

## Discovery on the design and planning principles of the mausoleum of Emperor Minh Mang (1791-1841), Nguyen dynasty, Vietnam

Khám phá mới về nguyên tắc quy hoạch mặt bằng tổng thể lăng của Hoàng đế Minh Mạng (1791-1841), triều Nguyễn, Việt Nam

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### Abstract

Conservation of architectural heritage is a conscious conservation activity, contains not only the means of carrying out the restoration projects but also conserving of the whole knowledge and concepts concerning those heritages, in order to guarantee for the development of national identity in architecture based on its tradition. This paper shows a first result of knowledge achievements concerning the Complex of Hue Monuments through analyzing the site planning principles of the mausoleum of Emperor Minh Mang, Nguyen dynasty (1802-1945) in Viet Nam.

This paper bases on the reliable historical documents of the Nguyen dynasty and the database sources which provided by the Heritage-Waseda (Tokyo, Japan) and the Hue Monuments Conservation Center (Hue, Viet Nam) in order to study about the construction and restoration history, planning principles and its Feng-shui (geomancy) conception that have been applied for designing and the construction of the Mausoleum. Through this study, the designing idealization and site planning principles have been defined, including principles of symmetric, grid-rods advance equally and construction unit that gives an effective approaching to identify the specific architectural feature in designing principle of the mausoleum of Emperor Minh Mang.

**Keywords:** Duy Tan University, Emperor Minh Mang, Hue Monuments, World Cultural Heritage.

### Tóm tắt

Bảo tồn di sản kiến trúc là hoạt động bảo tồn hữu thức, không chỉ mang ý nghĩa thực hiện các dự án trùng tu mà còn bao hàm ý nghĩa bảo tồn toàn bộ tri thức và khái niệm liên quan đến các di sản đó, nhằm bảo đảm cho sự phát triển bền vững của bản sắc dân tộc trong kiến trúc. Bài báo này báo cáo kết quả nghiên cứu bước đầu những thành tựu tri thức liên quan đến Quần thể Di tích Cố đô Huế thông qua việc phân tích nguyên tắc quy hoạch mặt bằng tổng thể lăng của Hoàng đế Minh Mạng triều Nguyễn (1802-1945) ở Việt Nam.

Bài báo này dựa trên việc khảo cứu các tư liệu lịch sử đáng tin cậy của triều Nguyễn và các nguồn cơ sở dữ liệu do Heritage-Waseda (Tokyo, Nhật Bản) và Trung tâm Bảo tồn Di tích Cố đô Huế (Huế, Việt Nam) cung cấp để nghiên cứu về lịch sử xây dựng, trùng tu, các nguyên tắc quy hoạch và quan niệm Phong thủy (phong thủy) được áp dụng cho việc thiết kế và xây dựng lăng của Hoàng đế Minh Mạng. Qua nghiên cứu này, các nguyên tắc lý tưởng hóa thiết kế và quy

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hoạch địa điểm đã được xác định bao gồm nguyên tắc đối xứng, các ô lưới trọng, nguyên tắc tịnh tiến và đơn vị thiết kế thi công triển khai nhằm đưa ra phương pháp tiếp cận hiệu quả để xác định đặc điểm kiến trúc cụ thể trong quy hoạch xây dựng lăng của Hoàng đế Minh Mạng.

*Từ khóa:* Đại học Duy Tân; hoàng đế Minh Mạng; Tượng đài Huế; di sản văn hóa thế giới.

## **1. Introduction of the mausoleum of Emperor Minh Mang**

### ***1.1. The values of the mausoleum of Emperor Minh Mang***

In 1802, Nguyen Anh<sup>1</sup> (the descendant of the Nguyen family) proclaimed Emperor with the date of Gia Long, restored the career of Nguyen's family after the long civil war of Vietnam and established the Nguyen Dynasty, brought back a hundred years of peaceful period for Vietnam in 19<sup>th</sup> and early-half of 20<sup>th</sup> century.

Emperor Minh Mang or Nguyen Thanh To (Nguyen Phuc Dam, the fourth son of Emperor Gia Long and Thuan Thien Cao Hoang Hau Queen. He was born in May 1791, died in January 1841, the second Emperor of the Nguyen Dynasty from 1820 to 1841 (Fig.1).

The mausoleum of Emperor Minh Mang (*henceforth the Mausoleum*) is located at the foot of Cam Ke mountain in An Bang village, Huong Tho commune, Huong Tra district, Thua

Thien Hue province nowadays, 12 km far from Hue city toward to the southwest side (Fig.3). In the 21<sup>st</sup> year of Minh Mang period (1840), the name of Cam Ke mountain<sup>2</sup> was changed to Hieu Son mountain, and in the 1<sup>st</sup> year of Thieu Tri period (1841), the mausoleum was named as Hieu Lang mausoleum<sup>3</sup>.

After 7 years since mounted the throne, Emperor Minh Mang sent the great mandarins and staffs of Kham Thien Giam (Department in charge of cosmology and calendar of Nguyen court) to search for the legend-land as the "*Van Nien Cat Dia*" (land for ten thousand year) to build his mausoleum. But it was not until the beginning of the year of Rat (1840) in lunar calendar, Le Van Duc great mandarin chose a good land located on the eastern side of Cam Ke mountain, facing the Bang Lang rivers junction, where met the Fengshui requirement (influenced from ancient Chinese civilization) necessary for the construction of Emperor's mausoleum<sup>4</sup>.

<sup>1</sup> Emperor Gia Long (8/2/1762 - 3/2/1820), family full name is Nguyen Phuc Anh was the first Emperor who established the Nguyen Dynasty, dated 1802 - 1820".

<sup>2</sup> National Department of History, Nguyen Dynasty, *Dai Nam Thuc Luc Chinh Bien*, volume 5, pp. 680, Education Publisher, Ha Noi, 2007.

<sup>3</sup> National Department of History, Nguyen Dynasty, *Dai Nam Thuc Luc Chinh Bien*, volume 6, pp. 269, Education Publisher, Ha Noi, 2007.

