construction: 1819	Type: Palace	Floor area: 268.3 m ²
Location: 48	Restoration: 1827, 1837, 1850	Status: Ruins/ Date of investigation: 01/2020	
Exterior photo			
None			
Interior photo			
None			

Figure 112: Inventory of "Van Minh Dien" palace

(Source: The drawing was based on Nakazawa et al. (1997) & the author's modifications)

Name: "Vo Hien Dien" palace	Year of Construction: 1819	Type: Palace	Floor area: 267.6 m ²
Location: 49	Restoration: 1837	Status: Ruins/ Date of investigation: 01/2020	
Exterior photo			
None			
Interior photo			
None			

Figure 113: Inventory of "Vo Hien Dien" palace

(Source: The drawing was based on Nakazawa et al. (1997) & the author's modifications)

Name: "Quang Minh Dien" palace	Year of Construction: 1810	Type: Palace	Floor area: 650 m ²
Location: 50	Restoration: 1830,	Status: Ruins/	Date of investigation: 01/2020
Exterior photo			
None			
Interior photo			
None			

Figure 114: Inventory of "Quang Minh Dien" palace

(Source: The drawing was based on Nakazawa et al. (1997) & the author's modifications)

Name: "Trinh Minh Dien" palace	Year of Construction: 1810	Type: Palace	Floor area: 481.3 m ²
Location: 51	Restoration: 1828, 1830	Status: Ruins/	Date of investigation: 01/2020
Exterior photo			
None			
Interior photo			
None			

Figure 115: Inventory of "Trinh Minh Dien" palace

(Source: The drawing was based on Nakazawa et al. (1997) & the author's modifications)

Name: "Nhat Thanh Lau" pavilion	Year of Construction: 1841	Type: Pavilion	Floor area: 235.5 m ²
Location: 56	Restoration: 2018	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)			
<p>Source: Author</p>			
Interior photo	None		

Figure 116: Inventory of "Nhat Thanh Lau" pavilion

(Source: The drawing was based on Nakazawa et al. (1997), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author's modifications)



Figure 117: The historical photo of "Nhat Thanh Lau" pavilion (1919)

(Source: <https://www.flickr.com/photos/13476480@N07/50021193833/in/photostream/>. Date of access: September 2021)

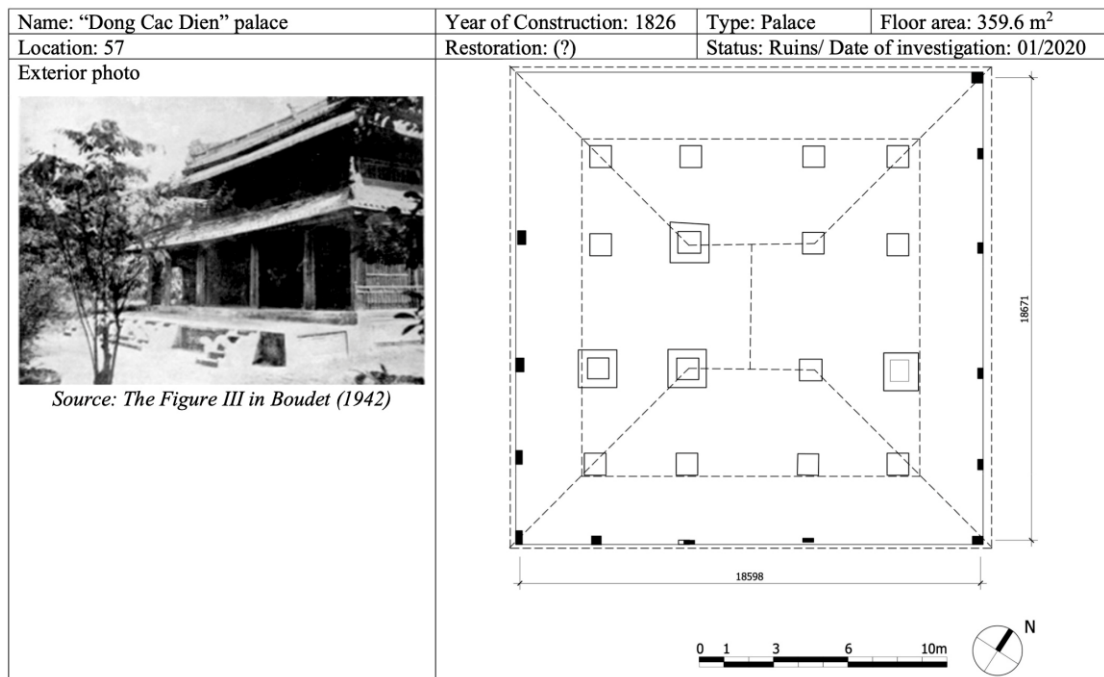


Figure 118: Inventory of “Dong Cac Dien” palace
(Source: The drawing was based on the measurement results by Le Vinh An from 2004 to 2014 and the author’s modifications)

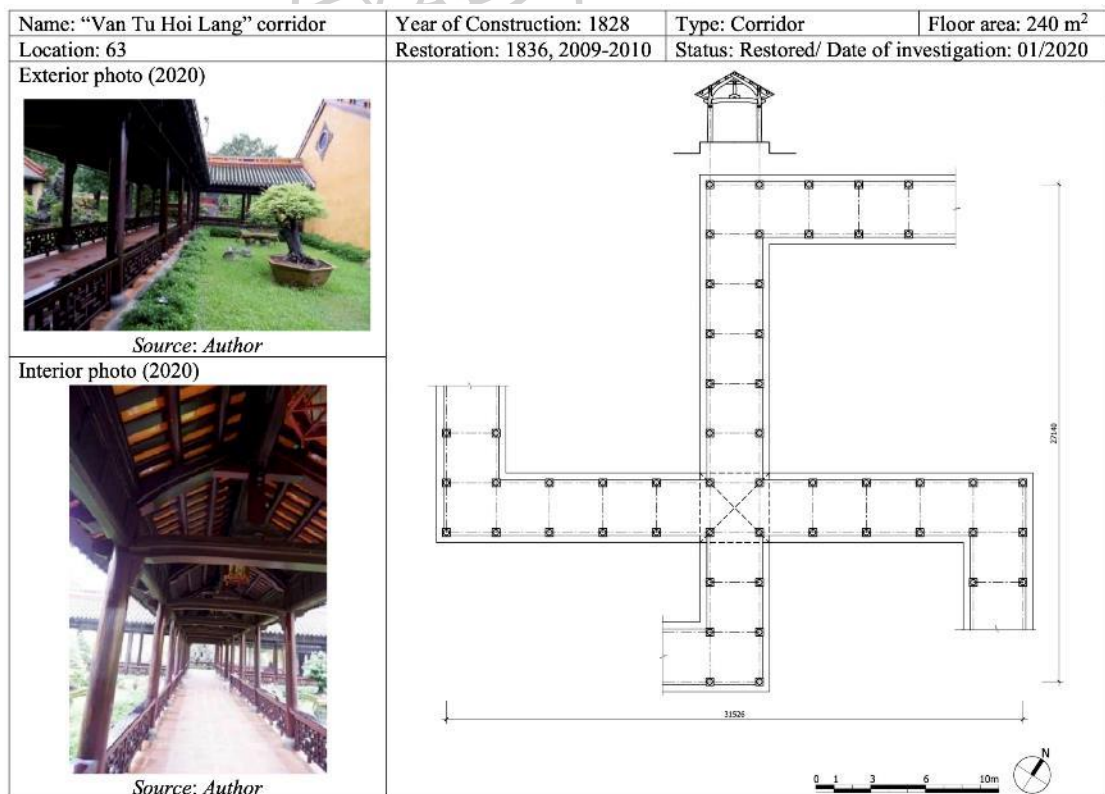


Figure 119: Inventory of “Van Tu Hoi Lang” corridor
(Source: The drawing was based on Pham (2004); Phan et al. (2014); and the author’s modifications)


Name: "Vinh Phuong Hien" parthouse	Year of Construction: 1828	Type: Parthouse	Floor area: 105 m ²
Location: 64	Restoration: 1836, 2009-2010	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)			
	<i>Source: Author</i>		

Figure 120: Inventory of "Vinh Phuong Hien" parthouse
 (Source: The drawing was based on Pham (2004); Phan et al. (2014),
 and the author's modifications)


Name: "Hoan Xuan Hien" parthouse	Year of Construction: 1828	Type: Parthouse	Floor area: 105 m ²
Location: 65	Restoration: 1836, 2009-2010	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)			
	<i>Source: Author</i>		

Figure 121: Inventory of "Hoan Xuan Hien" parthouse
 (Source: The drawing was based on Pham (2004); Phan et al. (2014),
 and the author's modifications)

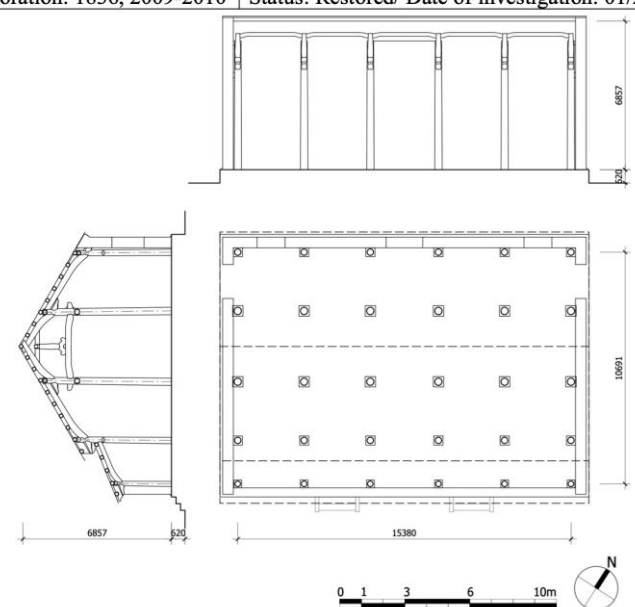

Name: “Cam Xuan Duong” hall	Year of Construction: 1828	Type: Hall	Floor area: 206.5 m ²
Location: 66	Restoration: 1836, 2009-2010	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)			
 <i>Source: Author</i>			

Figure 122: Inventory of “Cam Xuan Duong” hall
(Source: The drawing was based on Pham (2004); Phan et al. (2014),
and the author’s modifications)

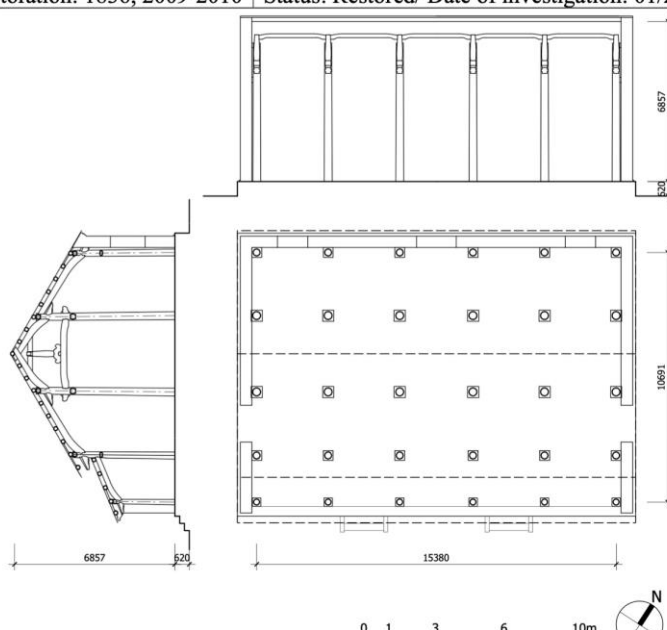

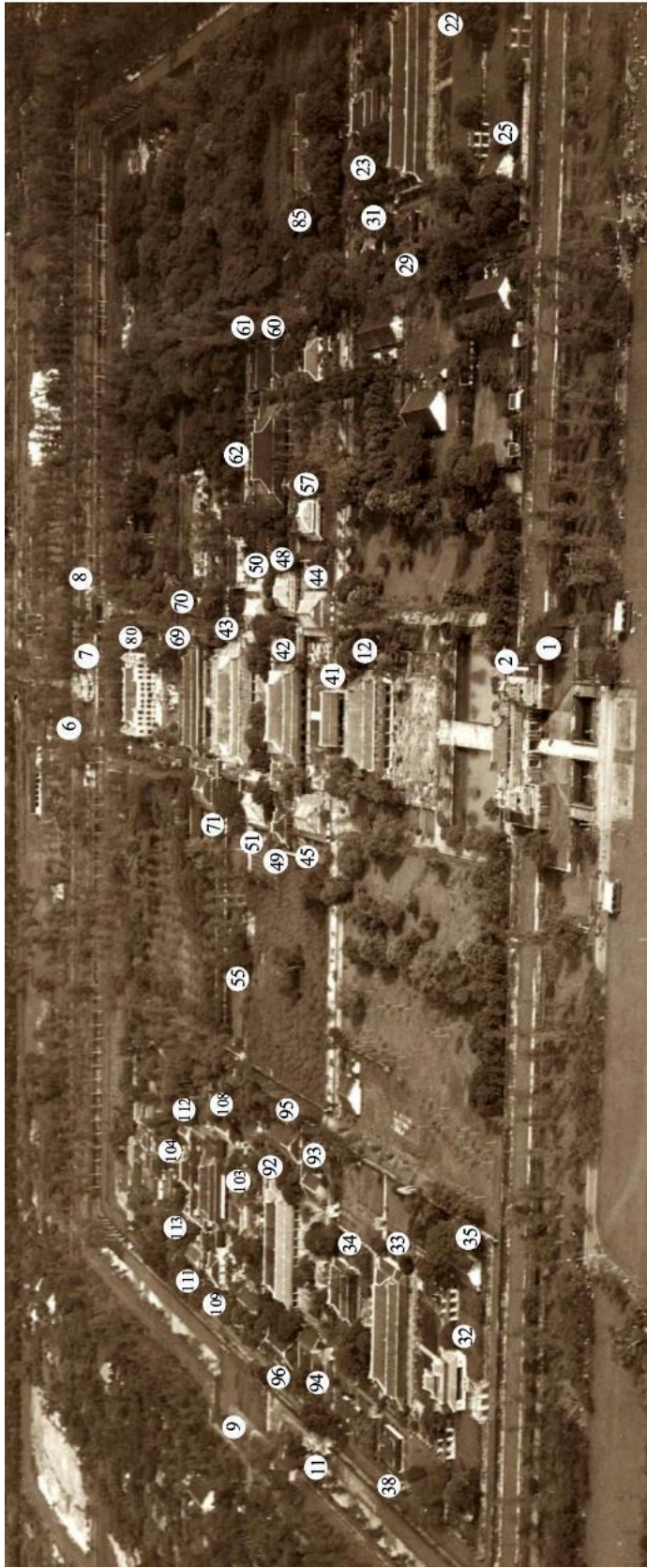
Name: “Di Nhlen Duong” hall	Year of Construction: 1828	Type: Hall	Floor area: 206.5 m ²
Location: 67	Restoration: 1836, 2009-2010	Status: Restored/	Date of investigation: 01/2020
Exterior photo (2020)			
 <i>Source: Author</i>			

Figure 123: Inventory of “Di Nhlen Duong” hall
(Source: The drawing was based on Pham (2004); Phan et al. (2014),
and the author’s modifications)

Name: “Duong Tam Dien” palce	Year of Construction: 1810	Type: Palace	Floor area: 366.2 m ²
Location: 70	Restoration: 1830	Status: Ruins/	Date of investigation: 01/2020
Exterior photo			
Interior photo			
None	None		

Figure 124: Inventory of “Duong Tam Dien” palace
 (Source: The drawing was based on Nakazawa et al. (1997)
 and the author’s modifications)

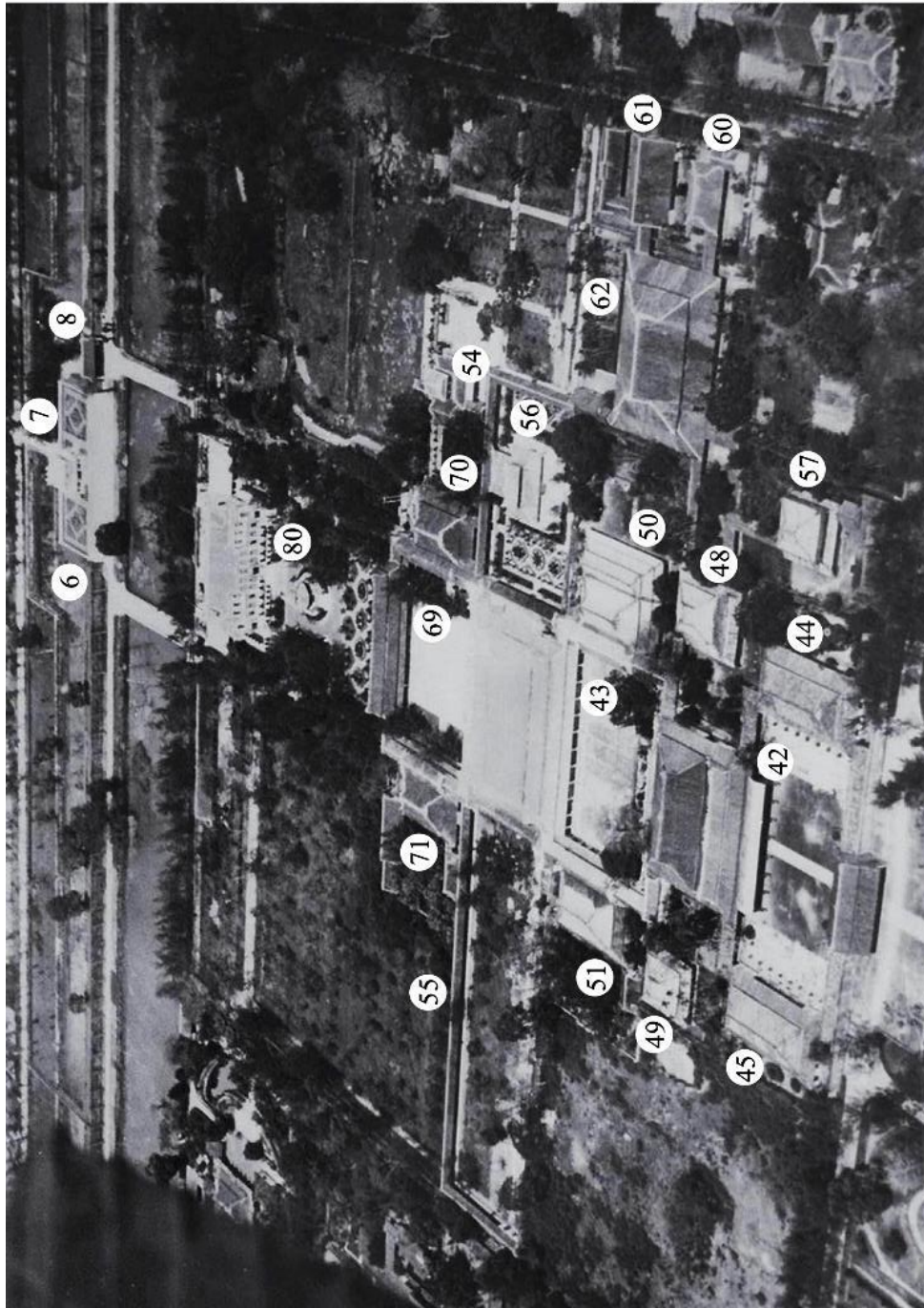
In addition, several historical photographs provide supplementary data for the typological study of the building, as follows:



No.	Name of building	No.	Name of building	No.	Name of building	No.	Name of building	No.	Name of building
1	Ngo Mon gate	22	Thai To Mieu temple	49	Vo Hien Dien palace	70	Duong Tam Dien palace	103	Dien Tho Chanh Dien palace
2	Ngũ Phụng Lau pavilion	23	Trieu To Mieu temple	50	Quang Minh Dien palace	71	Thuan Huy Vien house	104	Tho Ninh Dien palace
6	Northern podium	25	Huu Tung Tu shrine	51	Trinh Minh Dien palace	80	Lau pavilion (shown in the photo is "Kien Trung Dien" palace, built in 1921-1923)	108	Ta Tra Gia left house
7	The location of "Tu Thong Dinh" house (shown in the photo is "Tu Phuong Vo Su Lau" pavilion, built in 1923)	29	Tho Cong Tu shrine	60	Can Chanh Dien palace	85	The location of "Chi Thu So-Noi Tao-Doc Cong So" house (shown in the photo is "Noi Vu Phu" royal treasury store, built in 1906)	109	The location of "Huu Tra Gia" right house/ "Thong Minh Duong" hall (shown in the photo is "Tinh Minh Lau" pavilion, built in 1927)
8	Hoa Binh Mon gate	31	Than Tru kitchen	61	Can Thanh Dien palace	94	Huu Phoi Dien right sub-hall	111	Phuoc Tho Am shrine/ Khuong Ninh Cac pavilion
9	Western podium	32	Hien Lam Cac pavilion	62	Ta Vu left sub-hall	95	Ta Tung Vien house	112	Than Tru kitchen
11	Chuong Duc Mon gate	33	The To Mieu temple	69	Huu Vu right sub-hall	96	Huu Tung Vien house	113	Tho Chi Kho store
12	Thai Hoa Dien palace	34	Hung To Mieu temple	48	Van Minh Dien palace				

Figure 125: The aerial photograph of Hue Imperial City viewed from the South (1932)
 Note: The number of buildings corresponds the number shown in Figure 69.

(Source: <https://www.flickr.com/photos/13476480@N07/14792434935>. Date of access: September 2021)

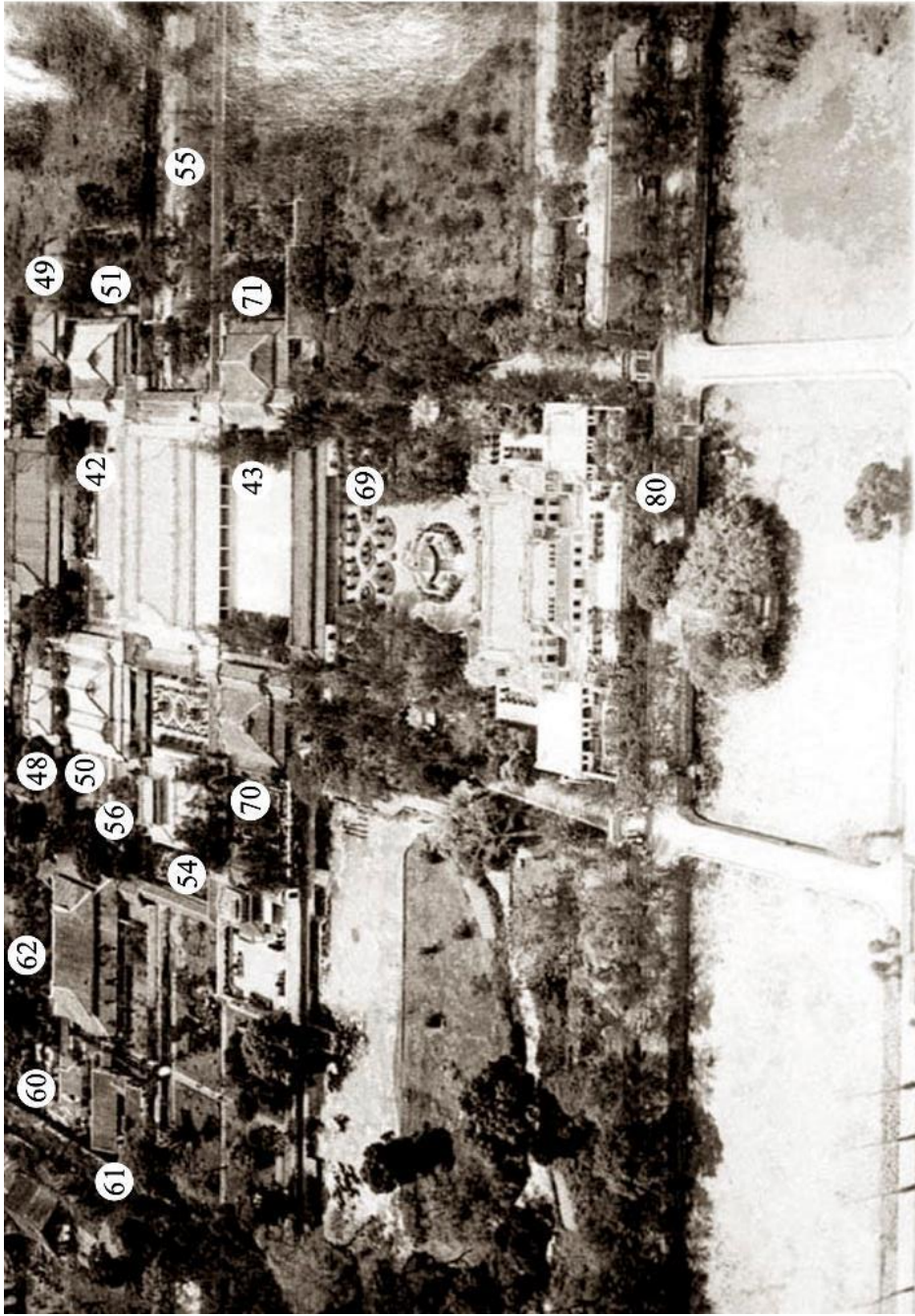


No.	Name of building
6	Northern podium The location of "Tu Thong Dinh" house (shown in the photo is "Tu Phuong Vo Su Lau" pavilion, built in 1923)
7	
8	Hoa Binh Mon gate
42	Can Chanh Dien palace
43	Can Thanh Dien palace
44	Ta Vu left sub-hall
45	Huu Vu right sub-hall
48	Van Minh Dien palace
49	Vo Hien Dien palace
50	Quang Minh Dien palace
51	Trinh Minh Dien palace
54	Ta Truong Lang left long-corridor
55	Huu Truong Lang right long-corridor
56	Nhat Thanh Lau pavilion
57	Dong Cac Dien palace
60	Thai Y Vien medical store
61	Thuong Thien So royal restaurant
62	Duyet Thi Duong royal theater
69	Khon Thai Dien palace
70	Duong Tam Dien palace
71	Thuan Huy Vien house
80	The location of the "Minh Vien Lau" pavilion (shown in the photo is "Kien Trung Dien" palace, built in 1921-1923)

Figure 126: The aerial photograph of Hue Imperial City viewed from the West (1930s)

Note: The number of buildings corresponds the number shown in Figure 69.

(Source: <https://www.flickr.com/photos/13476480@N07/40555329201>. Date of access: September 2021)



No.	Name of building
42	Can Chanh Dien palace
43	Can Thanh Dien palace
48	Van Minh Dien palace
49	Vo Hien Dien palace
50	Quang Minh Dien palace
51	Trinh Minh Dien palace
54	Ta Truong Lang left long-corridor
55	Huu Truong Lang right long-corridor
56	Nhat Thanh Lau pavilion
60	Thai Y Vien medical store
61	Thuong Thien So royal restaurant
62	Duyet Thi Duong royal theater
69	Khon Thai Dien palace
70	Duong Tam Dien palace
71	Thuan Huy Vien house
80	The location of the "Minh Vien Lau" pavilion (shown in the photo is "Kien Trung Dien" palace, built in 1921-1923)

Figure 127: The aerial photograph of Hue Imperial City viewed from the North (1930s)

Note: The number of buildings corresponds the number shown in Figure 69.

(Source: <https://www.flickr.com/photos/13476480@N07/24803287998/in/photostream/>. Date of access: September 2021)

4.2.6 “Noi Vu Phu” royal treasury store

“Noi Vu Phu” residence was located on the left (east) side of the HIC, south of the “Co Ha Vien” royal garden and north of the “Thai Mieu” temple area, with the Forbidden City to the west (The Cabinet of Nguyen Court, 1993a, p. 152). In 1839, during Minh Mang period, this area was expanded on a larger scale, consisting of one main building and several component buildings, including “Chi Thu So” house, “Noi Tao So” house, “Doc Cong So” house, and “Thap Hieu Kho” store (which was used for offices in charge of royal revenue and as storehouses for treasures and precious items such as gold, silver, jewels, silk, oil, crystal, and medicine) (The National Department of History of Nguyen Dynasty, 1960, p. 71). The site planning principle for the area specifies that the main direction is south, with the main building centrally located on the main axis of this area. All component buildings (storehouses/workshops) were located behind the main building and arranged in a well-proportioned layout. Other buildings, such as the “Tap Hien Vien” house, “Thi Ve Xu” camp, and “Chanh Mong Duong” hall, were not part of the layout during the Minh Mang period. They were built in later years for additional functions (The National Department of History of Nguyen Dynasty, 1960, pp. 70-71).

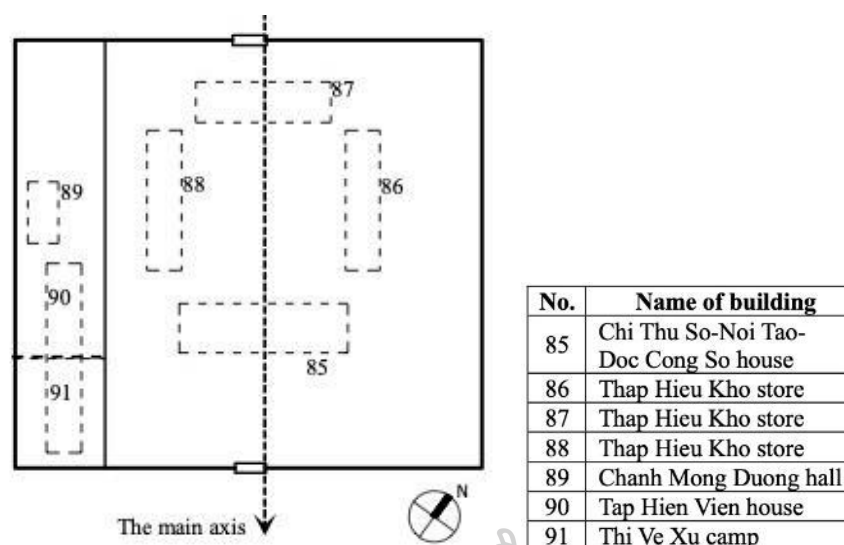


Figure 128: The site plan of the sixth area - “Noi Vu Phu” royal treasury store
(Source: The drawing was based on Nakazawa et al. (1995) and the study information of the author)

Table 10. The buildings in the “Noi Vu Phu” royal treasury store

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
85	Chi Thu-Nội Tạo-Độc Công Sở	支收所 內造所 督工所	“Chi Thu So-Noi Tao-Doc Cong So” house	1839	An office of the mandarins in charge of the accounting
86-88	Thập Hiệu Khố	十號庫	“Thap Hieu Kho” store	1839	A place to store the assets of the Nguyen Dynasty
89	Chánh Mông Đường	正蒙堂	“Chanh Mong Duong” hall	1882	For Prince to study (later Emperor Dong Khanh)
90	Tập Hiền Viện	集賢院	“Tap Hien Vien” house	1848	An office of mandarins in charge of drafting books
91	Thị Vệ Xứ	侍衛處	“Thi Ve Xu” camp	1844	A house of the soldiers

4.2.7 “Phung Tien Cung” residence

The current “Phung Tien Cung” residence was officially established in 1837 during the Minh Mang period and served as a temple for worshipping the Emperors and Empresses of the Nguyen Dynasty (The Cabinet of Nguyen Court, 1993a, pp. 74-75, 102-104). The key difference

between “Phung Tien Cung” and the other temple areas (“Thai Mieu” and “The Mieu” temple areas) was that this area was used for other royal members (who were not involved in administrative work), especially women, to worship the Emperors and Empresses (Thai, 1960, p. 57). The main building was the “Phung Tien Dien” palace, which faced the south. Sub-buildings and other component buildings were arranged in a well-proportioned layout. During the Vietnam War, all buildings in this area were destroyed or ruined.

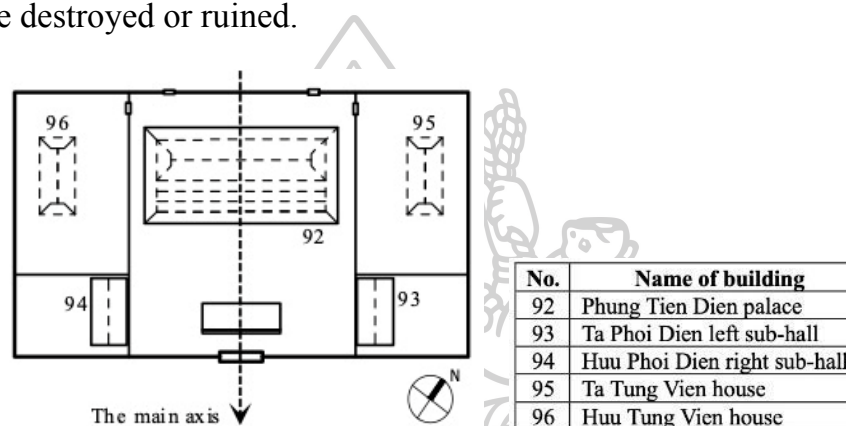


Figure 129: The site plan of the seventh area - “Phung Tien Cung” residence
(Source: The drawing was based on Nakazawa et al. (1995) and the study information of the author)

Table 11. The buildings in the “Phung Tien Cung” residence

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
92	Phụng Tiên Điện	奉先殿	“Phung Tien Dien” palace	1837	Worship the Emperors and Empresses. A place for women to worship.
93	Tả Vu	左廡	“Ta Vu” left sub-hall	1837-1841	The sub-building on the East of “Phung Tien Dien” palace
94	Hữu Vu	右廡	“Huu Vu” right sub-hall	1837-1841	The sub-building on the West of “Phung Tien Dien” palace
95	Tả Phối Điện	左配殿	“Ta Phoi Dien” palace	1837-1841	A place for the Emperor’s concubines after the Emperor died to live
96	Hữu Phối Điện	右配殿	“Huu Phoi Dien” palace	1837-1841	A place for the Emperor’s concubines after the Emperor died to live

The inventory drawings and photographs of the buildings in this area are as follows:

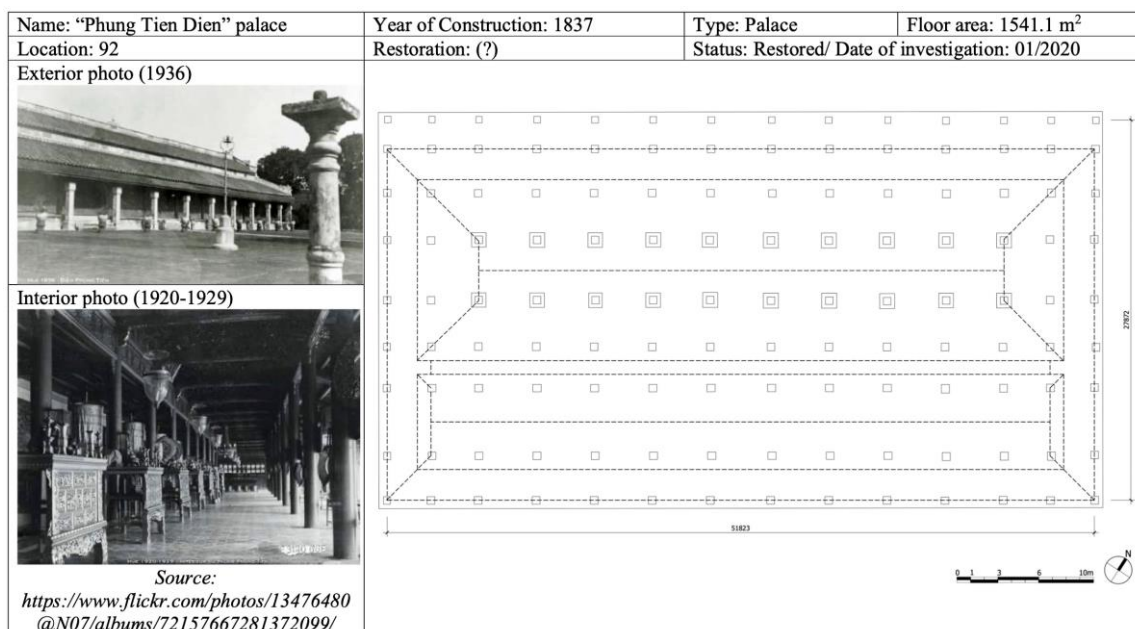


Figure 130: Inventory of “Phung Tien Dien” palace
 (Source: The drawing was based on Rokutanda and Nakagawa (2013)
 and the author’s modifications)



Figure 131: The historical exterior photo of “Phung Tien Dien” palace (1920-1929)
 (Source: <https://www.flickr.com/photos/13476480@N07/38973551701/in/photostream/>. Date of access: September 2021)



Figure 132: The historical interior photo of “Phung Tien Dien” palace (1920-1929)
 (Source: <https://www.flickr.com/photos/13476480@N07/38571269406>.
 Date of access: September 2021)

4.2.8 “Co Ha Vien” royal garden

According to historical documents (The National Department of History of Nguyen Dynasty, 1960, p. 61), this area was located on the left (east) side of the HIC, on the southern side of “Noi Kim Thuy Ho” lake, and faced south. The main building was the “Kham Van Dien” palace, with the main entrance gate being the “Thuong Uyen Mon” gate. Other component buildings were “Thuong Thang Lau” pavilion, “Minh Ly Thu Trai” parthouse, “Nhat Tan Hien” parthouse, “Quang Bieu Cac” pavilion, and “Ninh Mat Hoi Lang” corridor.

“Co Ha Vien” royal garden was primarily used by Emperor Gia Long to read books. In 1837, Emperor Minh Mang built the “Co Ha Duong” hall for relaxation. Additionally, in 1843, Emperor Thieu Tri decided to construct new buildings in this area and renamed it to “Co Ha Vien” royal garden (The Cabinet of Nguyen Court, 1993a, pp. 31-32).

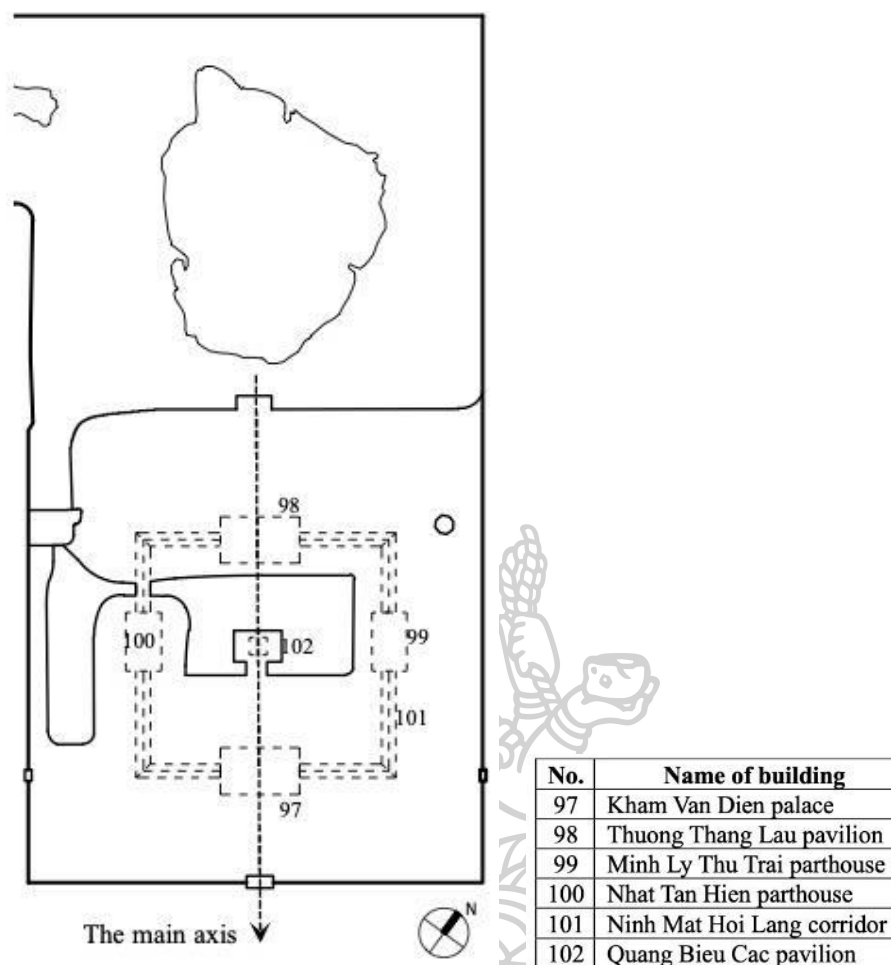


Figure 133: The site plan of the eighth area - “Co Ha Vien” royal garden
(Source: The drawing was based on Nakazawa et al. (1995) and the study information of the author)

Table 12. The buildings in the “Co Ha Vien” royal garden

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
97	Khâm Văn Điện/ Cơ Hạ Đường	欽文殿 /_	“Kham Van Dien” palace/ “Co Ha Duong” hall	1837-1841	A place for Emperors and Princes to study
98	Thưởng Thắng Lầu	賞勝樓	“Thuong Thang Lau” pavilion	1843	A place for Emperors and Princes to relax
99	Minh Lý Thư Trai/ Minh Lý Gia	.....	“Minh Ly Thu Trai” parthouse	1843
100	Nhật Thiện Hiên	.....	“Nhat Tan Hien” parthouse	1843
101	Ninh Mật Hồi Lang	寧謐迴 廊	“Ninh Mat Hoi Lang” corridor	1843	
102	Quang Biểu Các	光表閣	“Quang Bieu Cac” pavilion	1843	

4.2.9 “Dien Tho Cung” residence

Based on The National Department of History of Nguyen Dynasty (2002b, p. 590), in 1804, Emperor Gia Long built the “Truong Tho Cung” residence for the Empress Dowager, located on the northern side of the “Phung Tien Cung” residence. In 1820, Emperor Minh Mang built a new residence for his Empress Dowager on the same site, renaming it “Tu Tho Cung” residence (The National Department of History of Nguyen Dynasty, 2007a, p. 80). The new residence followed a similar construction principle to other areas: the main direction faced south, with two main buildings aligned along the main axis, also facing south. The front building was called the “Tien Dien” palace, and the back building was called the “Dien Tho Chanh Dien” palace. The component buildings were arranged in a well-proportioned layout. During the Tu Duc period, this area was renamed “Gia Tho Cung” residence. In 1901, during the Thanh Thai period, the residence was renamed “Ninh Tho Cung” residence, and some buildings were repaired and restored during this time. In 1917, Emperor Khai Dinh changed the name of the residence to “Dien Tho Cung” residence (Vietnam National Museum of History & Hue Monuments Conservation Center (HMCC), 1999).

Thus, this area served as the residence of the Empress Dowager and underwent numerous changes throughout the Nguyen Dynasty. However, the current construction principles were established during the Minh Mang period. Emperor Tu Duc enhanced the scale and architectural appearance of this area by adding the “Tho Ninh Dien” palace and the “Truong Du Ta” floating pavilion (The Cabinet of Nguyen Court, 1993a, pp. 30-45).

