

# THE SCHEME AND STRUCTURE OF CO LOA, HOA LU AND THANG LONG ANCIENT ROYAL CAPITALS

LAI VAN TOI \*

**Abstract:** Co Loa, Hoa Lu, and Thang Long used to be the imperial cities of many dynasties. From the perspective of planning and structure, they took thorough advantages of the natural conditions to set up uninterrupted fort-rings of advantageous battle-lines for defense and attack by both land and river. They did not stickle much for the balanced shape by appearance, but they were based on important and advantageous features. All those imperial cities have fort-rings that follow the “three-fort model”, including outer Wall, Royal City, and Forbidden City; each fort-ring undertakes particular functions with an appropriate layout in order to get the best protection for the king, royal families and the court. It is especially valuable that all these three ancient imperial cities left to us a lot of cultural – historic vestiges, which are full of vitality for now and future.

**Key words:** Imperial city, Co Loa, Hoa Lu, Thang Long, planning, structure.

## 1. In Scheming

### *In Co Loa Ancient Castle*

Nowadays, at Co Loa vestige area, there are three castle rampart circles which are Outermost Castle rampart, Middle Castle rampart and Innermost Castle rampart. These three castle rampart circles have been distributed in an area about 600 hectares, the circumference is 18,000 meters (the Outermost Castle). In the scheme, An Duong Vuong absolutely took advantage of the area's natural conditions.

As we have known, Co Loa was originally the alluvial ground of Red River belonging to the high Western part of the North Vietnamese delta, and lying completely in the water quadrilateral: Ca Lo river in the North, Duong river in the South, Red river in the West and Cau river in the East. Right at the foot of the Outermost Castle rampart in the South, there was flowing Hoang Giang river which was used as the outer trench. From Co Loa passing

over Hoang Giang river, it was possible to go up to Red River, then following Red River, Da and Lo rivers to go to the mountainous and forest area in the North, or following Red river and Day river to go to the plain area and then to the sea. From Co Loa following Hoàng Giang river, it was also possible to go up to the North-East mountainous and forest area by following Cau, Thuong and Luc Nam rivers, or following Luc Dau Giang rivers to go down to Thai Binh river and Kinh Thay river to spread to all the coastal plain area.

The three rampart circles of Co Loa Castle, two circles, Outermost Castle and Middle Castle ramparts had the form of a closed natural curved line. Nowadays the circle of Innermost Castle rampart has the form of a rectangular with fire-return mounds around. However, according to the results of archaeological excavation in the

---

(\*) Ph.D., The Center for Imperial City Research.

Innermost Castle, especially the results of cutting the Innermost Castle rampart at the Upper Temple (Co Loa), we have been revealed that at the time of heaping up, the circle of Innermost Castle rampart also had the form of a natural curved line by joining mounds and hills together, similar to the two outer circles of castle ramparts. When Au Lac was dominated by the North feudalists, the old castle of An Duong Vuong was still used as the administrative office of the dominating authorities. After defeating Nam Han troops and proclaiming himself king, Ngo Quyen chose Co Loa as the capital of the first independent state in the history of building and defending the country of the Vietnamese people. In these periods of time, Co Loa Innermost Castle was repaired and further heaped up to suit the needs of the new authorities. Therefore the present Innermost Castle rampart might be used by Trieu Da and king Ngo Quyen. The stratum of the cutting pit at the Middle Castle rampart in Thuong Subhamlet (Co Loa) in 2007 – 2008 separated three strata: i) The earliest stratum lies at the bottom of the pit (it might be heaped up before An Duong Vuong period; ii) the middle stratum was defined to be heaped up by An Duong Vuong covering the earlier rampart stratum with its upper limit composing a layer of Co Loa terra cotta spread in the earth of heaping the rampart; it is about 0.90m to 1.0m deep from the present rampart surface; iii) The uppermost stratum of the castle rampart belongs to the periods after An Duong Vuong.