<sup>4</sup> National Department of History, Nguyen Dynasty, *Dai Nam Thuc Luc Chinh Bien*, volume 5, pp. 680, Education Publisher, Ha Noi, 2007.



Fig. 1. Image of Emperor Minh Mang (hand sketch)

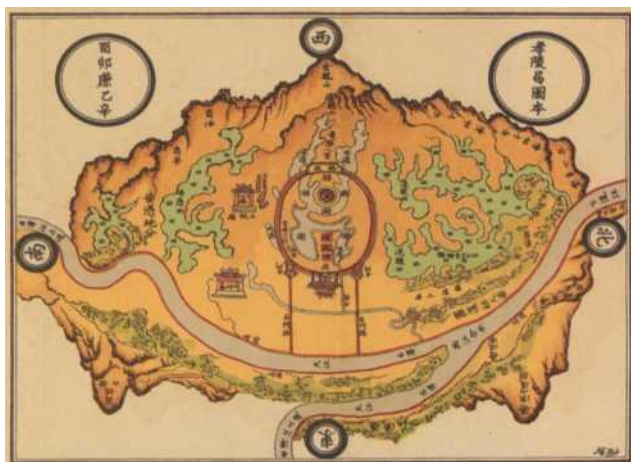


Fig.2. Layout of the Fengshui elements

In terms of geographical geomancy from macrocosmic view, land of La Khe hamlet (An Bang village, Huong Tho commune, Huong Tra district) that great mandarin Le Van Duc has found, approved by Emperor Minh Mang, really had enough Fengshui elements and hydro-geography required for the construction of the Mausoleum. Seen from the macrocosmic view, this land has Bang Lang river-junction as the “Minh Duong” front magical landscaping featured by wide water area, Phu Son mountain (in Huong Thuy district) described as the “Binh Phong” natural screen in front, Ngoc Tran mountain described the “Thanh Long” blue dragon on the left, Ton Son mountain described the “Bach Ho” white tiger on the right, Hieu Son main mountain as the “Huyen Vu” black turtle on the back, and the Mausoleum located at central position of the chosen land (Fig.2). This feature of land well known as “*Son hoi, Thuy tu*”

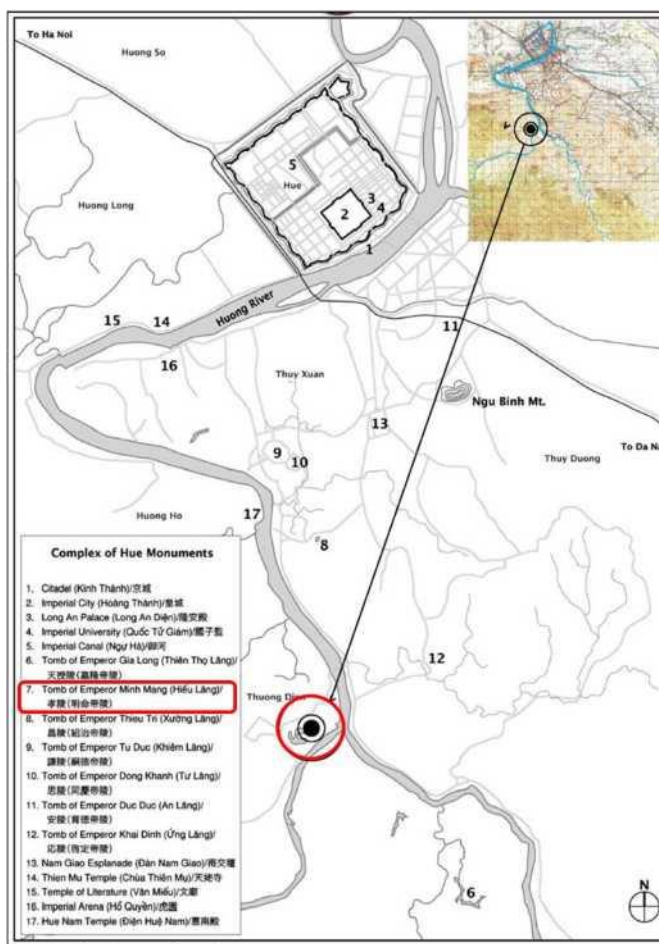


Fig.3. Location of the Mausoleum

(group of mountains turn back gathering water together). Seen from microcosmic view, this land has a shape of water-stream known as “*Ta Sa Tac An Chi Huyen Thuy*” (water run down from left in the shape of Z character constitute a wide water area in front of a chosen land) those satisfied the requirements of the Feng-shui mention above.

Backside of the Mausoleum stands against the Hieu Son mountain, frontside faces to the Huong Giang river, total area of land is 23.6 ha, outskirt is 1.878m including 1 grave, 17 buildings, 7 gates, 5 bridges, 2 ponds, 2 courtyards, 2 landmark-towers, water inlet sluice, stone embankments and boundary walls. The main items are arranged symmetrically on the central spatial area (according East-West direction), other component items are scattered layout on the surrounding hills or nearby the lakes (Fig.4, 5)