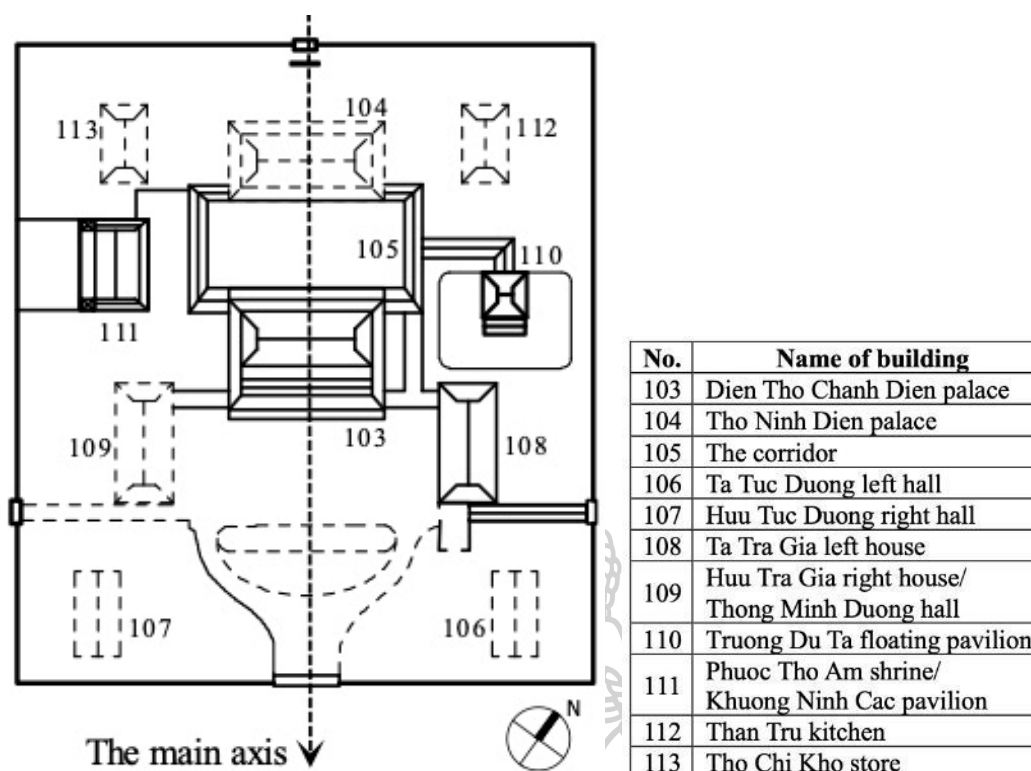


Figure 134: The site plan of the ninth area - “Dien Tho Cung” residence
(Source: The drawing was based on Nakazawa et al. (1995) and the study information of the author)

Table 13. The buildings in the “Dien Tho Cung” residence

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
103	Diên Thọ Chánh Điện	延壽正殿	“Dien Tho Chanh Dien” palace	1822	The main palace: for the Empress Dowager to receive guests and celebrate the longevity
104	Thọ Ninh Điện	壽寧殿	“Tho Ninh Dien” palace	1848	The palace behind “Dien Tho Chanh Dien” palace to live and rest
105	Hành lang	廊	The corridor	1822-1841	The corridor
106	Tả Vu/ Tả Túc	左廡/ ...	“Ta Vu” left sub-hall	1822-1841	The sub-building on the East of the “Dien Tho Chanh Dien” palace
107	Hữu Vu/ Hữu Túc	右廡/ ...	“Huu Vu” right sub-hall	1822-1841	The sub-building on the West of the “Dien Tho Chanh Dien” palace
108	Tả Trà Gia	左茶家	“Ta Tra Gia” left house	1831	The East waiting building of “Dien Tho Chanh Dien” palace (preparing the serious clothes)

109	Hữu Trà Gia (Thông Minh Đường)	右茶家 (聰明堂)	“Huu Tra Gia” right house (“Thong Minh Duong” hall)	1831	First floor: The West waiting building (preparing the serious clothes). Second floor: The theatre
110	Trường Du Tạ/ Lương Phụng Tạ	長儉榭 / 踉鳳榭	“Truong Du Ta” floating pavilion	1849	For the Emperor to relax
111	Phước Thọ Am/ Khương Ninh Các	幅壽庵 /...	“Phuoc Tho Am” shrine	1831	Worship Buddha and Polytheism
112	Thần Trù	神廚	“Than Tru” kitchen	1848	Kitchen
113	Thọ Chi Khố	壽祉庫	“Tho Chi Kho” store	1848	Storehouse

The inventory drawings and photographs of the buildings in this area are as follows:

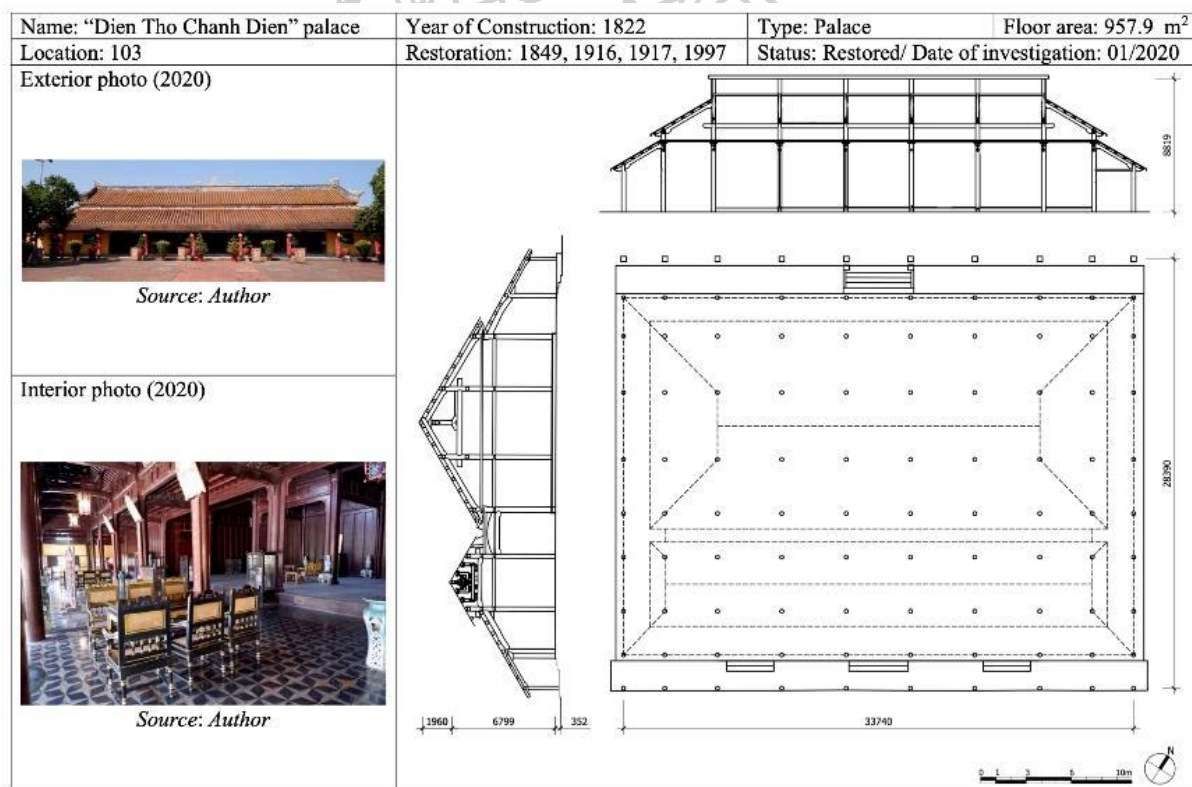


Figure 135: Inventory of “Dien Tho Chanh Dien” palace
(Source: The drawing was based on Tsuchiya et al. (1998)
and the author’s modifications)



Figure 136: The historical photo of “Dien Tho Chanh Dien” palace (1920-1929)
 (Source: <https://www.flickr.com/photos/13476480@N07/50347516131>.
 Date of access: September 2021)

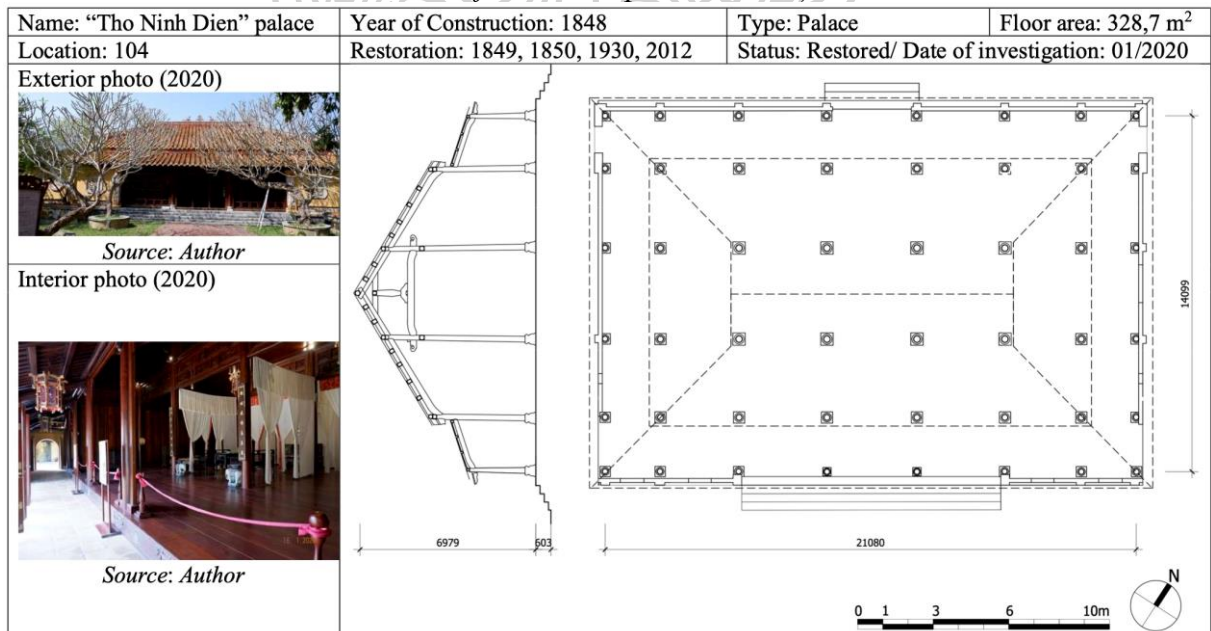


Figure 137: Inventory of “Tho Ninh Dien” palace
 (Source: The drawing was based on Hoang and Le (2015); Vietnam National Museum of History and Hue Monuments Conservation Center (HMCC) (1999); and the author’s modifications)

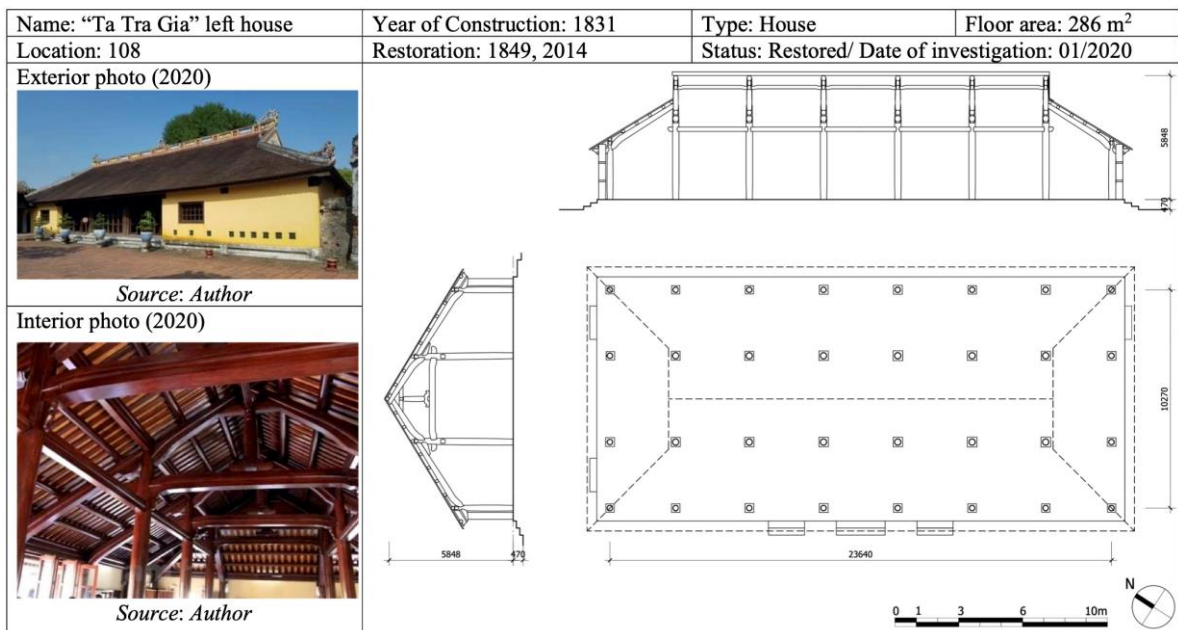


Figure 138: Inventory of "Ta Tra Gia" left house
 (Source: The drawing was based on Hoang and Le (2015), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author's modifications)



Figure 139: The historical photo of "Ta Tra Gia" house, viewed from "Dien Tho Chanh Dien" palace (1920-1925)

(Source: <https://www.flickr.com/photos/13476480@N07/46868597421/in/album-72157634566388946>. Date of access: September 2021)

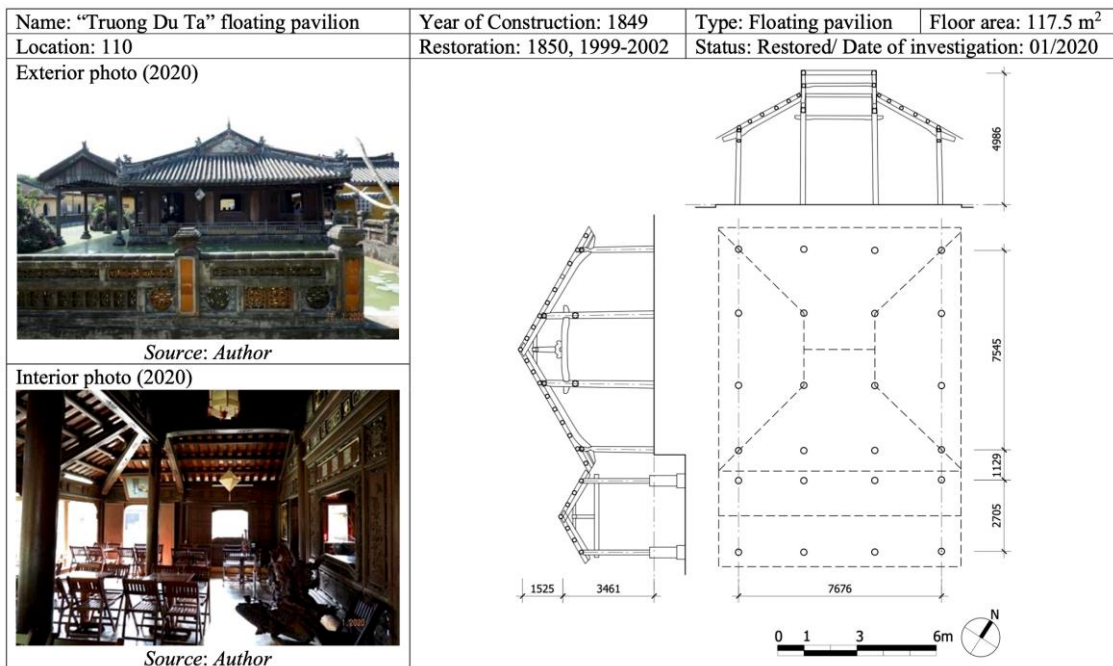


Figure 140: Inventory of “Truong Du Ta” floating pavilion
 (Source: The drawing was based on Rokutanda and Nakagawa (2013), and the author’s modifications)

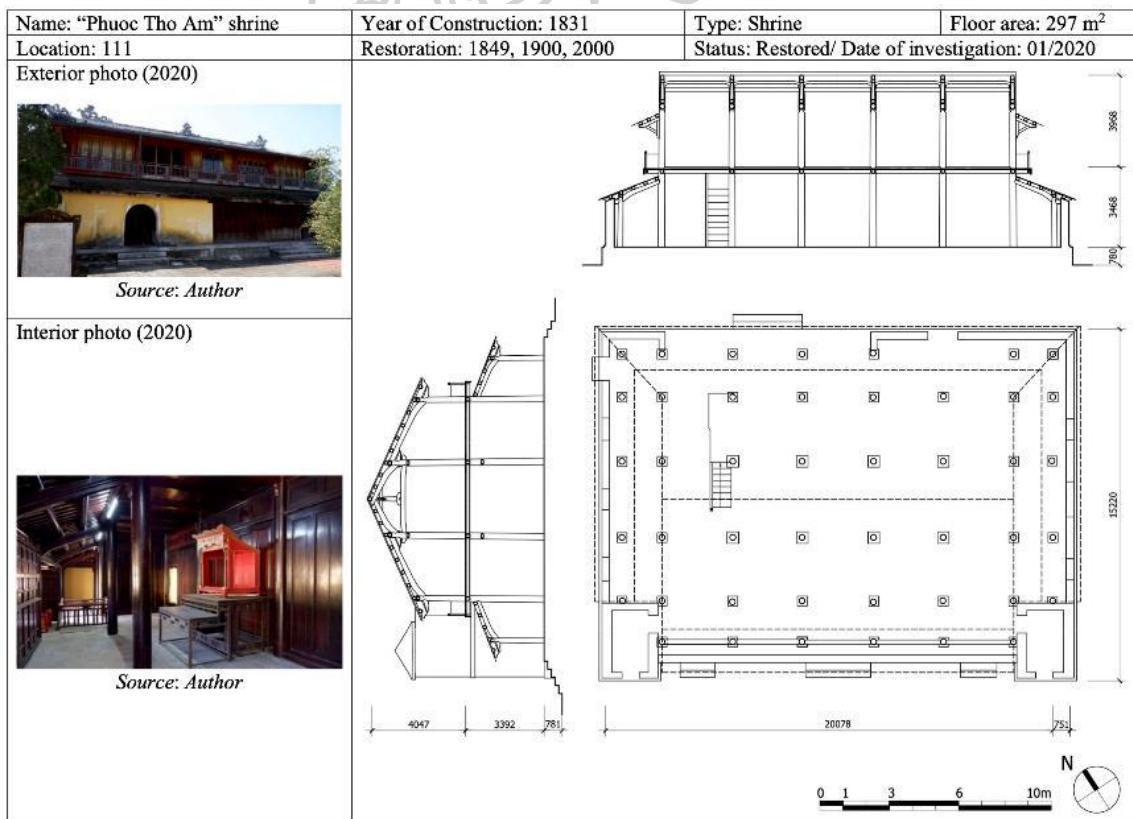


Figure 141: Inventory of “Phuoc Tho Am” shrine
 (Source: The drawing was based on Hoang and Le (2015), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)

4.2.10 “Truong Sanh Cung” residence

According to The National Department of History of Nguyen Dynasty (1960, pp. 22-23), Emperor Minh Mang built this area in 1822 and named it the “Truong Ninh Cung” residence, designed as a royal garden for the relaxation and enjoyment of the Empress Dowager and other royal ladies. In 1846, Emperor Thieu Tri renovated the area and renamed the buildings as follows: the front building became “Ngu Dai Dong Duong” hall, the middle building was designated as the “Tho Khuong Dien” palace, and the building behind “Tho Khuong Dien” palace was named “Van Phuc Lau” pavilion (The Cabinet of Nguyen Court, 1993a, pp. 29-30). Historically, during the Thieu Tri period, the Nguyen royal family experienced the happiness of having five generations living together, prompting Emperor Thieu Tri to rename the front building “Ngu Dai Dong Duong” (五代同堂), which means "five generations living together in the same house" (Thai, 1960, p. 59). In 1886, Emperor Dong Khanh repaired the “Truong Ninh Cung” residence area and renamed it “Truong Sanh Cung” residence (Vietnam National Museum of History & Hue Monuments Conservation Center (HMCC), 2001).

The residence also underwent numerous restorations, renovations, and name changes due to functional transitions. Historical documents suggest that the main direction of this area differs from others in the HIC because, during the Minh Mang period, it served as a royal garden for the Emperor and Empress Dowager to relax. Consequently, the axis did not adhere to the north-south orientation, which was typically the principle for other areas. In later periods, the Nguyen Court aimed to preserve the original construction axis (east-west) while focusing solely on the restoration, renovation, and renaming of the buildings. Between 2005 and

2010, this area underwent restoration and reconstruction to achieve its current architectural appearance.

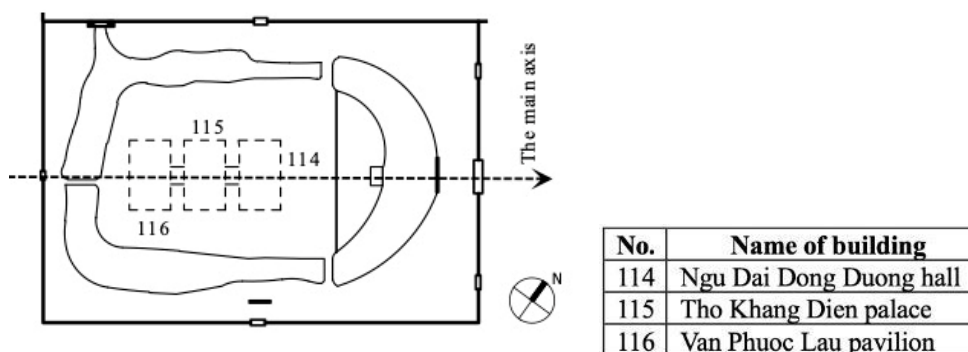


Figure 142: The site plan of the tenth area - “Truong Sanh Cung” residence
(Source: The drawing was based on Nakazawa et al. (1995) and the study information of the author)

Table 14. The buildings in the “Truong Sanh Cung” residence

No.	Name			Year of construction	Function
	Vietnamese	Chinese	English		
114	Ngũ Đại Đông Đường	五代同堂	“Ngu Dai Dong Duong” hall	1822	Holding a ceremony to present the fifth- generation grandson to the Grand Empress Dowager)
115	Thọ Khang Điện	壽康殿	“Tho Khang Dien” Palace	1820-1841	A living area for the Grand Empress Dowager or Empress Dowager
116	Vạn Phước/ Phúc Lâu	萬福樓	“Van Phuoc Lau” pavilion	1820-1841	The building behind “Tho Khang Dien” palace

Thus, during the Tu Duc period, approximately 115 buildings existed (excluding position 79 in Figure 69, which is in an area where the Nguyen Dynasty prohibited recording, so it is not included in the statistics). Based on the construction years of the buildings, this period mainly inherited the architectural style from the Gia Long - Minh Mang period, with an additional 21 buildings constructed from 1841 to 1883. These buildings, mostly located in the eastern and western areas of the HIC, served auxiliary functions to the main buildings, with most of the

architecture reflecting the style of the Gia Long – Minh Mang period. Regarding the names of the buildings in relation to their functions, there was consistency in naming (palace, temple, shrine, hall, sub-hall, house, or pavilion) and their usage. For example, temples were used for worshipping the Nguyen Lords or Emperors; shrines were designated for worshipping Buddha, mandarins, or gods; palaces served as the places of work or residence for the Emperor and the royal family. Initial observations indicate a correlation between the names of the buildings and their corresponding functions and users (ancestors, Emperors, mandarins, or soldiers).

The research results provided the first scientific data for determining the chronology, number of buildings, names, functions, and locations of all the buildings in the HIC during the Tu Duc period. To explore the architecture further, the following study will clarify the main buildings, construction terminology, and spaces within the wooden structures of the buildings in the HIC. This will serve as the second scientific foundation for identifying the common and distinct features in the typological characteristics of the architecture.

4.3 Comparative observation with the Forbidden City, Beijing, China

Under the widespread influence of Chinese culture across East Asia and the historical context of Vietnam's 1,000 years of Northern domination (see section 2.1.4), the Imperial Architecture of the Nguyen Dynasty was also shaped by designs from the Chinese Imperial Court. In the historical context of China, the Forbidden City in Beijing, a vast Imperial complex, was established in 1420. It served as the seat of power for 24 Emperors of the Ming and Qing Dynasties, continuously from 1420 to 1911 (Gao, 2016, pp. 4-5). In this section, to explore the spatial and architectural layout principles in the Nguyen Dynasty design, the study will clarify the similarities and differences in the architectural layout

patterns between the Nguyen Imperial Court and this representative model of the Chinese Imperial Palace.

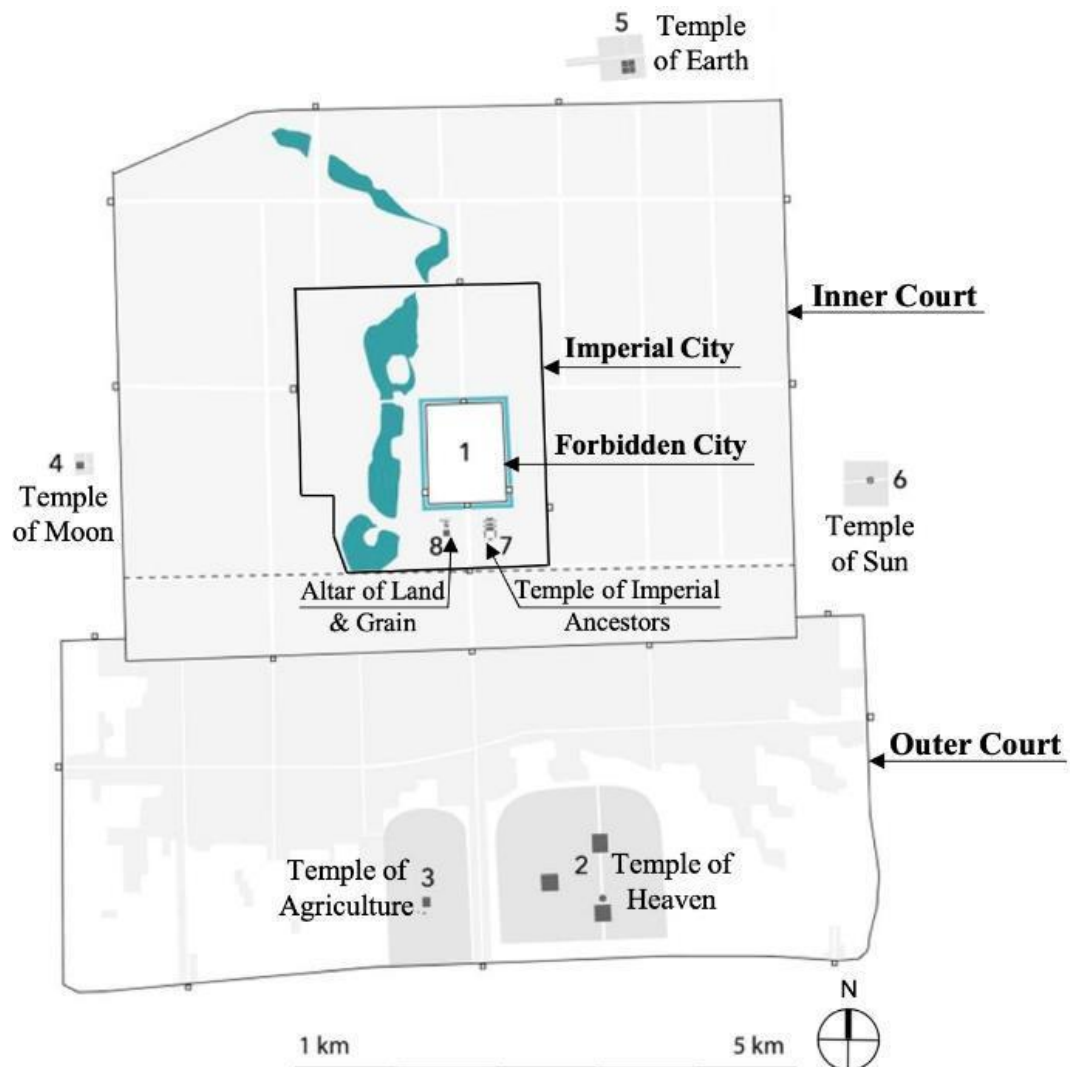


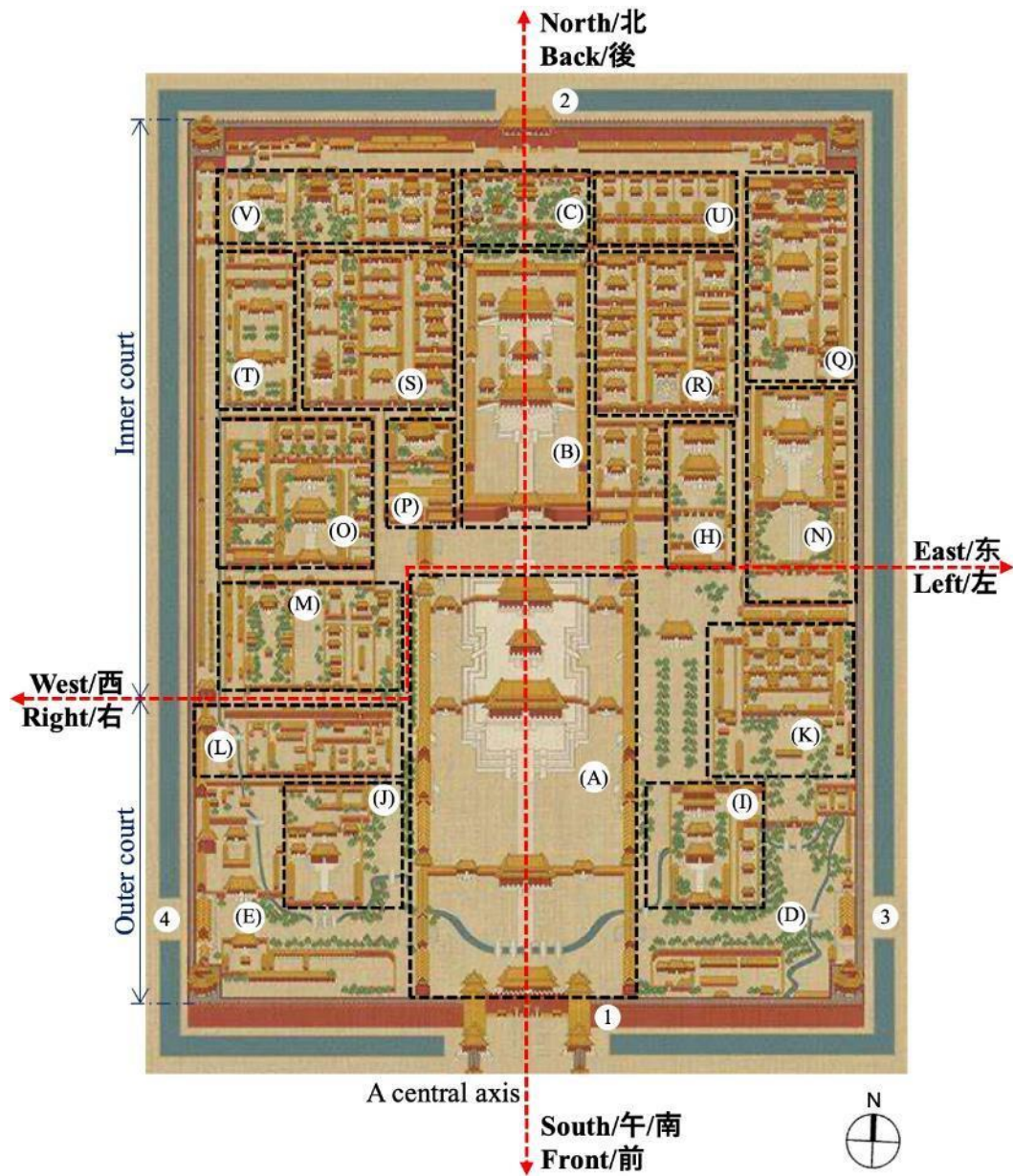
Figure 143: Map of the Inner Beijing City Walls, including the Imperial City and Forbidden City
(Source: Baratta and Magli (2021, p. 5))

The form of the Beijing Imperial Court (Figure 143) was established during the Ming Dynasty, beginning with the construction of the Inner City in 1420, followed by the expansion of the Outer City in 1552–1553 (Belsky, 2000, pp. 55-56). In terms of scale, the Inner City had a perimeter of 24 kilometers and covered an area of 2,300 hectares. The Outer City had a perimeter of 23 kilometers. The Imperial City and the Forbidden City were located within the Inner City. The Imperial City had a perimeter of 10.5 kilometers and an area of

approximately 687.5 hectares, while the Forbidden City had a perimeter of 3.5 kilometers and covered an area of 72 hectares. In terms of function, the Inner City served as a residential and commercial area; the Imperial City contained administrative offices and residential quarters for officials; the Forbidden City fulfilled two leading roles: hosting the highest court rituals and serving as the residence of the Emperor and the royal family; the Outer City was also a commercial and residential area. (Baratta & Magli, 2021; Chang & Bonavia, 2025; Gao, 2016, p. 4; Hagenbjork, 2011, p. 10)

Between 1420 and 1553, the Beijing imperial complex developed a three-walled structure following the model of three concentric enclosures. The Imperial City in Beijing included both administrative offices and residential quarters for officials, distinct from the HIC, which was solely designated for court rituals and as the residence of the emperor and the royal family. In terms of scale, the area of the Imperial City in Beijing was approximately 18.3 times larger than that of the HIC and functionally equivalent to the Hue Citadel. The Forbidden City in Beijing had a similar function to the HIC, but its size was 1.92 times larger. This difference can be attributed to the considerably smaller scale of the Nguyen Dynasty compared to that of the Chinese Imperial Court. As a result, the Nguyen Court reduced the scale of functions within the concentric enclosures of the Hue capital while still preserving the fundamental principle of a three-layered, enclosed structure. Therefore, a comparative analysis of the site plan between the Forbidden City in Beijing and the HIC is functionally valid.

According to the research of Gao (2016), the Ming Dynasty adopted the layout principles described in *The Book of Diverse Crafts* (Kao Gong Ji), a treatise on urban planning and architecture that dates back to the early 5th century BCE. According to this text, the capital should be a square oriented to the four cardinal directions, with the main gate facing south and the primary road to the palace running along a North–South axis. The Emperor’s main residence and administrative facilities were to be located at the center of the enclosure.



Note:

- | | | |
|---|---|--|
| (A) Grand court ceremony area | (L) Internal affairs department | (U) East workplace of officials serving the royal family (court painters, pharmacy, or royal treasury) |
| (B) Imperial residence & administrative office of Emperor & Empress | (M) Garden of Empress Dowager | (V) West area of the royal family (hosting banquets, and enjoying the scenery) |
| (C) Imperial garden | (N) Residence of Emperor after his retirement | (1) Southern main gate |
| (D) Eastern work area of mandarins | (H) Ancestral worship area | (2) East gate |
| (E) Western work area of mandarins | (O) Residence of Empress Dowager | (3) West gate |
| (I) East area of Literary works | (P) Imperial residence and administrative office of Emperor | (4) North gate |
| (J) West area of Military works | (Q), (R), (S), (T) Residence of Concubine, Empress Dowager, Grand Empress Dowager | |
| (K) Area of the imperial hospital, princes' studies | | |

Figure 144: The central axis, layout direction, and functional areas on the site plan of the Forbidden City, Beijing

(Source: https://vi.m.wikipedia.org/wiki/T%E1%BA%ADp_tin:Beijing_in_Ming_and_Qing_Dynasties.jpg)

Based on this principle, the site plan of the Forbidden City features a central axis running in a south–north direction, which plays a crucial role in organizing the entire spatial composition. The plan of the Forbidden City in Beijing is rectangular, with the central axis running through the middle of the Southern and Northern walls. Along this axis are the most important functional zones of the Imperial Court, including: (1) Southern main gate (the main gate of the Beijing forbidden city, (A) Grand court ceremony area, (B) Residence and office of the Emperor, residence of the Empress, (C) Imperial garden, (2) North gate. The functional zones on the east and west sides are symmetrically arranged along both sides of the central axis. Walls enclose the main functional areas within the complex and are all designed following the central axis as the primary organizational spine (Figure 144).

The Forbidden City in Beijing has four main gates. The principal gate on the southern side (Figure 144, position 1) was reserved for the Emperor, high-ranking officials, and members of the royal family. The northern gate (position 2) was typically used for internal affairs and involved fewer formal ceremonies; it served as the entrance for the Empress and Imperial consorts. The eastern gate (position 3) was designated for officials, royal relatives, or ceremonial processions when the main southern gate was not in use. Consorts and eunuchs used the western gate (position 4) for logistical purposes. The arrangement of the four gates and the access regulations in the Hue Imperial City (HIC) are also quite similar to those of the Forbidden City in Beijing (Figure 146).

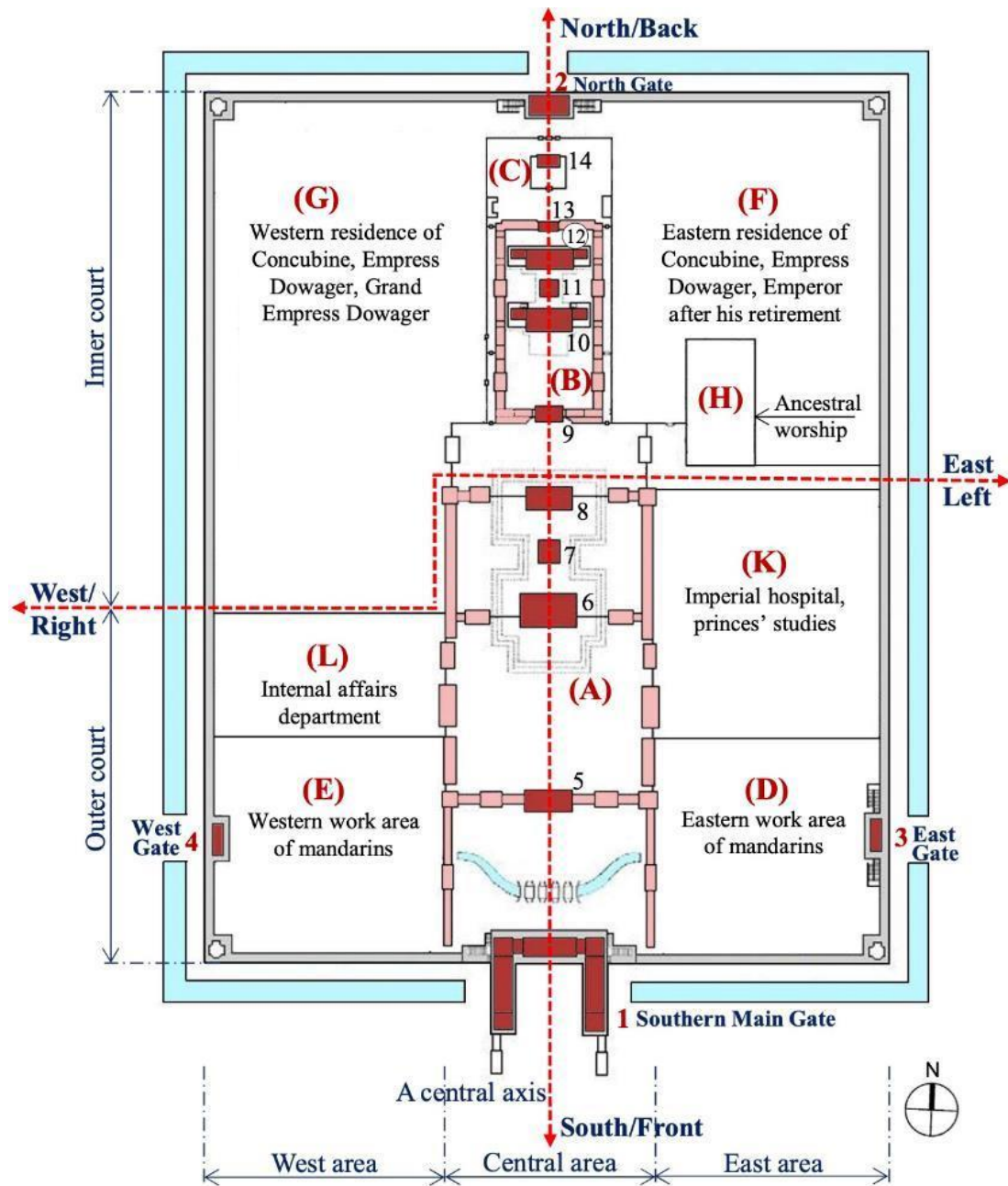
The Forbidden City in Beijing follows the principle of “Court in the front, residence in the back”, meaning the plan is divided into two main sections: the southern part designated for Imperial Court affairs, and the northern part reserved for the residence of the Emperor and the royal family. As shown in Figure 144, the site plan is divided into two main zones: Zone 1, the Outer Court, where major state ceremonies took place (A), and the eastern (D, I) and western (E, J) sections, which housed the working quarters of officials; and Zone 2, the

Inner Court, which served as the living quarters for the Emperor and the royal family, and also as the Emperor's and officials' daily working space. Within this area, zone (B) was the residence of the Emperor and Empress, while the eastern and western zones accommodated the retired Emperor, Empress, Empress Dowager, and Imperial consorts.

Based on the functional zones described above, the site plan of the Forbidden City in Beijing is generally divided into two parts along the north-south axis (the Inner Court and the Outer Court) and three parts along the east-west axis (east area, central area, and west area) (Figure 145). The central area is reserved for the most important functions, designated for the Emperor and the court. The central axis, running north to south, serves as the primary axis of symmetry, with the eastern and western zones arranged symmetrically on either side. The main structures are positioned along this central axis and are oriented to the South.

Additionally, along the central axis extending southward, the Ming dynasty court followed the principle that the ancestral temple was on the left and the Altar of Land and Grain on the right (Liu, 2024, p. 2) (Figure 143, positions 7 and 8). This principle is also reflected in the HIC site plan, with zone 3 designated as the Temple of Imperial Ancestors. However, symmetrically positioned on the opposite side of the central axis, the Nguyen dynasty altered zone 4 into a temple dedicated to the Nguyen Emperors (Figure 146). At the same time, the Altar of Land and Grain was relocated to the west, outside the HIC boundaries.

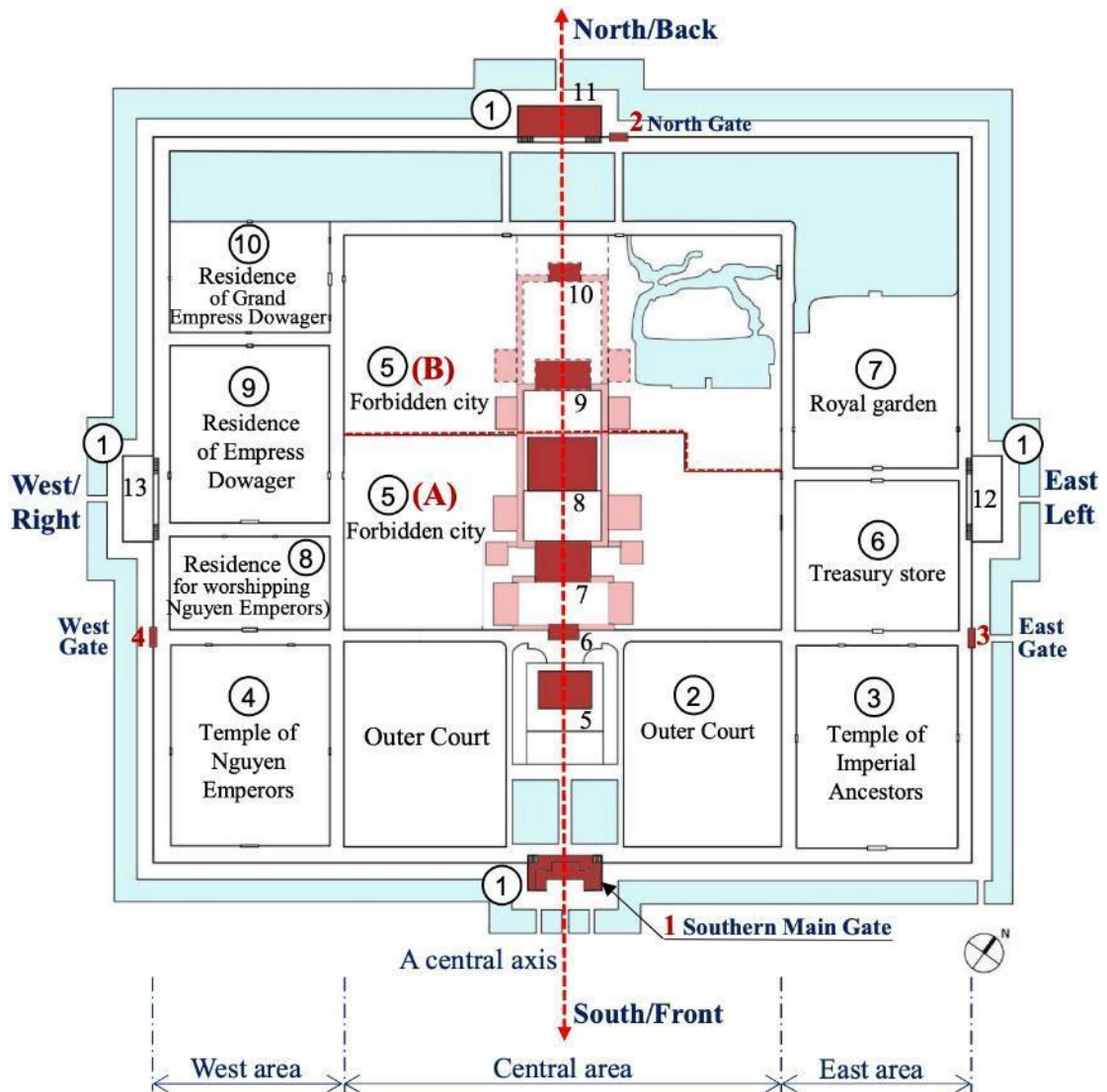
To clarify the above analysis, the study provides illustrations of the two site plans (Figures 145-146).



Note:

- | | | |
|---------------------------------|---|--|
| (A) Grand court ceremony area | (B) Imperial residence & administrative office of Emperor & Empress | (C) Imperial garden |
| (1) Southern main gate/午門 | (6) Hall of Supreme Harmony/太和殿 | (11) Hall of Union/交泰殿 |
| (2) North gate/神武門 | (7) Hall of Central Harmony/中和殿 | (12) Palace of Earthly Tranquility/坤宁宮 |
| (3) East gate/东华門 | (8) Hall of Preserving Harmony/保和殿 | (13) Gate of Earthly Tranquility/坤宁門 |
| (4) West gate/西华門 | (9) Gate of Heavenly Purity/乾清門 | (14) Hall of Imperial Peace/钦安殿 |
| (5) Gate of Supreme Harmony/太和門 | (10) Palace of Heavenly Purity/乾清宫 | |

Figure 145: Functional layout on the site plan of the Forbidden City, Beijing
 (Source: <https://slideplayer.com/slide/17572933/>)



Note:

- | | |
|---|--|
| (1) “Ngo Mon” gate/午門
& “Ngu Phung Lau” pavilion/五鳳樓 | (8) “Can Thanh Dien” palace/乾成殿 |
| (5) “Thai Hoa Dien” palace/太和殿 | (9) “Khon Thai Dien” palace/坤泰殿 |
| (6) “Dai Cung Mon” gate/大宮門 | (10) “Minh Vien lau” pavilion/明遠樓 |
| (7) “Can Chanh Dien” palace/勤政殿 | (11) North podium/北闕台
& “Tu Thong Dinh” house/四通亭 |
| (5A) “Can Thanh Cung” residence/乾成宮 | |
| (5B) “Khon Thai Cung” residence/坤泰宮 | |

Figure 146: Functional layout on the site plan of Hue Imperial City
 (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

The central axis also plays the most important role in the HIC site plan (Figure 146). Although the site is smaller in scale, its plan shares several similar features as follows:

- The HIC functioned as the working headquarters of the Nguyen Court and the residence of the Emperor and royal family (equivalent to the function of the Forbidden City in Beijing);

- The central axis follows a North–South orientation (by feng shui principles), with the South as the main direction;

- The site is divided into two parts along the North–South axis: the southern zone (Figure 146, zone 2) was the outer court, while the northern zone (zone 5) was the residence of the Emperor and the royal family, which itself was subdivided into zone 5A - where the Emperor worked and resided, and zone 5B - where the Empress and Imperial consorts lived. The site is also divided into three parts along the East–West axis: the central area, the eastern area, and the western area, with the central area being the most important area;

- The most important buildings are situated along the central axis.

Thus, the Nguyen Dynasty applied the key principles in the site plan design, including:

- The principle of a central North–South axis, oriented toward the South;

- The principle of “Court in the front, Residence in the back”: the southern zone for the royal court, and the northern zone for the Emperor's residence;

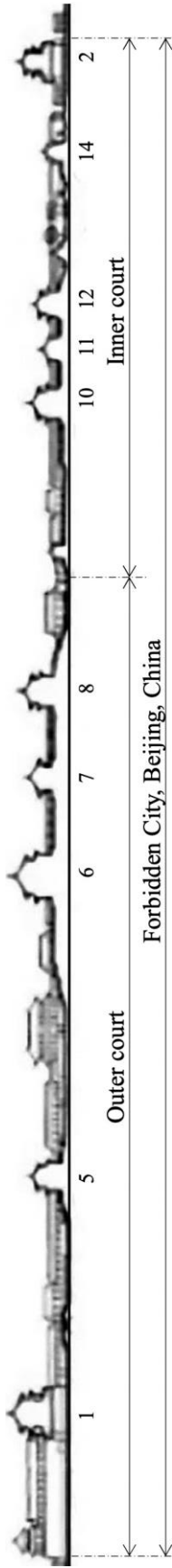
- The worship principle of the left ancestral (East) and the right Altar of Land (West);

- Zoning according to hierarchical functions: the Emperor at the center, with literary officials' offices on the left, and military officials' offices on the right.

On the other hand, the study examines the height factor of buildings, especially those with upper floors, along the central axis to clarify the height regulations applied to buildings situated on this axis.

- In the vertical section through the central axis of the Forbidden City in Beijing (Figure 147), several characteristics can be observed: the main buildings (positions 6, 7, 8, 10, 11, 12) are single-storey buildings (Figure 149), all set on elevated platforms. Among these, the outer court area has the highest platforms, with the Hall of Supreme Harmony (position 6) being the tallest and most monumental building. The solution to increasing the perceived height of single-storey buildings was to place them on high platforms and design them with double-tiered roofs (Figure 149, c). The buildings above the southern and northern gates are also single-story buildings (Figure 149, a, j), but they feature the same double-tiered roof design.

- In the vertical section through the central axis of the HIC (Figure 148), the main buildings (positions 5, 6, 7, 8, 9) are single-storey buildings, including spaces for grand ceremonies, regular ceremonies, and the residences of the Emperor and Empress (Figure 150, b, c, d). Position 10, where the Emperor enjoyed the scenery and relaxed, is a three-storey building, while the building above the southern gate (position 1) is two stories tall. Both are designated with the type of name “樓” (Pavilion), meaning multi-story pavilion. However, neither of these is the most important building along the central axis. This suggests that the multi-storey building does not depend on its hierarchical status, but instead on its functional use.