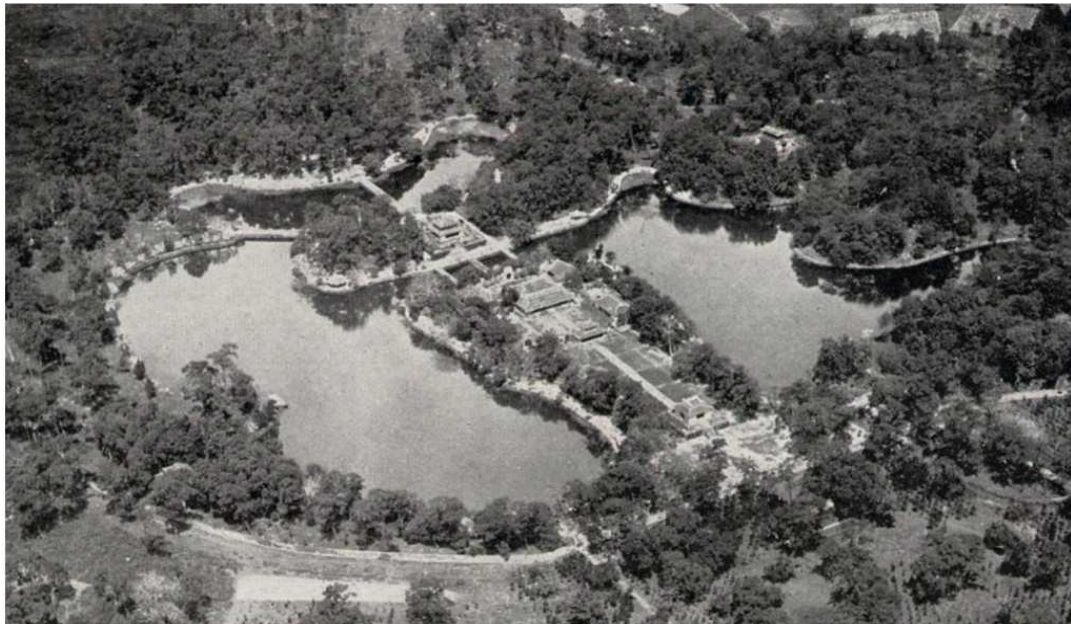


Fig. 4. Aerial old-photo of the Mausoleum of Emperor Minh Mang

Mai Khắc Ung, *Mausoleum of Emperor Minh Mang*, Association of History, Thua Thien Hue province, 1993, pp. 89-91; Thieu Vi Hoa, *Encyclopedic of Fengshui*, Thoi Dai Publisher, 2012.

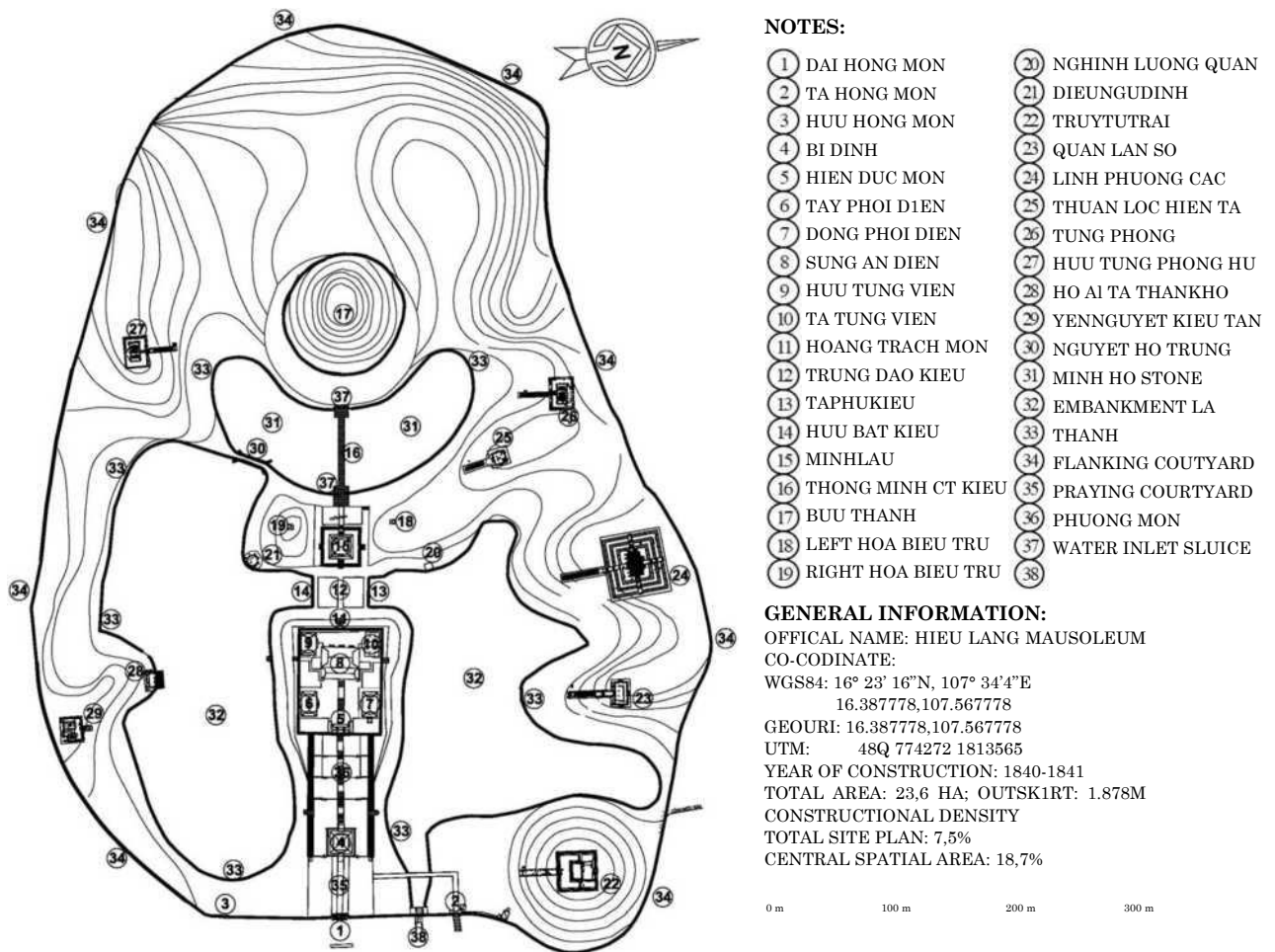


Fig.5. Master Site Plan of the Mausoleum of Emperor Minh Mang

Highlight of the construction plan of the Mausoleum can be identified by the smooth combination between architecture (artificial factors) and landscape (natural factors), the harmony of the ratio between the height architecture and the master site plan, the harmony between spiritual space and ecological landscaping. The Mausoleum is a completion in the majestic posture, concretizing the will of Emperor Minh Mang and the nation's potential with a great project of constructing the largest and most monumental mausoleum in the feudal and monarchical dynasties of Vietnamese's history from the time of founding the country to the time of giving the name of Dai Nam country under Minh Mang period.