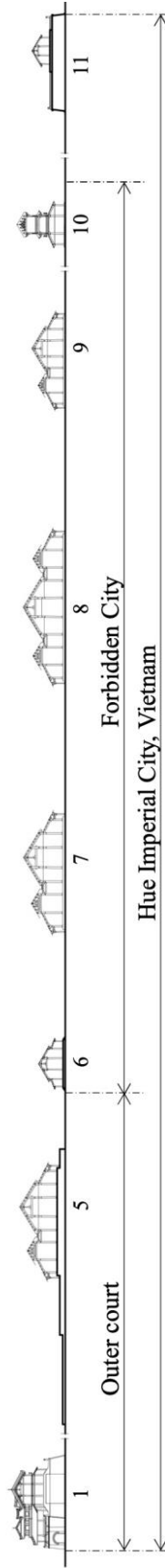


Note:

- (1) Southern main gate/午門
- & Five phoenix tower/五鳳樓
- (5) Gate of Supreme Harmony/太和門
- (6) Hall of Supreme Harmony/太和殿
- (7) Hall of Central Harmony/中和殿
- (8) Hall of Preserving Harmony/保和殿
- (10) Palace of Heavenly Purity/乾清宮
- (11) Hall of Union/交泰殿
- (12) Palace of Earthly Tranquility/坤寧宮
- (14) Hall of Imperial Peace/ 欽安殿
- (2) North gate/神武門

Figure 147: Vertical section along the central axis of the Forbidden City, Beijing, China

(Source: <https://hieunm.wordpress.com/2013/04/11/ve-dep-kien-truc-cung-dien-co-trung-quoc-phan-1/>)



Note:

- (1) “ Ngo Mon” gate/午門
- & “ Ngu Phung Lau” pavilion/五鳳樓
- (5) “ Thai Hoa Dien” palace/太和殿
- (6) “ Dai Cung Mon” gate/大宮門
- (7) “ Can Chanh Dien” palace/勤政殿
- (8) “ Can Thanh Dien” palace/乾成殿
- (9) “ Khon Thai Dien” palace/坤泰殿
- (10) “ Minh Vien lau” pavilion/明遠樓
- (11) North podium/北闕台
- & “ Tu Thong Dinh” house/四通亭

Buildings No. 6, 7, 8, 9, 10, and 11 are illustrated based on historical data.

Figure 148: Vertical section along the central axis of the Forbidden City, Hue Imperial City, Vietnam

(Source: <https://hieunm.wordpress.com/2013/04/11/ve-dep-kien-truc-cung-dien-co-trung-quoc-phan-1/>)

The following are photographs of the buildings along the central axis of the Forbidden City (Beijing) (Figure 149):



Figure 149a) Southern main gate
(Figure 147, position 1)
(Source: <https://smarthistory.org/the-forbidden-city/>)



b) Gate of Supreme Harmony
(position 5)
(Source: <https://www.pinterest.com/pin/535576580708589557/>)



c) Hall of Supreme Harmony
(position 6)
(Source: <https://www.pinterest.com/pin/871868809100915476/>)



d) Hall of Central Harmony
(position 7)
(Source: https://en.wikipedia.org/wiki/Hall_of_Central_Harmony)



e) Hall of Preserving Harmony
(position 8)
(Source: [https://commons.wikimedia.org/wiki/Category:Hall_of_Preserving_Harmony_\(Forbidden_City\)](https://commons.wikimedia.org/wiki/Category:Hall_of_Preserving_Harmony_(Forbidden_City)))



f) Palace of Heavenly Purity
(position 10)
(Source: https://www.sohu.com/a/339174265_129546)



g) Hall of Union
(Figure 147, position 11)

(Source: <https://www.wonders-of-the-world.net/Forbidden-city/Description/Pavilion-of-union-and-peace.php>)



h) Palace of Earthly Tranquility
(position 12)

(Source: https://www.360kuai.com/pc/98e2fc0b8fc4af831?cota=3&kuai_so=1&sign=360_7bc3b157)



i) Hall of Imperial Peace (position 14)

(Source: <https://baike.sogou.com/v54149277.htm>)



j) North gate (position 2)

(Source: <https://www.dpm.org.cn/explore/building/236456.html>)

Figure 149: Buildings on the central axis of the Forbidden City, Beijing

Note: The numbered positions of the buildings correspond to Figures 145 and 147

The following are photographs of the buildings along the central axis of Hue Imperial City (Figure 150):



a) “Ngo Mon” gate and “Ngu Phung Lau” pavilion (Figure 148, position 1)



b) “Thai Hoa Dien” palace (position 5)



c) “Dai Cung Mon” gate (position 6)



d) “Can Chanh Dien” palace (position 7)

Figure 150: Buildings on the central axis of Hue Imperial City

(Source: a) Author;

b) <https://ticotravel.com.vn/dien-thai-hoa/>;

c) <https://www.flickr.com/photos/13476480@N07/24931706948/in/photostream/>;

d) <https://hieuco.net/tin-tuc-su-kien/chum-anh-dien-can-chanh-o-co-do-hue-khi-chua-bi-pha-huy-364.html>)

Additionally, the study examines the building types along the central axis. Since the translation of building names from Chinese characters to English varies, the research focuses on the original Chinese names of the buildings. The types of the main buildings along the central axis in both site plans are as follows:

- Type of “殿” used for the grand ceremonies in the Forbidden City, Beijing (Figure 147, positions 6, 7, 8), as well as for the grand ceremonies, and the Emperor’s and Empress’s residences in the HIC (Figure 148, positions 5, 7, 8, 9, 10);

- Type of “宫” used for the Emperor’s and Empress’s residences

in the Forbidden City, Beijing (Figure 147, positions 10, 12). In the Forbidden City of the HIC, this naming type was initially used during the reign of the first Emperor Gia Long. Still, it was changed to “殿” during the reign of Emperor Minh Mang. The term “宫” later came to refer to a larger residential area that includes zone 5A, “Can Thanh Cung” residence (乾成宫), and zone 5B, “Khon Thai Cung” residence (坤泰宫) (Figure 146);

- Type of “樓” used for the building above the main southern gate (Figures 147–148, position 1).

Thus, the main buildings along the central axis of the HIC follow three naming types - “殿”, “宫”, and “樓” - similar to those in the Forbidden City, Beijing, during the early Gia Long period. From the reign of the second Emperor, Minh Mang, onward, only two types - “殿” and “樓” - remained in use. Among them, the most important buildings are named “殿” (Palace). Although no comprehensive study has been found on the hierarchical classification and naming conventions for all building types in the Forbidden City, Beijing, to serve as a reference for comparison with the HIC, an analysis of the central axis in both site plans suggests that the Nguyen Dynasty adopted the naming conventions for buildings along the central axis. This includes both the arrangement of significant buildings from South to North and the typology of their names.

It can be said that under the influence of Chinese culture and Confucian thought during the Nguyen Dynasty, the adoption of specific design principles was inevitable. These influences help explain the spatial organization of functional areas, the axial and directional layout of the HIC, as well as the naming conventions of buildings along the central axis.

Through the two vertical sections (Figures 147–148), it is also apparent that the architectural typologies of the Forbidden City in Beijing and the HIC are

fundamentally different. Although the Nguyen dynasty was influenced by Chinese cultural thought, the Nguyen architecture developed in a distinctly independent direction. While monumental, standalone buildings characterize Chinese imperial architecture, Nguyen imperial architecture is defined by more modestly scaled buildings, where a single structure is often the result of combining two to three interconnected buildings.

To further explore the architectural typology of the HIC, this study will delve into its characteristics, including building types, wooden structures, and the spatial concepts of Hue imperial architecture.

4.4 Timber frame terminology and spatial concept in Hue Imperial Architecture

Based on the list of buildings in section 4.2 and previous research results of Hideaki (2010); Kenta (2015); Le (2009); T. T. V. Nguyen et al. (2010), this section clarifies the architectural characteristics of the HIC, including the identification of building plan types, roof forms, spatial concepts in plan layouts, and terminology related to wooden structural frameworks.

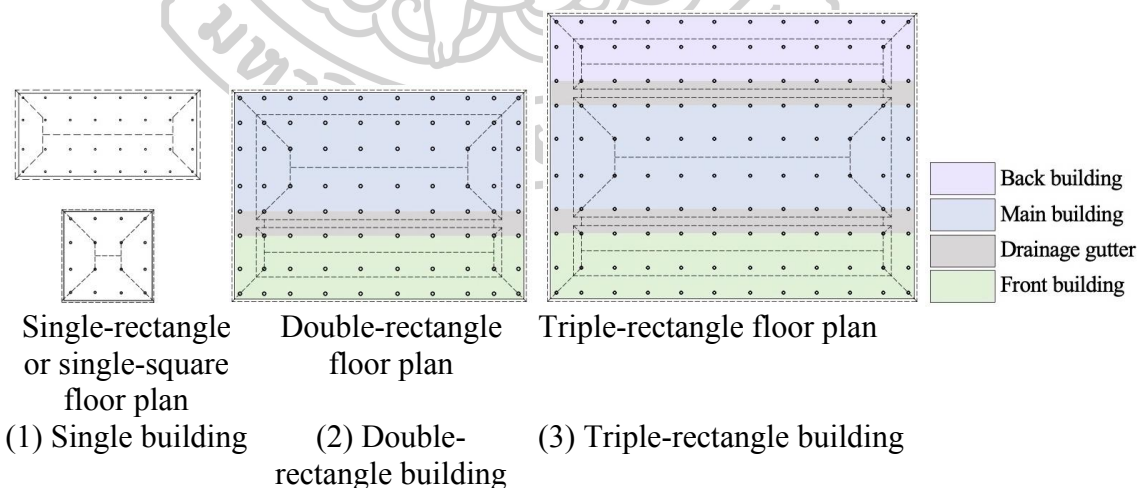


Figure 151: Types of floor plans in buildings of Hue Imperial City
(Source: Author)

Based on the building list presented in Section 4.2, the results reveal three main floor plan types: a single building (with a single-rectangle or square floor

plan) (Figure 151, 1); a double-rectangle building and a triple-rectangle building (consisting of two to three floor plans connected by one or two spaces called “Thua Luu” drainage gutter) (Figure 151, 2 and 3). In terms of roof forms, there are two main types: the gable roof (a two-sided sloping roof) and the gable-and-hip roof (a four-sided sloping roof), with one roof system potentially having one to two layers.

In the case of the gable roof type, there are several variations: a single-layer roof (with two roof planes), a double-layer roof at the front (with three roof planes), and a double-layer roof on both front and back sides (with four roof planes) (Figure 152). This roof type is typically used for one-storey, single buildings with rectangular floor plans.

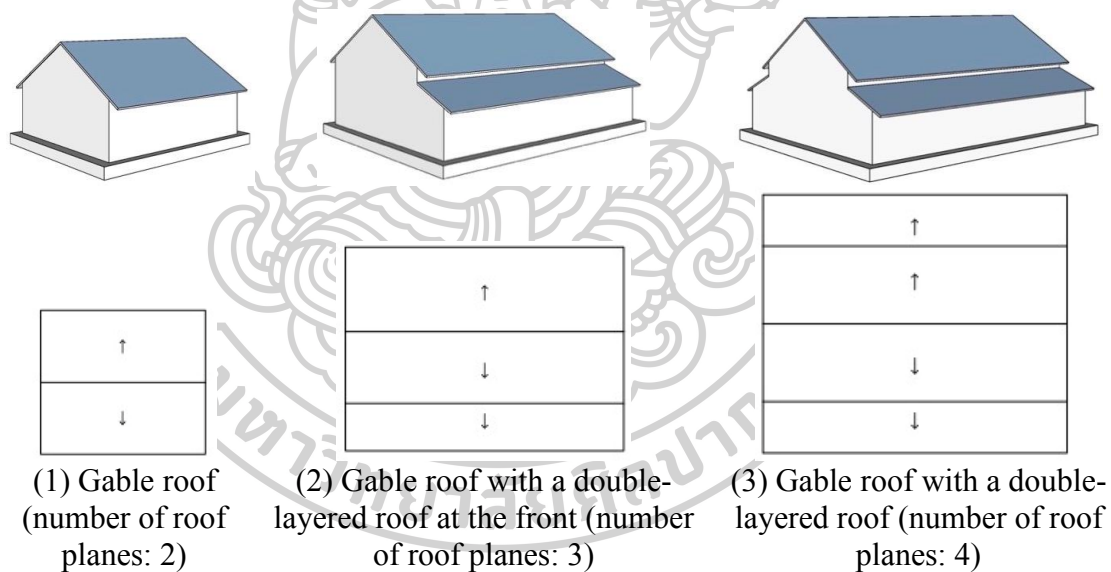
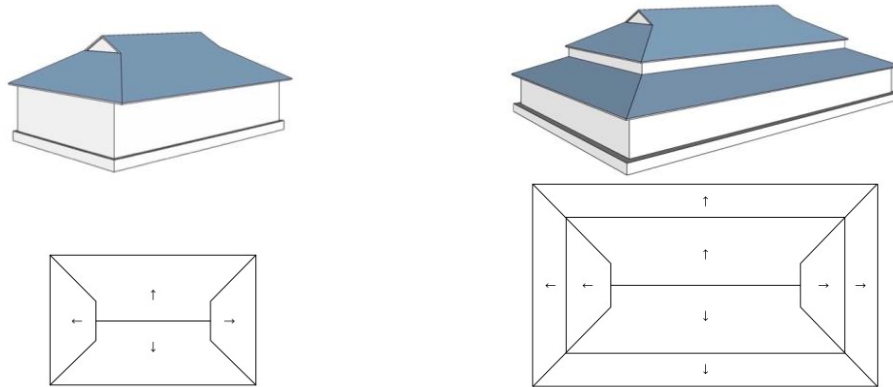


Figure 152: Types of roofs in the case of a one-storey, single building with a gable roof

(Source: Author)

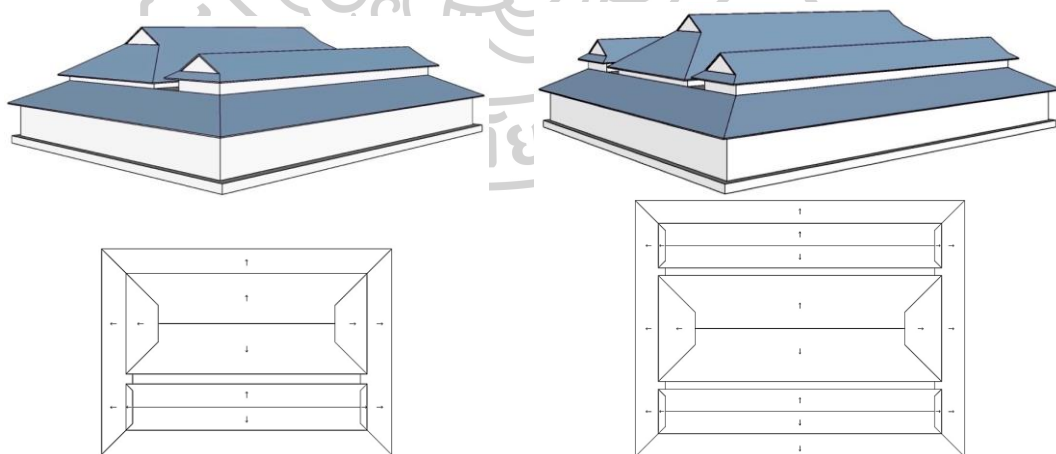
In the case of the gable-and-hip roof, this type is more prevalent in the HIC and ranges from simple forms (single buildings with single-layered roofs) to more complex forms (double-rectangle or triple-rectangle buildings with double-layered roofs). For single-rectangle or square, single-storey buildings, there are two roof types: a single-layered roof and a double-layered roof (Figure 153).



(1) Gable-and-hip roof (number of roof planes: 4) (2) Gable-and-hip roof with a double-layered roof (number of roof planes: 8)

Figure 153: Types of roofs in the case of a one-storey, single building with a gable-and-hip roof
(Source: Author)

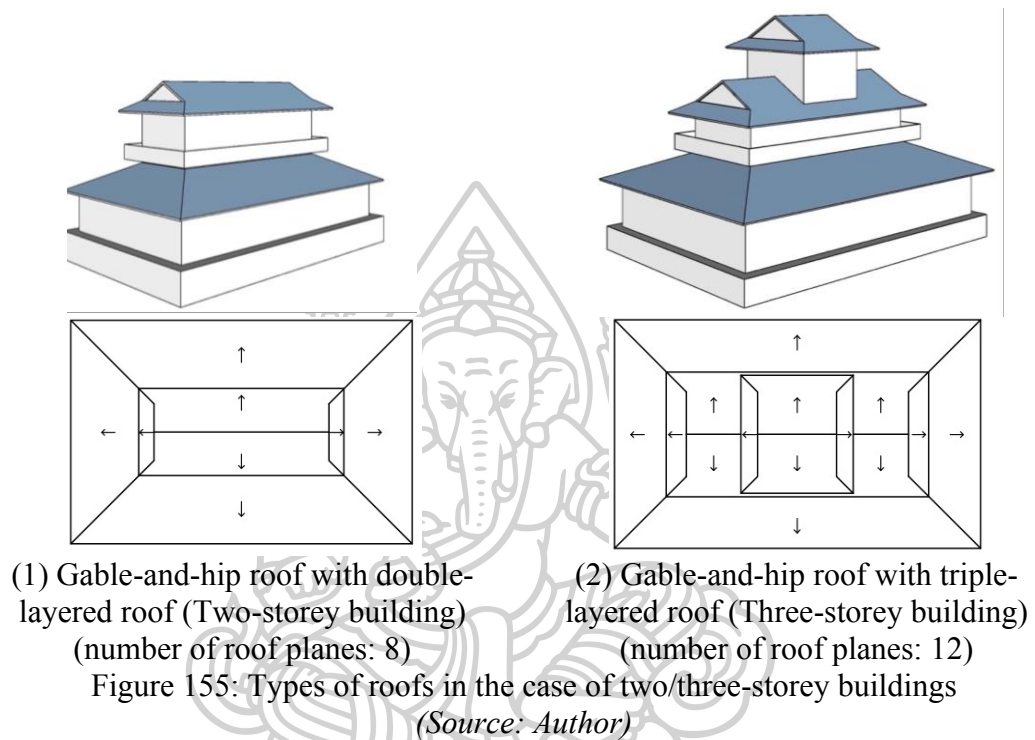
In the case of the double-rectangle building, the roof structure consists of two connected roof units, with an additional lower roof encircling the entire building. As a result, this roof type features a total of 12 roof planes (Figure 154, 1). In the triple-rectangle building, three roof units are connected and enclosed by a lower roof that runs around the building. This is the most complex roof form in HIC architecture, with a total of 16 roof planes (Figure 154, 2). Both roof types are applied to single-storey buildings.



(1) Two gable-and-hip roofs set above a continuous double-layered roof and connected by a drainage gutter (number of roof planes: 12) (2) Three gable-and-hip roofs set above a continuous double-layered roof and connected by two drainage gutters (number of roof planes: 16)

Figure 154: Types of roofs in the case of a one-storey, double/triple-rectangle building with gable-and-hip roof
(Source: Author)

Buildings in the HIC range from one to three stories. For two- to three-storey buildings, the floor plan typically consists of a single unit, the roof is of the gable-and-hip type, and each storey is covered by a single roof layer (Figure 155).



Before delving into each specific building, it is important to note the basic features of the floor plan and section, as shown in Figures 156-158. Figure 156 presents two rectangular floor plans connected by the drainage gutter space, with the front space designated as the Front building and the rear space designated as the Main building. The number of compartments and wings in the structure is described as follows: a front building with seven compartments and two wings; a main building with five compartments and two double wings.

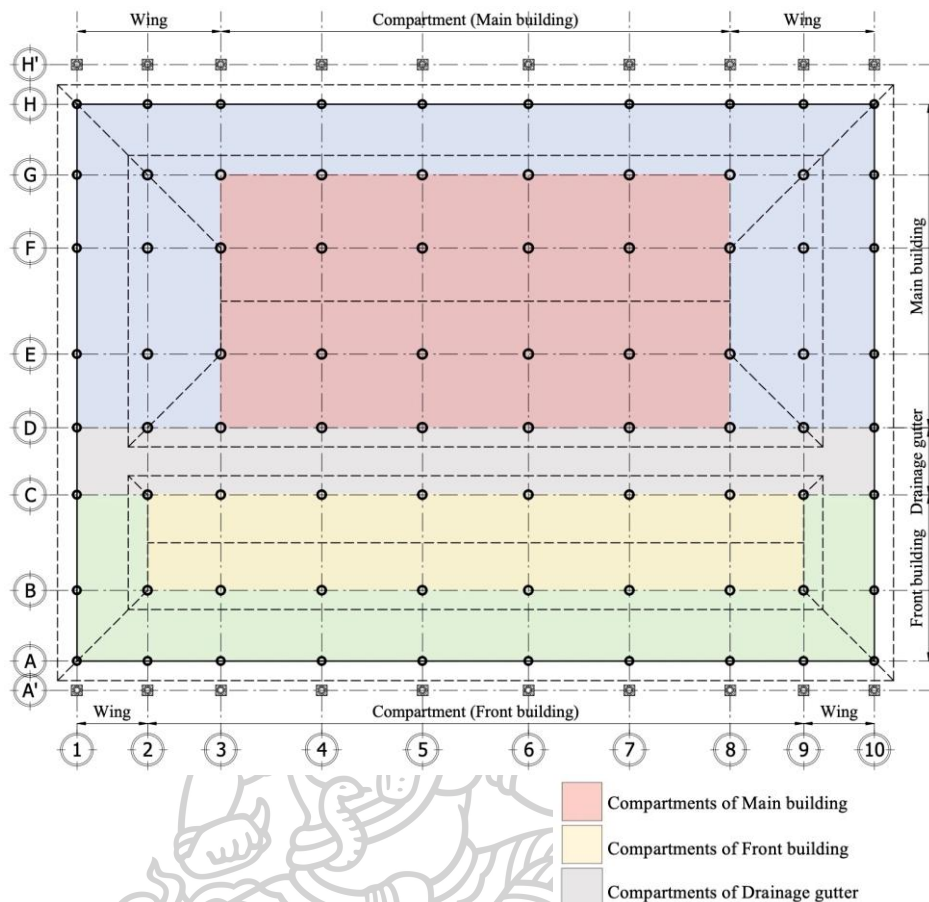


Figure 156: A typical floor plan of a double-rectangle building
 (Source: *The drawing was based on Saito and Nakagawa (2012, p. 2197) and the author's modifications*)

In the section of a double-rectangle building, each space - a front building and a main building - is defined by its roof unit, with the structure referred to as the front ridge beam and the main ridge beam, respectively. The building has a double-layered roof (Upper roof and Lower roof), and between these two layers is a decorative panel known as the neck wall. Thus, the section of a double-rectangle building reveals the following key features: a roof system with two ridge beams, a double-layered roof, and one neck wall positioned between the two roof layers (Figure 157).

In terms of elevation, buildings in the HIC share a unified architectural form, characterized by symmetry along the central axis. The central space is the most important; therefore, the number of compartments and wings is always odd. On the elevation, key features can be identified, including the number of

compartments, wings, the number of roof layers, and the presence of a neck wall. In Figure 158, the main elevation of the front building shows seven compartments, two wings, a double-layered roof, and a neck wall.

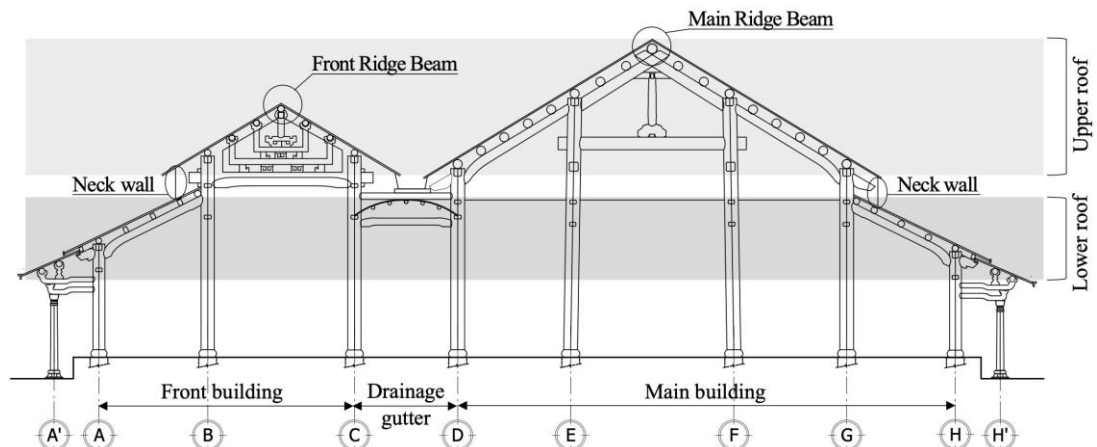


Figure 157: A typical section has double ridge beams (the front ridge beam and the main ridge beam) and two layers of roof (the lower roof and the upper roof)
 (Source: The drawing was based on Sakamoto et al. (2009, p. 47) and the author's modifications)

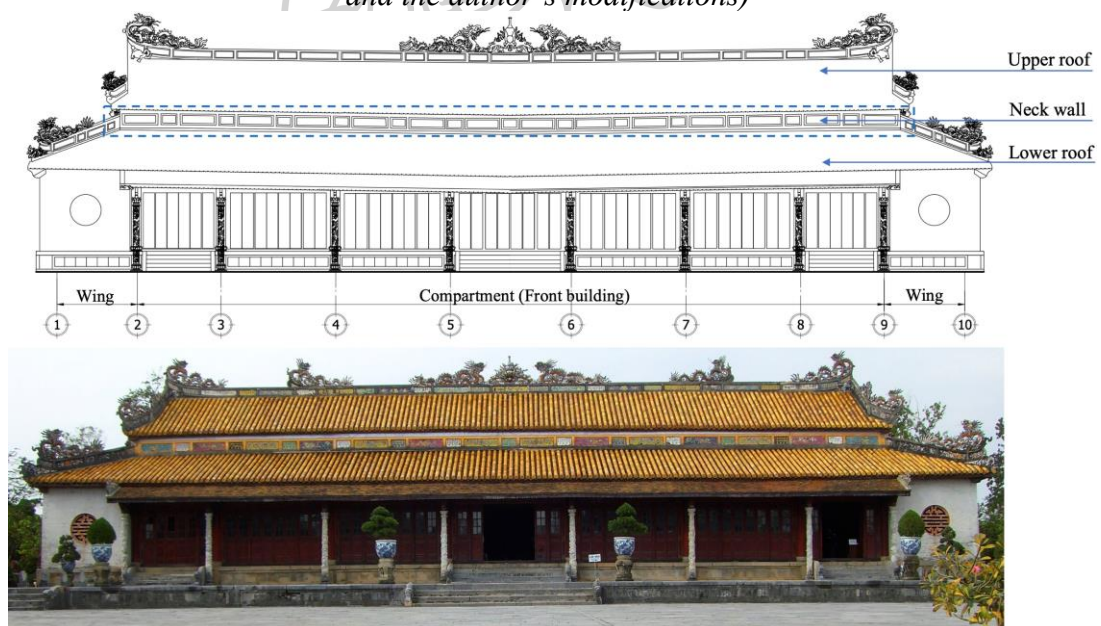


Figure 158: A typical elevation with an upper roof, a lower roof, and a neck wall
 (Source: The drawing was based on Nguyen (2022, p. 220) and https://commons.wikimedia.org/wiki/File:Citadel_of_Hue_2392419260_1d845a88a1_o.jpg)

Figures 156 to 158 present the fundamental features for identifying the main structures in the floor plan, section, and elevation of a double-rectangle

building. These features are repeated in buildings with single- and triple-rectangle layouts, with variations only in the number of ridge beams and the number of roof layers (one or two).

To further explore the terminology related to timber frame and the spatial concepts used in HIC architecture, the study introduces three typical building types that represent three groups with similar characteristics as follows: (1) Single building with a gable-and-hip roof, (2) Single building with a gable roof, (3) Double-rectangle building and triple-rectangle building:

(1) Group of single-building buildings with a gable-and-hip roof: An example representing this is the “Ta Tra” left house (Figures 159-163). This building features five compartments and two wings, with the names of the compartments, beam spans, and both horizontal and vertical axes illustrated in Figures 159 and 160. The section of this single-building type features one ridge beam (Figure 161, number 8), and the basic timber frame components are illustrated through two sections (Figures 161 and 162). In terms of elevation (Figure 163), the number of compartments can vary (3, 5, or 7) while the number of wings remains consistently two.

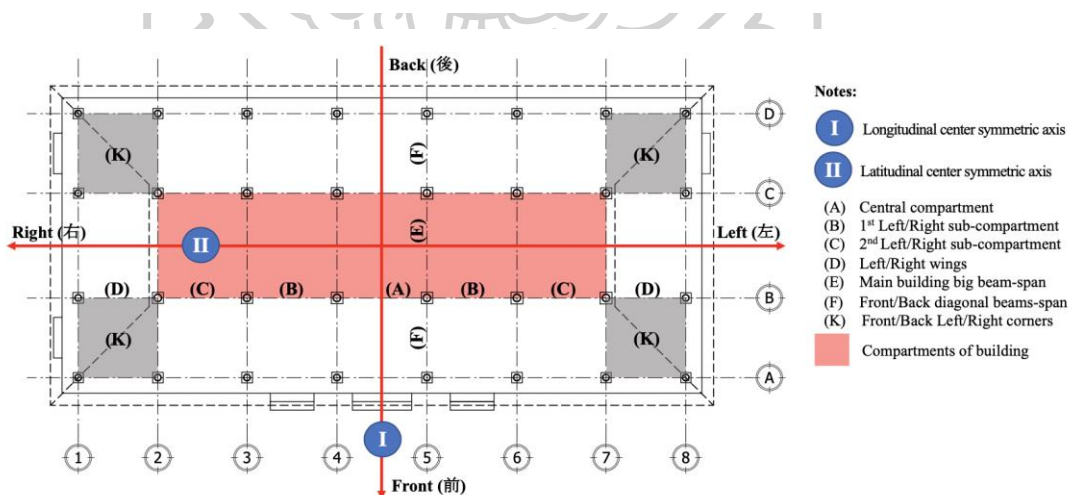


Figure 159: The plan-spatial conception in the “single ridge beam” type and the four roof slopes of the “Ta Tra” left house (“Dien Tho Cung” residence area) (Source: The drawing was based on Hoang and Le (2015), and the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)

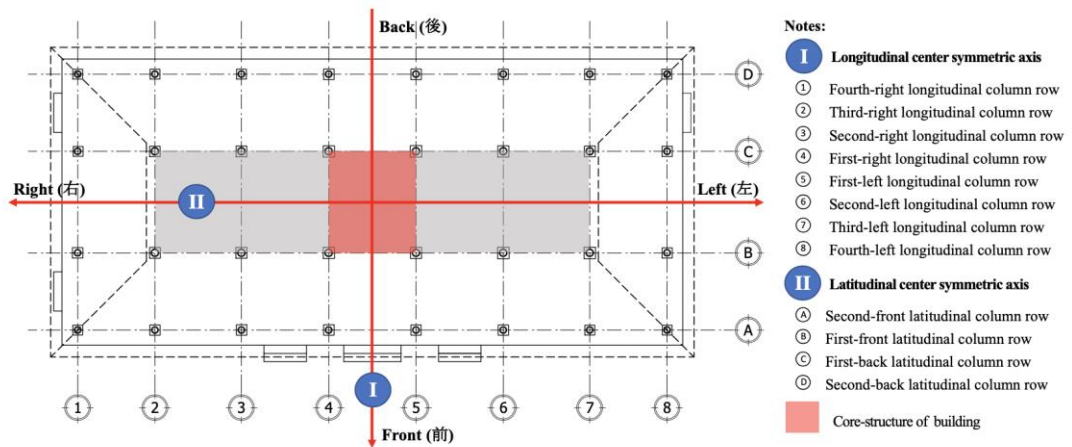


Figure 160: The names of the vertical and horizontal column grids in the “single ridge beam” type of the “Ta Tra” left house (“Dien Tho Cung” residence area)

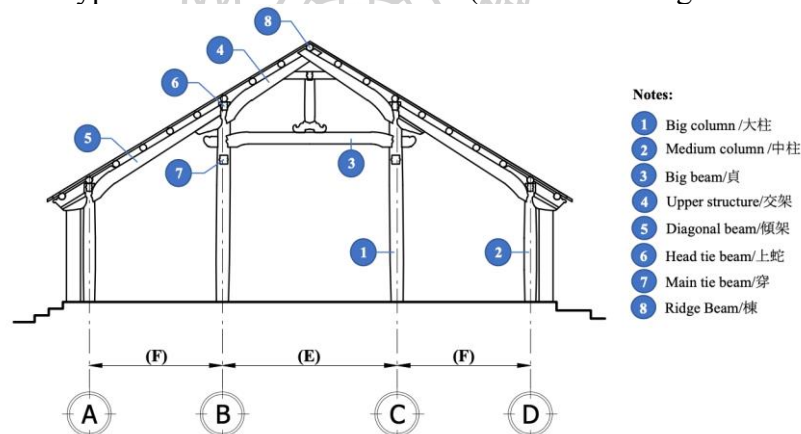


Figure 161: Timber frame terminology in the vertical section of the “single ridge beam” type in the “Ta Tra Gia” left house (“Dien Tho Cung” residence area)

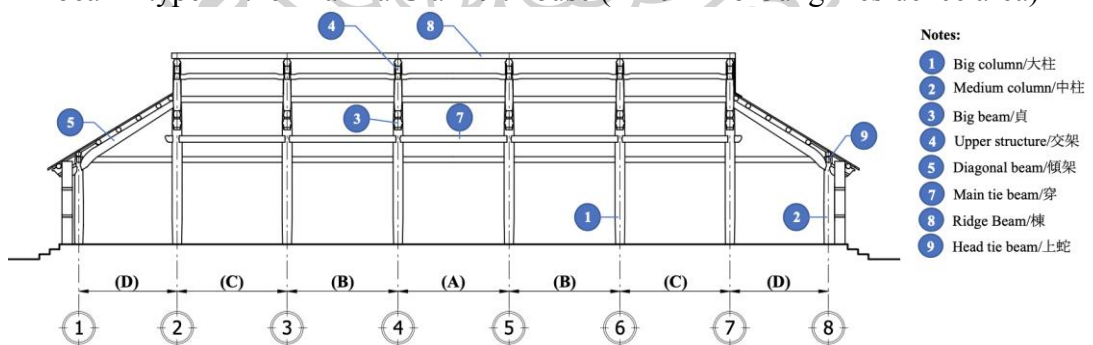
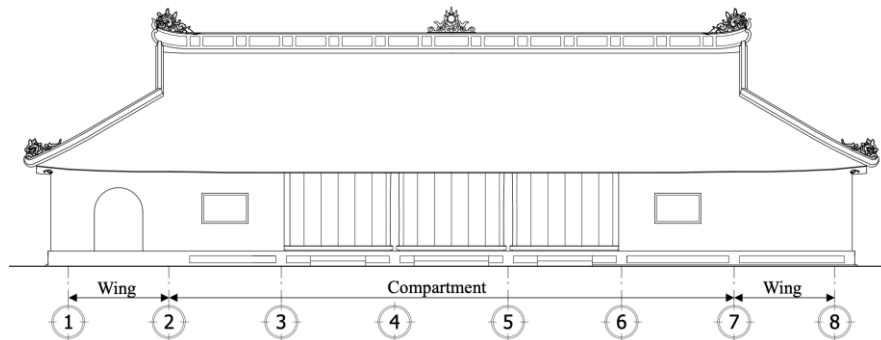


Figure 162: Timber frame terminology in the horizontal section of the “single ridge beam” type in the “Ta Tra Gia” left house (“Dien Tho Cung” residence area)
 (Source: The drawing was based on Hoang and Le (2015), and the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)



a) A typical elevation with five compartments, two wings, a single-layered roof, and a gable-and-hip roof



b) A photograph of “Ta Tra Gia” house (2020)

Figure 163: A typical elevation of a single-storey, single building with a gable-and-hip roof (“Ta Tra” left house)

(Source: The drawing was based on Hoang and Le (2015), and the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)

(2) Single-building group with gable roof: This building type consists of compartments without wings. The “Ta Tung Tu” shrine (The Mieu temple area) is selected as a representative example. This building has five compartments (Figures 164, 165). In addition to the two-sided sloping roof, an additional lower roof layer at the front elevation (Figure 166). Between the two roof layers is a decorative panel known as the neck wall (Figure 168). The spatial concepts and terminology used for the timber frame structure in the floor plan and section are similar to those of (1) the single building with a gable-and-hip roof.

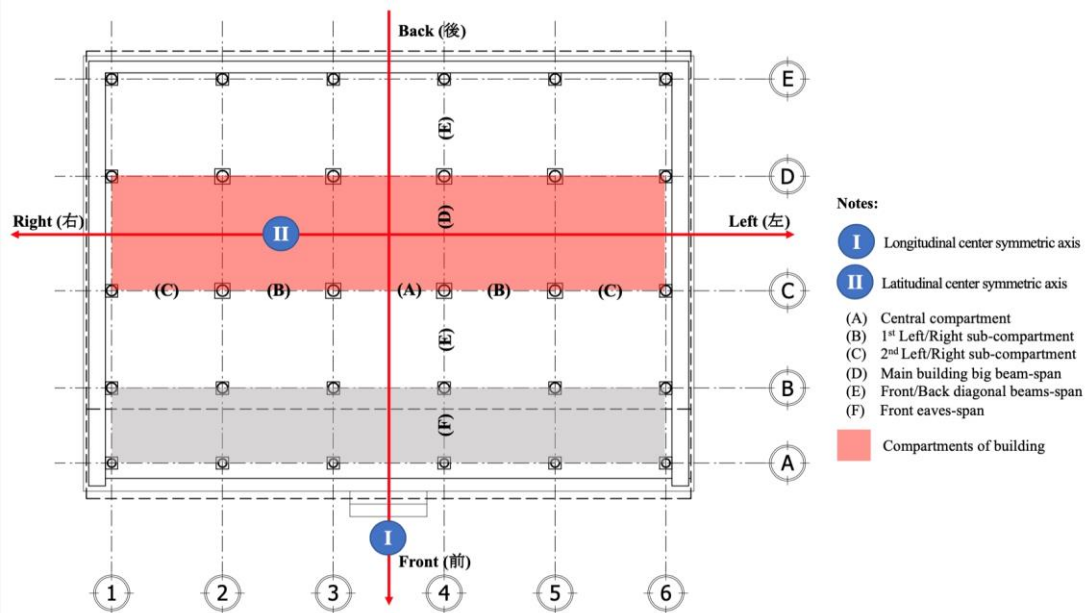


Figure 164: The plan-spatial conception in the “single ridge beam” type and the two roof slopes of the “Ta Tung Tu” shrine (“The Mieu” temple area)

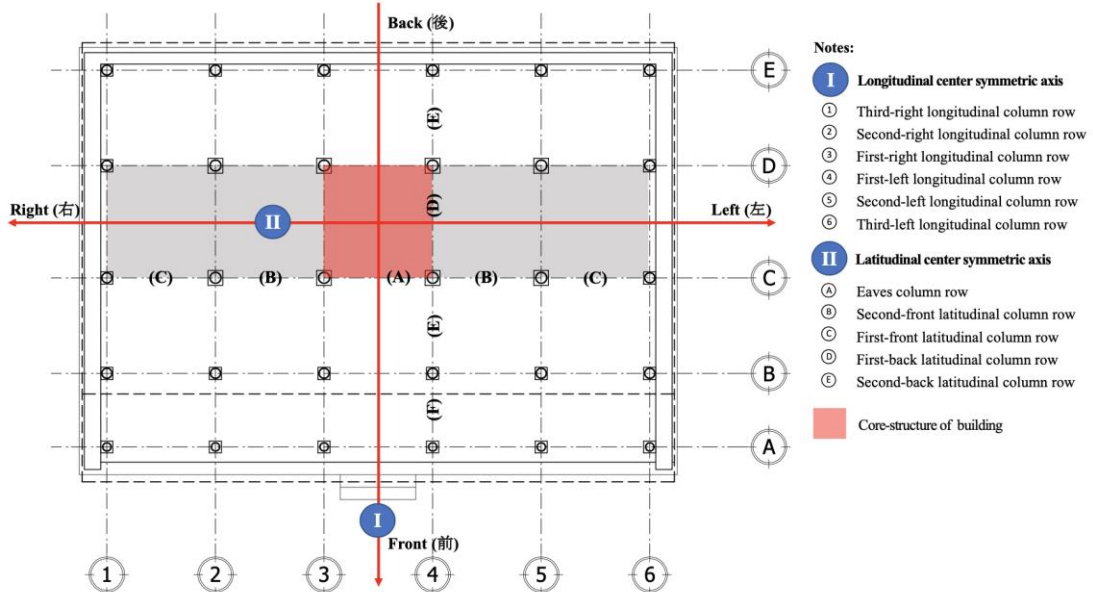


Figure 165: The names of the vertical and horizontal column grids in the “single ridge beam” type of the “Ta Tung Tu” shrine (“The Mieu” temple area)
 (Source: The drawing was based on Nakazawa et al. (1995), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)

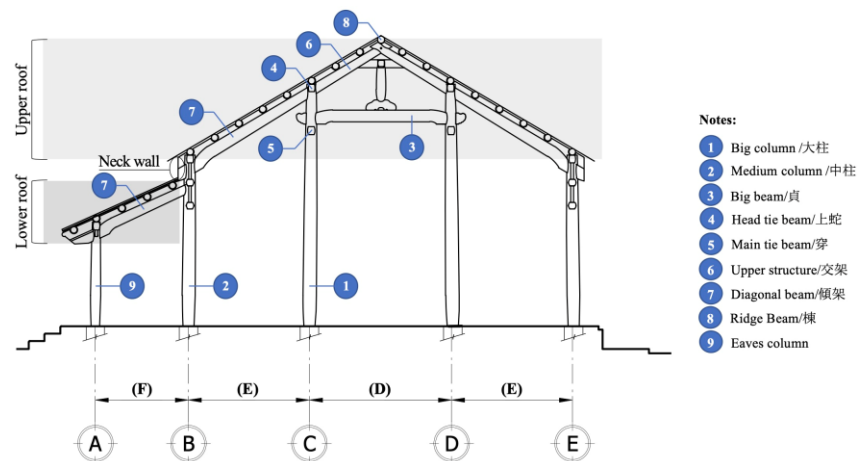


Figure 166: Timber frame terminology in the vertical section of the “single ridge beam” type in the “Ta Tung Tu” shrine (“The Mieu” temple area)

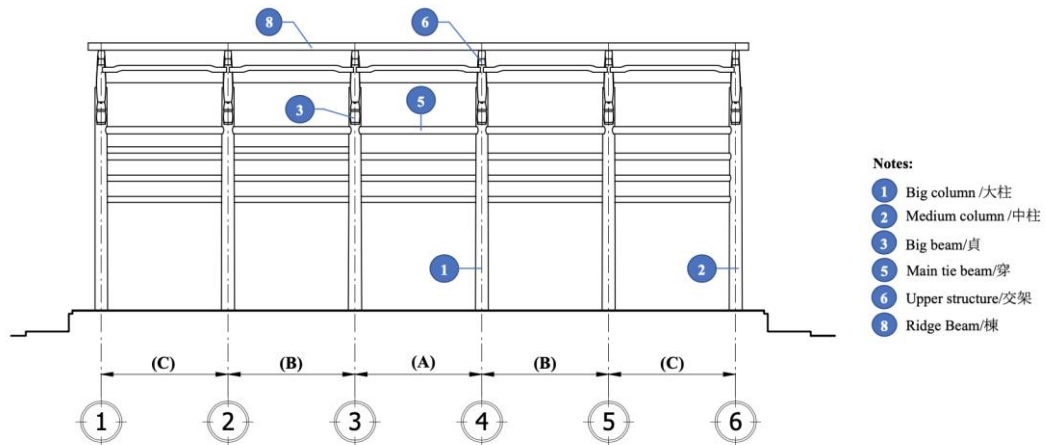
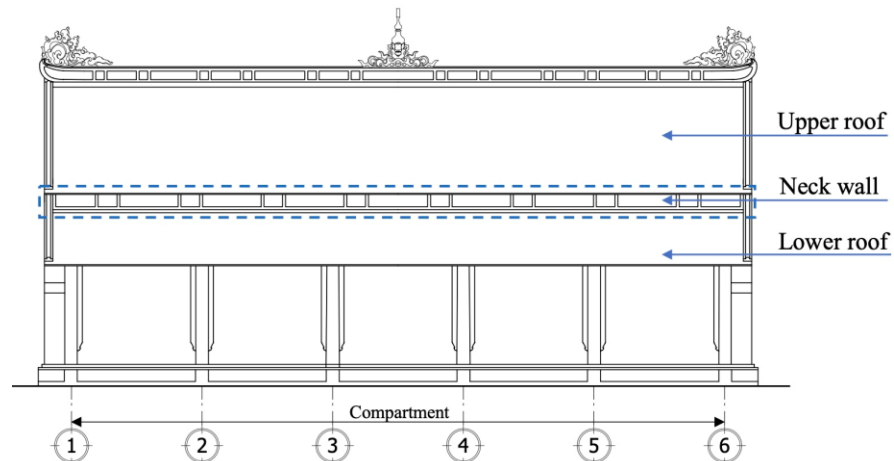


Figure 167: Timber frame terminology in the horizontal section of the “single ridge beam” type in the “Ta Tung Tu” shrine (“The Mieu” temple area)

(Source: The drawing was based on Nakazawa et al. (1995), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)



a) A typical elevation with five compartments, a one-storey, single-rectangle building, and a gable roof with a double-layered roof at the front



b) A photograph of “Ta Tung Tu” shrine (2020)

Figure 168: A typical elevation of a single-storey, single building, a gable roof with a double-layered roof at the front (“Ta Tung Tu” shrine)

(Source: The drawing was based on Nakazawa et al. (1995), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)

(3) Double-rectangle and triple-rectangle building types: The representative example of a double-rectangle building that still exists along the central axis of the HIC is the “Thai Hoa Dien” Palace. The triple-rectangle building type is represented by a single building that has since been ruined, with only its foundation remaining. Since both types share a similar spatial layout, the “Thai Hoa Dien” Palace is selected as a typical example. The typical floor plan of a double-rectangle building includes two connected spaces, referred to as the front building and the main building. For the triple-rectangle type, the three spaces are the front building, the main building, and the back building. The terminology related to timber frame structures and spatial concepts in the floor plan, elevation, and section is illustrated in Figures 169-173 and Figure 158.

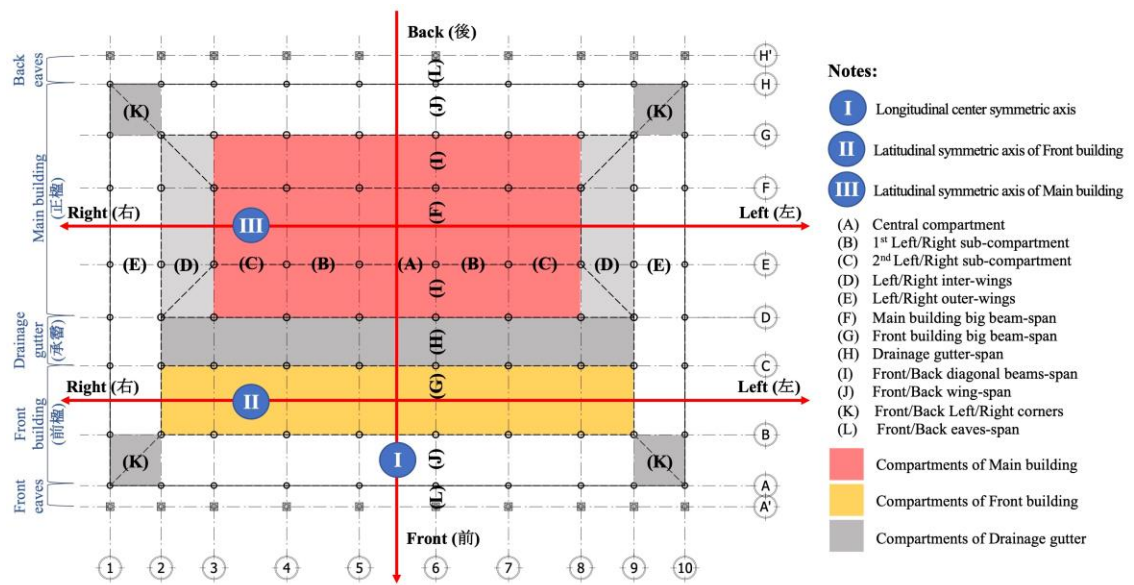


Figure 169: The plan-spatial conception of the “double ridge beams” type in the “Thai Hoa Dien” palace (“Ngoai trieu” court area)

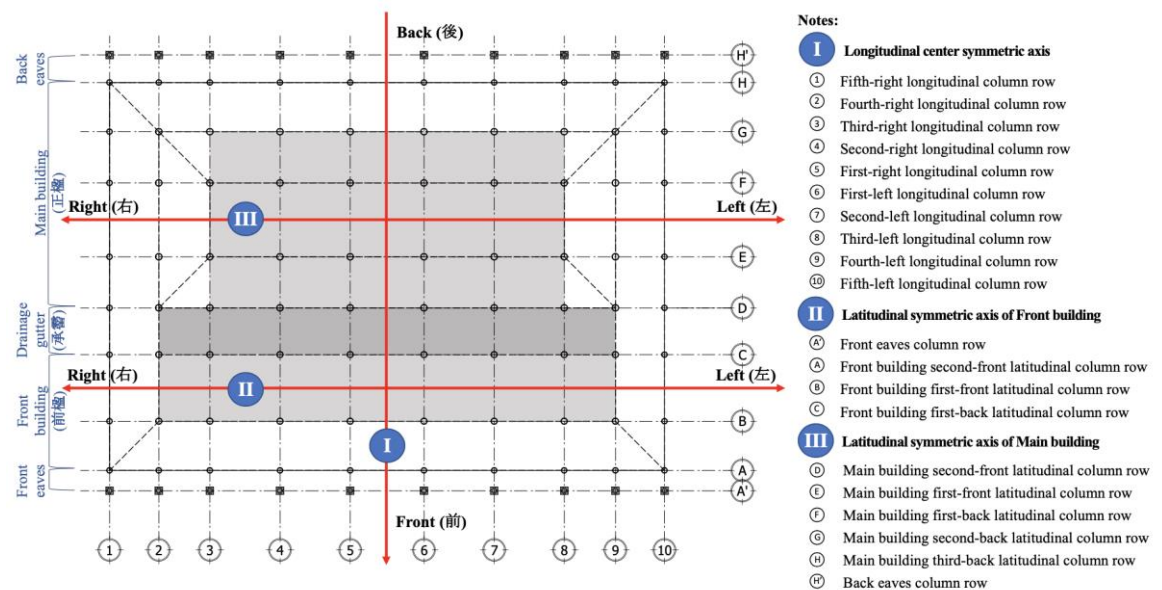


Figure 170: The names of the vertical and horizontal column grids in the “double ridge beams” type of the “Thai Hoa Dien” palace (“Ngoai trieu” court area)
 (Source: The drawing was based on Saito and Nakagawa (2012, p. 2197) and the author’s modifications)

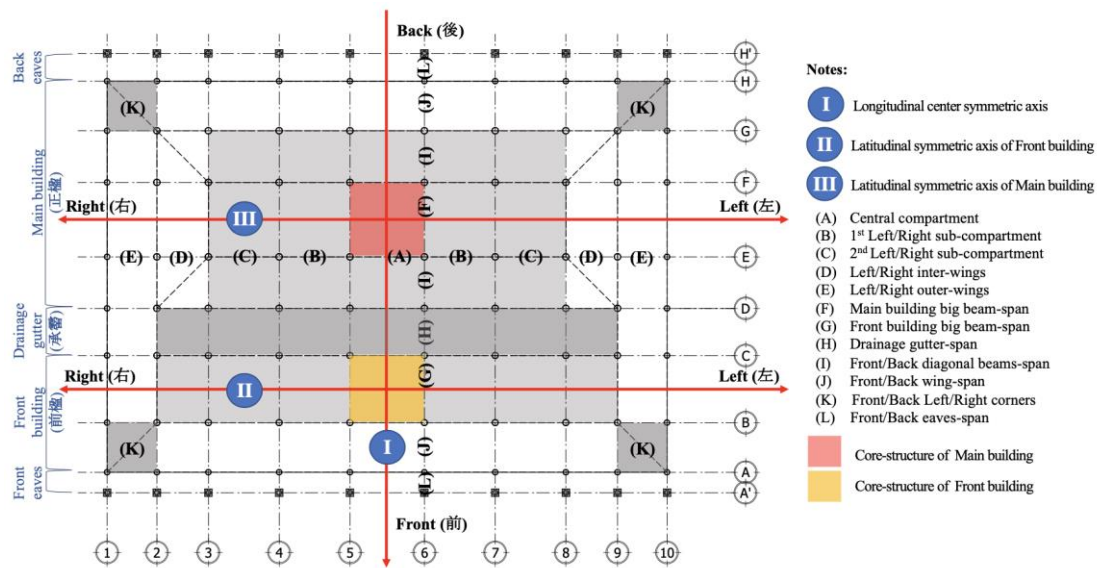


Figure 171: The core structure of the “double ridge beams” type in the “Thai Hoa Dien” palace (“Ngoai trieu” court area)

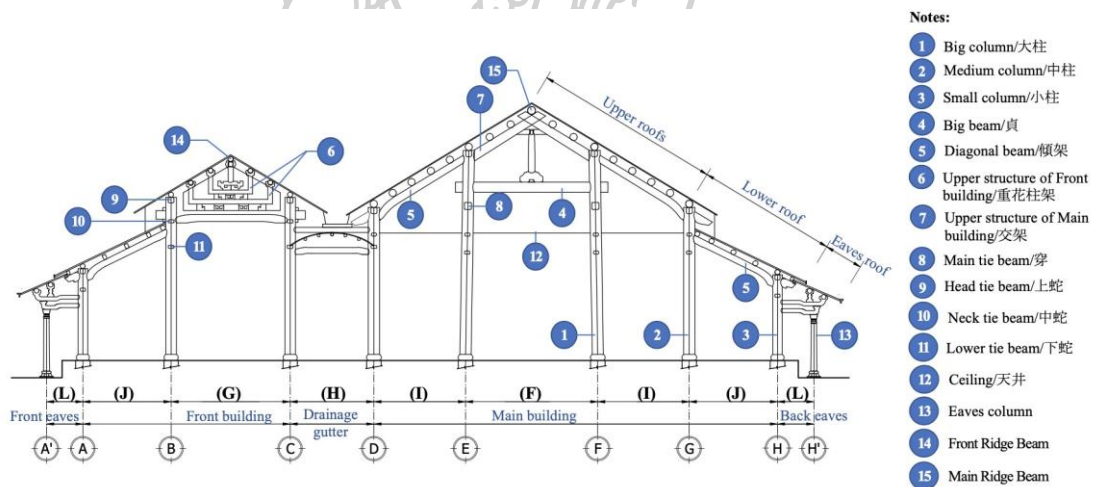


Figure 172: Timber frame terminology in the vertical section of the “double ridge beams” type in the “Thai Hoa Dien” palace (“Ngoai trieu” court area)
(Source: The drawing was based on Sakamoto et al. (2009, p. 47) and the author’s modifications)

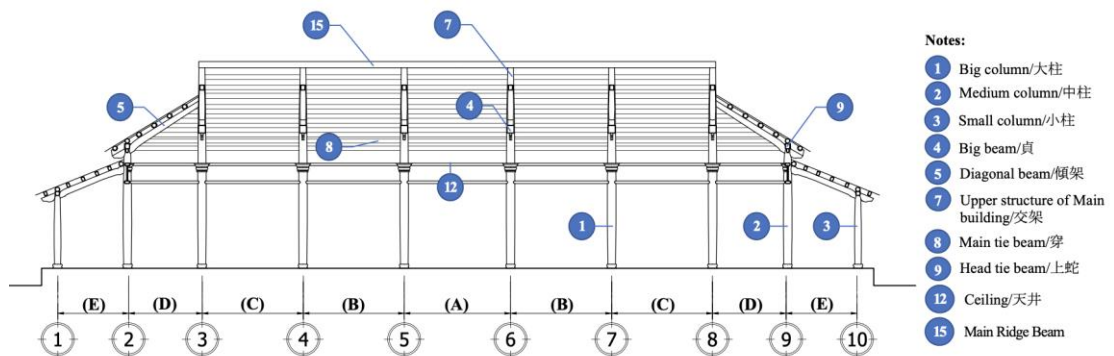


Figure 173: Timber frame terminology in the horizontal section of the “double ridge beams” type in the “Thai Hoa Dien” palace (“Ngoai trieu” court area)
 (Source: The drawing was based on Saito and Nakagawa (2012); Sakamoto et al. (2009); and the author’s modifications)

4.5 Sub-conclusion

Based on the above studies, the results indicate that throughout the Tu Duc period, the HIC comprised ten functional areas, with a large-scale total of approximately 116 buildings. Of these, approximately 95 date from the Gia Long - Minh Mang period, and 21 from the Thieu Tri - Tu Duc period. The results of this chapter are the establishment of a comprehensive dataset for all buildings, which includes information such as names (in Vietnamese, Chinese, and English), construction dates, building types, functions, locations, historical photographs, current photographs, preservation status, and existing architectural drawings. Through statistical tables, the buildings in the HIC have various functions and 20 type of building names, including: Temple, Shrine, Palace, Hall, Sub-hall, Pavilion, Floating pavilion, Parthouse, House, Theater, Restaurant, Medical store, House, Store, Kitchen, Barrack, Camp, Corridor, Gate, and Podium. All buildings feature timber-frame structures and are constructed on rectangular or square foundations. The buildings have three main types of floor plan as follows:

- (1) Single-rectangle/square building: consists of a single square/rectangular floor plan, a gable roof, or a gable-and-hip roof. This building type can range from one to three storeys high;

(2) Double-rectangle building: consists of two rectangular floor plans connected, a gable-and-hip roof, and one storey high;

(3) Triple-rectangle building: consists of three rectangular floor plans connected, a gable-and-hip roof, and one storey high.

Additionally, the study clarifies the main structural components and architectural terminology associated with the timber-framing system and spatial organization through the floor plans, sections, and elevations of three representative buildings. These findings enable a deeper investigation into the characteristics of the timber-framing system in HIC architecture, particularly through the floor plan and vertical section, which provide key information including the number of compartments and wings, ridge beams, roof slopes, roof tiers, stories, and roof planes.

On the other hand, a comparative analysis with the site plan of the Forbidden City in Beijing confirms that, alongside similarities influenced by Chinese culture, such as axial layout, orientation, functional areas, and naming conventions, the architecture of the Nguyen Dynasty developed a distinct architectural typology.

In summary, with 20 architectural typologies, 3 main floor plan types, and 2 basic roof types (gable roof and gable-and-hip roof) repeated across approximately 116 buildings, the architecture of the HIC demonstrates a unified architectural form and a clear hierarchy of structures. This suggests that the architecture of the Nguyen Dynasty was governed by a system of design principles that aimed to classify and hierarchize buildings. Therefore, this study will delve deeper into architectural typology analysis to systematize the various architectural types within the HIC, thereby establishing a classification system of architectural typologies based on specific criteria and developing a diagram that illustrates the evolution and characteristics of the architectural typologies.

Chapter 5

Architectural Typology of Hue Imperial City

In this chapter, the thesis delves into the study of the typology of the original Nguyen Dynasty architecture based on the architectural information obtained in Chapter 4. The study established criteria for classifying architectural typologies based on key features, including the relationship between names, functions, locations, and the main characteristics of the floor plan, section, and elevation. From this, the study identifies the architectural typologies of the HIC and analyzes their main features. The research results will compile all the HIC architectural typologies through a diagram that links the various typologies and a summary table of the architectural characteristics of these types.

5.1 Criteria for identifying architectural typologies

5.1.1 Criteria for functions and uses

Considering the functions and names of the structures in Section 4.2, the results show that there are buildings with similar functions, such as places of worship, workplaces, or residences, despite variations in their names. Therefore, this criterion is proposed to clarify the main functional groups of all the buildings in the HIC. Based on the functions and uses of the buildings, the study results identify four main functional groups: (1) Worship buildings, (2) Administrative buildings, (3) Residential buildings, and (4) Other facilities (supporting the main groups). This is a basic classification approach to understand the types of buildings in the HIC comprehensively.

5.1.2 Criteria for building names, functions, and locations

Analysis of the names of the buildings reveals that a building name typically consists of two parts: a proper name with a metaphorical

meaning and a component that defines the type of building, such as Palace, Temple, Hall, or Pavilion. For example, with the “Thai Hoa Dien” palace, “Thai Hoa” signifies the harmony between the “Yin” and the “Yang” for peace, and the building's format is “Dien/Palace”. Thus, the final part of the name plays an important role in identifying the type of building.

Regarding the function of the buildings, although they have been categorized into main functional groups according to Criterion 5.1.1, their locations within the HIC vary. Based on the principles of zoning, axis, and main orientation on the HIC site plan (presented in Section 4.1), as well as the position of each building (presented in Section 4.2), the study provides a statistical analysis of the positions of each type of name. According to the findings in Chapter 4, a total of 20 name types (Temple, Shrine, Palace, Hall, Sub-hall, Pavilion, Floating pavilion, Parthouse, House, Theater, Restaurant, Medical store, House, Store, Kitchen, Barrack, Camp, Corridor, Gate, and Podium) were assigned to approximately 116 buildings. As a result, the same type of name was used repeatedly for multiple buildings that differed in function, location, and architectural form. To distinguish between groups of buildings that share the same name type but differ in function and architectural characteristics, the study adds the symbols A, B, C, D, or E after the name type (Figure 174). It is important to note that the order of these symbols (A, B, or C) reflects a hierarchy of priority among the groups, based on the importance of their function or location, ranked from highest to lowest—such as the Emperor, the Royal Family, mandarins, and soldiers (see also Table 16).

This criterion aims to clarify the relationship between three factors: name, function, and location. Additionally, it helps systematize all the building names assigned by the Nguyen Dynasty and elucidates the position of each type of building according to its function within the HIC.

5.1.3 Criteria for building hierarchy based on a combination of building information (name, function, and location) and timber frame structure (plan, section, and elevation)

This criterion is proposed based on the differences in the locations of buildings, even when they have the same name. For example, buildings with the name Palace are located in three different positions: on the main axis of the HIC, on the main axis of a functional area, or to the East/West of the main axis of a functional area. A Palace located on the main axis of the HIC has a higher level than a Palace on the main axis of a functional area, with the lowest level being a Palace located to the East/West of the main axis of a functional area. Additionally, the function of the buildings also reveals a hierarchy in conjunction with their location, such as high-status buildings like those for the Emperor, Empress, Empress Dowager, concubines, followed by places for mandarins and soldiers.

Additionally, the study results on the terminology of wooden frames and the concept of space in Section 4.4 show that the scale of wooden structures is clearly assessed through the floor plan, section, and elevation of the building. For buildings located on the main axis of the HIC or the main axis of a functional area, which are large in scale, the wooden structure is more complex, with 2 or 3 ridge beams, a gable-and-hip roof, and a double-layered roof. Buildings located to the East/West of the main axis of a functional area will have a simpler single-house structure with simpler sections and elevations. Therefore, the criteria for classifying buildings must combine information from the building details and architectural typology on the floor plan, section, and elevation to comprehensively and accurately assess the building hierarchy.

5.2 Architectural typology of Hue Imperial City

5.2.1 Architectural typology of Hue Imperial City based on buildings' functions and uses

The buildings in the HIC serve many functions but can essentially be classified into four main groups: (1) Worship buildings, (2) Administrative buildings, (3) Residential buildings, and (4) Other facilities.

Within each main functional group, various buildings with different functions support the main buildings, categorized from main to auxiliary. For example, in the worship area (Figure 174, zone 3), the main worship building is the Temple (positions 22); the secondary worship building is the Palace (E) – used for offering sacrifices to ancestors (positions 26-28); the memorial place is the Pavilion (A) (position 21), or the place for worshipping officials who served the Nguyen Dynasty is the Shrine (B) (positions 24, 25).

Another example of a building belonging to the worship category is the building named Palace (B) (Figure 174, area 7, position 92), which was used for the daily worship of the Nguyen Dynasty's Emperor and Empress. This area was inhabited by female attendants who performed daily worship rituals and was not part of the ceremonial “Temple area,” which was designated for state rituals and reserved for men. Thus, each leading functional group encompasses multiple sub-functions and associated name types. A summary of the functional groups within the HIC is presented in Table 15.

Table 15. The architectural typology of Hue Imperial City is based on building function and uses

No.	Group of functions	Function	Type of name
1	Worship building	Worshipping the Nguyen ancestors and Emperors. A place for the Nguyen Court to hold ceremonies.	Temple
		Worshipping the Emperors and Empresses. A place for women to worship the Emperors & Empresses.	Palace (B)
		Preparing items for ceremonies, worshipping the Nguyen ancestors, and the Emperors	Palace (E)
		Monument for the “soul” of Emperors	Pavilion (A)
		A place for worshipping the Gods and the Buddha of the Empress Dowager	Shrine (A)
		Worshipping royal relatives and mandarins who made significant contributions to the Nguyen Dynasty.	Shrine (B)
		Worshipping Gods	Shrine (C)
2	Administrative building	The workplace of the Emperors	Palace (B)
		The workplace of mandarins in charge of administrative and military work.	Palace (D)
		A place for the Emperor to oversee ceremonies	Pavilion (B)
		Workplace of cabinets, mandarins	Hall (C), Sub-hall (A), Sub-hall (B)
		The workplace of mandarins in charge of accounting	House (A)
3	Residential building	Residence of the Emperor	Palace (A)
		Residence of the Empress, Empress Dowager, Grand Empress Dowager	Palace (B), Palace (C)
		A theater for the Emperor	Royal theater
		A place for the Emperor to relax and read books	Pavilion (B), Hall (A)
		A place for the Emperor and the royal family to relax	Floating pavilion, Parthouse
		A place for the Princes to study, for the Grand Empress Dowager to	Hall (B)

No.	Group of functions	Function	Type of name
		live	
		The building of the Emperor's concubines	House (B)
		Waiting house of the Emperor or mandarins	House (C)
		A place to prepare medicine for the Emperor and the royal family	Medical store
4	Others facilities	Workplace of soldiers, kitchen, warehouse	Kitchen, House (D), Barracks, Store, Camp
		Connecting corridors	Corridor
		Observation and defense	Podium
		Gate	Gate

5.2.2 Architectural typology of Hue Imperial City is based on building names, functions, and locations

Based on this criterion, the study establishes the relationship between 20 types of names, their functions, and locations. Within a single naming type, there can be multiple variations in function and location. Therefore, in the English translations, the designations A, B, C, D, or E are added to avoid confusion in the architectural typology classification (Figure 174). For example, the naming type “殿” (Table 16, number 2) includes forms such as place (A), (B), or (C), while names based on function are also used—for instance, the type “堂” (Table 16, number 3) may appear as theater or hall (A), (B).

Regarding the location of the buildings, the statistics reveal three main positions to note: (1) main buildings are located on the main axis of the HIC; (2) main buildings of the area are situated on the main axis of the area; and (3) auxiliary buildings are located on the East or West sides of the functional area. The classification table of building names, functions, and locations is presented below (Table 16).

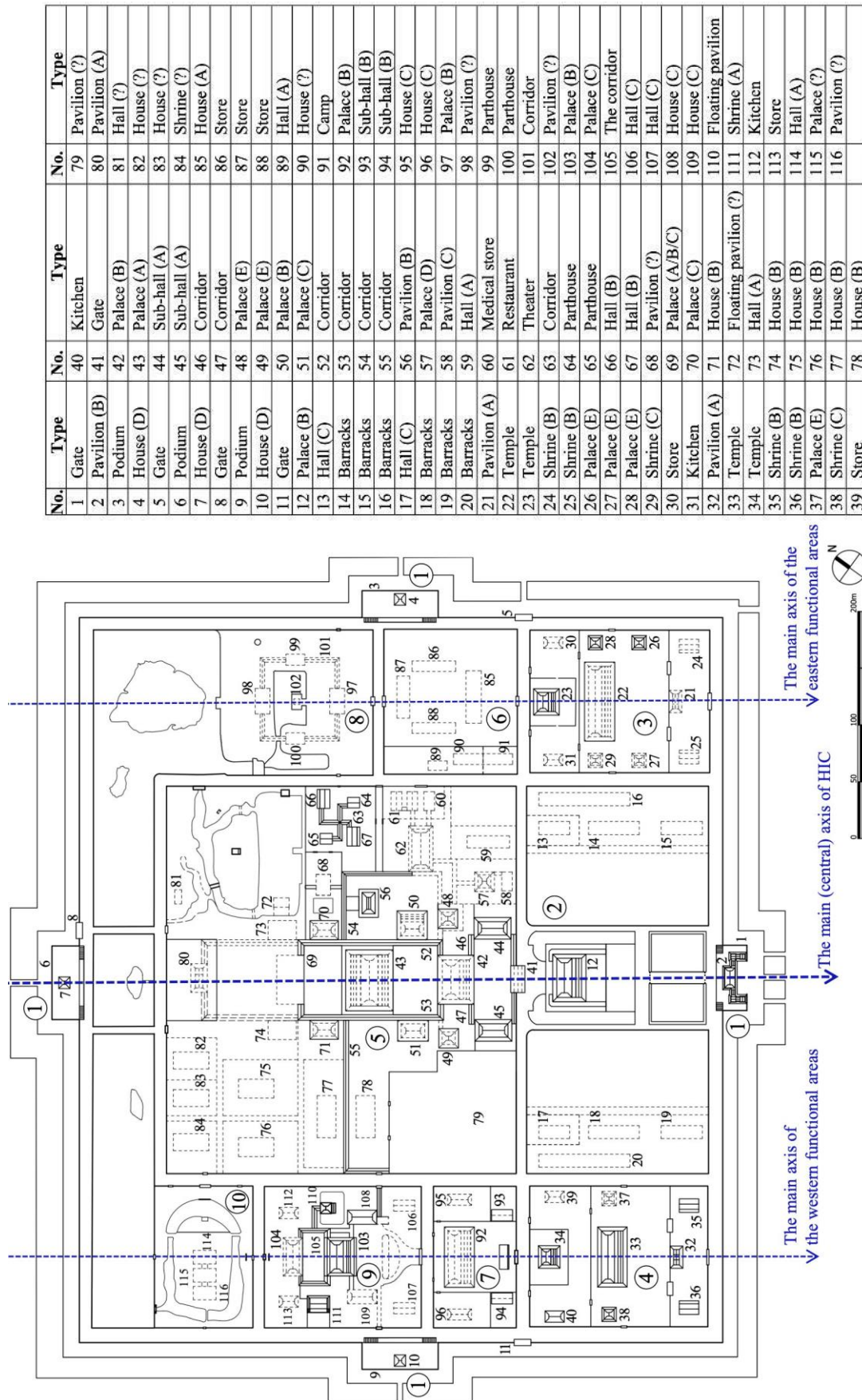


Figure 174: Name types and locations of buildings on the site plan of Hue Imperial City
 (Source: The drawing was based on Nakazawa et al. (1995) & the study information of the author)

Table 16. The architectural typology of Hue Imperial City is based on building names, functions, and locations

No.	Type of name			Function	Location
	Vietnamese	Chinese	English		
1	Miếu	廟	Temple	Worshipping ancestors and Emperors of the Nguyen Dynasty	Placed on the main axis of the functional area
2	Điện	殿	Palace (A)	Residence of the Emperor	Placed on the main axis of the HIC
	Điện	殿	Palace (B)	- Workplace of Emperors. - Residence of Empress Dowager. - A place for women to worship the Emperor & Empress.	Placed on the main axis of the HIC or the main axis of the functional area
	Điện	殿	Palace (C)	Residence of Empress and Empress Dowager	Placed on the main axis of the functional area
	Điện	殿	Palace (D)	Workplace of mandarins	Placed to the East/West of the main axis of functional areas
	Điện	殿	Palace (E)	A secondary worshipping structure next to the main Temple	Placed to the East/West of the main axis of functional areas
3	Đường	堂	Theater	A theater for the Emperor and court of the Nguyen Dynasty	Placed on the main axis of the sub-architecture cluster
			Hall (A)	A place for the Emperor and royal family to rest and relax	Placed to the East/West of the main axis of functional areas
			Hall (B)	A place for Princes to study; A living area for the Grand Empress Dowager.	Placed to the East/West of the main axis of functional areas, or Placed on the main axis of the functional area
4	Vu	廡	Sub-hall (A), (B)	Workplace of mandarins	Placed in the front on both the East and West sides of the main building

No.	Type of name			Function	Location
	Vietnamese	Chinese	English		
5	Viện	院	Medical store	The place to examine and prepare medicine for the Emperor and royal family.	Placed to the East/West of the main axis of functional areas
		院	House (B)	The residence of the concubines	Placed to the East/West of the main axis of functional areas
		院	Hall (C)	Workplace of mandarins	Placed to the East/West of the main axis of functional areas
6	Các	閣	Pavilion (A)	Monument for the “soul” of the Emperors	Placed on the main axis of the functional area and in front of the main building
7	Lâu/Lầu	樓	Pavilion (B)	A place for the Emperor and royal family to oversee ceremonies, relax, or read books	Placed on the main axis of the functional area or placed to the East/West of the main axis of functional areas
8	Tạ	榭	Floating pavilion	A place for the Emperor and royal family to relax	Placed to the East/West of the main axis of functional areas. (Placed in the park with the foundation half on the ground and half on the lake)
9	Am	庵	Shrine (A)	A place of worship for the Gods and Buddha of the Empress Dowager	Placed to the West of the main axis of functional areas
10	Tự/ Từ	寺/祠	Shrine (B)	Worshipping the royal relatives and mandarins who made significant contributions to the Nguyen Dynasty	Placed to the East/West of the main axis of functional areas
	Tự/ Từ	寺/祠	Shrine (C)	Worshipping Gods	Placed to the West of the main axis of functional areas
11	Sở	所	House (A)	Workplace of mandarins in charge of	Placed on the main axis of the functional area

No.	Type of name			Function	Location
	Vietnamese	Chinese	English		
				accounting	
			Restaurant	Kitchen for preparing food for the Emperor and royal family	Placed to the East/West of the main axis of functional areas
12	Gia	家	House (C)	Waiting house of Emperor or mandarins	Placed to the East/West of the main axis of functional areas
13	Khố	庫	Store	Warehouses	Placed to the East/West of the main axis of functional areas
14	Trù	廚	Kitchen	Kitchen for the functional area	Placed to the East/West of the main axis of functional areas
15	Xứ	處	Barracks, Camp	A place for soldiers and guards	Placed to the East/West of the main axis of functional areas
16	Lang	廊	Corridor	Connecting corridors	Placed in the front, rear, or beside the main building to connect with sub-buildings
17	Hiên	軒	Parthouse	A place for the Emperor and royal family to relax	Placed to the East/West of the main axis of functional areas. (Placed in parks or gardens of architectural clusters)
18	Đình	亭	House (D)	A place for soldiers and guards	Placed on podiums
19	Đài	台	Podium	A place for soldiers to observe and defend	Placed in the middle of the four sides of the enclosed walls of the HIC
20	Môn	門	Gate	Gate	Placed on the enclosed walls of functional areas and the HIC. The main gate was placed in the middle of the Southern wall.

Thus, the Nguyen Dynasty used 20 types of official names to name the HIC architecture. Depending on a building's name and function, one can determine its location on the HIC site plan or within the functional area. In other words, knowing two out of the three factors (name, function, and location) will determine the remaining information. This is an important relationship in the regulations for establishing the Nguyen Dynasty's system of buildings.

5.2.3 Architectural typology of Hue Imperial City based on building hierarchy



Based on the information about the relationship between name, function, and location, the study arranges the buildings according to their usage and user group in the following hierarchy: places reserved for the Emperor; the working places of the Emperor and the Nguyen Court; places for ancestor worship; residences of the Empress, Empress Dowager, and Grand Empress Dowager; mandarins; soldiers; guards; and servants. The hierarchical order of locations is buildings on the main axis of the HIC, buildings on the main axis of a functional area, and buildings located to the East/West of the functional area, respectively.

Common characteristics of buildings designated for the Emperor, the Nguyen Court, and ancestor worship, such as Palace (A), Palace (B), and Temple (for example, Figure 174, positions 43, 42, 22), include their large scale but only one-storey building, a double/triple-rectangle building, a double/triple ridge beam structure, a gable-and-hip roof, and a double-layered roof.

Another characteristic analyzed in Section 4.3 is that the number of stories is not considered a significant criterion in determining a building's hierarchical status, as the most prestigious Nguyen Dynasty buildings (Palace (A), Palace (B), and Temple) are all single-storey

buildings. Multi-storey buildings (typically two or three storeys) were often designed for specific functional or symbolic purposes. For instance, pavilions such as the “Ngu Phung Lau” pavilion (Figure 174, position 2) have two storeys and were built for the function of observing from above. In contrast, others, such as the “Tuy Thanh Cac” pavilion and “Hien Lam Cac” pavilion (Figure 174, positions 21 and 32), have three storeys and serve spiritual or commemorative roles, honoring the ancestors and emperors of the Nguyen Dynasty.

Therefore, concerning the wooden frame structure on the plan, section, and elevation, the study categorizes the building hierarchy based on key features. These include the number of ridge beams (corresponding to the number of structural units in a floor plan of a single, double, or triple-rectangle building), number of roof slopes (that is, a gable roof with two slopes or a gable-and-hip roof with four slopes), the number of roof layers, the number of stories, and the number of roof planes.

Based on the characteristics analyzed above, the study proposes the hierarchy of building status as presented in Table 17.



Table 17. The architectural typology of Hue Imperial City is based on the building hierarchy

No.	Type of name	User	Location	Timber frame structure					Illustrative drawing		
				Number of ridge beams	Number of roof slopes	Number of roof layers	Number of stories	Number of roof planes	Plan	Section	Perspective
1	Palace (A)	Emperor	The main axis of the HIC	3	4	2	1	16			
	Palace (B)	Emperor, the Nguyen court, Royal family	The main axis of the HIC or the main axis of functional areas	2	4	2	1	12			
2	Temple	Ancestor worship	The main axis of functional areas	1	4	2	1	8			
	Palace (C)	Royal family	The main axis of functional areas	1	4	2	2	8			
3	Palace (D)	Mandarins	The East/West of functional areas	1	4	2	1	8			
	Palace (E)	Ancestor worship (next to Temple)	The East/West of functional areas	1	4	2	1	8			
4	Pavilion (A)	Emperor, Royal family	The main axis of the HIC or the main axis of functional areas	1	4	1	3	12			
	Pavilion (B)	Emperor, Royal family	The main axis of the HIC or the East/West of functional areas	1	4	1	2	8			

No.	Type of name	User	Location	Timber frame structure					Illustrative drawing		
				Number of ridge beams	Number of roof slopes	Number of roof layers	Number of stories	Number of roof planes	Plan	Section	Perspective
5	Theater, Hall (A)	Emperor, Royal family	The East/West of functional areas	1	4	2	1	8			
	Hall (B)	Emperor, Royal family	The East/West of functional areas	1	4	1	1	4			
	Sub-hall (A)	Mandarins	The East/West of functional areas	1	4	2	1	8			
	Gate	Emperor, Mandarins	The main axis of the HIC	1	2	2	1	4			
	House (C)	Concubines of late Emperors	The East/West of functional areas	1	4	1	1	4			
6	Shrine (A)	Worshipping Buddha, Gods	The East/West of functional areas	1	4	1	2	8			
	Shrine (B)	Worshipping the royal relatives and mandarins	The East/West of functional areas	1	2	1	1	3			
	Shrine (C)	Worshipping Gods	The West of functional areas	1	4	2	1	8			

No.	Type of name	User	Location	Timber frame structure					Illustrative drawing		
				Number of ridge beams	Number of roof slopes	Number of roof layers	Number of stories	Number of roof planes	Plan	Section	Perspective
7	Floating pavilion, Parthouse	Emperor, Royal family	The East/West of functional areas	1	4	1	1	4			
				1	2	1	1	2			
8	Medical store, Royal store, Royal kitchen	Mandarins, Storekeepers, Royal chefs	The East/West of functional areas	1	4	1	1	4			
	House (D)	Soldiers, guards	The East/West of functional areas	1	4	1	1	4			
	Restaurant, Sub-hall (B), Barracks/Camp	Royal kitchen, Soldiers, guards	The East/West of functional areas	1	2	1	1	2			
	Corridor	Everybody	The East/West of functional areas	1	2	1	1	2			

Note:

- House (A), House (B), and Hall (C) have undergone many changes and lack sufficient data, so the thesis has not been classified yet but is likely to fall into Group 5 – the group for officials' working areas or auxiliary buildings serving the main palace;
- The cases of Podium and Gate are not included in this table due to their different architectural types, except for the “ Dai Cung Mon” gate (the main gate of the Forbidden City).

Thus, the architecture in the HIC comprises eight hierarchical levels. The highest level is the private palace of the Emperor, known as Palace (A), followed by buildings for the Emperor and the Nguyen Court's official functions, referred to as Palace (B), and ancestor worship buildings, such as the Temple. In general, Levels 1, 2, and 3 are designated for the Emperor, ancestor worship, the royal family, and essential mandarins, typically in the form of a Palace and a Temple. Level 4 includes places where the Emperor and the royal family commemorate ancestors, or where the Emperor participates in ceremonies held outside the main "Ngo Mon" gate. Level 5 comprises buildings for the Emperor and mandarins, serving both work and relaxation purposes. Level 6 is for places dedicated to the worship of Buddhism and polytheism. Level 7 is for relaxation and sightseeing. Level 8 consists of auxiliary buildings, such as those used by lower-ranking mandarins, soldiers, servants, and guards. Each type of Nguyen Dynasty building has clear regulations based on the relationship between name, function, location, and wooden frame structure (plan, section, and elevation), corresponding to each level of hierarchy.

The results presented in Table 17 have identified architectural types within groups of similar hierarchy and typology. This provides a scientific basis for determining the architectural typology on the site plan and establishes the regulations for the architectural design of the Nguyen Dynasty.

5.3 Characteristics of the architecture in Hue Imperial City

Based on the architectural typology classified in Section 5.2, the study clarifies the characteristics of each type of building according to their hierarchical order from highest to lowest as follows:

(1) First level: Palace (A)

Triple-rectangle building – Palace (A) – Main palace: Triple-rectangle building, gable-and-hip roof, triple ridge beams, four-sided sloping roof, double-layered roof, one-storey building, 16 roof planes.

This type includes only a single building, located at the center of the Forbidden City (Figure 174, position 43). Based on the remains of the building foundation (Figure 107) and historical photographs (Figures 125–127), the study illustrates the architectural typology as follows (Figure 175)

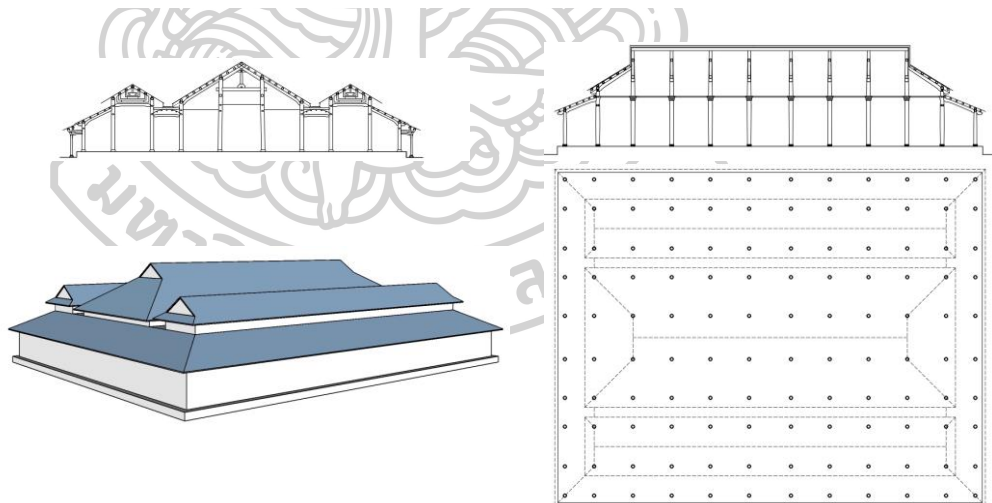


Figure 175: Typical Palace (A) - Illustrative typological drawing of “Can Thanh Dien” palace
(Source: Author)

An example of the Palace (A) type still existing in Hue City is the “Ngung Hy Dien” Palace at the Dong Khanh Mausoleum, built in 1888, which was selected as a representative example (Figure 176). The structure features a similar layout, comprising three rectangular floor

plans: the front building, the main building, and the back building. Although the “back building” differs slightly in its roof connection to the “main building,” the overall structure can still be considered a typical example.

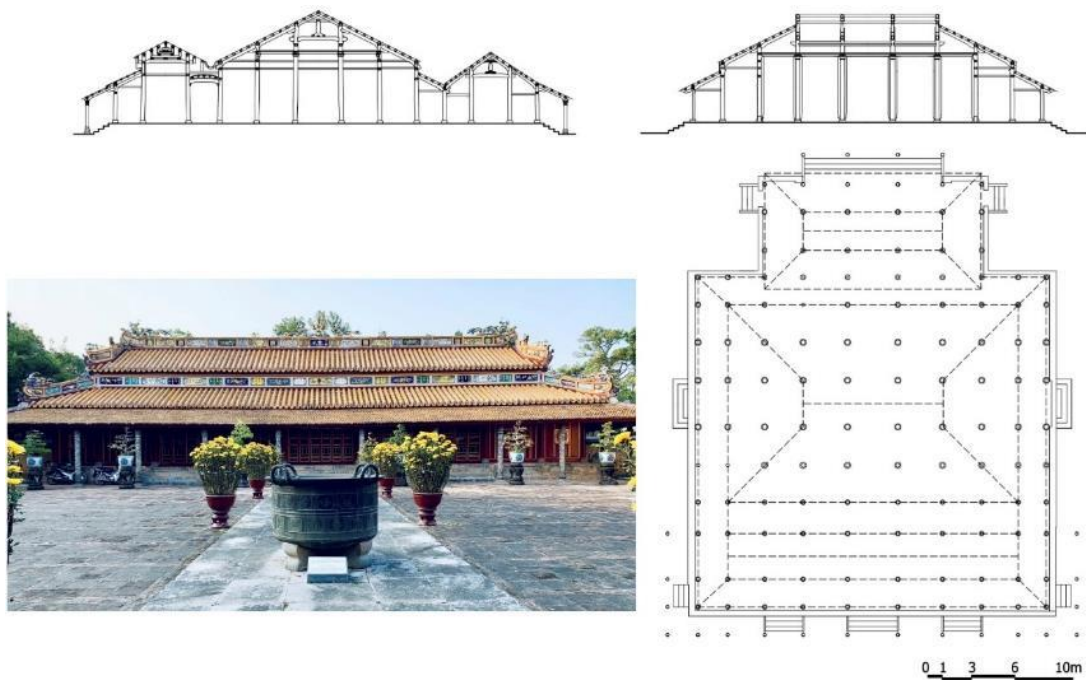


Figure 176: “Ngung Hy Dien” palace (“Dong Khanh” Mausoleum, Hue City)

(Source: The drawing was based on Rokutanda and Nakagawa (2013), the measurement results by Le Vinh An from 2004 to 2014, and the author’s modifications
Source (photo): <https://hanamtv.vn/quay-nguoc-thoi-gian-tham-quan-nhung-lang-tam-noi-tieng-tai-co-do-hue-13558.html>)

(2) Second level: Palace (B), Temple

Double-rectangle building – Palace (B), Temple – Main palace, temple: Double-rectangle building, gable-and-hip roof, gable-and-hip roof, double ridge beams, four-sided sloping roof, double-layered roof, one-storey building, 12 roof planes. (Figures 177, 178)

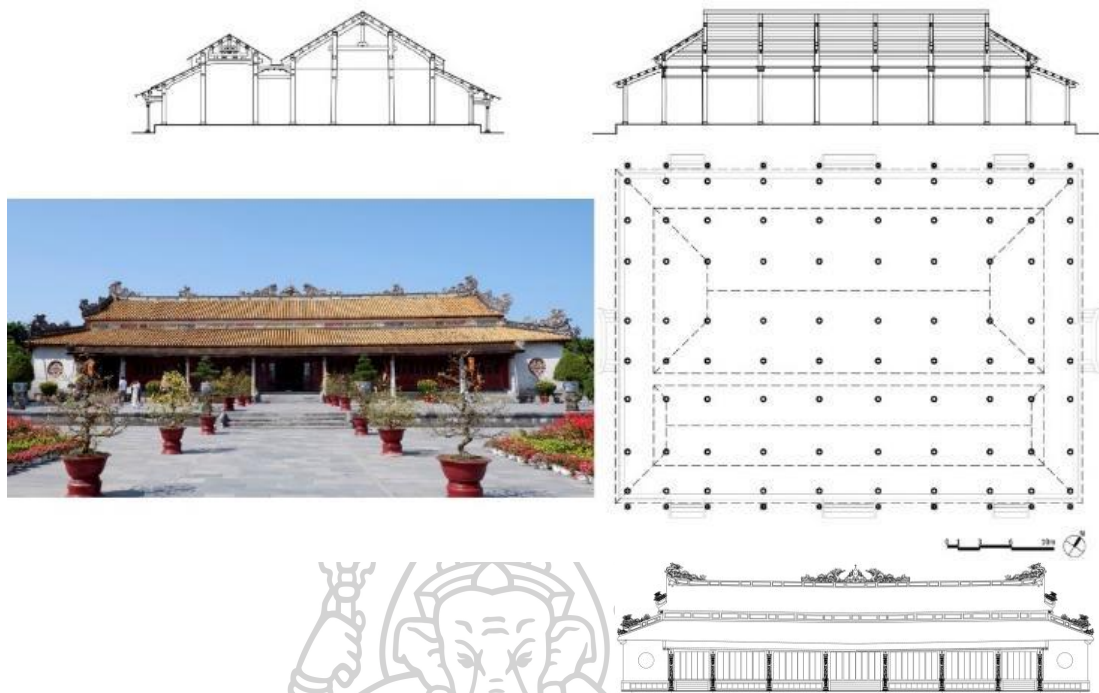


Figure 177: Typical Palace (B) - “Thai Hoa Dien” palace
 (Source: The drawing was based on Saito and Nakagawa (2012); Sakamoto et al. (2009); and the author’s modifications)

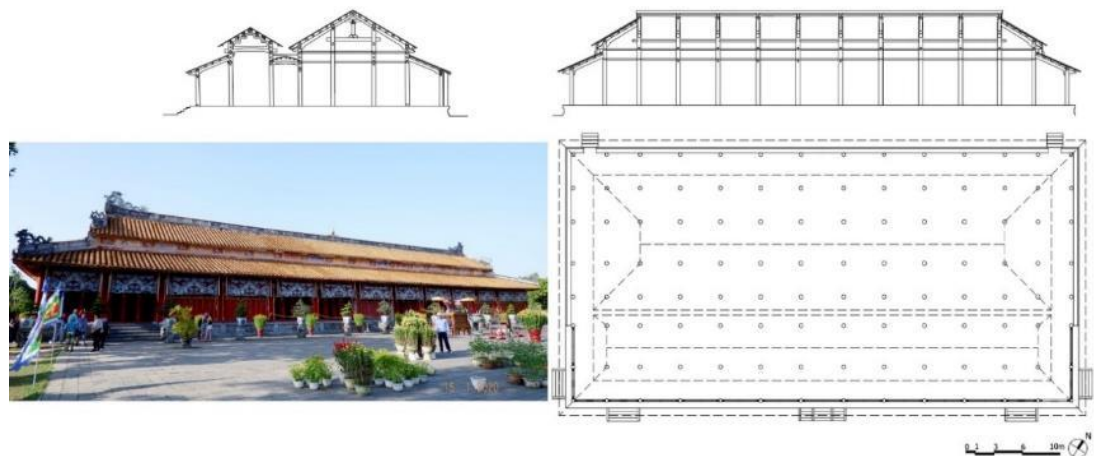


Figure 178: Typical Temple - “The Mieu” temple
 (Source: The drawing was based on Shirai and Nakagawa (2014) and the author’s modifications)

According to the statistical results presented in Section 4.2 and Figure 174, there are approximately nine structures of the Palace (B) and Temple types that share a similar architectural typology. Depending on whether the number of compartments in the front building and the main building increases or decreases, the architectural form develops along the

horizontal axis. In terms of sectional view, the wooden frame structure remains typologically consistent across these buildings. Table 18 lists the number of compartments and wings of the buildings classified as Palace (B) and Temple types, along with a reference column for each building's inventory.

Table 18. Scale of Palace (B) and Temple type

No.	Name of buildings	Front building		Main building		Position (Figure 174)	Inventory of buildings (Figure)
		Compartment	Wing	Compartment	Wing		
1	“Thai Hoa Dien” palace	7	2 wings	5	2 double wings	12	78
2	“Can Chanh Dien” palace	7	2 wings	5	2 double wings	42	104-106
3	“Quang Minh Dien” palace	5	2 wings	3	2 double wings	50	114
4	“Phung Tien Dien” palace	11	2 wings	9	2 double wings	92	130-132
5	“Dien Tho Chinh Dien” palace	7	2 wings	5	2 double wings	103	135-136
6	“Thai To Mieu” temple	15	2 wings	13	2 double wings	22	82
7	“Trieu To Mieu” temple	5	2 wings	3	2 double wings	23	83
8	“The To Mieu” temple	11	2 wings	9	2 double wings	33	92-94
9	“Hung To Mieu” temple	5	2 wings	3	2 double wings	34	95-96

(3) Third level: Palace (C), Palace (D), Palace (E)

(3.1) Single-rectangle building – Palace (C) - Subsidiary

palace: Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, double-layered roof, one-storey building, 8 roof planes. (Figure 179)

The main buildings classified as Palace (C) include “Trinh Minh Dien” Palace (Figure 174, position 51; Figure 115), “Duong Tam Dien”

Palace (Figure 174, position 70; Figure 124), and “Tho Ninh Dien” Palace (Figure 174, position 104; Figure 137). Since “Trinh Minh Dien” Palace and “Duong Tam Dien” Palace were destroyed, “Tho Ninh Dien” Palace is selected as the representative example.