### **1.2. History of construction and restoration**

After approving the construction plan of his mausoleum, Emperor Minh Mang gave an order to measure and draw the map of chosen land, and propose an architectural construction plan. Day of Ox, August 1804 was officially chose to start the construction work of the Mausoleum<sup>1</sup>. The first batch include mobilized 3.000 civilians plant trees, burn grass, level the yard and dig the lakes. Construction work of the Mausoleum began not long before Emperor Minh Mang was seriously illness, and on December 28<sup>th</sup>, 1840, he was died<sup>2</sup>. Emperor Thieu Tri ascended the throne. February, 1841 he sent nearly 10.000 soldiers to continue the construction work according to his father's approached designing plan<sup>3</sup>.

According to the historic documents, the end of June, 1841, main items of construction works were completed. On July 9<sup>th</sup>, 1841, the

Nguyen court held the burial ceremony of Emperor Minh Mang, then the body of Emperor was put on burial in the grave. If, excluding 4 months preparing of construction site at the end of 1840 under Minh Mang period, the main items of the Mausoleum were mainly built continuously and urgently within 5 months from February, 1841 to July, 1841 and completed in 1843 under Thieu Tri period. The historic sources of the Nguyen dynasty didn't seem to mention the works of repairing and restoration of the Mausoleum after the completion. However, it can be considered that the remaining of the Mausoleum up to nowadays is original that was built from the Minh Mang period to Thieu Tri period.

### **2. Literature reviews**

The previous studies related to this study topic include four domestic scholars and three foreign scholars. The domestic scholars have published the books and journals while the foreign scholars are master students and conservation experts who had established the master theses and restoration reports concerning the imperial mausoleums in Hue.

The domestic studies have provided historical document sources, calendaring construction, and cultural, artistic, and architectural values at the remaining imperial mausoleums of the Nguyen dynasty. These studies have proved that the imperial mausoleum in Hue is the most brilliant achievement of ancient Vietnamese architecture. However, these studies have not yet reached the scope of overall research, looking at a comprehensive assessment of the complex of imperial mausoleums of the Nguyen dynasty in Hue as well as have not solved the fundamental issues of architecture such as site planning principles, architecture designing method, construction technique and principles of surrounding landscape. The

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<sup>1</sup> National Department of History, Nguyen Dynasty, *Dai Nam Thuc Luc Chinh Bien*, volume 5, p. 780, Education Publisher, Ha Noi, 2007.

<sup>2</sup> National Department of History, Nguyen Dynasty, *Dai Nam Thuc Luc Chinh Bien*, volume 5, p. 889, Education Publisher, Ha Noi, 2007.

<sup>3</sup> National Department of History, Nguyen dynasty, *Dai Nam Thuc Luc Chinh Bien*, volume 6, p. 51, Education Publisher, Ha Noi, 2007.

foreign studies related to the imperial mausoleum of the Nguyen dynasty adopted the perspective of architectural history and architectural techniques mainly from researchers and graduate students of Japanese universities who carried out the studies in the period from 1994 to 2005 within frame-work of the cooperation program between Japan and Vietnam. These studies had provided a relatively completed view of site planning principle of the imperial mausoleums under Nguyen dynasty during the period when Vietnam country was still independent and autonomous, which helps to identify the features of the imperial mausoleums in the first half of the 19<sup>th</sup> century.

### 3. Study results

#### 3.1. Regarding to measurement units used for planning of the Mausoleum

The source of “Han-Nom” literature published in 1902 under Thanh Thai period notes that<sup>4</sup>: “1 feet of Quan Dien Xich equal 1.1 of Quan Moc Xich; 1 feet of Kinh Xich equal 0.9 of Quan Moc Xich that northern were used; 1 meter of western rule equal 2.35 feet of Quan Moc Xich of Nguyen dynasty. Accordingly, 1 feet of Quan Dien Xich rule = Quan Moc Xich rule x 1.1; 1feet of Kinh Xich rule = Quan Moc Xich x 0.9; 1meter of Western rule (1m = 100cm = 1000mm) = Quan Moc Xich rule x 2.35. Thus, Quan Moc Xich = 426mm (1000mm 2.35 = 425.5mm), Quan Dien Xich rule = 468mm (425mm x 1.1 = 468.05mm), Kinh Xich rule = 383mm (425mm x 0.9 = 382.5mm)”.

As mentioned above, it can be considered that there were 03 rulers were used for the land measurement, construction and site planning

under Nguyen dynasty including: Quan Dien Xich rule (1 feet = 466 ~ 468mm), Quan Moc Xich rule (1 feet = 424 ~ 426mm) and Lu Ban Xich (1 feet = 382 ~ 383mm). Ratio among them relation would be: 466:424:382 (or 468:426:383) = 11:10:9.

Thus, it can be considered that the ruler was used for planning and construction of the Mausoleum of Emperor Minh Mang would be the Lu Ban Xich rule with the length of 1feet = 382 ~ 383mm which was deployed from the Quan Moc Xich rule in their comprehension proportional relation: 11:10:9<sup>5</sup>.

#### 3.2. Regarding to the databases used for analyzing

To analyze the site planning principle of the Mausoleum, we used the measurement data of Waseda University in cooperation with the Hue Monuments Conservation Center that implemented from 2002-2006. The drawing of site plan of the Mausoleum is digitalized based on the measurement results recorded by two instrumentation equipment composed as Optimal Measurement Machine and GPS in matching with the Satellite photo of the Mausoleum (Fig.7).

In addition, in order to measure the objects in detail, we use the hand-sketch and manual measurement methods accompanied with recording by using digital camera. Sheets of measurement data (database) is gathered and analyzed by the Microsoft Excel, then converted into 2D drawing data by Auto CAD 2014 software. The error on measurement data by the equipment is tolerant within 5mm - 8mm, database analyzing tolerance within 10mm - 15mm can be accepted.