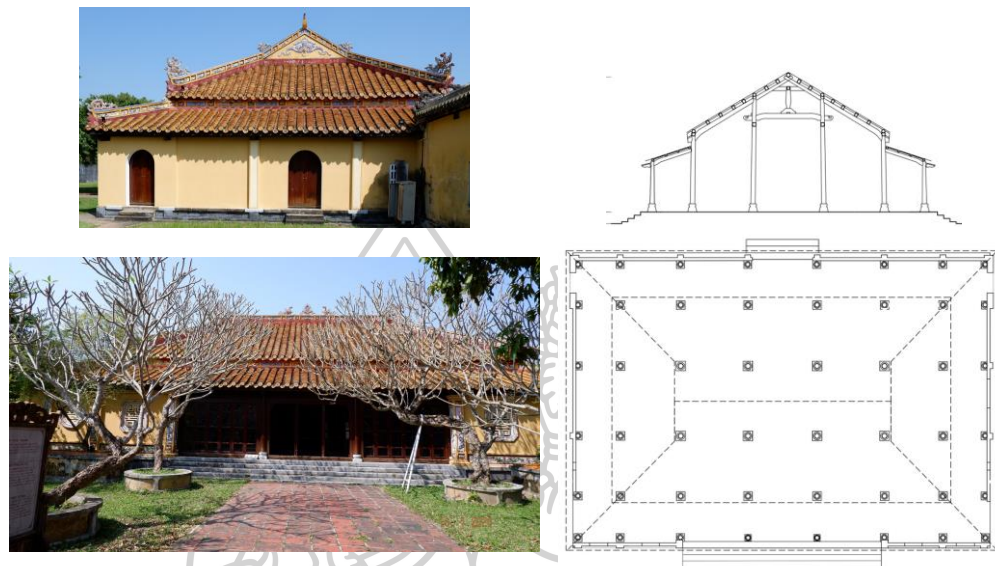


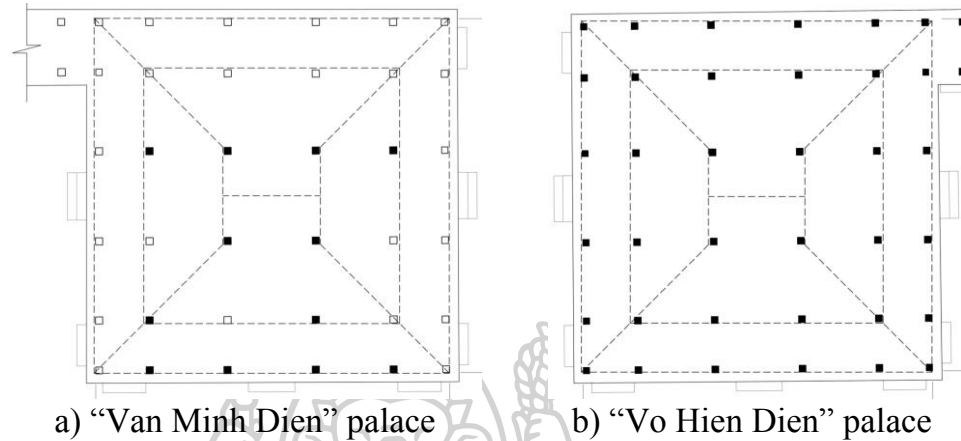
Figure 179: Typical Palace (C) – “Tho Ninh Dien” palace
 (Source: *The drawing was based on Hoang and Le (2015); Vietnam National Museum of History and Hue Monuments Conservation Center (HMCC) (1999); and the author’s modifications*)

(3.2) Single-square building – Palace (D) – Subsidiary palace:

Single-square building, gable-and-hip roof, single ridge beam, four-sided sloping roof, double-layered roof, one/two-storey building, 8 roof planes. (Figure 180)

The Palace (D) type includes three buildings with square floor plans, used as workplaces for high-ranking mandarins. The three remaining buildings of this type are “Van Minh Dien” Palace (Figure 174, position 48), “Vo Hien Dien” Palace (position 49), and “Dong Cac Dien” Palace (position 57). Based on the current state of the foundations and historical photographs, the study identifies the structural layout of this type as described above, along with the roof style of the buildings (Figures 180, 181). Additionally, the data indicate that within the Palace (D) type,

the structure could be developed into two storeys (Figure 181) while maintaining the same floor plan dimensions (one compartment and two double wings).



a) “Van Minh Dien” palace

b) “Vo Hien Dien” palace

Figure 180: Typical Palace (D) (one-storey building)

(Source: The drawing was based on Nakazawa et al. (1997) & the author’s modifications)

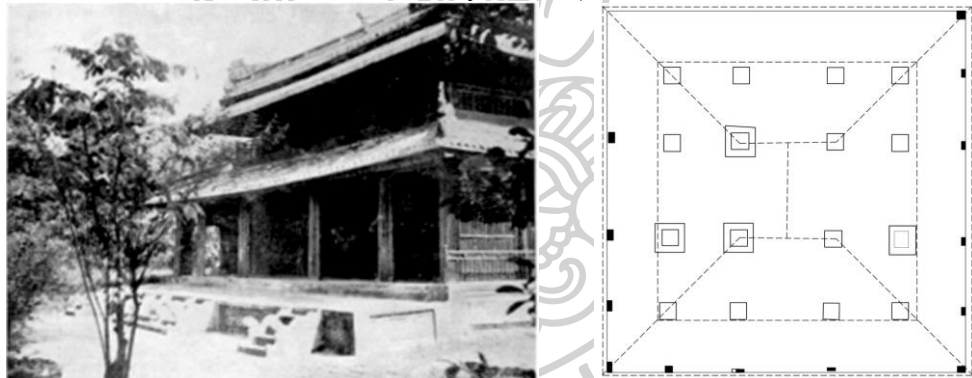


Figure 181: Typical Palace (D) (two-storey building) - “Dong Cac Dien” palace

(Source: The drawing was based on the measurement results by Le Vinh An from 2004 to 2014 and the author’s modifications;
The photograph: the figure III in Boudet (1942))

Since the buildings mentioned above were destroyed, the study selects “Long Duc Dien” Palace as the representative example for the single-storey case (Figure 183). The typical example of the two-storey Palace (D) type is illustrated as follows (Figure 182).

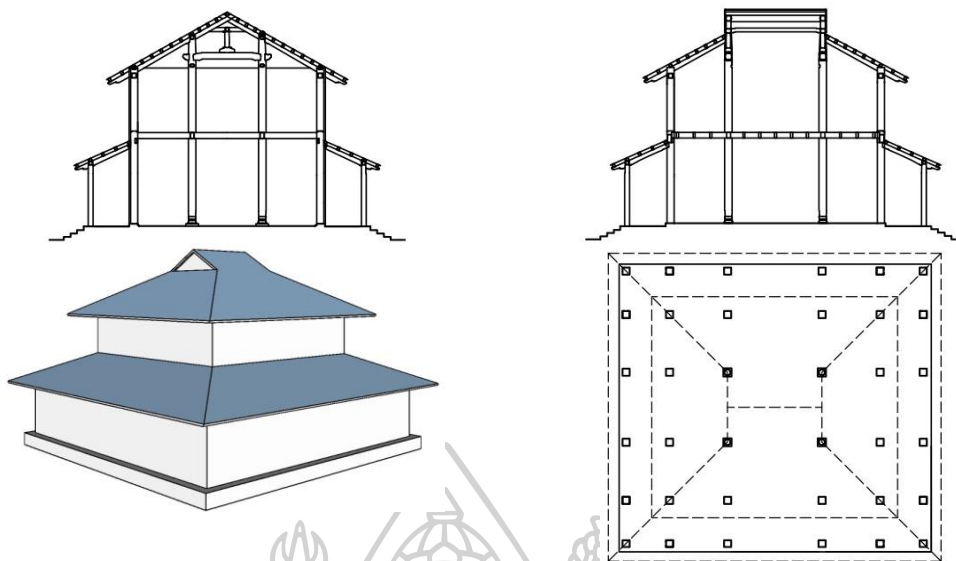


Figure 182: Typical Palace (D) (two-storey building) - Illustrative typological drawing of “Dong Cac Dien” palace
(Source: Author)

(3.3) Single-square building – Palace (E) - Subsidiary temple:

Single-square building, gable-and-hip roof, single ridge beam, four-sided sloping roof, double-layered roof, one-storey building, 8 roof planes.
(Figure 183)

The Palace (E) type includes four buildings: “Chieu Kinh Dien” Palace, “Muc Tu Dien” Palace, “Long Duc Dien” Palace, and “Canh Y Dien” Palace (Figure 174, positions 26, 27, 28, and 37). Among these, two buildings – “Chieu Kinh Dien” Palace (Figure 86) and “Long Duc Dien” Palace (Figure 88) - have been reconstructed based on their original foundations. “Muc Tu Dien” Palace (Figure 87) still retains its foundation, while “Canh Y Dien” Palace was destroyed. As these buildings share similar scale and architectural typology, “Long Duc Dien” Palace is selected as the representative example (Figure 183).

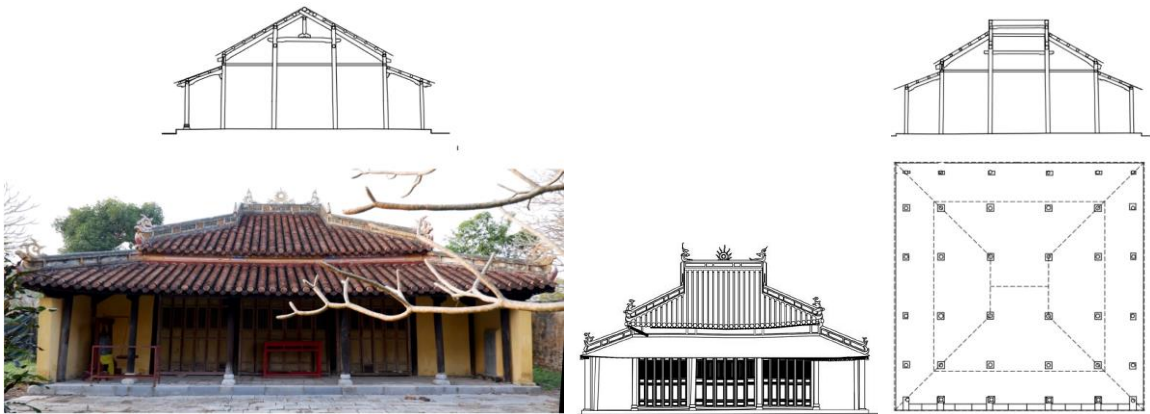


Figure 183: Typical Palace (E) – “Long Duc Dien” palace

(Source: The drawing was based on Hiroyasu et al. (2014); Shirai and Nakagawa (2009, 2010); Shirai et al. (2015); Shirai et al. (2014); and the author’s modifications)

(4) Fourth level: Pavilion (A), Pavilion (B)

(4.1) Single-rectangle building – Pavilion (A): Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof for each floor, three-storey building, 12 roof planes (Figure 184).

There are three three-storey buildings of this type within the HIC: “Tuy Thanh Cac” Pavilion (Figure 174, position 21), “Hien Lam Cac” Pavilion (position 32), and “Minh Vien Lau” Pavilion (position 80). However, since “Tuy Thanh Cac” Pavilion and “Minh Vien Lau” Pavilion were destroyed, “Hien Lam Cac” Pavilion is selected as the representative example.

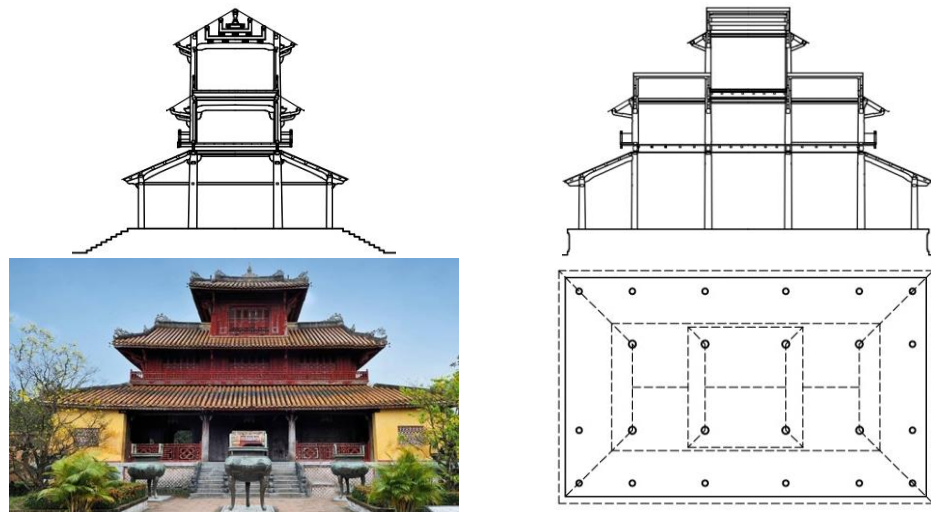


Figure 184: Typical Pavilion (A) – “Hien Lam Cac” pavilion
 (Source: The drawing was based on Hue Monuments Conservation Center (HMCC) and Institute for Building Science and Technology (IBST) (1998); Institute for Conservation of Monuments (ICM) (2020); and the author’s modifications; <https://vinpearl.com/vi/hien-lam-cac-cong-trinh-kien-truc-co-dep-nguy-nga-o-hue>)

(4.2) Single-rectangle building – Pavilion (B): Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof for each floor, two-storey building, 8 roof planes. (Figures 185, 186).

Based on the results of Section 4.2, the study identifies two main buildings of this type: “Ngu Phung Lau” Pavilion (Figure 174, position 2) and “Nhat Thanh Lau” Pavilion (position 56). Among them, “Ngu Phung Lau” Pavilion consists of nine interconnected buildings (Figure 71), which are essentially nine Pavilion (B) types linked together. Figure 186 presents the architectural typology of the central building and a perspective view of “Ngu Phung Lau” Pavilion.

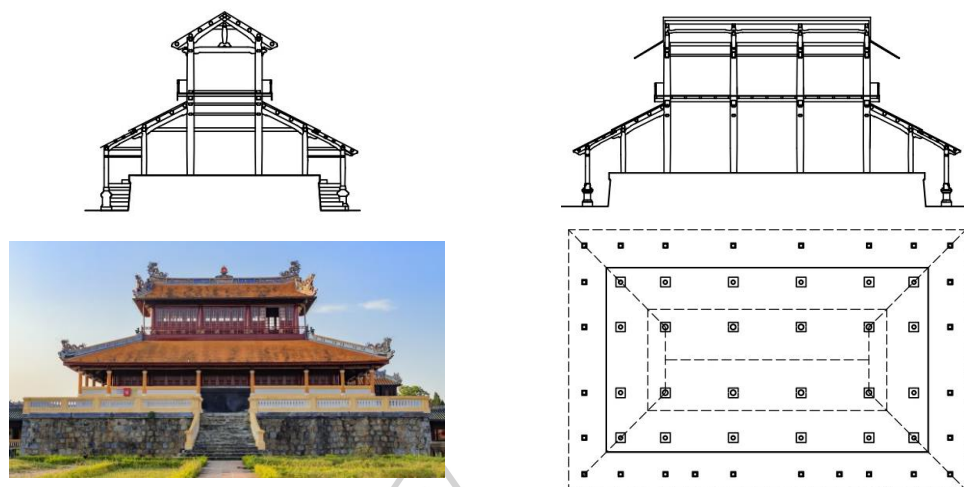


Figure 185: Typical Pavilion (B) – “Nhat Thanh Lau” pavilion
 (Source: The drawing was based on Nakazawa et al. (1997), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications; <https://jp.wideee.com/hue-tourism/>)

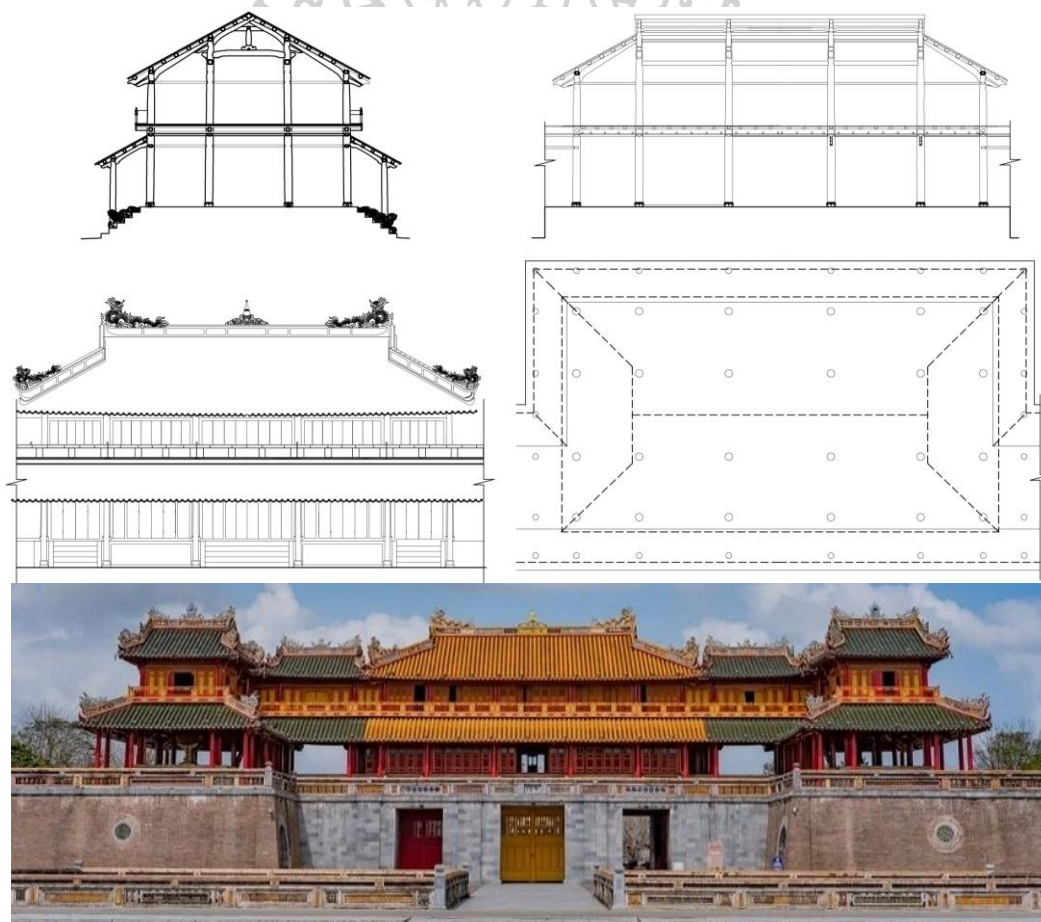


Figure 186: Typical Pavilion (B) – “Ngu Phung Lau” pavilion
 (Source: The drawing was based on Phan (2018) and the author’s modifications; <https://vinwonders.com/vi/wonderpedia/news/kiet-tac-kien-truc-ngo-mon-hue/>)

(5) Fifth level: Theater, Hall (A), Hall (B), Sub-hall (A), Gate, House (C)

(5.1) Single-rectangle building – Theater, Hall (A):

The Theater type includes one building, “Duyet Thi Duong” Royal Theater (Figure 174, position 62). The Hall (A) type includes “Duong Chanh Duong”g Hall (position 59), “Tinh Quan Duong” Hall (position 73), “Chanh Mong Duong” Hall (position 89), and “Ngu Dai Dong Duong” Hall (position 114). These buildings are located on the East or West sides of functional areas and were designated for the Emperor, Prince, and the court. Based on historical records and archival photographs (Figures 125-127, position 62), the typology of the Theater is identified as shown in Figure 187. Additionally, since the location and function of the Hall (A) type are similar to those of the Theater, the study proposes two architectural typologies for this type, as illustrated below.

- Single-rectangle building – Theater and Hall (A) (Case 1): Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, double-layered roof, one-storey building, 8 roof planes. (Figure 187)

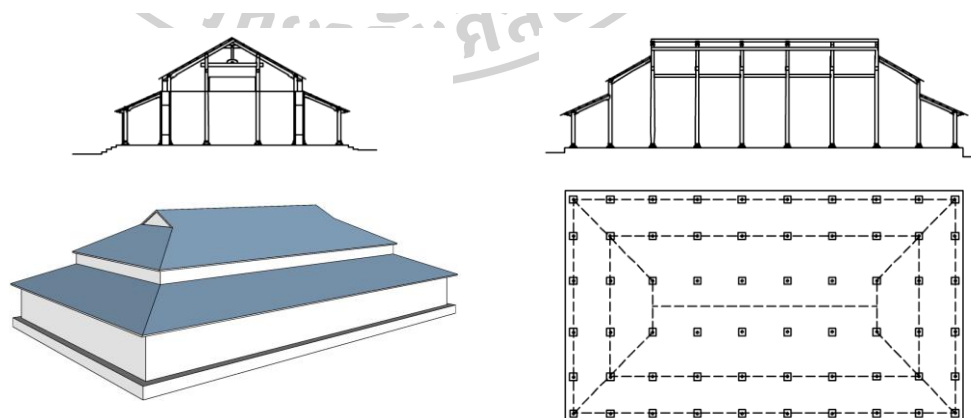


Figure 187: Typical Theater and Hall (A) (Case 1) - Illustrative typological drawing of “Duyet Thi Duong” royal theater

(Source: Author)

- **Single-rectangle building – Hall (A) (Case 2):** Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof, one-storey building, 4 roof planes. (Figure 188)

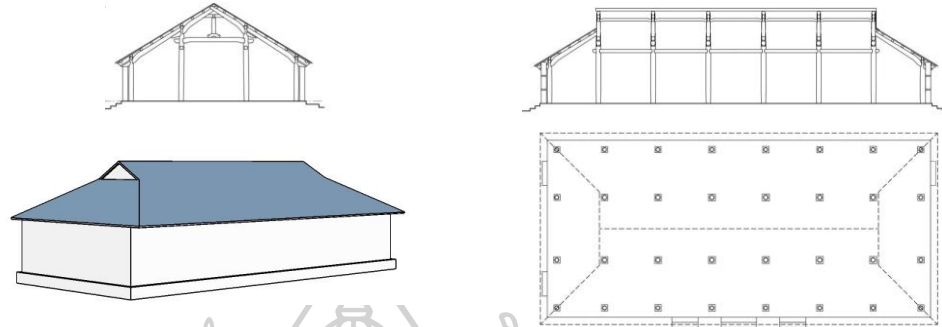


Figure 188: Typical Hall (A) (Case 2) - Illustrative typological drawing
(Source: Author)

(5.2) Single-rectangle building – Hall (B): Single-rectangle building, gable roof, single ridge beam, two-sided sloping roof, double-layered roof at the front, one-storey building, 3 roof planes. (Figure 189)

This architectural type is represented by “Cam Xuan Duong” Hall (Figure 174, position 66) and “Di Nhien Duong Hall” (position 67). These two buildings are identical in terms of scale and architectural typology, as illustrated below:

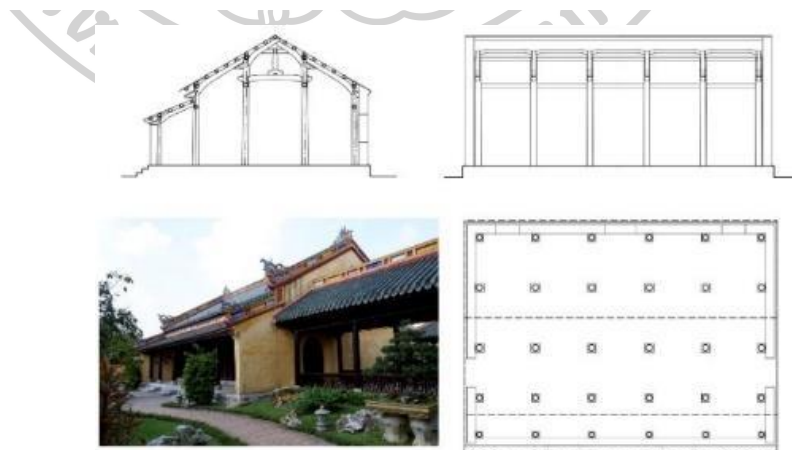


Figure 189: Typical Hall (B) – “Di Nhien Duong” hall
(Source: The drawing was based on Pham (2004); Phan et al. (2014); and the author’s modifications)

(5.3) Single-rectangle building – Sub-hall (A): Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, double-layered roof, one-storey building, 8 roof planes. (Figure 190)

This type includes two buildings: “Ta Vu” left sub-hall (Figure 174, position 44), “Huu Vu” right sub-hall (position 45). These buildings are symmetrically arranged along the main axis of the HIC. The architectural typology of this type is shown in Figure 190.

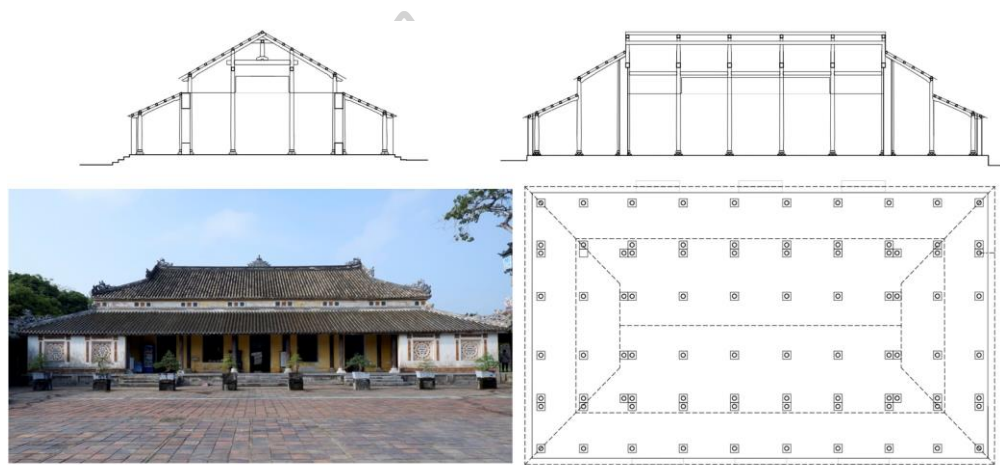


Figure 190: Typical Sub-hall (A) – “Ta Vu” left sub-hall

(Source: The drawing was based on the Institute for Conservation of Monuments (ICM) (2020, pp. 68-75); Nakazawa et al. (1997); and the author’s modifications)

(5.4) Single-rectangle building – Gate: Single-rectangle building, gable roof, single ridge beam, two-sided sloping roof, double-layered roof, one-storey building, 4 roof planes (Figure 191).

The building is the “Dai Cung Mon” gate of the Forbidden City (Figure 174, position 41), which has now been destroyed. Based on historical photographs (Figure 103), the study illustrates the architectural typology of this type as follows:

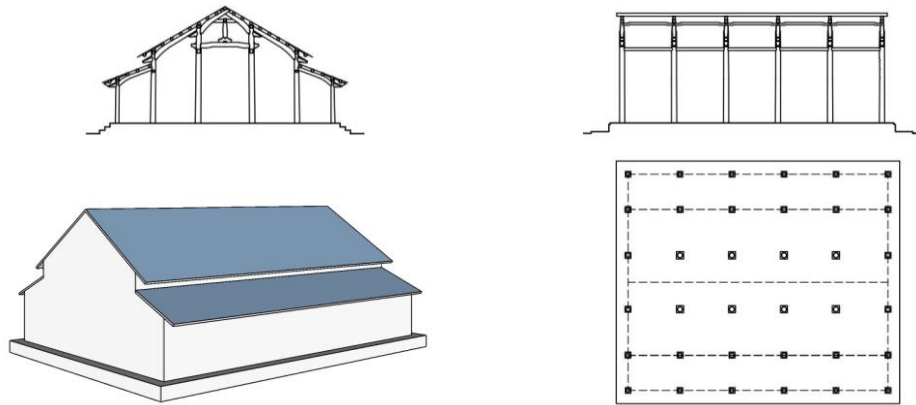


Figure 191: Typical Gate - Illustrative typological drawing “Dai Cung Mon” gate
(Source: Author)

(5.5) Single-rectangle building – House (C): Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof, one-storey building, 4 roof planes. (Figure 192)

The House (C) type includes the buildings “Ta Tra Gia” left house (Figure 174, position 108) and “Huu Tra Gia” right house (position 109). These two buildings are symmetrical along the main axis of the functional area. Currently, “Huu Tra Gia” right house was destroyed. The architectural typology of Ta Tra Gia (Left House) is as follows:

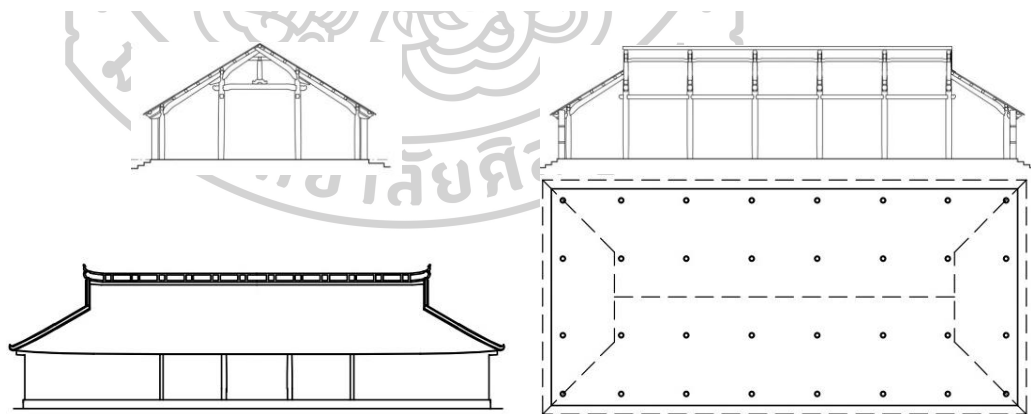


Figure 192: Typical House (C) - “Ta Tra Gia” left house
(Source: The drawing was based on Hoang and Le (2015), the measurement results by Le Vinh An and the author from 2019 to 2020, and the author’s modifications)

(6) Sixth level: Shrine (A), Shrine (B), Shrine (C)

(6.1) Single-rectangle building – Shrine (A): Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof for each floor, two-storey building, 8 roof planes (Figure 193). This type includes one building, “Phuoc Tho Am” shrine (Figure 174, position 111), with the following structure:

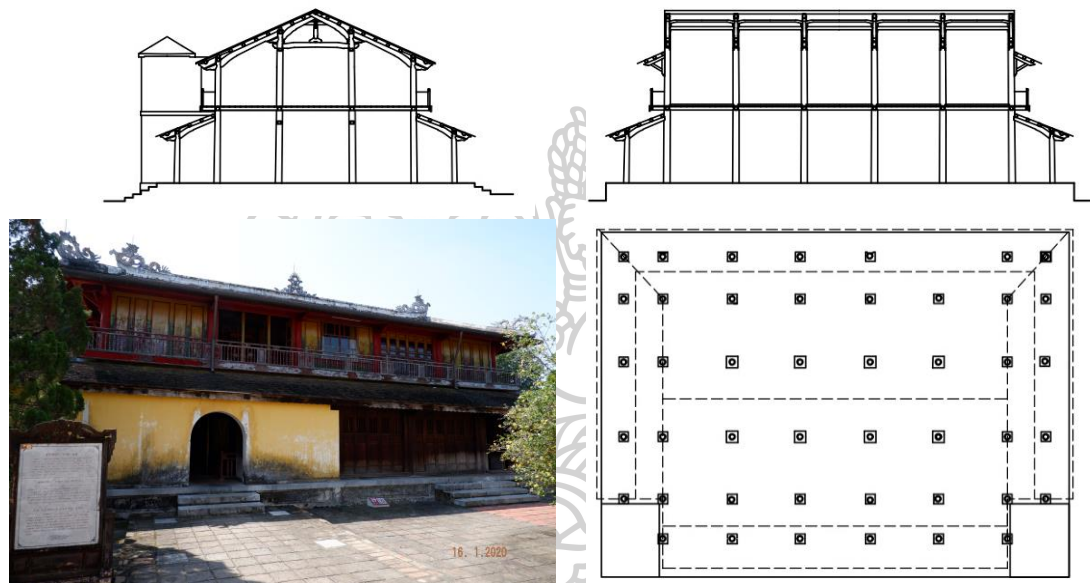


Figure 193: Typical Shrine (A) - “Phuoc Tho Am” shrine
 (Source: The drawing was based on Hoang and Le (2015),
 and the measurement results by Le Vinh An and the author from 2019 to 2020,
 and the author’s modifications)

(6.2) Single-rectangle building – Shrine (B): Single-rectangle building, gable roof, single ridge beam, two-sided sloping roof, double-layered roof at the front, one-storey building, 3 roof planes (Figure 194).

There are four buildings similar in scale and architectural typology, including “Ta Tung Tu” Shrine and “Huu Tung Tu” Shrine (Figure 174, positions 24, 25, 35, and 36). Their characteristic architectural typology is as follows:

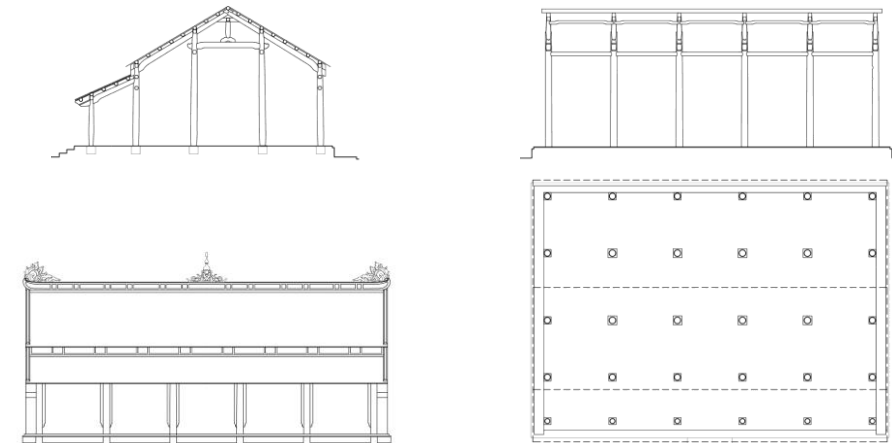


Figure 194: Typical Shrine (B) - “Ta Tung Tu” shrine
 (Source: The drawing was based on Nakazawa et al. (1995),
 the measurement results by Le Vinh An and the author from 2019 to 2020,
 and the author’s modifications)

(6.3) Single-square building – Shrine (C): Single-square building, gable-and-hip roof, single ridge beam, four-sided sloping roof, double-layered roof, one-storey building, 8 roof planes. (Figure 195)

This type includes two buildings with the same name, “Tho Cong Tu” Shrine (Figure 174, positions 29 and 38), with the following architectural typology:

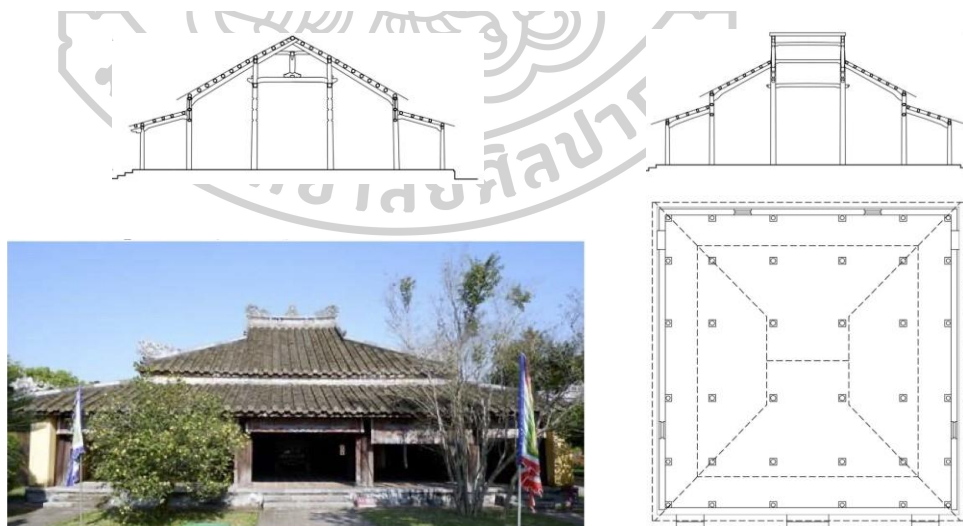


Figure 195: Typical Shrine (C) – “Tho Cong Tu” shrine
 (Source: The drawing was based on Nakazawa et al. (1995)
 and the author’s modifications)

(7) Seventh level: Floating pavilion, Parthouse

(7.1) Single-rectangle/square building - Floating pavilion:

Single-rectangle/square building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof, one-storey building, 4 roof planes.

The floating pavilion type currently includes the remaining building, “Truong Du Ta” Floating Pavilion (Figure 174, position 110). The main building has the form of a single-square building as described above. Additionally, it is combined with a rectangular-plan building featuring a gable roof (Figure 196).

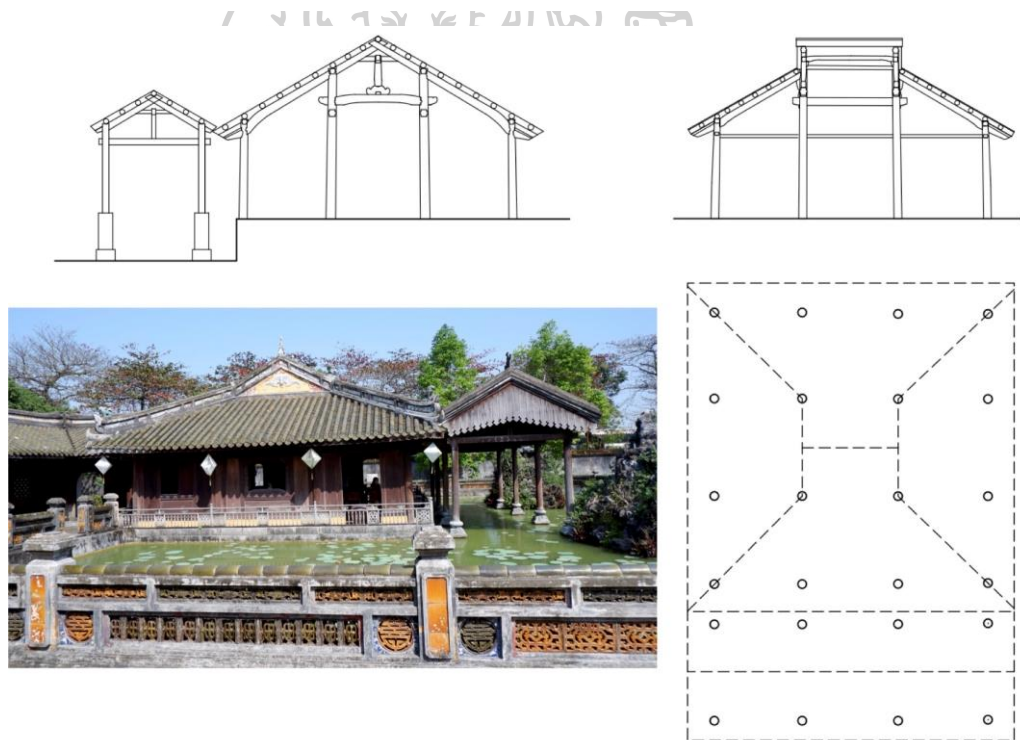


Figure 196: Typical Floating pavilion - “Truong Du Ta” floating pavilion
 (Source: The drawing was based on Rokutanda and Nakagawa (2013),
 and the author’s modifications)

(7.2) Single-rectangle building – Parthouse: Single-rectangle building, gable roof, single ridge beam, two-sided sloping roof, single-layered roof, one-storey building, 2 roof planes (Figure 197).

The parthouse type includes “Vinh Phuong Hien” Parthouse (Figure 174, position 64) and “Hoan Xuan Hien” Parthouse (position 65), which share similar scale and architectural typology as follows:

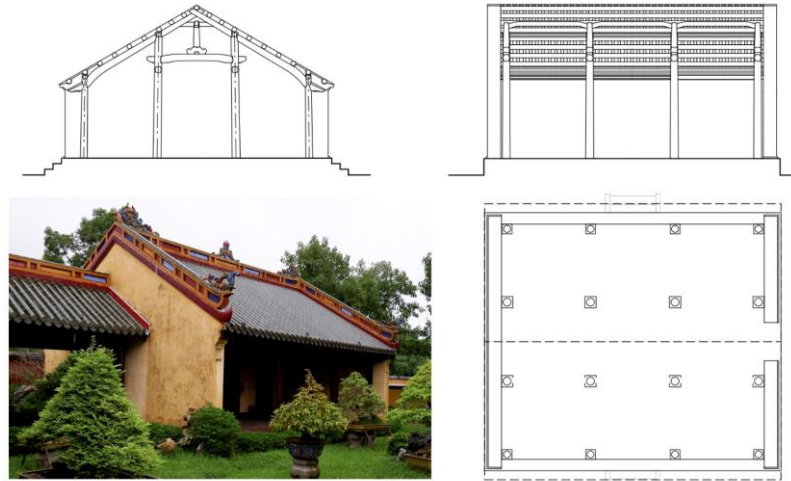


Figure 197: Typical Parthouse - “Vinh Phuong Hien” Parthouse
 (Source: The drawing was based on Pham (2004); Phan et al. (2014);
 and the author’s modifications)

(8) Eighth level:

(8.1) Single-rectangle building – Medical store, Royal kitchen, Royal store: Single-rectangle building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof, one-storey building, 4 roof planes.

This type of building was destroyed, and the current “Kitchen” form has been reconstructed on the original foundation as “Than Tru” Kitchen (Figure 174, position 40). Therefore, this building is selected as the representative example (Figure 198).

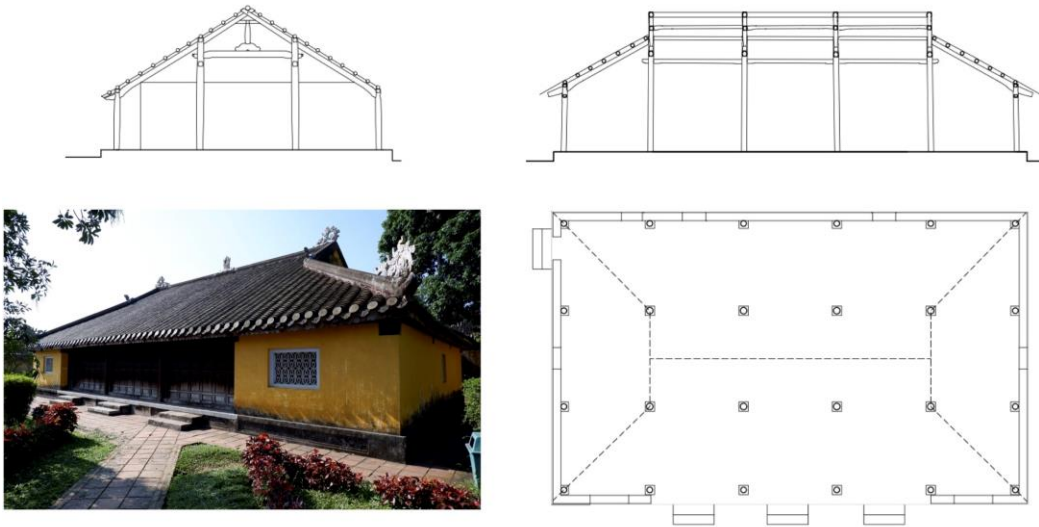


Figure 198: Typical Store, Kitchen - “Than Tru” kitchen
 (Source: The drawing was based on Nakazawa et al. (1995)
 and the author’s modifications)

(8.2) Single-square building - House (D): Single-square building, gable-and-hip roof, single ridge beam, four-sided sloping roof, single-layered roof, one-storey building, 4 roof planes (Figure 199).

This type includes three buildings placed on the podiums: “Phuong Dinh” House (Figure 174, positions 4, 10) and “Tu Thong Dinh” House (position 7). The architectural typology of this type is illustrated in Figure 199.

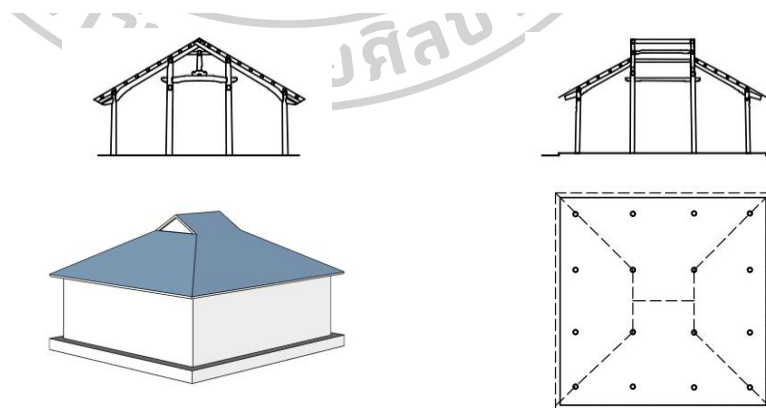


Figure 199: Typical House (D) - Illustrative typological drawing of
 “Phuong Dinh” house
 (Source: Author)

(8.3) Single-rectangle building – Restaurant, Sub-hall (B), Camp, Barrack: Single-rectangle building, gable roof, single ridge beam, two-sided sloping roof, single-layered roof, one-storey building, 2 roof planes.

These buildings were destroyed; based on historical photographs (Figure 125), the study reconstructs the architectural typology of this type as illustrated in Figure 200.



Figure 200: Typical Restaurant, Sub-hall (B), Camp, Barrack - Illustrative typological drawing
(Source: Author)

(8.4) Single-rectangle building – Corridor: Single-rectangle building, gable roof, single ridge beam, two-sided sloping roof, single-layered roof, one-storey building, 2 roof planes (Figure 201).

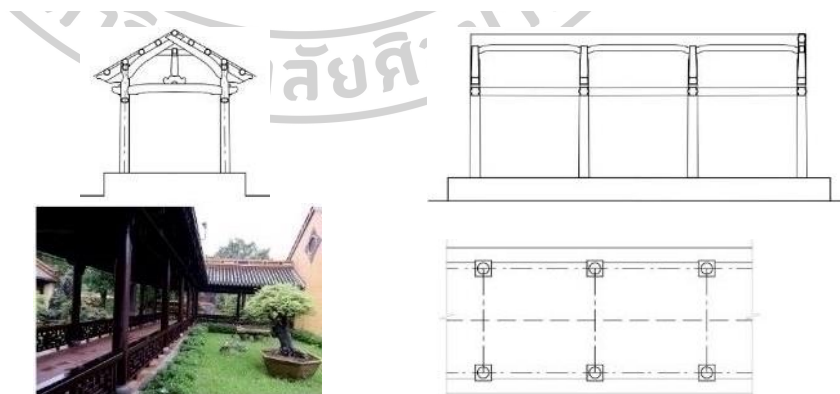


Figure 201: Typical Corridor

Source: The drawing was based on Pham (2004); Phan et al. (2014); and the author's modifications

Through the characteristics and analysis of typical buildings (Figures 175-201), it can be observed that the wooden architecture in the HIC is unified and interconnected in terms of typology due to its structural wooden framework. Thus, despite the total number of buildings in the HIC being 116, there is a commonality in the floor plans, which are either rectangular or square. The square floor plan typically consists of a single floor plan and a single wooden framework, which can then be developed into a two-storey building. The rectangular floor plan can be either a single plan or a combination of multiple adjacent rectangular plans. Higher-level structures have more rectangular plans joined together, leading to the development of frameworks with 2 or 3 ridge beams.

Thus, the architectural typology of the HIC developed from basic to complex structures, ranging from single ridge beams to triple ridge beams. Clarifying the relationships between these typological forms enhances the recognition and understanding of the original architecture of the HIC more comprehensively.

5.4 Analysis of the architectural typology in Hue Imperial City

The results in Section 5.3 show that the HIC architecture was developed based on two plan shapes: square and rectangle. Based on these two types of plans, the architectural typology has standard formation rules along with variations (a combination of single uniform plans or a combination of square and rectangular plans). The types are systematized based on the basic plan and section layout below (Figure 202).