<sup>4</sup> Dang Xuan Bang, *Nam Phuoc Danh Vat Bi Khao*, volum 3 (quyen ha), chapter Ho Cong, p. 18a, lines 3-4, Thien Dinh Dinh Ban Publisher, Thanh Thai period, 1902 (source: Nationall Library of Viet Nam).

<sup>5</sup> Le Vinh An & Nguyen Tien Binh, *New discoveries on the Mausoleum of Emperor Minh Mang and the origin of the Lu Ban rule of Nguyen Dynasty*, Magazine of Research and Development, ISSN 1859-0152, volume 113/2014, pp. 21-43



**Fig.7.** Combination data of Optimal Measurement Machine and GPS system on the Satellite photo

### **3.3. Characteristics in site planning principle of the Mausoleum**

The sources of Nguyen dynasty when describing the whole of the Mausoleum all started from the Buu Thanh grave (perhaps, because this position was most important for construction where keeps the coffin of Emperor Minh Mang) located in the West toward the East along the Dung Dao central axis (*henceforth, the Central axis*), then developed to the left side and right side in which the Hoa Bieu Tru landmark-towers (*henceforth, the Landmark-towers*) are mentioned as an important item of the description that defines the central spatial axis of the whole area from the West (back side) towards the East (front

side) where placed the main items sequentially: Buu Thanh grave (*henceforth, the Grave*), Buu Thanh Mon entrance of the Grave (*henceforth, the Entrance*), Tam Tai Son mountains where locates the Minh Lau pavilion (*henceforth, the Pavilion*), Hoa Bieu Tru landmark-towers (located on Thanh Son left mountain and Binh Son right mountain), Phung Than Son mountain where locates the Tam Dien worship area (*henceforth, the Worship area*) consists of the Sung An Dien main temple (*henceforth, the Main temple*) and the Hien Duc Mon main gate (*henceforth, the Main gate*), Bai Dinh praying courtyard (*henceforth, the Praying courtyard*), Trung Dai podium where locates the Bi Dinh stele hall (*henceforth, the Stele hall*), San Chau

flanking courtyard (*henceforth, the Flanking courtyard*) and Dai Hong Mon front gate (*henceforth, the Front gate*)<sup>1</sup>. This information is a useful suggestion for determining the basis axes and the grids for carrying out the analysis explained below (Fig.5, 7, 8).

In this analysis, we use the grid of rods (*henceforth, the Grid-rods*) with value of 1 rod = 3820mm (rods of the Lu Ban Xich rule). On

the one hand, the rods are deployed from the axis-line passing through centre to the centre of the Landmark-towers (*henceforth, the axis of Landmark-towers, representation the North-South direction*) along on the Central axis (*representation the East-West directions*). On other hand, the rods are developed from the Central axis along on the axis of Landmark-towers. The analysis results are assumed below:

3.3.1. Symmetric principle across the Central axis and the axis of Landmark-towers

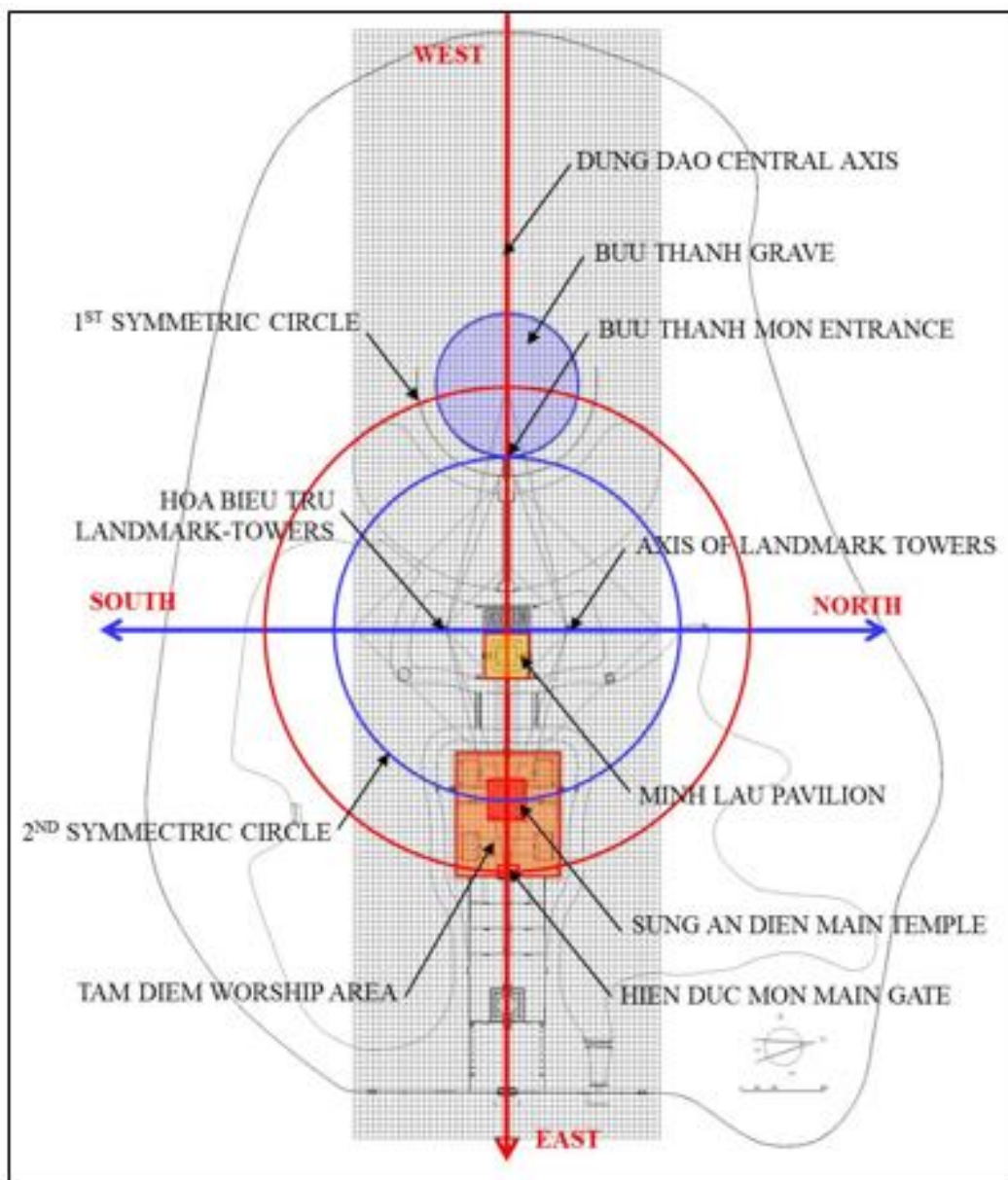


Fig.8. Map of Grid-rods analyzing on the whole central spatial area of the Mausoleum

<sup>1</sup> Cabinet of Nguyen Dynasty, *Kham Dinh Dai Nam Hoi Dien Su Le*, Cong Bo, volume 13 (set 216), pp. 322-324, Thuan Hoa Publisher, Hue, 1993.



The Central axis of the Mausoleum has been defined as the East-West direction facing to the East<sup>1</sup>. According to the North-South direction of symmetry across the Central axis, the 10<sup>th</sup> rod developed from the Central axis towards its both left and right hand-sides would be position of the two Landmark-towers (thus, the centre-centre distance of the two Landmark-towers is 19 rods) placed on the Thanh Son left-mountain and Binh Son right-mountain of the Tam Tai Son mountain; The 8<sup>th</sup> rod would be left wall-edge (northern edge) and right wall-edge (southern edge) of the Worship area (thus, the width of the Worship area is 16 rods); The 3<sup>rd</sup> rod would be left wall-edge and right wall-edge of the foundation of the Main temple (thus, the width of foundation of the Main temple is 6 rods), and 11<sup>st</sup> rod ends the northern and southern edges of the Grave (thus, diameter of the Grave is 22 rods).

The East-West direction from the axis of the Landmark-towers to the Entrance = Distance from that axis to the central position of the Main temple = 27 rods (means location of the Entrance and central position of the Main temple placed symmetrically across the axis of the Landmark-towers); Distance from the axis of Landmark-towers to the central position of the Grave = Distance from that axis to the central position of the Main gate = 38 rods

(means central position of the Grave and center position of the Main gate placed symmetrically across the axis of the Landmark-towers); Distance from the axis of Landmark-towers to the eastern edge of the Grave = Distance from that axis to the western edge of the foundation of the Main temple = 24 rods; Distance from the Central axis to outer edge of the Landmark-towers = Distance from the axis of Landmark-towers to eastern edge of the Pavilion approached from the East side (Fig.8).

Therefore, it can be considered that the axis of Landmark-towers and the Central axis must be the basic axes for planning of the main items of the Mausoleum thought as a method of symmetric planning on the both of North-South and East-West directions, which is very unique characteristic of the Mausoleum.

The Buu Thanh grave used for burial of the body of Emperor Minh Mang (Fig.9), the Sung An Dien main temple used for worship of the Emperor's soul (Fig.10). The symmetrical planning of the Buu Thanh Mon entrance and the central position of Sung An Dien main temple, the Hien Duc Mon main gate and the central position of the Buu Thanh grave in pairs across the axis of Landmark-towers those well-seen from Minh Lau pavilion must be the intentional planning idea (Fig.11).



**Fig.9.** Buu Thanh grave seen from Minh Lau pavilion



**Fig.10.** Sung An Dien temple seen from Minh Lau pavilion

<sup>1</sup> According to the measurement results of the Institute of UNESCO World Cultural Heritage, Waseda University (Tokyo, Japan) from 2002-2006.



**Fig.11.** Minh Lau pavilion (East view)

There seem to be a balance of real and virtual, negative realm and positive realm, body and soul. The entrance of the Worship area (Hien Duc Mon main gate) where the emperor's soul resides is in balance with the place where the Emperor's body is buried (Buu Thanh grave), entrance of the place where the Emperor's body is buried (Buu Thanh Mon gate) is in balance with the place where the Emperor's soul resides (Sung An Dien main temple). Therefore, if the Dung Dao central axis according East-West direction is considered as the axis of construction, then the axis of Landmark-tower according North-South direction would be the axis of spirit. Perhaps, this is an intentional expression of the expective static balance between body and soul of the Emperor Minh Mang upon returning to eternity. This expectation was also a common mentality of the people in ancient Southeast Asia.