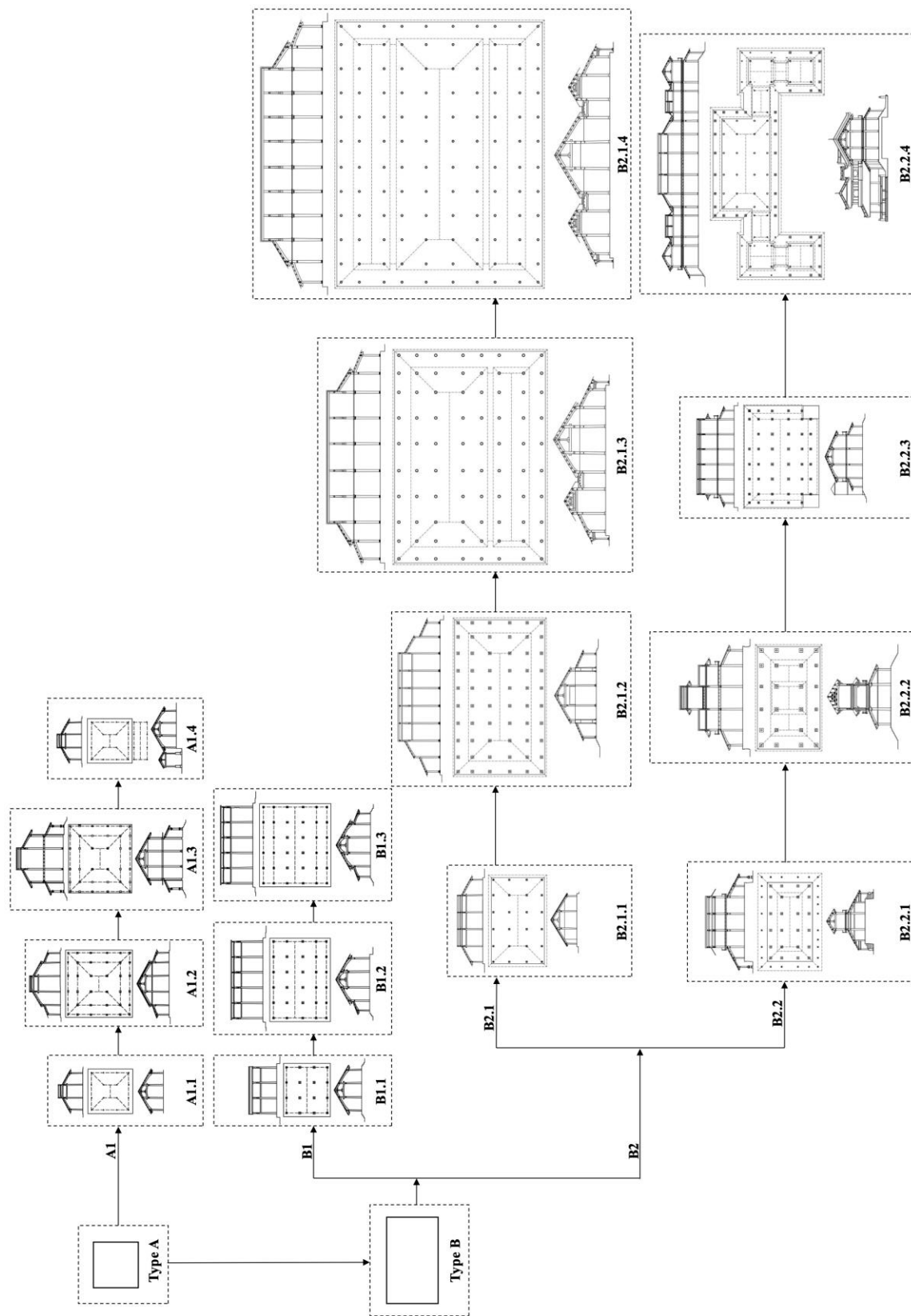


Figure 202: Diagram of architectural typology in Hue Imperial City
 Note: Type A1.3, B1.3, and B2.1.4 are simulated based on the historical data, historical photographs, and remaining building foundation
 (Source: Author)

With a square plan categorized as Type A, the basic architectural typology is type A1.1 (a single-square building, gable-and-hip roof, single-layered roof, one-storey building, one compartment, and two wings). Thereafter, the structure develops into type A1.2 (a single-square building, gable-and-hip roof, double-layered roof, one-storey building, one compartment, and two double wings), and type A1.3 is the same size but two stories high. Lastly, Type A1.4 is a combination of basic type A1.1 and type B1.1 below.

According to the results in section 5.3, Type A buildings in this group include styles such as House (D), Palace (D), Palace (E), Shrine (C), and Floating Pavilion. This group of buildings supports functions for the main buildings, such as places for the Emperor and the royal family to relax and enjoy the scenery, places for officials to work, and auxiliary worship buildings for temples or places dedicated to deities. The main characteristics include a square floor plan, one compartment, two wings or two double wings, and mostly one-storey buildings (except for A1.3, which is two stories).

With a rectangular plan categorized as Type B, there are two basic architectural typologies: type B1 and B2, which could be sub-categorized into Type B1.1 as well as B2.1 and B2.2. From type B1.1 (a single-rectangle building, gable roof, single-layered roof, one-storey building), the scale is gradually developed into types B1.2 and B1.3 (a single-rectangle building, gable roof, double-layered roof). The difference between types B1.2 and B1.3 is that B1.2 only has two layers of roof on the front elevation.

B1 is also a group of buildings with supportive functions for the main buildings, including types such as Parthouse, Sub-hall (B), Barrack, Camp, Shrine (B), Hall (B), Gate, such as the main gate of the Forbidden City (B1.3); places for worshipping the Nguyen Dynasty's mandarins or royal family members, or places for the Emperor and the royal family to relax and enjoy the scenery (B1.1, B1.2). The main architectural features of this type include a single-rectangular building with a gable roof. These buildings typically have

three or five compartments. Higher-ranked buildings have two layers of roofing; however, B1.2, being lower in rank than B1.3, only has two layers of roofing on the main façade, while B1.3 has two layers of roofing on both the front and back of the building.

Architectural type B2.1.1 (a single-rectangle building, gable-and-hip roof, single-layered roof, one-storey building) develops on a larger scale with types B2.1.2 (a single-rectangle building, gable-and-hip roof, double-layered roof, one-storey building), B2.1.3 (a double-rectangle building, gable-and-hip roof, double-layered roof, one-storey building), and B2.1.4 (a triple-rectangle building, gable-and-hip roof, double-layered roof, one-storey building). B2.1.1 represents the basic structure of wooden architecture with a rectangular floor plan, three compartments, two wings, a four-sided sloping roof, and a single-layered roof, making this type suitable for auxiliary buildings such as kitchens and stores. The B2.1.2 structure is an evolved version with an increased number of compartments and wings and a double-layered roof, represented by Palace (C), which is designated for the Empress Dowager, Grand Empress Dowager, or high-ranking mandarins. The B2.1.3 and B2.1.4 types are the most advanced in the HIC, including Palace (A), Palace (B), and Temple. As such, Palace B and Temple (B2.1.3) are usually located at the center of the main functional area, while Palace (A) (B2.1.4), with only one building being the “Can Thanh Dien” Palace, is placed between the center of both the Forbidden City and the HIC. The typological characteristics of B2.1.3 and B2.1.4 are more complex, with a single-rectangle building composed of a double/triple-rectangular building joined on a single platform, double/triple ridge beams, and spaces divided into primary and secondary areas with a Front building – Main building or Front building – Main building – Back building. These buildings have a double-layered roof and a gable-and-hip roof (four-sided sloping roofs).

Type B2.2 includes single-rectangular buildings and two or three stories. Type B2.2 encompasses Pavilion (A, B) and Shrine (A) structures, including

B2.2.1, B2.2.2, B2.2.3, and B2.2.4. Pavilion (A, B) types (B2.2.1, B2.2.2, and B2.2.4) are buildings used to commemorate ancestors and deceased Nguyen Emperors, for the Emperor to over-watch major ceremonies, or as private spaces for the Emperor. Notably, type B2.2.4 is a combination of nine-floor plans on the same foundation, essentially an evolved version of B2.2.1. Type B2.2.3 refers to a Shrine (A) type structure, the only one of its kind located within the “Dien Tho Cung” residence area. This building was specifically designed for the Empress Dowager’s worship of Buddhism and polytheism.

To provide a more detailed understanding of the typologies and architectural features of the HIC, the study clarifies these in Tables 19-22 below:

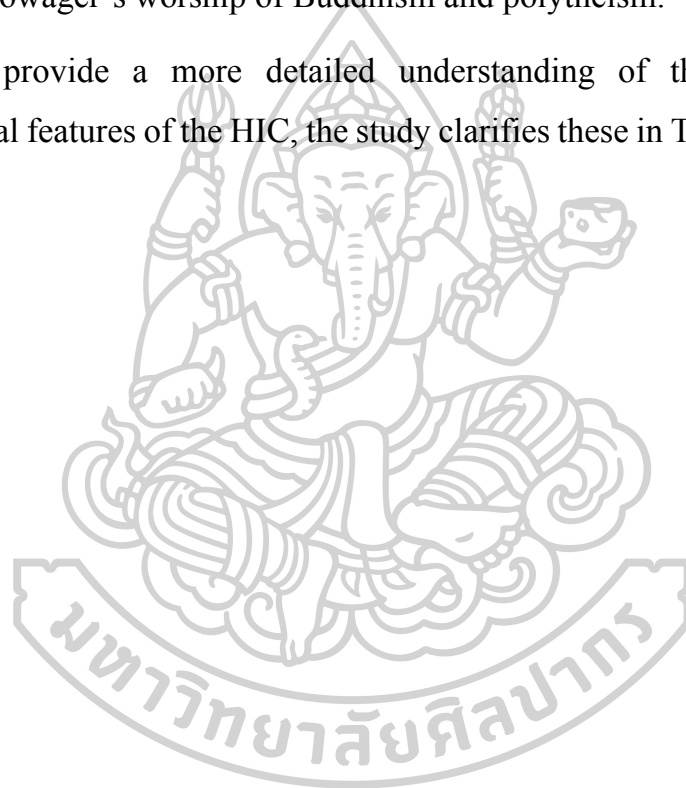


Table 19. The architectural characteristics of Hue Imperial City are based on the building information

ARCHITECTURAL TYPE		BUILDING INFORMATION						
		Type of name	Function	Building list	Location			
					Information of location	Zone in master plan	Number in map (Figure 6)	
Type A	A1.1	House (D)	A place for soldiers and guards	"Phuong Dinh" House; "Tu Thong Dinh" House	Placed on podiums	1	4, 7, 10	
	A1.2	Palace (E), Shrine (C)	- Workplace of mandarins. - A secondary worshiping structure next to the main Temple. - Worshiping Gods	"Chieu Kinh Dien" palace, "Muc Tu Dien" palace, "Long Duc Dien" palace, "Tho Cong Tu" shrine, "Canh Y Dien" palace, "Van Minh Dien" palace, "Vo Hien Dien" palace	The East/West of functional areas	3, 4, 5	26, 27, 28, 29, 37, 38, 48, 49	
	A1.3	Palace (D)	Workplace of mandarins	"Dong Cac Dien" palace	The East/West of functional areas	5	57	
	A1.4	Floating pavilion	A place for Emperor and royal family to relax	"Truong Du Ta" pavilion	The East/West of functional areas	9	110	
Type B	B1	B1.1	Parthouse, Sub-hall (B), Restaurant Barrack, Camp	A place for Emperor and royal family to relax	"Vinh Phuong Hien" parthouse, "Hoan Xuan Hien" parthouse, "Ta Phoi Dien" left sub-hall, "Huu Phoi Dien" right sub-hall, "Ta Tuc Duong" left hall, "Huu Tuc Duong" right hall	The East/West of functional areas	2, 5, 7, 9	14-16, 18-20, 64, 65, 93, 94, 106, 107
		B1.2	Shrine (B), Hall (B)	- Worshiping the royal relatives and mandarins who made significant contributions to the Nguyen Dynasty. - A place for Emperor and royal family to rest and relax.	"Ta Tung Tu" shrine, "Huu Tung Tu" shrine, "Cam Xuan Duong" hall, "Di Nhen Duong" hall	The East/West of functional areas	3, 4, 5	24, 25, 35, 36, 66, 67
		B1.3	Gate	The main gate of the Forbidden City	"Dai Cung Mon" gate	Placed on the main axis of the HIC	5	41
	B2.1	B2.1.1	Kitchen, Store, House (C)	- Kitchen for the functional area. - Warehouses.	"Than Tru" kitchen, "Than Kho" store, "Ta Tra Gia" house	The East/West of functional areas	3, 4, 9	30, 31, 39, 40, 108
		B2.1.2	Sub-hall (A), Palace (C), Theater	- Workplace of mandarins. - Residence of Queen and Queen Mother.	"Ta Vu" left sub-hall, "Huu Vu" right sub-hall, "Trinh Minh Dien" palace, "Duyet Thi Duong" royal theater, "Tho Ninh Dien" palace	Sub-hall, Theater: The East/West of functional areas. Palace (C): Placed on the main axis of the functional area	5, 7, 9, 10	44, 45, 51, 62, 104
		B2.1.3	Temple, Palace (B)	- Worshiping ancestors and Emperors of the Nguyen Dynasty. - Workplace of Emperors. - Residence of Queen Mother.	"Thai To Mieu" temple, "Trieu To Mieu" temple, "The To Mieu" temple, "Hung To Mieu" temple, "Phung Tien Dien" palace, "Thai Hoa Dien" palace, "Can Chanh Dien" palace, "Quang Minh Dien" palace, "Dien Tho Chanh Dien" palace	Placed on the main axis of the HIC or on the main axis of the functional area	2, 3, 4, 5, 7, 9	12, 22, 23, 33, 34, 92, 42, 50, 103
		B2.1.4	Palace (A)	Residence of the Emperor	"Can Thanh Dien" palace	Placed on the main axis of the HIC	5	43
		B2.2.1	Pavilion (B)	A place for Emperor and royal family to relax, read books	"Nhat Thanh Lau" pavilion	The East/West of functional areas	5	56
		B2.2.2	Pavilion (A)	Monument for the "soul" of the Emperors	"Tuy Thanh Cac" pavilion, "Hien Lam Cac" pavilion, "Minh Vien Lau" pavilion	Placed on the main axis of the functional area	3, 4, 5	21, 32, 80
		B2.2.3	Shrine (A)	A place of worshiping Gods and Buddha of the Queen Mother	"Phuoc Tho Am" shrine	Placed to the West of the main axis of functional areas	9	111
		B2.2.4	Pavilion (B)	A place for Emperor and royal family to watch ceremonies	"Ngu Phung Lau" pavilion (of "Ngo Mon" main gate)	Placed on the main axis of the HIC (placed on the "Ngo Mon" main gate)	1	2

Table 20. The architectural characteristics of Hue Imperial City are based on the features of the plan, section, and roof

ARCHITECTURAL TYPE		ARCHITECTURAL CHARACTERISTICS												
		Plan				Section				Roof				
		Floor shape	Compartment	Wing	Area (square meter)	Type of ridge beam	Storey	Height (meter)	Number of bay/truss	Type of roof	Layer of roof	Number of roof planes		
Type A	A1.1	Square	1	2 wings	Not identified	1	1	Not identified	2	Gable-and-hip roof	1	4		
	A1.2	Square	1	2 double wings	185-234.5	1	1	5.2-6.4	2	Gable-and-hip roof	2	8		
	A1.3	Square	1	2 double wings	359.6	1	2	Not identified	2	Gable-and-hip roof	1 layer of roof per floor	8		
	A1.4	Square+ Rectangle	Square: 1 Rectangle: 3	Square: 2 wings Rectangle: 0	117.5	1	1	4-5	2 & 4	Gable-and-hip roof & gable roof	1	6		
Type B	B1	B1.1	Rectangle	3 (some buildings have not been identified)	0	105 (some buildings have not been identified)	1	1	5.5 (some buildings have not been identified)	4 (some buildings have not been identified)	Gable roof	1	2	
		B1.2	Rectangle	5	0	206-220	1	1	6.9	4	Gable roof	2	3	
		B1.3	Rectangle	5	0	290	1	1	Not identified	6	Gable roof	2	4	
	B2	B2.1	B2.1.1	Rectangle	3, 5	2 wings	194-286	1	1	5.2-5.9	4-6	Gable-and-hip roof	1	4
			B2.1.2	Rectangle	3-5-7 (some buildings have not been identified)	2 double wings	498-1583	1	1	8.33 (some buildings have not been identified)	4-6-8 (some buildings have not been identified)	Gable-and-hip roof	2	8
			B2.1.3	Rectangle	Front building: 5-7-9-11-15. Main building: 3-5-7-9-13	Front building: 2 wings. Main building: 2 double wings	671-1937	2	1	10.58 (some buildings have not been identified)	Front building: 6-8-10-12-16. Main building: 4-6-8-10-14	Gable-and-hip roof	2	12
		B2.1.4	Rectangle	Front building: 9 Main building: 7 Back building: 9	Front building: 2 wings Main building: 2 double wings Back building: 2 wings	2253	3	1	Not identified	Front building: 10 Main building: 8 Back building: 10	Gable-and-hip roof	2	16	
		B2.2	B2.2.1	Rectangle	3	2 double wings	235.5	1	2	9.5	4	Gable-and-hip roof	1 layer of roof per floor	8
			B2.2.2	Rectangle	3 (some buildings have not been identified)	2 wings	270.5 (some buildings have not been identified)	1	3	13 (some buildings have not been identified)	4 (some buildings have not been identified)	Gable-and-hip roof	1 layer of roof per floor	12
			B2.2.3	Rectangle	5	2 wings	297	1	2	7.4	6	Gable-and-hip roof	1 layer of roof per floor	8
			B2.2.4	Rectangle+ Square	3 & 1	2 double wings + 2 wings	624.6	1 per floor	2	8.1	4 & 2	Gable-and-hip roof	1 layer of roof per floor	50

The summary table of architectural characteristics in the HIC highlights the characteristics of Type A and Type B architectural styles, including information on names, functions, a list of buildings, and their locations. Additionally, the table outlines key architectural features to identify the types through floor plans, sections, roofs, and elevations. The study results provide a systematic overview of architecture, offering detailed insights into typological features and aiding in the identification and referencing of wooden structural frameworks within the HIC's buildings.

Although some buildings in the HIC have not been precisely identified in terms of architectural features, based on their names, historical information about their locations, and functions, preliminary estimates of their level and architectural typology can be made. Most of these buildings are located at levels 4 to 8, featuring single rectangular floor plans that range from one to three stories. Therefore, they still fall under Type B, but are not at the highest level, such as B2.1.3 or B2.1.4. The "Khon Thai Dien" palace, located on the central axis of the HIC, lacks sufficient scientific evidence to confirm whether it is B2.1.3 or B2.1.4, but given its function for the Empress, it is classified as rank 2. Overall, the buildings that have not yet been fully cataloged still fall under the Type B typology. Hence, the architectural typology diagram of the HIC (Figure 202) serves as a fairly comprehensive representation of the architectural typology.

5.5 Sub-conclusion

Based on the three main criteria in the architectural characteristics of the HIC (First criterion, functions and uses; Second criterion, names, functions, and locations; and Third criterion, building hierarchy), the study identified architectural typology results as follows: The first criterion encompasses four main functional groups and the building names associated with each; the second criterion identifies 20 building names, along with their corresponding functions and locations; and the third criterion combines the first two criteria, using

building information and the main characteristics of the wooden frame structures to determine the hierarchy of buildings, ranging across eight levels from highest to lowest. These include Level 1, Palace (A); Level 2, Palace (B) and Temple; Level 3, Palace (C, D, E); Level 4, Pavilion (A, B); Level 5, Theater, Hall (A, B), Sub-hall (A), Gate, House (C); Level 6, Shrine (A, B, C); Level 7, Floating Pavilion, Parthouse; Level 8, Medical Store, Royal kitchen, Royal store, House (D), Restaurant, Sub-hall (B), Barracks, Camp, Corridor.

At the same time, the study identifies the architectural characteristics of the HIC through typical existing architectures or those that retain their original value. Based on components such as floor plans, sections, and elevations, the study presents the main features of the wooden frame structure for each architectural type and level, aiming to understand the similarities and differences in typology among the various levels. Based on these study results, the thesis develops a typology diagram for the architecture of the HIC. According to this diagram, the architecture evolves from a rectangular and square, forming three basic types: A1, B1, and B2. Architecture further develops into four main branches, with unit frame structures being types A1.1, B1.1, B2.1.1, and B2.2.1. Among these, the highest level buildings, in descending order, are B2.1.4 and B2.1.3, categorized as Palace (A, B) and Temple. The remaining types are buildings for lower levels and serve as auxiliary functions for the main buildings.

Tables 15-17, 19-22, and Figure 202 present the systematized results regarding the architectural regulations of the Nguyen Dynasty. These tables work together to provide a comprehensive reference for the architecture of the HIC. For architectural types with basic historical information (such as names, functions, construction dates, and construction locations) and remaining construction foundations or archaeological data, it is possible to determine the architectural type and typology of the building. Thus, the wooden structural framework and key architectural characteristics were initially identified, including the floor plan shape, the number of compartments, the number of

wings, the number of floors, and the number of ridge beams. For some building types only mentioned by name in historical records and for which no data can be found, the architectural type, building level, and typological characteristics can be inferred based on the building type and construction area, using similar buildings of the same level as a reference.

Based on the HIC's architectural characteristics and the rules regarding the architectural hierarchy and typology, the layout of main buildings and functional zones on the HIC site plan also follows certain design principles. To gain a deeper understanding of the Nguyen Dynasty's architectural design principles, further exploration of the planning and layout principles of the HIC site plan is necessary. Therefore, the next chapter of the research will delve into clarifying the design principles of the HIC site plan.



Chapter 6

The Design Principle of the Site Plan of Hue Imperial City

As presented in Chapter 5, the thesis within the HIC is determined by their names, functions, and hierarchical levels, allowing the identification of their positions on the overall site plan. Thus, the Nguyen Dynasty established regulations for arranging buildings from the early stages of conceptualizing the HIC architectural design. Chapter 6 aims to discover the method of creating the site plan and determining axes, directions, and the scale of functional areas. The study results further clarify the spatial organizational mindset of the Nguyen Dynasty and the correlation between the positions of the main structures and the site plan.

6.1 Literature review

6.1.1 The “Magic square” gridding method

According to Funo (2017, p. 725), “Historically, the grid (or gridiron or chessboard) is the most common pattern for planned cities and is universal, both geographically and chronologically. We can see many examples in the East and the West, as well as in the past and at present. The grid is widely used as a spatial indexing system when dividing space into a series of contiguous cells. Among a wide variety of grid systems, architects/planners use square or rectangular grids frequently because they are the simplest in works of urban planning”.

This grid system originated in ancient civilizations or ancient cities as follows: Indus Valley civilization, Mesopotamian civilization, ancient Greece, ancient Egypt, ancient Roma, Teotihuacan, or Babylon, with the blocks divided by a grid of straight streets, running North-South, and East-West (Figure 203). In Asia, from the 1st century to the 10th century

AD, Chinese Dynasties established capitals that followed a grid aligned with the cardinal directions and a clear spatial hierarchy (Figure 204). Japan, inspired by Chinese planning, established similar capitals between the 8th and 15th centuries, such as Nara (8th century) and Kyoto (9th century) (Grant, 2001, pp. 223-230).

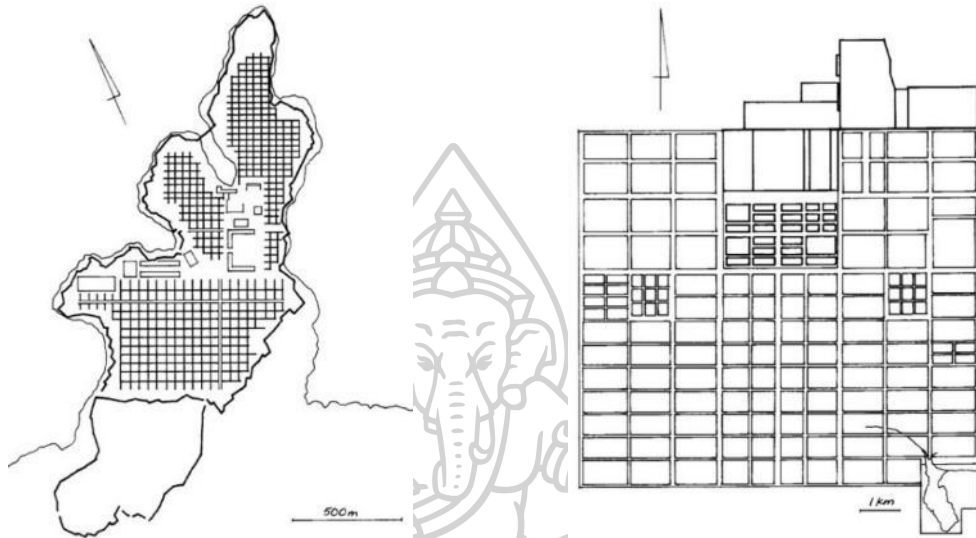


Figure 203: The ancient Greek city of Miletos featured a comprehensive grid of equal-sized blocks designed by Hippodamos in the 15th century BC

Figure 204: The grid plan of Chang'an during the Tang Dynasty (618-907) had the Palace located in the North, surrounded by walls and administrative areas

(Source (Figures 203, 204): Grant (2001, pp. 224, 229))

In Europe, Hundreds of new towns were built from the 12th to the 14th century. The ground plans generally tended towards orthogonal regularity, often even griddedness, and in most cases, it is obvious that there was some sort of spatial planning (Boerefijn, 2010, p. 403). Additionally, the expansion of European colonization across several continents from the 16th to the 19th century rapidly advanced the grid system in their colonial countries. For instance, the Spanish (under Philip II) developed the Laws of the Indies for buildings and towns, while the French established a grid system in Louisbourg in eastern Canada (Figure 205) (Grant, 2001, pp. 232-233).

Thus, the formation and development of the grid planning method in both Europe and Asia have existed for a long time. For this reason,

architects and urban planners also use the grid planning method when studying the layout planning of ancient cities. Returning to the grid planning method in China, the earliest planning norm can be dated back to the Zhou Dynasty of 1000 BC, when the Zhou-Li: Kao-Gong-Ji officially recorded the rules of city planning (Wu, 2015, pp. 1-2). The city was laid out on a square-shaped land, dividing and governing the land through a grid system. There were three gates along each side of the square, and the 9x9 grid was employed to delineate and allocate different hierarchical zones for various purposes (Figure 206). Therefore, it is not by coincidence that previous studies on square grid design methods have been utilized to investigate ancient Chinese cities. For instance, "The Magic Square: Cities in Ancient China" by Schinz (1996) employed two crucial methods in the study: the unit square grid and the axial symmetry (Figure 207). Another study by Funo (2017), "Ancient Chinese Capital Models – Measurement System in Urban Planning", relied on the analysis results of traditional measurement units to construct various urban grid models in three ancient Chinese capitals (Figure 208). This research clarified the Street Block model for the three urban grid models mentioned.

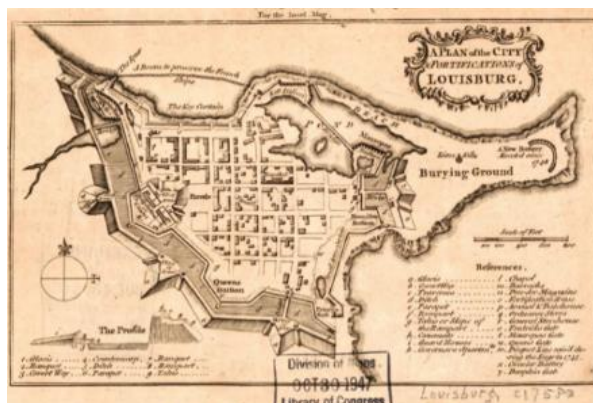


Figure 205: The grid system was used in the urban plan of Louisbourg, Canada. The map was published in 1758

(Source:

<https://www.loc.gov/item/2017593646/>)

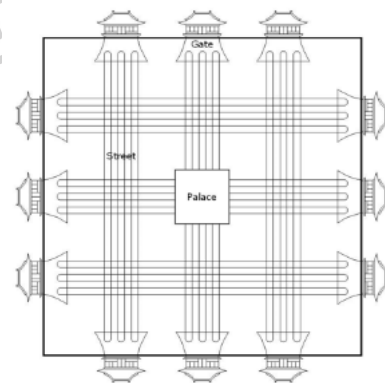
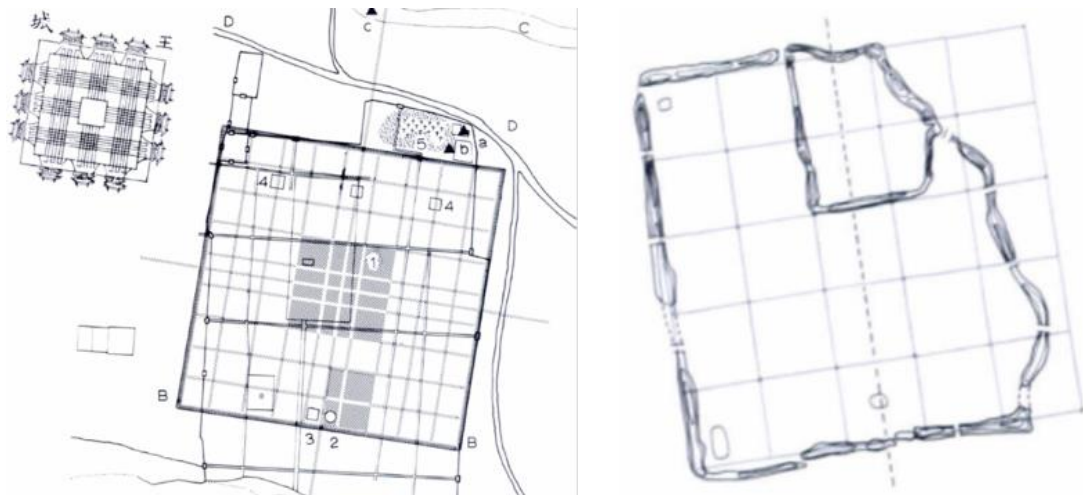


Figure 206: *The Ideal Capital City in Imperial China in the Rituals of Zhou (Zhou Li, c.1066-221 BCE)*

(Source: Donia (2018))



a) The City of Chengzhou (Luoyang),
founded by the Duke of Zhou in 1038 BC

b) The City of Yan of the
Kingdom of Chu

Figure 207: The central axis and grid square system were used in the planning
analysis of Alfred Schinz

(Source: Schinz (1996, pp. 64-65, 91))

In Vietnam, a research outcome on the HIC was published by the Architectural Institute of Japan, titled "Analysis on the measurement in planning of disposition (IV) - Studies on the Imperial Palace of the Nguyen Dynasty, Hue, Vietnam" (Nakazawa et al., 1997). In this article, the authors analyzed the measurement units used by the Nguyen Dynasty and, for the first time, proposed a grid system to identify spatial layout relationships (Figure 209). The preliminary research results presented two feasible grid cases for planning. However, the study was limited to the scope of the Forbidden City. It did not provide general principles for arrangement or relationships among major structures on the overall layout of the HIC. Nevertheless, this research serves as a foundation for a more comprehensive study of the overall layout of the HIC based on the grid system approach.

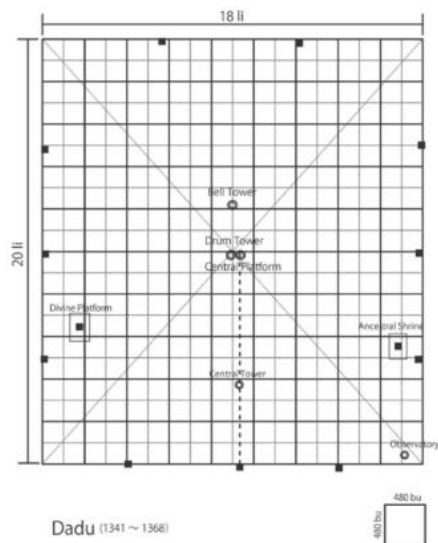


Figure 208: The basic grid of the Da Yuan (Duan) capital Model was established in the 13th century, using a single square unit of 1 li x 1 li (Li/里 is a traditional Chinese unit of length) (Source: Funo (2017, p. 741))

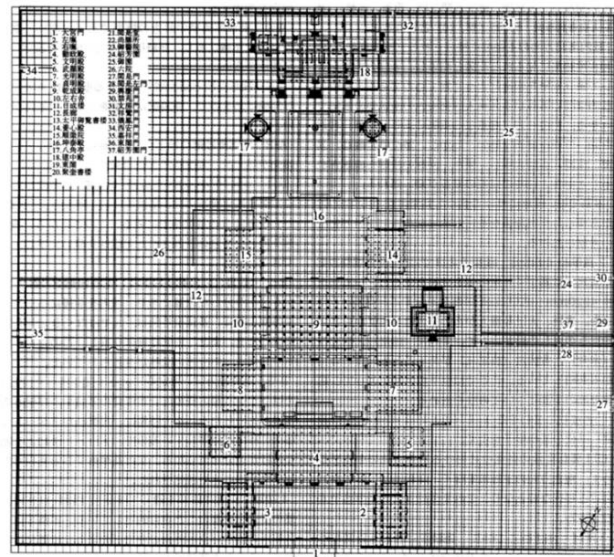


Figure 209: The grid system used in the layout of the Forbidden City, with a grid size of 4.24 x 4.24 meters (where 4.24 meters equals one unit or one rod, the construction measurement unit proposed for use in the Nguyen Dynasty) (Source: Nakazawa et al. (1997, p. 466))

For the research work of domestic experts, Le Vinh An and Nguyen Tien Binh presented the results of the reconstruction of the “Chieu Kinh Dien” palace (Le & Nguyen, 2014) during the 2011-2015 period (a project located within the “Thai Mieu” temple area). The study used the rod grid system (“rod” being the traditional measurement unit of the Nguyen Dynasty) to analyze the correlation of positions between the remaining structures and the foundation ruins of the related structure. The research results were successfully applied in reconstructing a building constructed during the Gia Long period (Figure 210).

Another study by Vo Ngoc Hung and Le Vinh An, "The Calligraphy of Architectural Planning of the Tomb of Emperor Minh Mang, the Nguyen Dynasty (1802-1945), Vietnam" (Vo & Le, 2022), applied the grid system to the study of the Minh Mang Tomb. This research used a square grid analysis with each square measuring one rod (1 rod = 3.82 meters, a traditional Vietnamese unit used to construct the

Tomb) to establish the planning principles for the overall architectural layout (Figure 211).

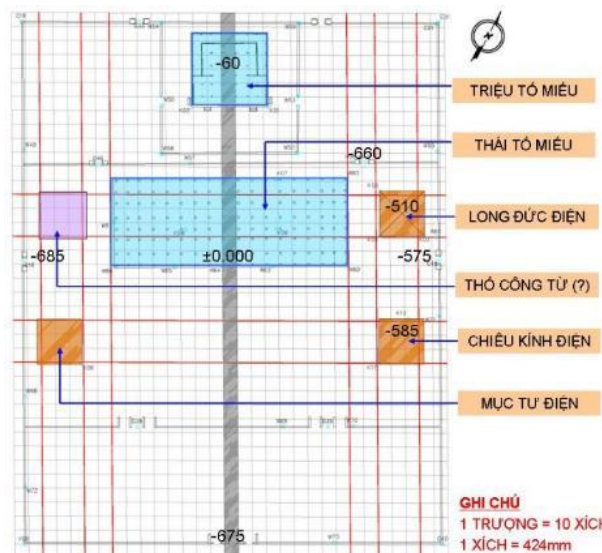


Figure 210: The analysis layout of the rod grid system in the “Thai Mieu” temple area aims to determine the positional correlation of the “Chieu Kinh Dien” palace with the surrounding structures
(Source: Le and Nguyen (2014, p. 116))

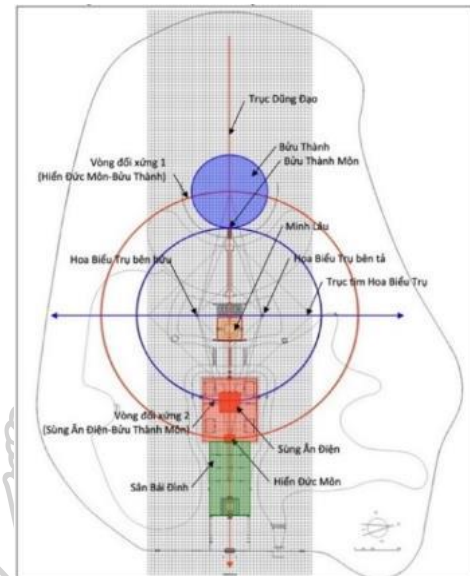


Figure 211: Study on applying the central axis and a rod grid system with a unit of 3.82x3.82 meters on the overall layout of Minh Mang's Tomb
(Source: Vo and Le (2022))

It can be said that the grid planning method is not a new approach and has been applied in some ancient sites worldwide. Therefore, several studies on ancient urban areas have used grid systems to identify spatial layout principles or rediscover original designs on the overall layout. Evaluating the initial period of the Nguyen Dynasty, during Emperor Gia Long, the HIC site plan was also influenced by two main streams of thought: one is the influence of China, and the other is the historical context that allowed the French to come to Vietnam and bring the military model of “Vauban” (Mantienne, 2003, pp. 520-521).

Examining the HIC site plan specifically, it is easy to observe that it is arranged symmetrically across an axis and involves a grid division based on traffic axes. Regarding previous domestic studies and considering various international research directions on grid models in

ancient cities, this chapter applies grid methods to uncover comprehensive and in-depth design principles on the site plan.

6.1.2 Traditional measurement units of the Nguyen Dynasty applied for the grid method

In the historical records of the Nguyen Dynasty, no official documentation on the measurement units used in construction during the Gia Long – Tu Duc period has been found so far. According to the research results of Phan (2003), through a survey of several wooden rulers that still exist and are on display at the Vietnam National Museum of History, the researcher found that these rulers have inconsistent values ranging from 0.419 to 0.425 meters (Figure 212 and Table 23).



Figure 212: Some measuring rules from the Nguyen Dynasty period at the Vietnam National Museum of History, Hanoi
(Source: Author, 2024)

Table 23. List of the investigated Rulers used under the Nguyen Dynasty

No.	Name of Ruler		One Vietnamese traditional foot (meter)
	Vietnamese	Chinese	
1	Quan Moc Xich (T1_1)	官木尺	0.419
2	Quan Moc Xich (T1_2)	官木尺	0.421
3	Quan Moc Xich (T2)	官木尺	0.422
4	Quan Moc Xich (T3)	官木尺	0.425

Note: The Vietnam Museum of History has three rulers, so Phan (2003, p. 160) designated them as T1 (with two sides, T1_1 and T1_2), T2, and T3.

Besides, the measurement system of the Vietnamese people during the Nguyen Dynasty consisted of three main types: the tailoring ruler (used for making clothes), the field ruler (used for tax calculation), and

the carpentry ruler (used for measuring length and dimensions in architecture and construction) (Kitani & Nakagawa, 2015b, p. 1190; Phan, 2003, p. 157). Within the carpentry ruler system, there were many different measurement systems, which were quite complex, including three main ruler systems: the length measuring system or “Kinh” ruler, the technical measuring system or occupational ruler, and the auspicious measurement system or “Lỗ Ban” ruler (Luban/魯班 ruler). The research results indicated that the length-measuring ruler (for measuring column length, beam length, and distances between areas) used in the early Nguyen Dynasty had values of 0.424 - 0.425 meters (Phan, 2003, pp. 158-159).

Additionally, in 1897, the Governor-General of French Indochina unified the various types of rulers, including the carpentry ruler, the field ruler, and the tailoring ruler, into a single standard unit with a measurement value of 0.4 meters (Nguyen, 1997, p. 42).

Thus, studying the original buildings of the Nguyen Dynasty requires clarifying the measurement units used during the early Nguyen period, especially in the Gia Long to Tu Duc period. This study is based on previous studies and re-examines them to determine the measurement units used in construction design at the HIC. Based on the research results of Dau Dinh Nguyen, a historian, the carpentry ruler's length was one rod equal to 4.24 meters, one foot equal to 0.424 meters, and one inch equal to 0.0424 meters (Table 24).

Table 24. The names and lengths of the carpentry ruler used in the design of the Nguyen Dynasty

No.	Vietnamese	Chinese	English	Length (meter)
1	Trượng	丈	Rod	4.24
2	Xích/Thước	尺	Foot	0.424
3	Thốn/Tấc	寸	Inch	0.0424

The research by Le and Truong (2020) on the reconstruction of “Can Chanh Dien” palace indicates that the measurement value in construction is 1 foot = 0.424 – 0.428 meters. According to the reconstruction study of “Chieu Kinh” palace (Le & Nguyen, 2014), the grid system used by the researchers is 1 foot = 0.424 meters. The successful reconstruction of the project demonstrates the application of the grid system and the measurement unit used in the design and construction of the early Nguyen Dynasty period.

Generally, previous research based on the data and the values of extant measuring rulers indicates that the wooden ruler used during the Nguyen Dynasty period ranged from 0.419 to 0.428 meters (Table 23 and Le and Truong (2020, p. 1418)). However, the value of 0.424 meters for the carpentry ruler was presented by historian Dau Dinh Nguyen in the study (Nguyen, 1997). This value was utilized by experts in grid partitioning in the restoration project of the “Chieu Kinh” palace (Le & Nguyen, 2014), and was found in the study result conducted by the Institute of UNESCO World Heritage, Waseda University, and the Hue Monuments Conservation Center (HMCC) (Kitani & Nakagawa, 2015b; Nakazawa et al., 1997).

6.1.3 Verifying on the historical design units and the fact

According to the historical records (The Cabinet of Nguyen Court, 1993a; The National Department of History of Nguyen Dynasty, 1960), information about buildings is typically very basic, following a structure that includes the name of the buildings, number of compartments, number of wings, height of the foundation or circumference of the walls, height, and thickness. The information is quite limited and recorded only for the most significant buildings within the HIC. This study, therefore, compiles these parameters from historical records and the actual measurements

conducted by the author to verify the values used in measurements during the Nguyen Dynasty.

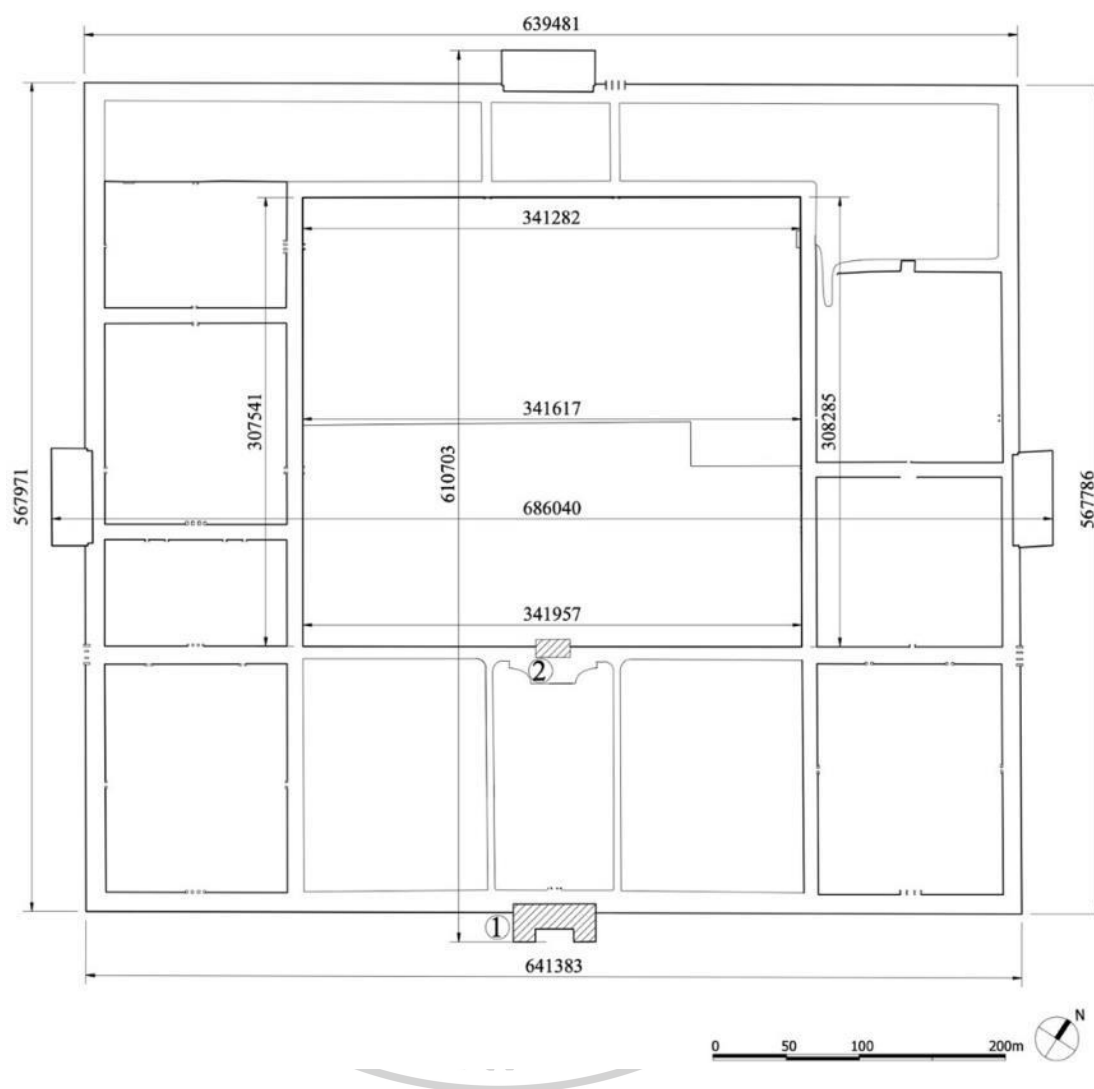


Figure 213: Dimensions of Hue Imperial City

Note: “Ngo Mon” main gate of the HIC (position 1) and “Dai Cung Mon” main gate of the Forbidden City (position 2) were built during the Minh Mang period (see Section 4.2.1 and 4.2.5)

(Source: The author modified from Nakazawa et al. (1995))

Table 25. The value of one rod when compared to the length of the sides of Hue Imperial City and the Forbidden City

No.	Name	Position	Actual length (meter)	Historical record (rod)	The value of one rod (meter)	Source
1	HIC	South	641.383	155.5	4.125	
2	HIC	North	639.481	155.5	4.112	

No.	Name	Position	Actual length (meter)	Historical record (rod)	The value of one rod (meter)	Source
3	HIC	East	567.786	151	3.760	(The Cabinet of Nguyen Court, 1993a, p. 13) Including the circumference of the four podiums
4	HIC	West	567.971	151	3.761	
5	The circumference of the HIC		2615.307	614	4.260	
6	The Forbidden City	South	308.285	72.6	4.246	(The National Department of History of Nguyen Dynasty, 1960, p. 21)
7	The Forbidden City	North	307.541	72.6	4.236	
8	The Forbidden City	East	341.957	81	4.221	
9	The Forbidden City	West	341.282	81	4.213	
10	The circumference of Forbidden City		1299.065	307.2	4.229	

Table 26. The value of one rod when compared to the height of some main building foundations

No.	Name of building	Actual height of the building foundation (meter)	Historical record (rod)	The value of one rod (meter)	Source
1	“Can Chanh Dien” palace	0.920	0.23	4.000	(The Cabinet of Nguyen Court, 1993a, p. 20)
2	“Can Thanh Dien” palace	0.921	0.23	4.004	(The Cabinet of Nguyen Court, 1993a, p. 22)
3	“Thai Hoa Dien” palace	2.350	0.58	4.052	(The Cabinet of Nguyen Court, 1993a, p. 28)
4	“Dien Tho Chinh Dien” palace	0.560	0.14	4.000	(The Cabinet of Nguyen Court, 1993a, p. 30)
5	“Tho Ninh Dien” palace	0.560	0.14	4.000	(The Cabinet of Nguyen Court, 1993a, p. 31)
6	“Hien Lam Cac” pavilion	1.500	0.36	4.167	(The Cabinet of Nguyen Court, 1993a, p. 74)

Note: The buildings of the “Thai To Mieu” temple, “The To Mieu” temple, and “Hung To Mieu” temple have been altered from their original forms, so they are not included in the above data.