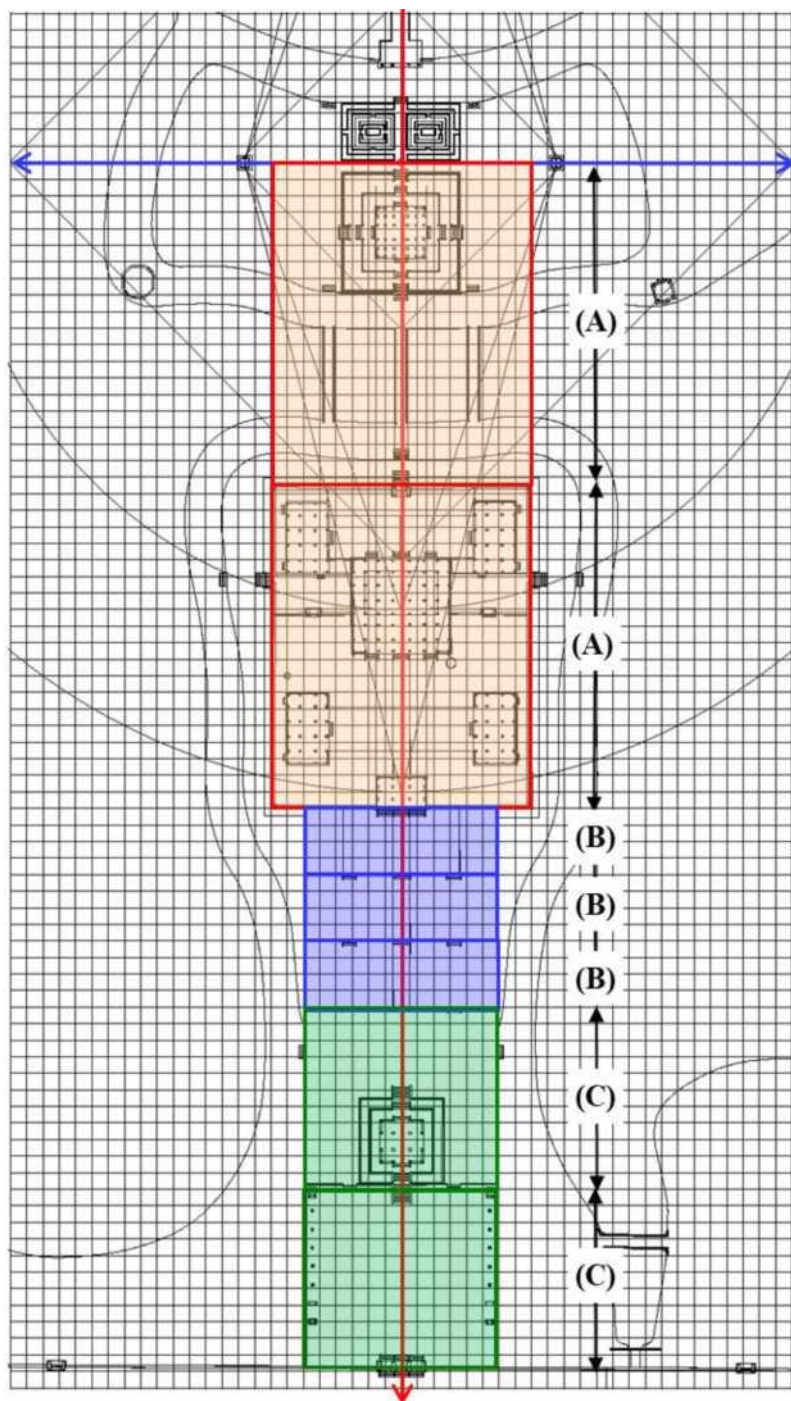
### 3.3.2. Principle of Grid-rods advance equally along the Central axis

As the above-mentioned, the Central axis according East-West direction on which the important items are arranged sequence from the West (back side) towards the East (front side).

Other component items are composed of the Dong Phoi Dien left-temple, Tay Phoi Dien right-temple, Dong Phoi Vien left-hall, Tay Phoi Vien right hall (*henceforth, the 04 component buildings*), the Landmark-towers, the two rows of stone-statue of the Flanking courtyard and other relevant items which are absolute symmetrically arranged on the both left and right sides of the Central axis (Fig.12).

According to the East-West direction, from the axis of Landmark-tower towards the East (front side) there is no longer any proportional relation with the area in the West (back side). It can be understood that, after completing planning the location of the Grave and the Worship area by applying the principle of symmetry across the axis of Landmark-tower, other items defined from that axis to the Front gate were planned by applying other principle thought as grid-rods advance equally, namely:

The distance from the axis of Landmark-towers to the western border of the Worship area = Length of the Worship area = 19.5 rods, floor area of the Worship area is 16 rods (in latitude) x 19.5 rods (in longitude) (A);



**Fig.12.** Map of Grid-rods analyzing on the haft central spatial area from Minh Lau pavilion to Dai Hong Mon front gate

Grid-rods advance equally from the eastern border of the Worship area to the Praying courtyard into 3 levels, each level has 4 rods. The total floor area of Praying courtyard is 12 rods x 12 rods (B);

Grid-rods advance equally from the lowest level of Praying courtyard to the eastern border

of the Stele-hall (upper flanking courtyard) = Distance from Stele-hall to the Front gate (lower flanking courtyard) = 11 rods, floor area of each courtyard = 12 rods x 11 rods (C); and, from the Front gate to the Outer-front screen is 7 rods.

Thus, the areas from the axis of Landmark-towers towards the Front gate are concentrated



**Fig.13.** The Worship area



**Fig.14.** Bai Dinh parying courtyard



**Fig.15.** Bi Dinh stele hall



**Fig.16.** San Chau flanking courtyard

with a higher density of construction works than other areas <sup>21</sup> and they were strictly planned because these areas were the places to carry out the dynasty ceremonies for worshipping of the Emperor and Queen monthly, on lunar new year occasion, and especially on the anniversary ceremony of their dead periodically (Fig. 13, 14, 15, 16).

### *3.3.3. Relations of the central area and the other surrounding component buildings*

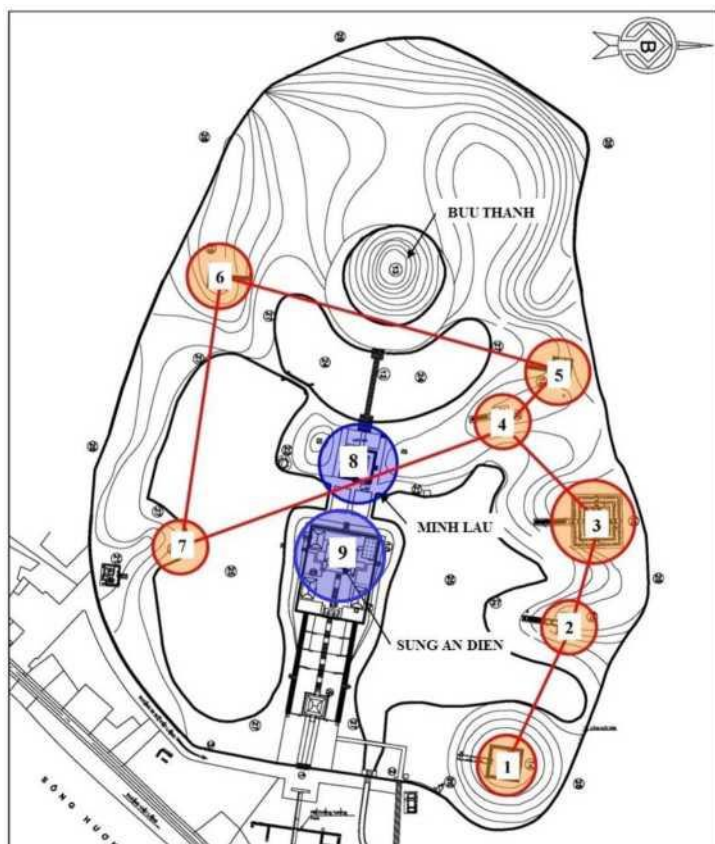
Continuously, only the constructional items placed on the central spatial area along the Central axis are planned to be constructed in a regular manner and symmetrical layout. Those all constituent-elements proportionally have relation to each other by feet and its proportional relates to the whole as a decimal relation of the Grid-rods. The architectural design of those items arranged in the central spatial area are characterized by the geometric lines recognized by its basic geometries (circles, squares, rectangles), while the architectural scenery surrounding the central spatial areas are characterized by the irregular lines to soften the principle of symmetrical composition and harmony with the natural landscape.