According to both comparison tables (Tables 25, 26), the length of one rod during the Nguyen Dynasty period ranged from 4.0 to 4.26 meters. Converted into the value of one foot, the value of the carpentry ruler ranges from 0.4 to 0.426 meters. This result demonstrates a valid basis for the length of the carpentry ruler used in the HIC. Therefore, the value of the carpentry ruler ranges from 0.419 to 0.428 meters. However, due to the carpentry ruler being made of wood and engraved using manual methods, there is a variation in length between individual rulers.

To apply the grid system in the study of the HIC site plan, this study must select the most appropriate value within the range of 0.419 to 0.428 meters. Based on the research findings of historian Nguyen Dau Dinh and a synthesis of previous studies by domestic and international experts, the value of 0.424 meters was chosen for use in numerous previous studies. Therefore, in the comprehensive study of the HIC site plan, this study continues to use the value where one foot equals 0.424 meters and one rod equals 4.240 meters.

6.2 Analysis results

6.2.1 Applicable grid system for the site plan of Hue Imperial City

As presented in section 6.1.3, the established rod grid system has a dimension of one rod (4.240 meters). It is necessary to determine the reference points for arranging the rod grid system so that the rod grid system can be applied to the site plan. According to the results discussed in section 3.2, during the Gia Long period, the perimeter of the HIC, the Forbidden City, and the main axis of the HIC were established. In the Minh Mang period, the main axis of the HIC remained unchanged, and the perimeter walls of the HIC and the Forbidden City remained constant. Although there were two architectural changes at the main entrance gates

of the main gate of the HIC and the Forbidden City (see positions 1 and 2 in Figure 213), the dimensions of the walls from East to West and from North to South of the HIC and the Forbidden City remained unchanged. Therefore, the areas of these main gates are only used to analyze the site plan from the Minh Mang period onward. From this point, two options for dividing the rod grid system are proposed as follows:

Case analysis I: Divide the rod grid system along the North-South direction using three methods: first, evenly dividing by one rod from the East wall to the West wall; second, evenly dividing by one rod from the East podium to the West podium; and third, using the main North-South axis as the standard, dividing the grid into East and West directions.

Case analysis II: Divide the rod grid system horizontally along the East-West direction using three methods: first, evenly dividing by one rod from the North to the South wall; second, extending from the Northern podium towards the South; and third, using the horizontal axis from the center of the Forbidden City as the standard, then dividing the grid into North and South directions.

The current rod grid system has dimensions of $1 \times 1 \text{ rod} = 4.24 \times 4.24$ meters. However, due to the large scale of the overall HIC site plan, the grid system is divided into a “10x10-rod” scale for a more convenient site plan analysis.

Analyzing the two cases mentioned above, the study results are as follows:

In Case analysis I, the first method was used to divide the grid from the Eastern wall of the HIC to the Western side, which yielded approximately 151 rods. The second method, dividing the grid from the

West podium to the East podium, produces around 161.8 rods (Table 27). With these two approaches, if the grid is divided from one side of the wall to the other, the results show that the central grid does not align with the North-South central axis of the HIC. Additionally, considering that the HIC walls have undergone several renovations for 143 years, the walls have varying degrees of deviation due to the underdeveloped construction techniques at that time. Therefore, using the wall boundary as the standard axis to form the grid is inaccurate. Based on the analysis, the study will choose the third method for the vertical division from North to South. This means determining the central axis of the HIC by connecting the central axes of the buildings to the midpoint between the Northern wall and the central axis of the “Ngo Mon” main gate. From this axis, the remaining North-South grids will be defined (Figure 214).

Table 27. Statistics on some lengths of walls in Hue Imperial City and the Forbidden City

No.	Position		Dimension (meter)	Number of the rod grid
1	HIC	East podium to West podium	686.040	161.80
2	HIC	South wall	641.383	151.27
3	HIC	North wall	639.481	150.82
4	HIC	East wall	567.786	133.91
5	HIC	West wall	567.971	133.96
6	HIC	South podium to North podium	610.703	144
7	The Forbidden City	South wall	341.957	80.65
8	The Forbidden City	North wall	341.282	80.49
9	The Forbidden City	East wall	308.285	72.71
10	The Forbidden City	West wall	307.541	72.53
11	The Forbidden City	In the middle of the wall from South to North	307.859	72.61
12	The Forbidden City	In the middle of the wall from East to West	341.617	80.57

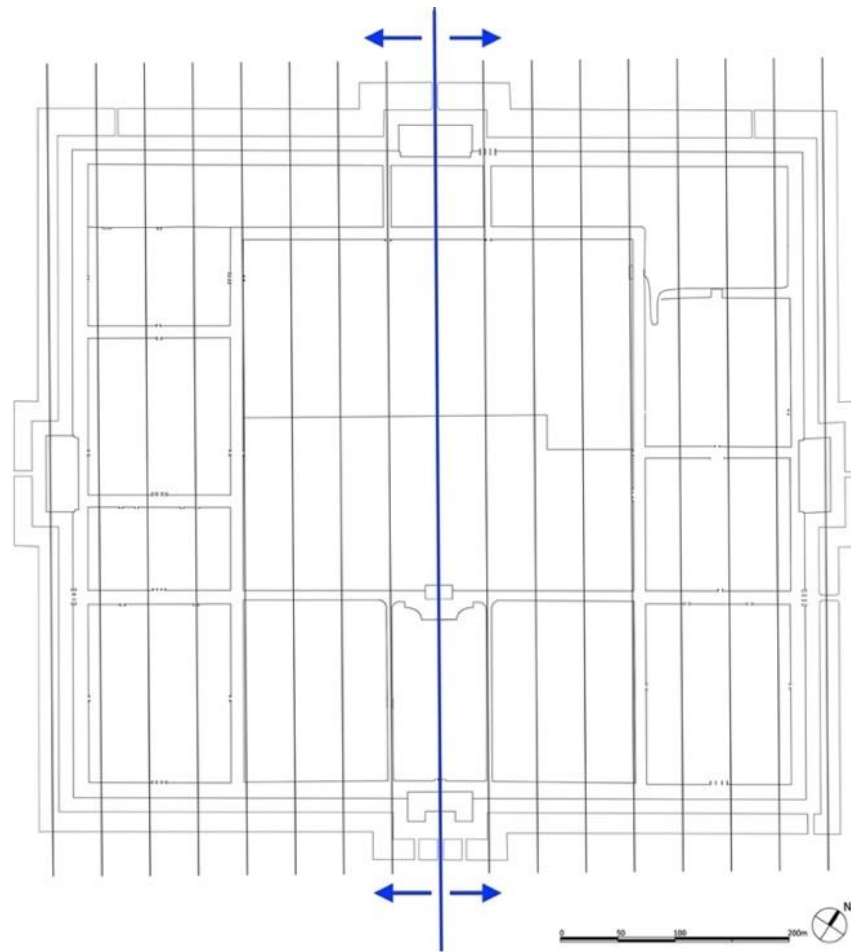


Figure 214: Determine the central axis and the grids in the North-South direction of Hue Imperial City
 (Source: The author modified from Nakazawa et al. (1995))

In Case analysis II, dividing the grid from the Southern wall of the HIC to the Northern podium yields a result of 140 rods (14x10 rods), particularly from the Southern wall of the HIC to the center of the Forbidden City is 80 rods (8x10 rods), and this position coincides with the horizontal symmetry axis of the Forbidden City (Figure 215). In the case of using the Northern wall of the HIC as a standard to divide the grid towards the South, the result is 134 rods (Figure 216). However, this grid system does not cover the Northern podium, while the other two cases yield the same result. Therefore, the option of dividing the grid horizontally can be done from the Southern wall of the HIC towards the

North or from the Northern podium towards the South. In other words, taking the horizontal central axis of the Forbidden City and dividing the grid in both the North and South directions produces the same result. The chosen method for the horizontal grid is, first, to determine the horizontal central axis of the Forbidden City and thereafter create the rest of the horizontal grids (Figure 215).

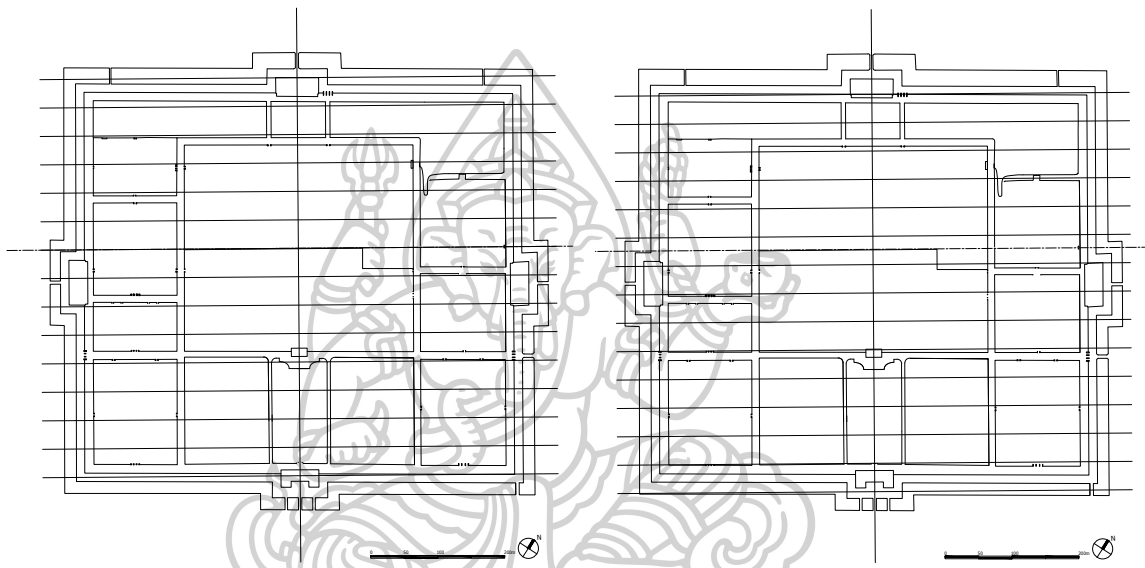


Figure 215: Divide the horizontal grid from the North podium of Hue Imperial City

Figure 216: Divide the horizontal grid from the North wall of Hue Imperial City

(Source: The author modified from Nakazawa et al. (1995))

According to the analysis above, the grid on the HIC site plan is determined based on two main axes: the North-South central axis, which passes through the middle of the walls facing South and North of the HIC and the Forbidden City. The main horizontal axis is determined by finding the horizontal symmetrical axis of the Forbidden City, which is the line connecting the middle of the East and West walls of the Forbidden City. From these two main axes, the grid on the HIC site plan is established (Figure 217).

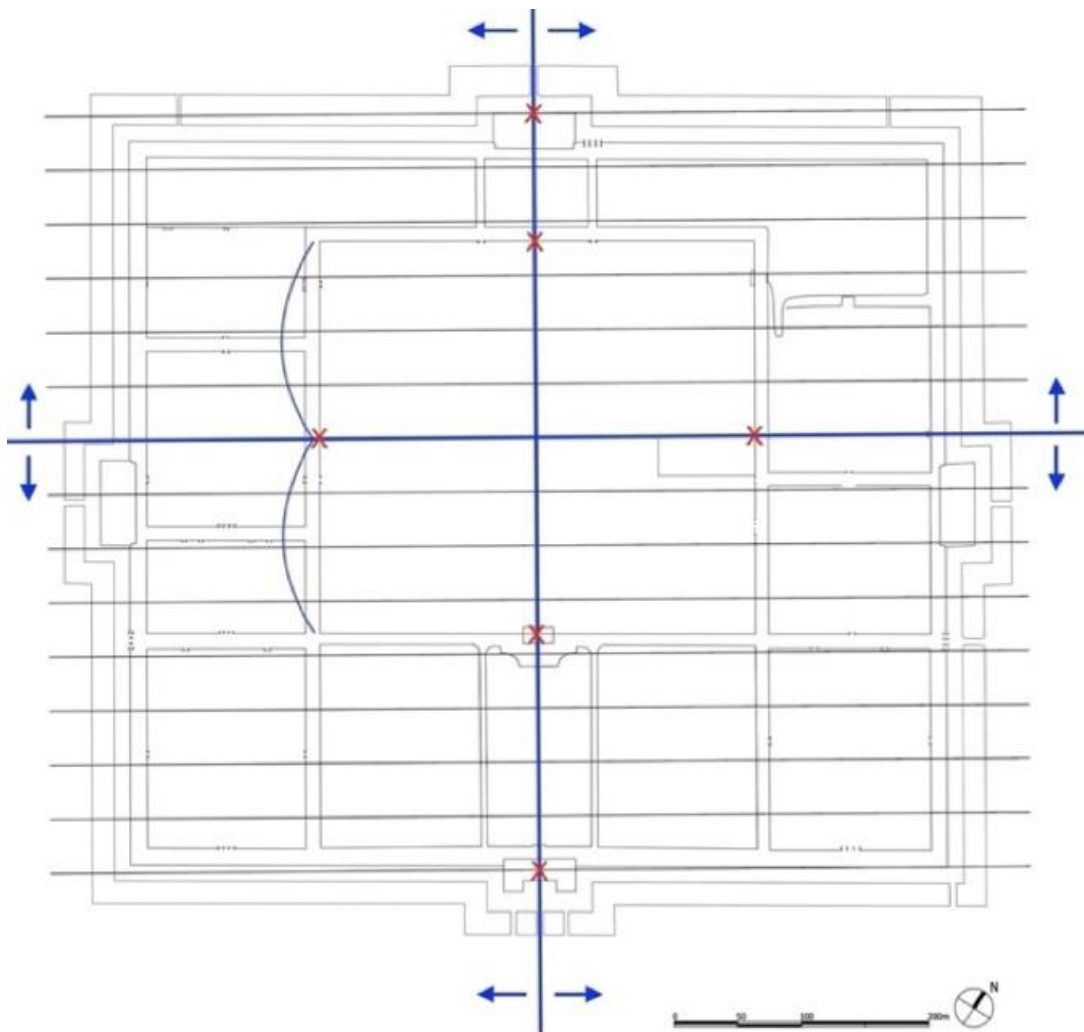


Figure 217: Determining the North-South and East-West central axes of the site plan of Hue Imperial City
 (Source: *The author modified from Nakazawa et al. (1995)*)

After establishing the rod grid system for the HIC, the North-South central axis is labeled as S/N-0, and the primary East-West axis is labeled as the E/W-0 axis. The main grids are determined with a distance of 10 rods, and the unit square is 1x1 rod (Figure 218).

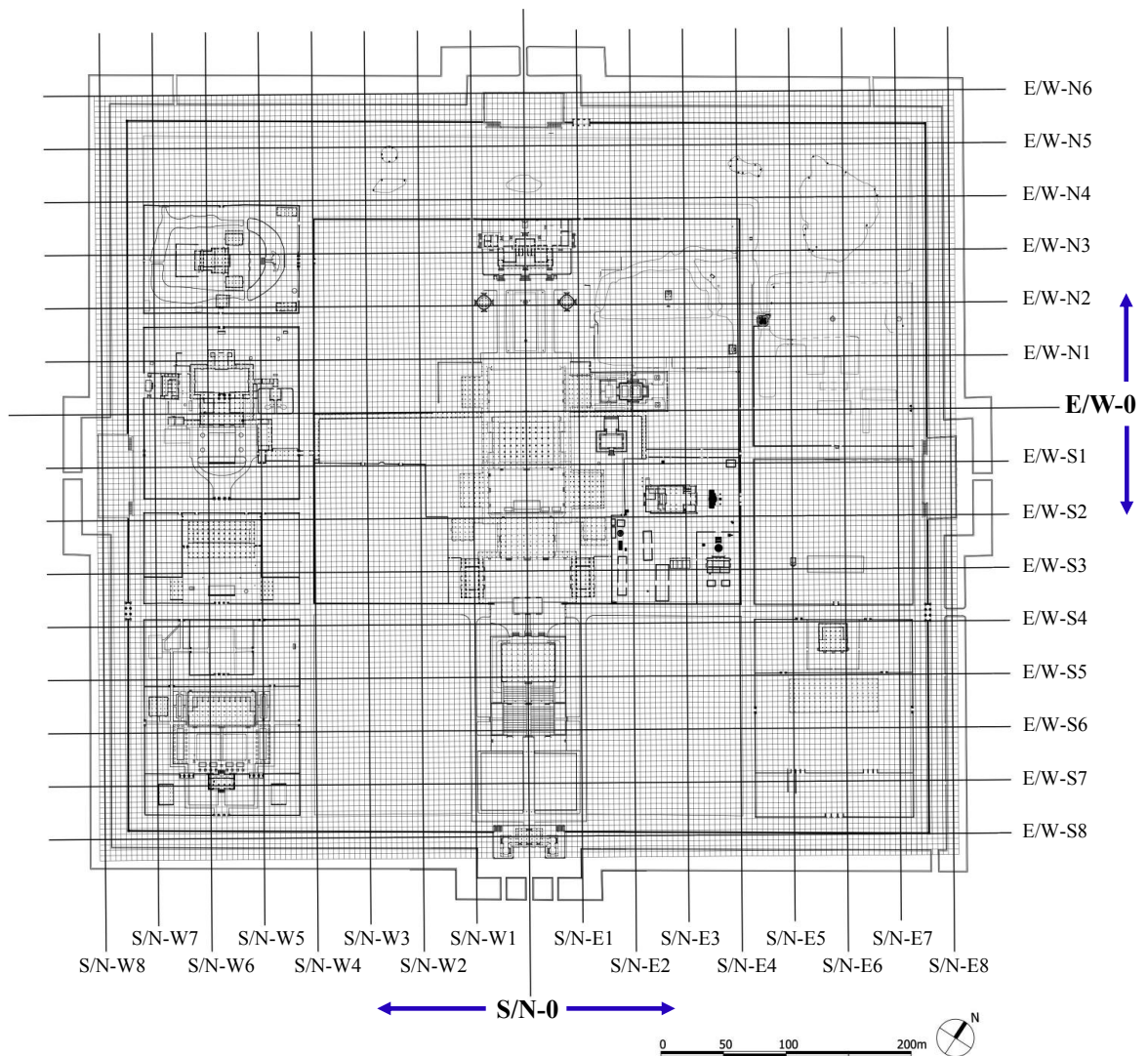


Figure 218: Determining the grid system of Hue Imperial City based on the S/N-0 axis and the E/W-0 axis

(Source: The author modified from Nakazawa et al. (1995))

The analysis of the grid system, as shown in Figure 218, reveals that when considering the 1x1 rod squares, the boundary walls of the main functional areas closely align with the horizontal lines. However, the vertical lines do not align with the main walls of the areas. Comparing this with the horizontal dimension of the walls of the Southern and Northern Forbidden City, measured at approximately 80.5-81 units, and the walls of the Southern and Northern HIC, measured at about 151 units, it is observed that the odd number of horizontal lines is one unit. From the

above analysis, two cases of the grid system on the HIC site plan could be proposed as follows:

a) Case I: The grid system with the symmetrical axis S/N-0

In this case, the symmetrical axis S/N-0 and E/W-0 axis are two defined axes passing through the center of the Forbidden City. From these axes, the unit grids are evenly spaced in various directions. From the S/N-0 axis to the Eastern and Western walls of the Forbidden City is approximately 40.3 rods, to the Eastern and Western walls of the HIC is 75.5 rods, and to the Eastern and Western podiums is 80.9 rods (Figure 218, Table 28).

Table 28. The number of rod grids from the central axis S/N-0 to the East/West walls of Hue Imperial City

No.	Position		Dimension (meter)	Number of the rod grid
1	HIC	The S/N-0 to East/West podium	343.02	80.9
2	HIC	The S/N-0 to East/West wall	320.22	75.5
3	The Forbidden City	The S/N-0 to East/West wall	170.81	40.3

Note: Take the average value of the central axis to the East/West walls.

b) Case II: The grid system includes the symmetrical axis S/N-0 combined with a rod

This case is proposed based on the following two reasons: first, the length of the Southern and Northern walls is an odd number (around 151 rods); second, there is a distinct stone pavement along the central axis S/N-0 from “Ngo Mon” main gate to “Can Thanh Dien” palace. Figures 219, 220, taken in 1926 and 1932, show a separate stone pavement existing along the central axis of the HIC from in front of the “Ngo Mon” main gate to the “Can Chanh Dien” palace. This stone pavement still exists on the current foundation of the HIC (Figures 221, 222). According to measurement results, the width of

this pavement varies from 3.8 to 5.27 meters, indicating the presence of a rod axis with a certain thickness along the symmetrical axis S/N-0.



Figure 219: The stone pavement existed in front of the main gate of the Forbidden City in 1926

(Source: <https://www.flickr.com/photos/13476480@N07/26987873889/>)



Figure 220: The stone pavement existed on the main axis of Hue Imperial City in 1932

(Source: <https://www.flickr.com/photos/13476480@N07/24803287958/in/album-72157716000093687/>)



Figure 221: The stone pavement existed in front of the main gate of Hue Imperial City in 2024



Figure 222: The stone pavement existed in front of "Thai Hoa Dien" palace in 2020

(Source: Author)

Table 29. The number of rod grids from the central axis S/N-0 to the East/West walls of Hue Imperial City, incorporating the symmetrical axis S/N-0 combined with a rod

No.	Position		Dimension (meter)	Number of the rod grid
1	HIC	The S/N-0 to East/West podium	340.900	80.4
2	HIC	The S/N-0 to East/West wall	318.096	75
3	The Forbidden City	The S/N-0 to East/West wall	168.69	39.8

Note: Take the average value of the central axis to the East/West walls.

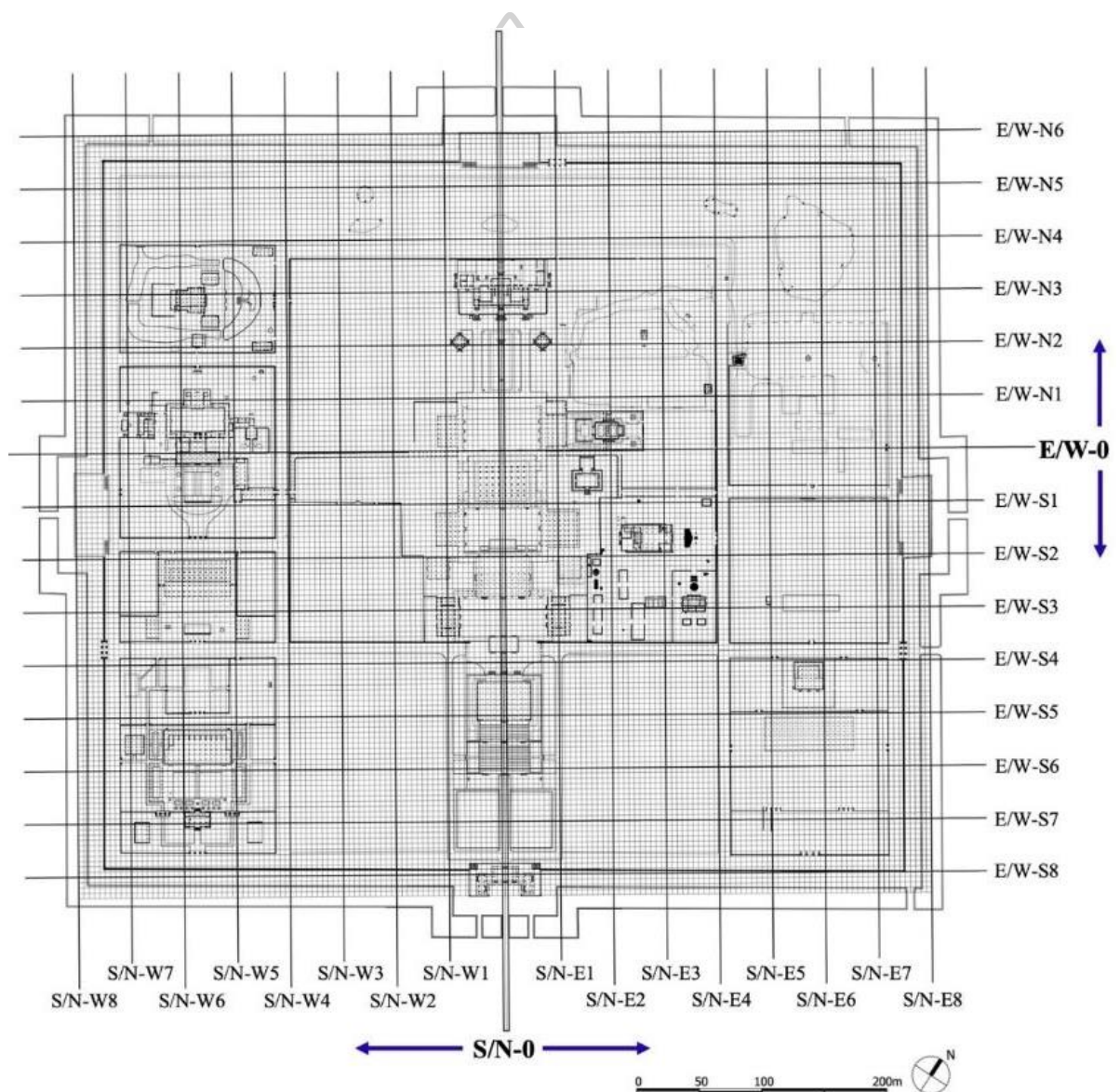


Figure 223: The grid system of Hue Imperial City is determined based on the E/W-0 axis and S/N-0 axis (incorporating the symmetrical axis S/N-0 combined with the one-rod grid) (Source: The author modified from Nakazawa et al. (1995))

Figure 223 illustrates the grid system with the central axis S/N-0 combined with one rod. This grid system aligns the boundary walls of the main functional areas closely with the vertical grids. The number of horizontal grids on the East and West sides is symmetrical across the axis S/N-0. For instance, the East and West walls of the Forbidden City are around 40 rods away from the axis S/N-0, and the East and West walls of the HIC are 75 rods away from the axis S/N-0 (Table 29).

Based on the analysis of the grid systems in the cases above, the results show that Case II aligns more closely with the boundaries along the East and West walls of the HIC than Case I. Additionally, the presence of the existing stone pavement along the central axis further supports this analysis result. Therefore, the possibility of one-rod thickness at the central axis serving a functional role in establishing the architectural space of the HIC is entirely plausible. However, this study concludes with the principles for laying out the site plan based on both cases, aiming to provide the most comprehensive study on the HIC and laying the groundwork for related studies.

6.2.2 Positional setting of the main buildings

Examining the main buildings along the central axis S/N-0, it is easily observed that the central point of the Forbidden City (point 01) is the rear edge of the “Can Thanh Dien” palace. According to historical data within the Forbidden City area (The Cabinet of Nguyen Court, 1993a, p. 40), moving backward from the “Can Thanh Dien” palace, there is the “Can Thanh Cung” residence, and behind it is the “Khon Thai Cung” residence. According to site surveys, the E/W-0 axis, which passes through point 01 and coincides with the position of the long corridor from East to West, serves as the standard axis that divides the Forbidden City into two areas.

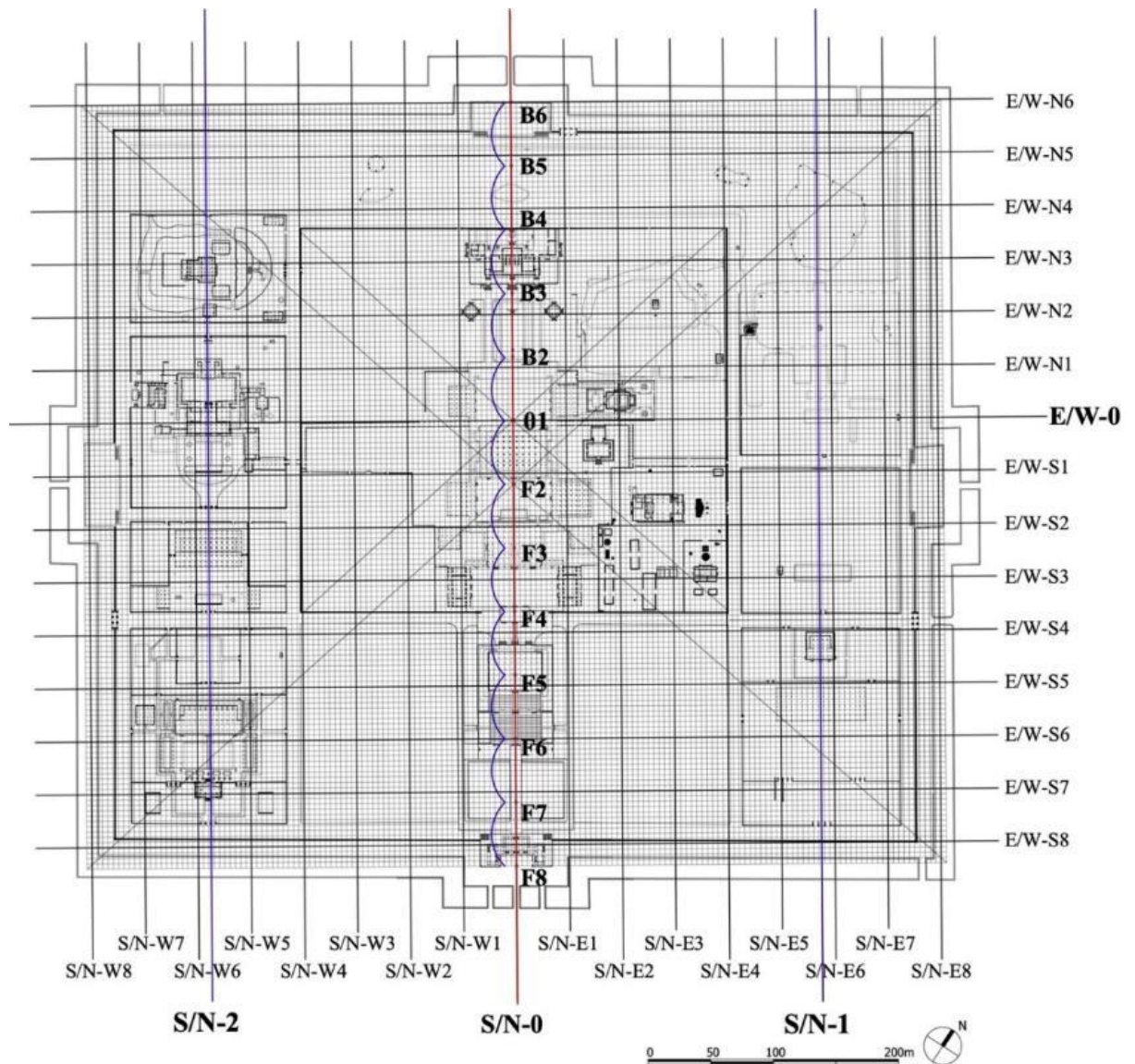


Figure 224: Determining the grid system of Hue Imperial City
 (Source: The author modified from Nakazawa et al. (1995))

Examining the S/N-0 axis (Figure 224), from the center position of the South wall extending to the North wall of the Forbidden City, specifically from position F4 to B4, the length is 6x12 rods; and from position F8 to B6, the length is 12x12 rods. The distance from point 01 to F4 and from point 01 to B4 are 3x12 rods; from F4 (the center position of the South wall of the Forbidden City) to F3 (the central point of “Can Chanh Dien” palace) is 1x12 rods; and from F3 to 01 is 2x12 rods. Continuing from 01 to B2 (position of “Khon Thai Dien” palace) is 1x12

rods; from B2 to B4 (the center position of the North wall of the Forbidden City) is 2x12 rods; and from B3 to B4 is 1x12 rods, where the “Minh Vien Lau” pavilion is located. The initial observation indicates that along the central axis S/N-0, there is a repetition of 12 rods from the center position 01.

The “Ngoai Trieu” court area is defined within positions F4 to F8, with a dimension of 4x12 rods length. The main building at position F5 (“Thai Hoa Dien” palace) is 1x12 rods away from F4. However, F5 is not precisely at the center of this main building but is offset by 0.5 rods. This can be explained by the fact that position F5 was not part of Gia Long's original design and only appeared during the Minh Mang period, leading to the discrepancy.

Based on the above analysis, the central axis S/N-0 possesses the following important characteristics:

- It is the symmetrical axis of the HIC;
- It contains the symmetrical axes of the main buildings within the HIC;
- A distance of 12 rods separates important positions along the S/N-0 axis.

Therefore, starting from the central position 01, it is entirely possible to determine the scale of the HIC in the North-South direction. The distance from the center 01 to the Southern boundary is 7x12 rods, and from the center 01 to the Northern boundary is 5x12 rods. The crucial positions along the S/N-0 axis are determined based on multiples of 12 rods (the distance from the center of the Forbidden City to the center of the HIC).

Considering the Eastern area of the HIC, the axis S/N-1 is identified as the axis connecting the center of the Northern and Southern walls with a wall length of 30 rods. Figure 224 shows the current condition of the Eastern area of the HIC, where many structures have been heavily damaged, with only a few foundations remaining, particularly in the “Thai Mieu” area from axis E/W-S4 to E/W-S8 (constructed and completed during Gia Long period). Axis S/N-1 aligns with the symmetrical axis of these two main buildings in this area, passing through the central axis of the main gate of this area. Comparing this with the results in Section 4.2 and Figure 69, it can be concluded that S/N-1 serves as the central axis of the Eastern area.

In the Western area of the HIC, axis S/N-2 is determined by reflecting axis S/N-1 across axis S/N-0. It is observed that the boundaries of the Eastern walls are significantly skewed compared to the grid system. Particularly, the Northern point has one rod shifted compared to the Southern point, which may be explained by measurement and positioning errors during previous construction activities. Due to this skewness of the Eastern walls in this area, axis S/N-2 does not perfectly align with the symmetrical axis of the main buildings from grid E/W-S4 to E/W-S8. Although there is a slight deviation of about 0.5 rods, it can be attributed to the skewness of the Eastern walls. Generally, axis S/N-2 passes through the symmetrical axis of most main buildings in the Western area, indicating the existence of a central axis in the Western area similar to the Eastern area (excluding the “Truong Sanh Cung” residence, the main East-West axis, as reviewed in Chapter 4).

Therefore, on axis S/N-0, the main buildings of the Nguyen Dynasty can be identified, and important positions can be determined based on the repetition of 12 rods, including the main buildings of the HIC, delineating the boundaries of the North/South walls of the Forbidden

City and the boundaries of the North/South walls of the HIC. The two main axes of the East and West areas (S/N-1 and S/N-2) are approximately 57.5 rods apart from axis S/N-1. These axes also play a role similar to the central axis S/N-0 by hosting the main buildings of the East and West areas.

6.2.3 Proportional relation between vertical and horizontal directions of Hue Imperial City areas

Based on the vertical and horizontal proportions of the HIC, the proportion of the North-South length of the Forbidden City's walls to the HIC's length is approximately 0.5 (80.6/161.8 rods), and the proportion of the East-West length of the Forbidden City's walls to the HIC's length is also 0.5 (72/144 rods). Therefore, the proportion of the vertical/horizontal lengths of the HIC is twice that of the vertical/horizontal lengths of the Forbidden City. Based on this proportion, the scale of the vertical and horizontal dimensions of the HIC site plan can be established as follows:

- Vertical dimension: The width of the “Ngoai Trieu” court area is two-thirds of the width of the Forbidden City (denoted as W), while the remaining area is one-third of W.
- Horizontal dimension: The width of the Eastern and Western areas equals half the width of the Forbidden City (denoted as L). (Figure 225)

Some important vertical and horizontal dimensions in the HIC are as follows:

- From the central axis S/N-0 to the edge of the East/West podium of the HIC is approximately 81 rods (80.9 rods), to the

East/West wall of HIC, is 75.5 rods, and to the East/West wall of the Forbidden City is roughly 40 rods (40.3 rods);

- The width of the roads along the four walls of the HIC is 3 rods, the width of the roads outside the North and South walls of the Forbidden City is 3 rods, and the width of the roads around the remaining areas ranges from 2 to 2.5 rods;
- After excluding internal traffic, the dimensions of the North and South walls of the two main areas in the East and West of the HIC are 30 rods;
- The S/N-1 and S/N-2 axes are the symmetrical axes of the East and West areas of the HIC. From the S/N-0 axis to the S/N-1 or S/N-2 axis is 57.5 rods;
- The dimensions of the main areas of the HIC are as follows: “Thai Mieu” temple area and “The Mieu” temple area 30x37 rods; the “Noi Vu Phu” royal treasure area 30x28 rods; the “Phung Tien Cung” residence area 30x17.5 rods; “Dien Tho Cung” residence area 30x32.5 rods, and “Truong Sanh Cung” residence area 30x20 rods. The “Co Ha Vien” royal garden area is 30 rods wide, with a length of contiguous land measuring 31 rods and an extension of the pond reaching the Northern wall of the HIC. The proportion of the width of the East/West area to the width of the HIC wall is around one-fifth (30/151 rods).

Along with the results presented in sections 6.2.1 and 6.2.2, the study redraws the HIC site plan diagram using a simplified grid system as follows (Figures 225-227):

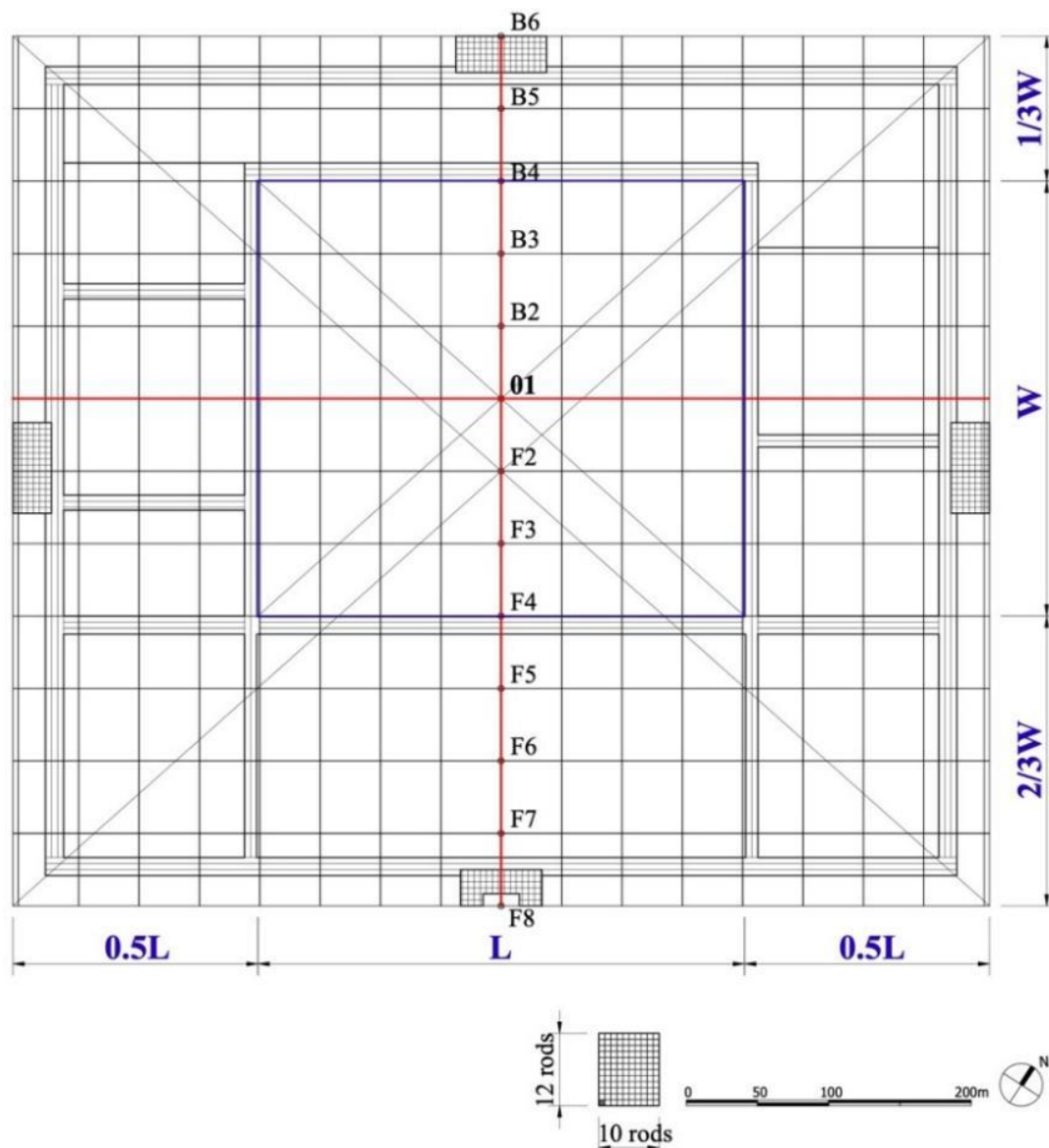


Figure 225: The proportion of the sizes of the Forbidden City and Hue Imperial City
(Source: Author)

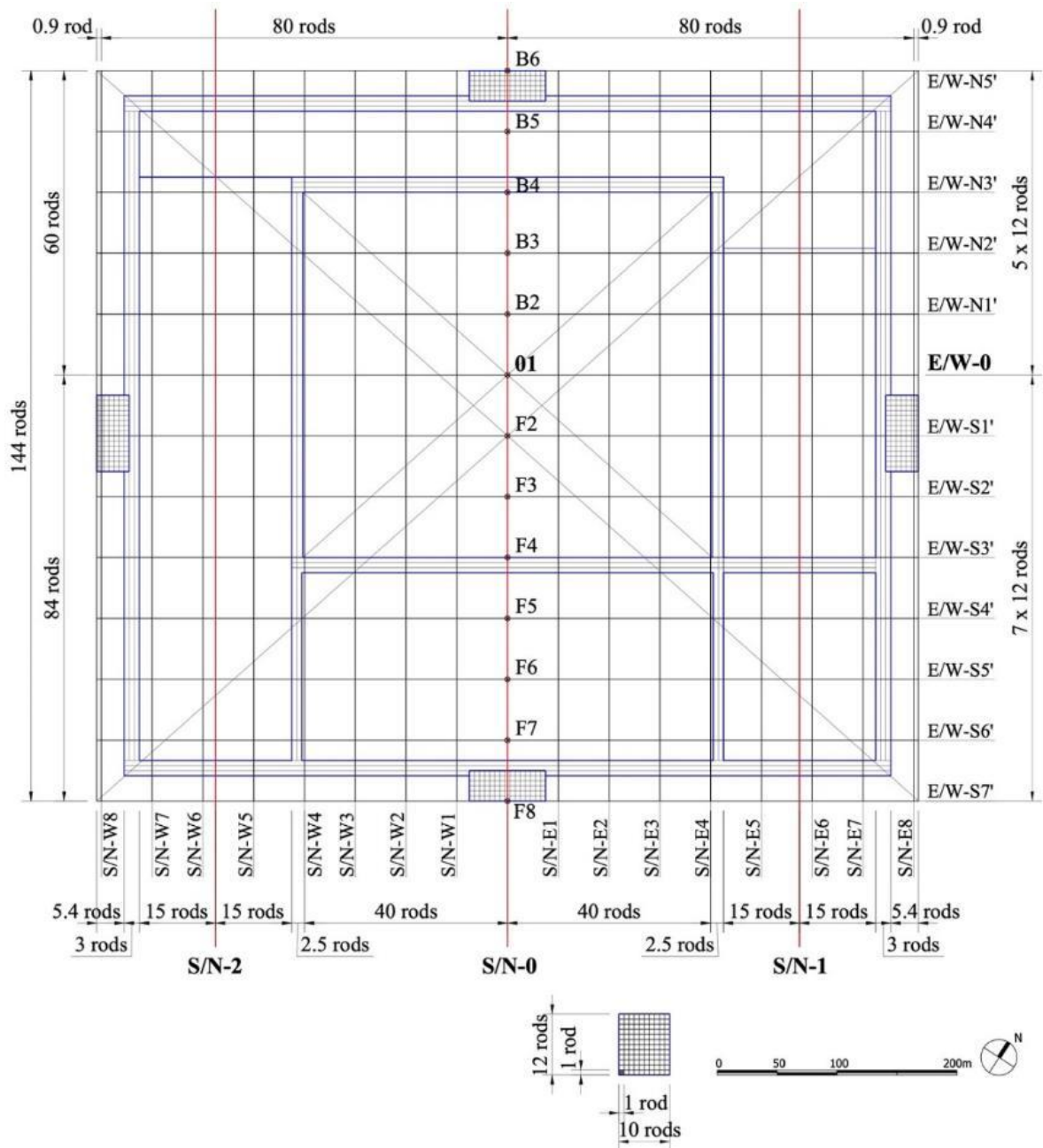


Figure 226: The grid system of Hue Imperial City site plan during the Gia Long period using the 12x10-rod unit
 (Source: Author)

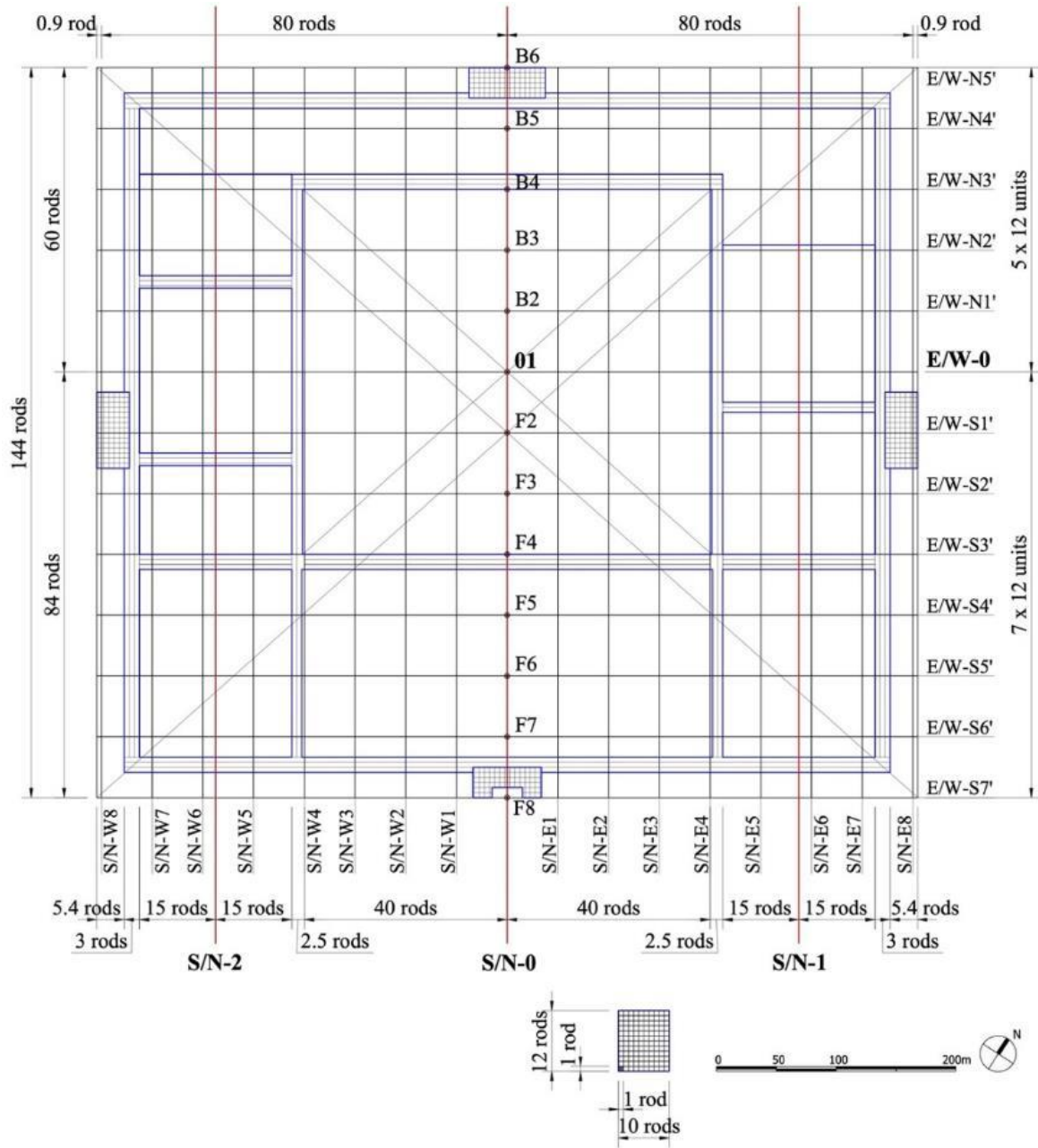


Figure 227: The grid system of Hue Imperial City site plan during the Minh Mang period using the 12x10-rod unit
 (Source: Author)

Basically, the grid system on the master plan of the Gia Long and Minh Mang periods did not change in terms of size or the number of grid cells. However, since the Gia Long period was the initial formation stage. The boundaries of the functional areas within the HIC had not yet been fully defined into nine areas, except for the boundaries of the Forbidden City and “Thai Mieu” temple area (Figure 226). It can be said that by Gia Long period, the master plan had achieved the following key values: (1) establishing the overall proportions and dimensions of the HIC through the 12x10-rod unit grid system, (2) determining the layout rules for the main functional areas through the three main axes (S/N-0, S/N-1, and S/N-3) and the main orientation of the HIC, (3) setting the principle of positioning significant buildings along the central axis, and (4) defining the boundaries of the main functional areas (zone (1), (3), and (5)). The Minh Mang period inherited these principles and continued establishing, supplementing, and completing the remaining functional areas (Figure 227).

6.2.4 Geographical relation between the main buildings and the axes

This study focuses on explaining the relationship of the buildings with the three main axes: S/N-0, S/N-1, and S/N-2. Figure 228 illustrates a grid with a thickness of one rod that crosses the symmetric axis S/N-0 to examine the role of this thickness at the symmetrical axis in the arrangement of buildings. However, the current condition depicted in Figure 228 includes remnants of building foundations from different periods. Therefore, the study processes the information and simplifies the diagram for each area, retaining traces from the Gia Long – Minh Mang period (Figures 229-230).

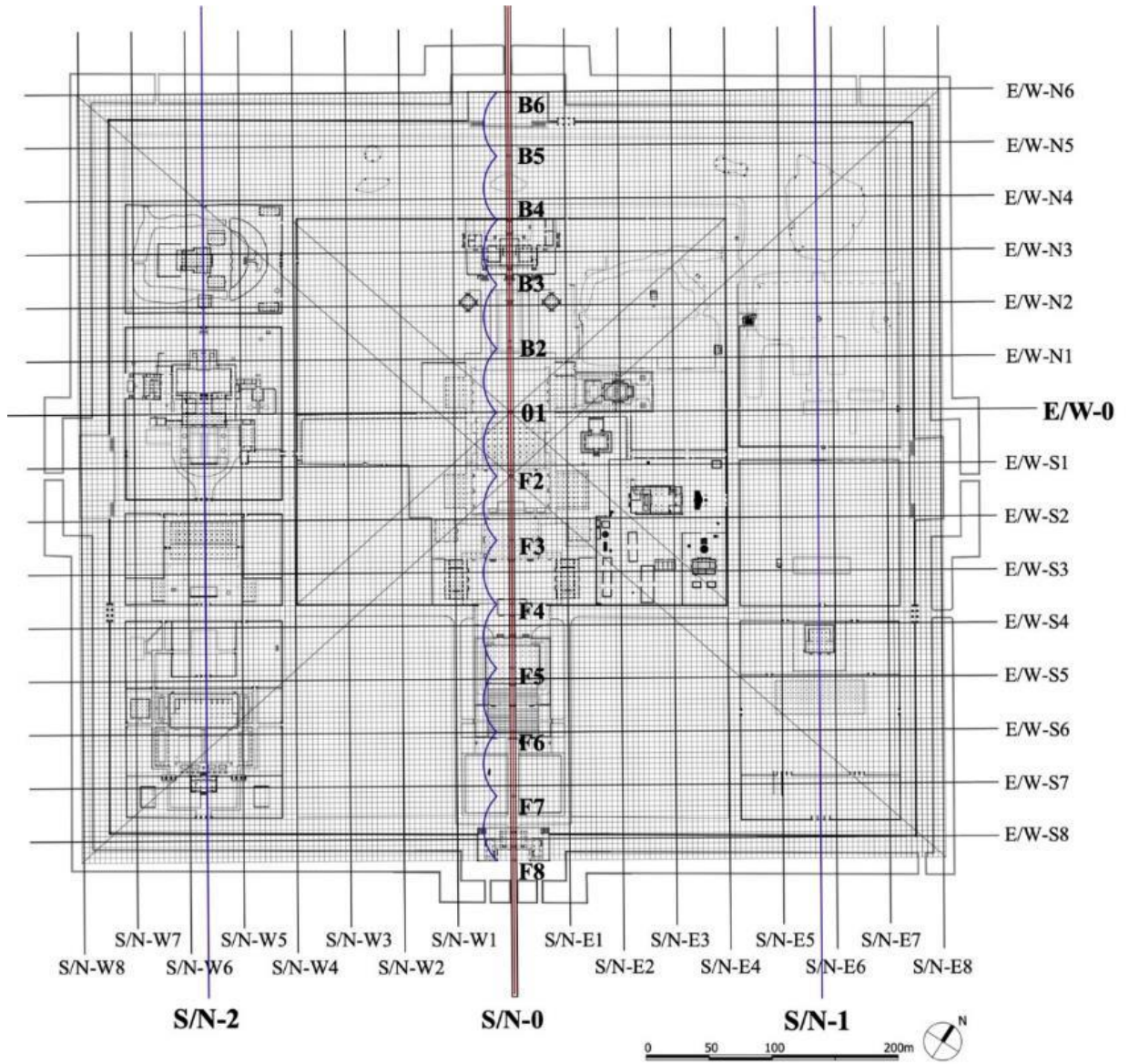
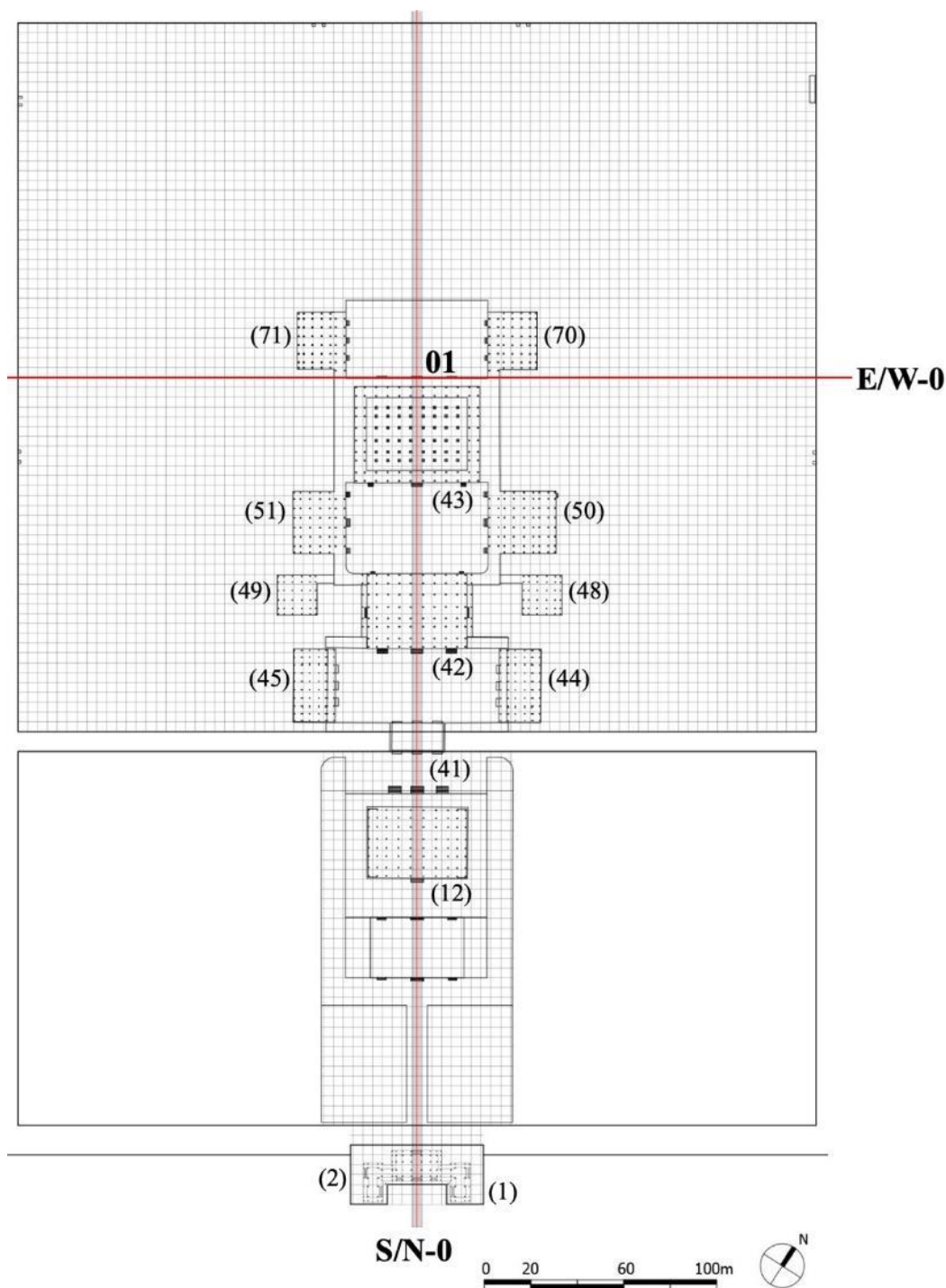


Figure 228: Analysis of the grid system of Hue Imperial City with the symmetrical axis S/N-0 combined with the one-rod grid
 (Source: The author modified from Nakazawa et al. (1995))



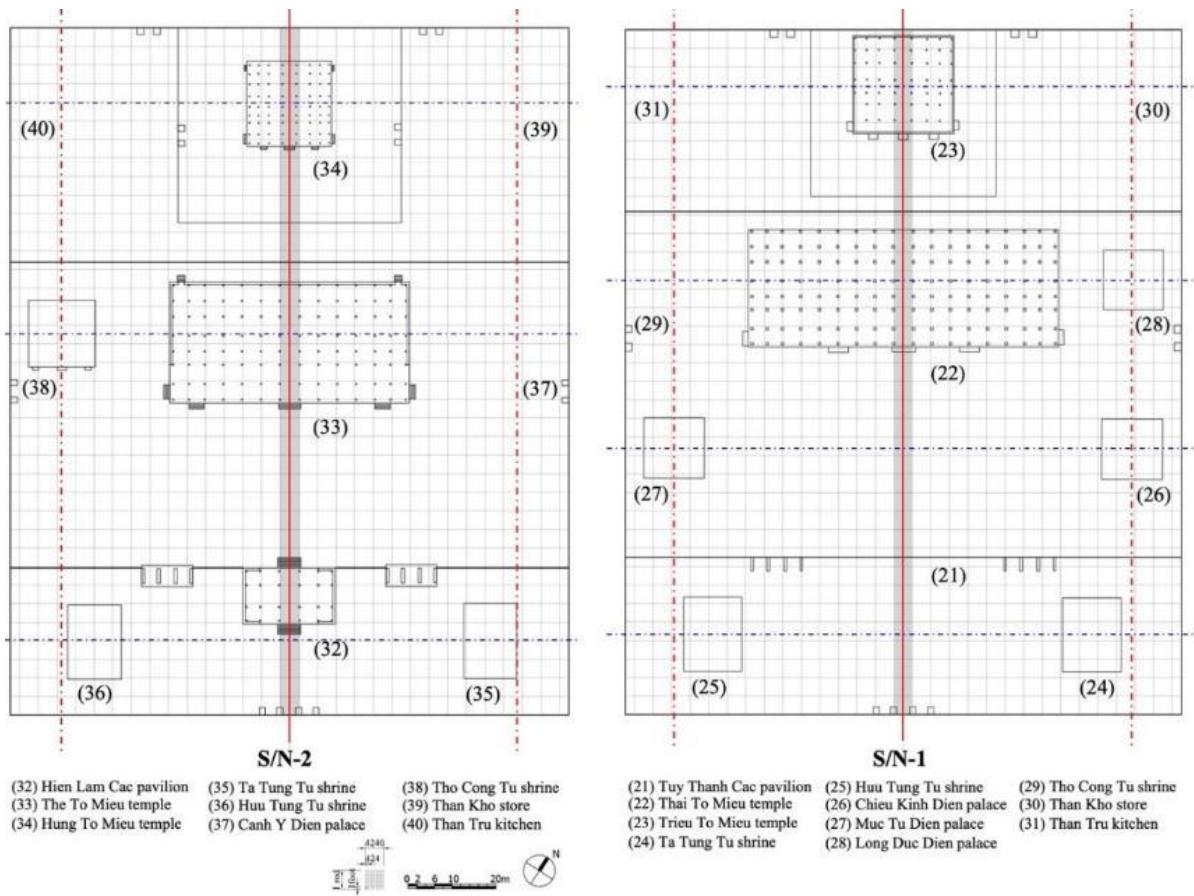
- | | | |
|----------------------------|----------------------------|-----------------------------|
| (1) Ngo Mon gate | (43) Can Thanh Dien palace | |
| (2) Ngu Phung Lau pavilion | (44) Ta Vu left sub-hall | (50) Quang Minh Dien palace |
| (12) Thai Hoa Dien palace | (45) Huu Vu right sub-hall | (51) Trinh Minh Dien palace |
| (41) Dai Cung Mon gate | (48) Van Minh Dien palace | (70) Duong Tam Dien palace |
| (42) Can Chanh Dien palace | (49) Vo Hien Dien palace | (71) Thuan Huy Vien house |

Figure 229: The central rod axis and the correlation of the rod grid system and the main buildings in the “Ngo Mon” main gate, the “Ngoai Trieu” court area, and the Forbidden City
(Source: Author)

Considering Figure 229, the central rod axis is the main space passing through the center of the main buildings, while the edges of the foundations of these buildings align with the lines on the rod grid system. For example, at position (43) is the “Can Thanh Dien” palace, with its main space situated along the central rod axis and the edges of its foundation in the East/West direction, 6 rods away from the central rod axis, with a total width of 13 rods; position (42) is the “Can Chanh Dien” palace with a width of 11 rods; the remaining buildings are positioned along the grid lines or at the edges of the column boundary.

“Thai Mieu” area was completed during Gia Long area (Figure 230b), and the “The Mieu” area was completed during the Minh Mang area (Figure 230a), showing consistency in the use of the central rod axis system. This system, similar to the central rod axis on the S/N-0 axis, functions to contain the main spaces of the buildings in these two areas. From these central spaces, other column steps are formed. The grid system aligns quite well with the edges of the foundation of the buildings, with some minor shifts due to measurement and construction processes, which are generally acceptable. On both the Eastern and Western sides of the area, two symmetrical axes intersect through the central axis, resembling the layout principle of the HIC site plan.

The remaining areas, as presented in section 4.2, indicate that the principle of the three main axes North-South has also existed before. Nowadays, these areas have undergone significant changes since Emperor Tu Duc; therefore, the grid system cannot yet be applied to analyze the central rod axis. However, the “Thai Mieu” area on the S/N-1 axis and the “The Mieu” area on the S/N-2 axis have been relatively well-preserved to this day, providing a reliable basis to affirm the design principles of the site plan within the HIC during Gia Long - Minh Mang periods.



a) The grid system of the “Thai Mieu” area b) The grid system of the “The Mieu” area

Figure 230: The grid system with the central rod axis at the “Thai Mieu” and “The Mieu” areas and its relationship with the positions of the main building foundations
(Source: Author)

Based on the analysis above, the study presents the HIC site plan, incorporating one rod at the central axis S/N-0. This diagram is used for organizing the architectural space of the HIC (Figures 231-232).

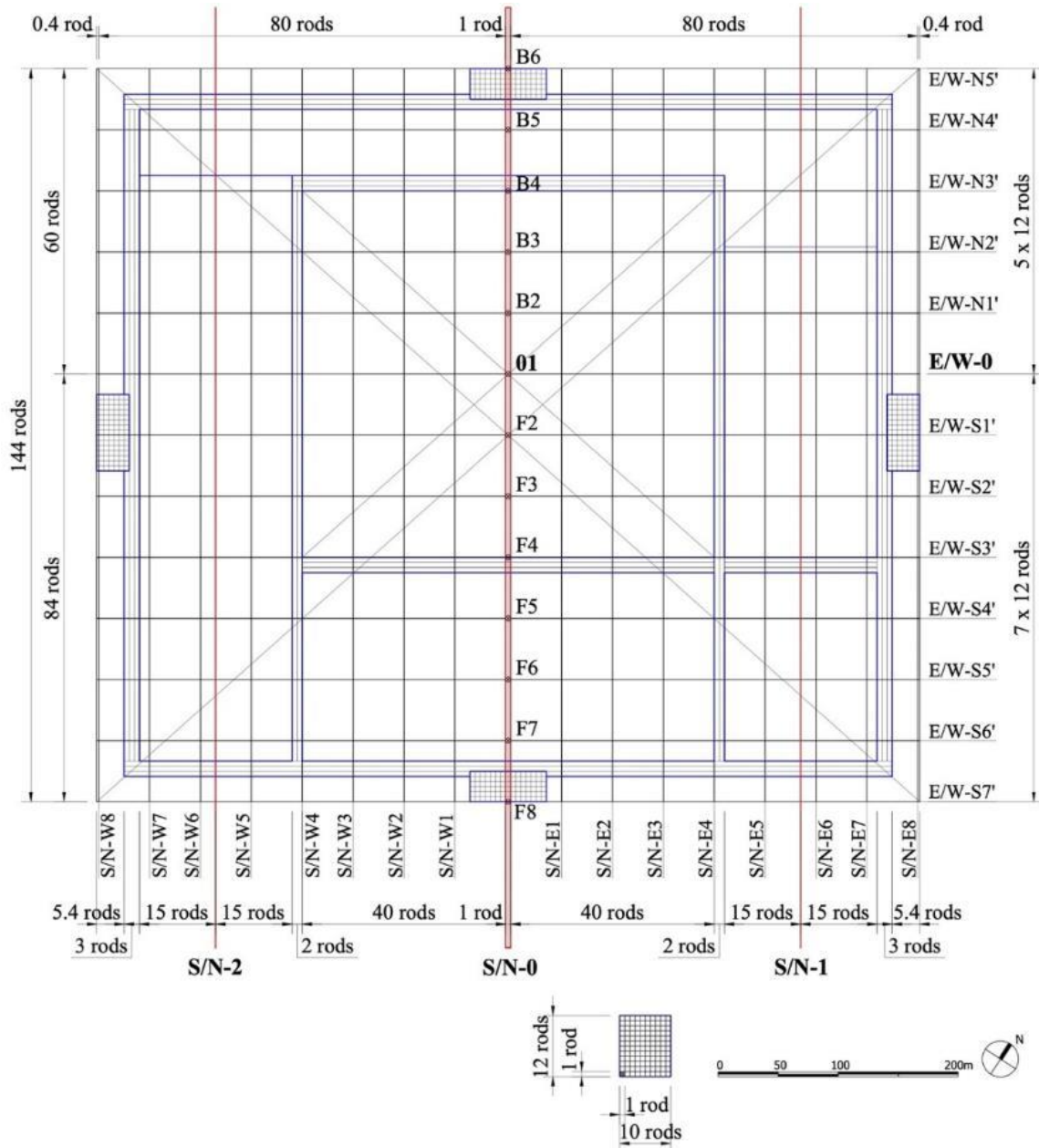


Figure 231: The grid system of Hue Imperial City site plan using the 12x10-rod unit during the Gia Long period (incorporating the symmetrical axis S/N-0 combined with the one-rod grid)
 (Source: Author)

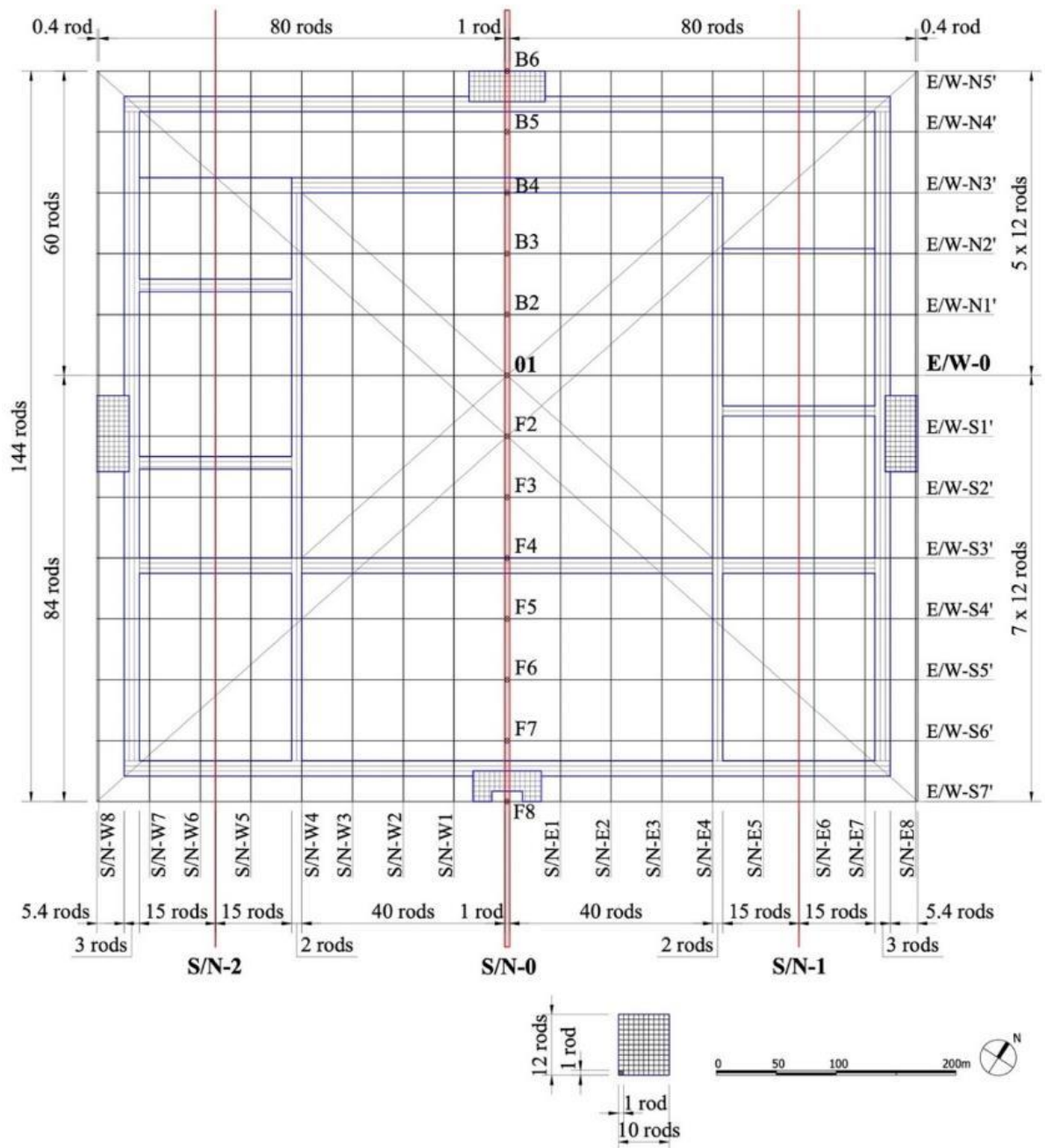


Figure 232: The grid system of the Hue Imperial City site plan used the 12x10-rod unit during the Minh Mang period (incorporating the symmetrical axis S/N-0 combined with the one-rod grid)
 (Source: Author)

6.3 Discussion on the site planning principles of Hue Imperial City

6.3.1 Principle of the “Twelve and Ten-unit” grid system applied for the design

From the above analyses, the study makes the following observations about the vertical axes of the HIC:

- The vertical and horizontal axes establishing the HIC site plan are formed from center 01 – the center of the Forbidden City;
- The vertical axis is the most important in organizing functions within the site plan, with three key vertical axes: the central axis S/N-0, the East axis S/N-1, and the West axis S/N-2, where the East and West axes are symmetrical across the central axis. Regarding the functional arrangement on the three axes within the main areas of the HIC, a general principle is to arrange the functions according to the priority of importance, from main to subsidiary, from front to back, with the most important and primary areas located to the South, decreasing in significance towards the North.
- The Emperor’s buildings are located at the center of the HIC. Therefore, it is situated between the center of the Forbidden City (01) and the center of the HIC (F2).
- In each enclosed area within HIC, this principle is reiterated, with the three main vertical axes reappearing to determine the placement of the buildings.

Regarding the horizontal layout of the HIC, the main horizontal axis passing through center 01 is used to determine the remaining horizontal axes. The primary horizontal axes are spaced 12 rods apart, and at the intersections of these horizontal axes with the central S/N-0 axis,

the most important buildings of the HIC or the defined positions of the walls of the main areas are located. Although the reason for the recurrence of the number 12 and its significance cannot yet be fully explained, it is undeniable that this particular number appears repeatedly. This recurrence may be related to spatial thinking or the significance of the number in the Nguyen Dynasty's perception, influenced by Chinese culture while also incorporating traditional Vietnamese cultural elements.

Based on the results of the vertical and horizontal analyses mentioned above, it can be seen that the 12x10-rod unit grid is the repeating unit on the site plan, with the horizontal axis being 10 rods and the vertical axis being 12 rods. This is a significant difference in the grid system established by the Nguyen Dynasty compared to the usual square grid system.

6.3.2 Principles of the symmetric-line axis and central-spatial axis

In the process of planning the HIC site plan, determining the positions of points and the lines/edges/axes is the initial step for positioning and measurement. Starting from the central point 01, the designers establish the S/N-0 axis, then proceed to determine the S/N-1 and S/N-2 axes by measuring distances. From these axes, they can define the North, South, East, and West boundaries of the main functional areas within the site plan. This method is fundamental for creating grid systems and performing measurements, and it is essential in site planning processes in general, not just for the HIC.

Based on the analysis results from sections 6.2.2 and 6.2.4, the presence of a one-rod thick axis demonstrates a distinct spatial thinking method in the overall layout of the Nguyen Dynasty, differing from traditional planning methods. Within the HIC site plan, two design concepts exist the symmetric-line axis and the central-spatial axis. The

symmetric-line axis plays a role in measurement, boundary definition, and intersection determination during design and construction processes. On the other hand, the central-spatial axis embodies a concept of space in architectural design, where the most significant buildings within the HIC are arranged, notably with the main space situated on this central axis.

With the typological characteristics of the HIC architecture consisting of two types of square and rectangular floors, the number of compartments of buildings along the horizontal axis is odd. Therefore, the main space of the buildings is always in the center, which aligns with the presence of the spatial axis in the Nguyen Dynasty architectural design. Besides, the notion of the number 12 is repeated at important positions on the central S/N-0 axis, and the total number of steps from F8 to B6 is 12x12 rods, which is also a unique feature in the Nguyen Dynasty architecture.

The central axis of the HIC, marked by the number 12, holds significant symbolic meaning for the Emperors and the Nguyen Dynasty court. It may have been influenced by East Asian culture or represent a metaphorical belief that the dynasty wished to express in their architectural design. This symbolism could include concepts related to time, such as the 12 months of the year, the 12-year cycle of the zodiac, the 12 hours in a day, as well as elements of Feng Shui, like the four directions and eight orientations (4+8).

The analysis results have opened up many avenues for further research to delve deeper into uncovering the principles of arranging buildings on the HIC site plan, including methods to determine the scale of the foundations, axes, orientations, and the central positions of destroyed buildings. Concurrently, it identifies the differences in the Nguyen Dynasty design thinking by applying design principles (the

symmetric-line axis) combined with the implicit cultural methods of East Asian and Vietnamese cultures (the central-spatial axis).

6.3.3 Principle of building location

Regarding the principles of arranging buildings within the HIC, the study examined the existing remnants and buildings formed during the Gia Long - Minh Mạng period, specifically focusing on the main buildings along the central axis S/N-0 and the two areas of “Thai Mieu” and “The Mieu” area. The study has identified several characteristics as follows:

- On the central axis S/N-0:
 - The main/important positions are spaced 12 rods apart (during the Gia Long period). During the Minh Mang period, the position of the “Thai Hoa Dien” palace was altered, resulting in the F5 point being shifted 0.5 rods from the center of the main space of the “Thai Hoa Dien” palace.
 - The building designated for the Emperor, the largest in the Forbidden City (“Can Thanh Dien” palace), is located between the center 01 of the Forbidden City and the center F2 of the HIC
 - The auxiliary buildings on the East and West sides of the central axis S/N-0 are symmetrically arranged around this central axis, with the foundation sizes determined based on the rod grid system.
- On “Thai Mieu” and “The Mieu” area (the Eastern and Western areas of the HIC):
 - The S/N-1 and S/N-2 axes are straight lines connecting the midpoints of the Southern and Northern walls;

- The S/N-1 and S/N-2 axes serve as the basis for forming the vertical grids, while the horizontal grids are determined from the Southern wall of the area;
- The main buildings in the area will be positioned along the S/N-1 and S/N-2 axes, with the main space located on the rod axis passing through the S/N-1 and S/N-2 axes;
- Auxiliary buildings on the East/West sides are established based on pairs of parallel axes (pairs of axes symmetrical to the S/N-1 and S/N-2 axes);
- The size of the building foundations is also determined based on this rod grid system.

6.3.4 Proposed design process of Hue Imperial City

Based on the above analysis, the study proposes a procedure for establishing the HIC site plan through the combination of the symmetric-line axis and the central-spatial axis as follows:

- Determine the center of the Forbidden City, which is position 01;
- Identify the central axis S/N-0 (North-South) and the horizontal axis E/W-0 (East-West);
- Determine the thickness of one rod on the central axis S/N-0;
- Use a 12x10-rod unit grid to establish the grid system (12 rods vertically and 10 rods horizontally), limiting the HIC boundary with a width-to-length proportion of the HIC being twice that of the Forbidden City. From the rod boundary on the S/N-0 axis to the Eastern/Western limit of the HIC is $(8 \times 10 + 0.4)$ rods.

From the E/W-0 axis to the Southern limit of the HIC is 7x12 rods, and to the Northern limit of the HIC is 5x12 rods;

- Along the S/N-0 axis, identify 12 key points to determine the scale of the main areas of the HIC: The Forbidden City including from point 01 to F4 defines the boundaries of the “Can Thanh Cung” residence, and from point 01 to B4 defines the boundaries of the “Khon Thai Cung” residence; From point F4 to F8 marks the boundary of “Ngoai Trieu” court area and the main gate of the HIC; From point B4 to B6 is the landscape area and the Northern gate of the HIC;
- Setting up transportation in the HIC: The vertical traffic along the 4 walls of the HIC is 3 rods, and the horizontal traffic along the North and South sides adjacent to the outer walls of the Forbidden City is also 3 rods; other roads measure between 2-2.5 rods;
- The Eastern and Western areas are determined by subtracting the road width to establish the boundaries of each area;
- During the Gia Long period, the perimeter of the HIC, the Forbidden City, and the “Thai Mieu” temple area were clearly defined, and the remaining areas were defined from the Minh Mang period;
- The symmetric axes S/N-1 and S/N-2 of the Eastern and Western areas are determined by connecting the midpoint between their southern and northern walls.

Through the analysis of the HIC site plan using the rod grid system, the study has identified a new aspect in the Nguyen Dynasty design thinking, particularly the role of the symmetric-line axis and the central-spatial axis in urban planning and architectural design. The combination

of these axes creates the distinctive rod grid system of the Nguyen Dynasty. Additionally, on the HIC site plan, there are three main axes: the central axis (S/N-0) and the pair of parallel axes (S/N-1 and S/N-2). This principle is consistently applied in surveyed functional areas: each enclosed area features a central axis with main buildings placed on it and complemented by auxiliary buildings arranged along the two parallel axes.

In further studies, if all areas are analyzed, it is likely to discover more detailed principles in locating buildings. Therefore, studying the rod grid system, the symmetric-line axis, the central-spatial axis, and the symmetric axis will help identify many relationships between the site plane and construction scale (area scale, level, or typological forms) and between the floor plan, elevation, and section. The study results in this chapter initially demonstrate these relationships through existing data. To delve deeper, combining archaeology and modern technology is necessary, as many areas in the HIC remain unsurveyed.

The central axis S/N-0 plays a role as the main design axis while also embodying the Nguyen Dynasty design philosophy. The repetition of 12 rods helped identify the 12x10-rod unit system in planning the HIC site plan. This discovery has generated many ideas for study through the proportions of 10 and 12, aiding in a deeper understanding of which cultural characteristics influenced the Nguyen Dynasty design thinking. It also reveals the distinct architectural features of the HIC compared to other Imperial Cities of the same period worldwide.

Chapter 7

Conclusions and Recommendations

7.1 Conclusions

The Nguyen Dynasty, consisting of 13 Emperors, ruled the final feudal monarchy of Vietnam for 143 years (1802-1945), with its capital in Phu Xuan (present-day Hue City, Thua Thien Hue Province). The Hue Capital City is composed of three enclosed walls: Hue Citadel, Hue Imperial City, and the Forbidden City. Among these, Hue Imperial City (which includes the Forbidden City) is the only place in Vietnam where a significant number of Imperial architectural monuments have been preserved.

During the Nguyen Dynasty, the country's history experienced numerous upheavals, with two main periods of political development: the period of independence (1802-1884), spanning from the Gia Long to the Tu Duc period, and the period of French colonization (1884-1945), from the Tu Duc to the Bao Dai period. The architecture in the HIC can be divided into five periods as follows: 1) the Gia Long period (1802-1820), which shaped the site plan and overall scale; 2) the Minh Mang period (1820-1841), which involved reforms and large-scale construction; 3) the Thieu Tri – Tu Duc periods (1841-1883), during which the overall scale was completed and buildings were restored; 4) the Thanh Thai – Duy Tan periods (1889-1916), which introduced European architectural styles and reduced the number of traditional buildings; and 5) the Khai Dinh – Bao Dai periods (1916-1945), which completed the transition to European architectural style. Thus, this thesis aims to study the original Nguyen architecture, only focusing on the architectural periods from the Gia Long to the Tu Duc period.

Within the HIC site plan, there are ten main functional areas: Gates and Podiums, "Ngoai Trieu" Court Area, "Thai Mieu" Temple Area, "The Mieu"

Temple Area, "Tu Cam Thanh" Forbidden City, "Noi Vu Phu" Royal Treasure Store; "Phung Tien Cung" Residence Area, "Co Ha Vien" Royal Garden Area, "Dien Tho Cung" Residence Area, and "Truong Sanh Cung" Residence Area. They are enclosed by a surrounding wall (except for the Gates and Podiums), with the primary orientation facing Southeast (except for the "Truong Sanh Cung" Residence Area, which faces East). The main buildings of each functional area are aligned along the North-South axis. In the overall layout of the HIC, there is one central axis running North-South, on which the two most important areas of the HIC, the "Ngoai Trieu" court area and the Forbidden City, are situated. To the East and West, two parallel axes are symmetrically aligned with the central axis. Based on these three axes, the functional areas in the HIC are symmetrically arranged, with the main buildings of each area positioned along these axes. Furthermore, this thesis indicates that there were approximately 115 buildings existing during the Tu Duc period (except for one area within the Forbidden City; recording was prohibited by the Nguyen Dynasty, making an accurate inventory impossible). From this, the thesis compiles a comprehensive database of architectural information, including historical documents, previous studies, archaeological findings, drawings, old photographs, old maps, current photographs, and the condition surveys of each functional area.

Through data analysis, the thesis establishes three criteria for determining architectural typology: (1) criteria for functions and uses, (2) criteria for building names, functions, and locations, and (3) criteria for building hierarchy based on a combination of building information (name, function, and location) and timber frame structure (plan, section, and elevation). The results indicate that the architecture of the HIC has 20 architectural name types and 8 hierarchical levels, with its functions divided into four main groups: Worship buildings, Administrative buildings, Residential buildings, and Other facilities. For each hierarchical level, the thesis clarifies the relationships between name, function, location, and the structure of the timber frame (plan, section, and elevation). The

research findings show that HIC architecture is developed based on two plan shapes: square (Type A) and rectangular (Type B), with the main buildings in the HIC utilizing Type B. Within Type B, high-level architecture for the Emperor and the Nguyen Dynasty court falls under Types B2.1.2, B2.1.3, and B2.1.4, known as Palaces (A, B, C) and Temples. Type B2.2 is characterized by single structures with 2-3 stories, classified as Pavilions and Shrines (A). Regarding the study of architecture, the thesis has developed reference tables on typology, architectural typology diagrams, and the architectural characteristics of the HIC. This provides crucial information for identifying the original architecture of the Nguyen Dynasty and serves as an important scientific basis for the research and reconstruction of destroyed buildings.

Additionally, the study clarifies the design principles of the HIC site plan based on the method of a square grid system, a method proposed for use in the site plan of ancient capitals worldwide, and some studies in Hue. The study proposes a square grid system using the traditional Nguyen Dynasty unit of measurement (one rod equals 4.24 meters), with main vertical and horizontal axes, establishing the grid system centered on the Forbidden City. The analysis identifies important findings as follows: 1) the design approach for the HIC's site plan is based on the combination of the symmetric-line axis and central-spatial axis. The symmetric-line axis plays a role in the measurement and construction positioning, while the spatial axis contributes to spatial composition and the establishment of the HIC's scale; 2) the principles and process of establishing the HIC's site plan using a 12x10-rod grid system; and 3) the principles of building placement along the main axis of the HIC and in two typical areas, the "Thai Mieu" temple and the "The Mieu" temple. The design solution employing the symmetric-line axis, central-spatial axis, and the 12x10-rod grid system is a significant feature identified in the HIC site plan.

In summary, the study not only provides scientific data for researchers' reference but also opens up many avenues for in-depth studies on the architecture

of the HIC. This includes further research into each architectural hierarchy or type (Type A, B) in terms of architectural design methods, the relationship between the proportions of the plan, section, elevation, decorative details, and materials used. On a broader scale, this typology-based research method can be applied to architectural types outside the HIC, such as tombs or pagodas, thereby establishing a comprehensive understanding of the characteristics and design principles of all architectural types of the Nguyen Dynasty. Regarding the design principles of the HIC's site plan, the study suggests using the proposed grid system method to further analyze the design principles of each main functional area within the HIC. Additionally, the grid system can be applied to analyze the layout of the Hue Citadel to explore the meanings and design principles of the Hue Citadel – Hue Imperial City – the Forbidden City complex.

The architecture of the HIC is a crucial part of the Complex of Hue Monuments. Although it was recognized as a UNESCO World Heritage Site in 1993, many issues related to its planning, architecture, and the metaphorical meanings in the Nguyen Dynasty design thinking need further study. Clarifying these features will not only uncover the characteristics of the original Nguyen architecture but also highlight the differences between traditional Vietnamese architecture and that of other countries. Through this study, the thesis has contributed comprehensive findings on the architectural design regulations of the Nguyen Dynasty, including the typology and the design principle of the site plan. It provides valuable knowledge for teaching architectural history at the university and restoring and preserving architectural heritage in Hue City. Additionally, the study stimulates and opens up many avenues for future studies, contributing to developing a more complete and in-depth system of traditional Vietnamese architectural data.

7.2 Recommendations

Through the process of researching this thesis, the author has recognized that the study of architectural heritage in Hue City still faces numerous challenges in various aspects, including research data, access to monuments, and the integration of interdisciplinary scientific research. Therefore, through this research, the author wishes to put forward several proposals to agencies, organizations, or centers responsible for management and research development, with the aim of supporting the preservation of monuments and contributing to the comprehensive and in-depth development of data on Vietnam's architectural history in the future:

(a) For the preservation of architectural monuments:

- Inventory areas that have not yet undergone archaeological study and prioritize archaeological work in key areas, as archaeological results are one of the important scientific foundations when researching architectural monuments;
- Digitize all current monuments, inventory, and evaluate the remaining original monuments, whether partially original or replaced, and document information about previous restoration efforts;
- Establish a national architectural monument data center, which includes historical information, archaeological results, collections of old photographs, old maps, digitized works (2D, 3D), domestic and international research projects, measurement and survey results of current conditions, and restoration information;
- Create an interdisciplinary research center consisting of experts in history, cultural studies, archaeology, architecture, construction, interior design, or fine arts while facilitating researchers' access to

the aforementioned open data to foster a research community that can exchange expertise and produce high-value scientific research outcomes.

(b) For the education of architectural history:

- Establish a typology identification system for traditional architecture in specific regions, using Hue's architecture as a pilot study and continuing research for other regions. This architectural typology system will help learners more easily approach architectural monuments and identify the characteristic architecture of each region, period, or type;
- Develop architectural history courses that combine theory with experiential field trips and invite experts from related scientific fields to exchange professional perspectives.

(c) For the management of monuments and tourism development:

- Provide training and share knowledge with relevant organizations, such as monument management authorities, teachers, and tour guides, based on research results on architectural history. Develop architectural models using VR (virtual reality) or AR (augmented reality) technology, particularly VR models for areas that have been destroyed, to help disseminate historical, architectural, and cultural information to the community;
- Conduct comprehensive planning studies for monument areas, ensuring a balance between management directions for architectural heritage conservation zones and new urban areas to promote sustainable tourism and economic development.

The recommended actions, along with the study results of this thesis, will not only contribute a significant amount of previously unstudied architectural information on the Hue Imperial Heritage in particular and the Complex of Hue Monuments in general, but they could also promote the preservation of architectural heritage, build a database for the education of architectural history, and encourage Vietnamese people to be proud of their traditional architecture.



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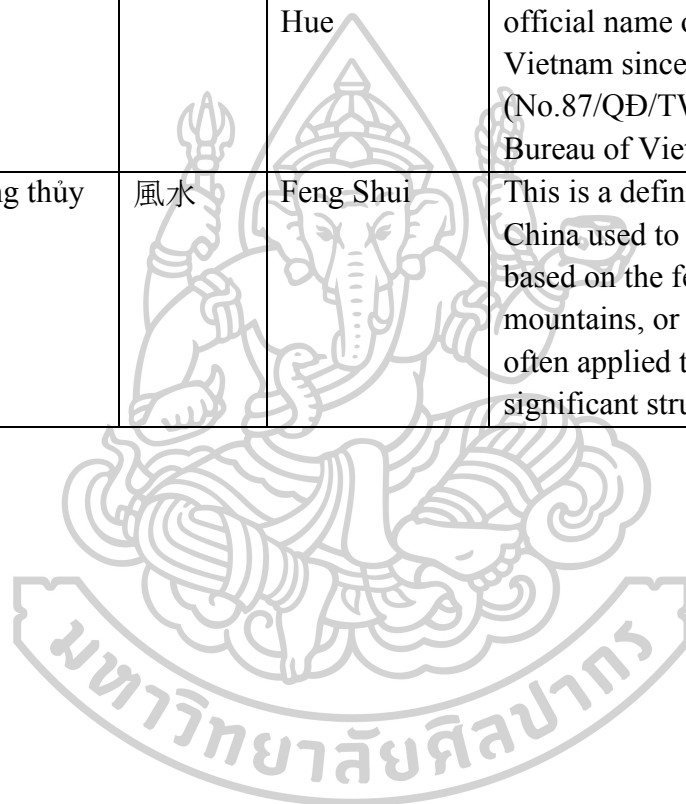
APPENDIX

Explanations of names and places

No.	Full Name			Explanation
	Vietnamese	Chinese	English	
1	Cộng Hòa Xã Hội Chủ Nghĩa Việt Nam		Socialist Republic of Vietnam	The official name of the country has been from 1976 to the present. People often refer to it simply as Vietnam (Vietnam Academy of Social Sciences & Institute of History, 2017a, p. 101)
2	Đại Việt	大越	Dai viet	Da Viet was the official name of the country during the periods 1054-1400 and 1428-1804 (The National Department of History of Nguyen Dynasty, 1998, pp. 133, 393)
3	Việt Nam	越南	Vietnam	Vietnam was the official name of the country during the Nguyen Dynasty from 1804 to 1838 (The National Department of History of Nguyen Dynasty, 2002b, p. 588)
4	Đại Nam	大南	Dainam	Dai Nam was the official name of the country during the Nguyen Dynasty from 1838 to 1945 (The National Department of History of Nguyen Dynasty, 2007b, p. 276)
5	Huế		Hue	The “Hue” is a misreading of “Hoa” from “Thuan Hoa” (the name of the region during the Nguyen Lords’ period, which later became the capital of the Nguyen Dynasty). Today, people commonly use “Hue” when referring to Thua Thien Hue province.
6	Kinh Sư	京師	Capital	Vietnam's capital during the

				<p>Nguyen Dynasty (1802-1945) was located in what is now Thua Thien Hue province.</p> <p>It represents both a geographic and an administrative concept. (The National Department of History of Nguyen Dynasty, 1960, pp. 15-16)</p>
7	Kinh Kỳ	京畿	Capital	<p>It was the concept of a cultural region, also known as Kinh Su (京師)</p>
8	Dinh Quảng Đức/ Phủ Thừa Thiên	廣德營/ 承天府	Quang Duc shire/ Thua Thien prefecture	<p>The name of the capital under the Nguyen Dynasty's administrative system:</p> <p>1802-1822: Quan Duc Shire; 1822-1945: Thua Thien Prefecture. (Dao, 2005, p. 210)</p>
9	Kinh Đô	京都	Capital city	<p>It was the capital city of Vietnam during the Nguyen Dynasty.</p>
10	Kinh Thành/ Thành Nội	京城	Citadel	<p>The citadel was the core urban area of the capital city, enclosed by the first wall layer in the "Vauban" style. It contained government and military offices of the Nguyen Dynasty, such as departments or institutes, and housing for Mandarins and citizens.</p>
11	Hoàng Thành/ Đại Nội	皇城/ 大內	Imperial City	<p>The Imperial City was the area enclosed by the second rectangular wall, located within the Citadel. This area was the most important, and the Emperor, the royal family, and government officials used it.</p>
12	Tử Cấm Thành	紫禁城	Forbidden City	<p>The Forbidden City was the area enclosed by the third wall within the Imperial City. It was a highly restricted area used exclusively by the Emperor, the royal family, and Nguyen's cabinet.</p>

13	Kinh đô Phú Xuân (Huế)	京都富春 (Hue)	Phu Xuan Capital City (Hue)	“Phu Xuan” was the name of the capital city of Vietnam under the Tay Son Dynasty (1788-1802).
14	Kinh đô Huế	京都 (Hue)	Hue Capital City (Hue)	“Hue” was the name of the capital city of Vietnam under the Nguyen Dynasty (1802-1945).
15	Cố đô Huế	古都 (Hue)	Hue ancient Capital City	The concept refers to the former capital city under the Nguyen Dynasty (1802-1945).
16	Thừa Thiên Huế		Thua Thien Hue	Thua Thien Hue has been the official name of a province in Vietnam since 1989 (No.87/QĐ/TW of the Political Bureau of Vietnam)
17	Phong thủy	風水	Feng Shui	This is a definition from ancient China used to orient buildings based on the features of water, mountains, or a compass. It is often applied to spiritually significant structures.



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