Arranged around the central spatial area are 7 small-mountains (hills) on which there were 7 buildings (Fig. 17), sequentially: In the northern side, Phuc Am Son mountain placed Truy Tu Trai (1), Dao Thong Son mountain placed Quan Lan So hall (2), Khai Thach Son mountain placed Linh Phuong Cac pavilion (3), Duc Hoa Son mountain placed Thuan Loc Hien part-house (4), Tinh Son mountain placed Ta Tung Phong chamber (5); To the South, Y Son

mountain placed Huu Tung Phong chamber (6) and Tran Thuy Dao peninsula placed Hu Hoai Ta floating pavilion (7). Although they are scattered on the artificial hills surrounding Trung Minh Ho lake, even the architectural scale is large or small, and their architectural feature is slightly different from each other depending on their classification and function, all of these 7 buildings are oriented facing to the central spatial area of the Mausoleum creating a consistent site planning with two main designing principles: Organizing architectural space according to the axes with functional subdivisions featured by the Vietnamese traditional architecture style and organizing of architectural landscape in harmony with the surrounding nature.

## **4. Discussions**

It starts from Dai Hong Mon front gate (Fig.18, first gate has lowest geographical cote among the constructional items of the Mausoleum), pass through the San Chau flanking courtyard (Fig.16), coming up over the Bi Dinh stele hall (Fig.15), down through the Bai Dinh praying courtyard (Fig.14), level by level coming up again the Sung An Dien main temple (Fig.19), then suddenly down throughs the Trung Dao Kieu bridge (Fig.5), immediately coming up again over the Minh Lau pavilion (Fig.11), then down throughs again the Thong Minh Chinh True Kieu bridge (Fig.5) and coming up again the Buu Thanh Mon entrance (Fig.19, the last gate) to get into the Buu Thanh grave (Fig.5). This route leading ups and downs continuously along the Central axis makes confusion of sensational under finding of geographical position in height.



**Fig.17.** Location of the surrounding component items



**Fig.18.** Dai Hong Mon front gate (first gate)



**Fig.19.** Buu Thanh Mon entrance (last gate)

Minh Lau pavilion presentation of bright pavilion, located on the Tam Tai three entities mountain (describe the Heaven, the Earth and Human) at in front of the Hoa Bieu Tru landmark-towers, was planned to be built in the geographical cote as similarity to the Sung An Dien main temple an Buu Thanh Mon entrance (approximated 1 rod higher than based land-cote) as seem to orient to the emotional awareness on the balance among three important entities: Present - Past - Future. The viewpoint of Minh Lau pavilion is applied to the whole view of the Mausoleum.

Looking forward to the East (where sunrise, implied the beginning of human life) to see the Sung An Dien main temple (praying for the soul of Emperor), looking backward to the West (where sunset, implied the end of human life) to see the Buu Thanh grave (keeping the body of Emperor), looking towards the North (direction of ancestors) to see 5 hills

accompanied with 5 buildings; looking to the South (direction of emperors) to see 1 hill and 1 peninsula where on each placed a building. Thus, in total there were 7 buildings located on 7 hills and peninsula (Fig.17). It can be imagined those 7 items are representation of the North Star cluster flanking to the central spatial area of the Mausoleum where the soul and the body of the Emperor are remained. If including 2 mountains Tam Tai Son mountain (8) and Phung Than Son mountain (9) in the central spatial area mentioned above, the total site plan of the Mausoleum has 8 hills and 1 peninsula (a total of 9), this is a symbolic number of the Emperor in heaven following the human perspective and the worldview according to the Eastern philosophy.

Additionally, shape of the Buu Thanh grave is designed in circle to describe the Heaven, shape of the Sung An Dien main temple and the Minh Lau pavilion are designed in square to

describe the Earth. Thus, Minh Lau pavilion likes the last station of reality on the Earth to step through another gate: “The gate to the afterlife” which presented by the landmark-towers. According to the Eastern belief that human being life is just temporary, the dead is coming back forever.

If the Minh Lau pavilion is a space of temporary actual condensation, then Sung An Dien main temple (the place for worship of soul of Emperor that once existed in the real life) is the past, and the Buu Thanh grave (the burial place to keep the body of Emperor for his soul to be reborn) is the future. Therefore, the landmark-towers appeared in the all of mausoleums of the Nguyen’s Emperors are always placed between the division of the worship area and the grave (some time placed between the stele hall and the grave).

## 5. Conclusions

Through this study, based on the reliable historical documents and database sources, the construction and restoration history, planning principles and Fengshui conception have been verified. In terms of construction works, the basic planning principles have been summarized as: In the macrocosmic perspective, the applying of Fengshui principle has been recognized; In the microcosmic perspective, the consistent planning with two

designing principles consists of the organizing architectural space according to the axes with functional subdivisions featured by the Vietnamese traditional architecture style and organizing of architectural landscape in harmony with the surrounding nature. From an architectural designing perspective, the principles of symmetric, grid-rods advance equally verified to give an effective approach to identify the site planning principles of the Mausoleum.

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