All three circles of castle rampart have outer trenches. In the South and East of Co Loa Outermost Castle rampart, there were Hoang Giang river and rivulets flowing

close to the rampart foot which were used as the natural trench. The trench of the Outermost Castle rampart was connected to Hoang Giang river. The trench of the Middle Castle rampart was connected to that of the Outermost Castle rampart and to Hoang Giang river by Song Sewer Tributary and Khau Tributary (in the East), passing by An Cham System at the foot of Cot Co Mound belonging to Mit Hamlet (in the South). So the water trenches system of all three circles of castle ramparts were connected together and inter-communicating to ditches, rivulets, deep and large ponds and lakes in the area to create a system of waterways in chain repetition, joining with the system of rivers outside, making a very convenient waterway communication liaison.

Besides three circles of close ramparts and trenches, between one circle and the other, An Duong Vuong had sections of embankment heaped up or he made full use of natural mounds and hills which were arranged and used as “defense works” lying in the common structure of Co Loa Castle. Besides the natural mounds, archaeologists have also excavated and discovered various sections of embankment heaped up in the function of defense outside Co Loa Castle at Bai Mieu (in the South), Dinh Trang (in the North-East). All these war ramparts and defense mounds together with three circles of castle ramparts combined to form a united and solid architectural work of military defense character.

In brief, in the scheme and design of Co Loa Castle, the natural terrain conditions were exhaustively studied and made use intelligently and creatively which have been manifested concretely in the following points:

- Advantage was taken of Hoang Giang

river as the outer trench, ponds were fully used to make ports which could contain hundreds of gunboats.

- Further heaping up and connecting natural mounds and hills and stretches of land when building the circles of castle rampart to reduce the human labor power while the solidity and advantage of the castle were still guaranteed and the labor power was economized.

- Creating new technique to strengthen the castle foot by hard materials such as bamboo stakes, wood or stone at places where the earth was swampy and sagging, or gravel was spread on the surface against erosion and slipperiness when moving from lower position up. This creativeness was deified as the help of Golden Tortoise Deity.

- All the structure of Co Loa Castle ramparts made up a solid and firmly defended military architecture in close combination between the navy and the infantry; it was the absolute taking advantage of the benefit of Au Viet people who were adept in climbing and using bow and arbalest in the mountainous and forest region; they were acquainted with the life in the area of rivers and water, they were well-versed in using boats and rafts. Co Loa Castle of Au Lac country brought this pre-eminent tradition of ancient Viet people into full play.

#### ***About Hoa Lu Ancient Royal Capital***

Hoa Lu Castle had a very unique style of structure. It was a castle of very great scope, comprising the Inner Castle and the Outer Castle with the figure which was the natural curved line by connecting rock mountains together. Dinh and Early Le Dynasties took advantage of the natural terrain full of obstacles and difficult of access in this area to build up grand rampart

walls, connecting sloping ranges of rock mountains to create a large area of castles, composing a good deal of defense circles linked together which were very effective in defense as well as in attack. It was quite different from small strongholds ramparts of the North aggressors built on our country, or the styles of citadels imported from the West into our country in recent centuries. Although situated deep in the area of forest and mountains, Hoa Lu still had close relation with the entire country thanks to the water and road system of communication.

In term of waterway traffic, in the North of Hoa Lu Castle there were Hoang Long river, Lang river and Boi river... joining at Kenh Ga river confluence, they flowed to Day river at Gian Khau bridge. Along this system of rivers, from Hoa Lu it was possible to go up to the mountainous and forest area, down to the sea or to Thang Long through Chau river and Red River. It was the way which Ly Cong Uan used to transfer the royal ancient capital from Hoa Lu to Thang Long. Truong river was an effluent of Hoang Long river, connecting to the system of trenches and rivers in the castle, it was easy to go down to the South to go out of the castle. On Hoang Long river, at the section from Truong Yen landing stage to Gian Khau confluence, there was an effluent called Chanh river. This section of river flowed outside the system, ran outside the system of limestone mountains, met Truong river flowing out from the castle at the position of Co Loan village then joined Van river together. Van river ran along 1A national highway. It was divided into two effluents at Yen bridge. One effluent ran to the East, met Vac river and then Day river at Kim Dai tributary.

The other effluent ran to the West, meeting the system of Thien Duong river system, Ganh and Ben rivers and flowed out to the sea at Than Phu estuary.

The discovery and excavation of Ghenh Thap and Ngoi Chen combined with book documents have made scientists think that this place was the place King Le commanded the drill of the navy, watched sailing boats on festival days. This has revealed that Hoa Lu was the defense base with the combination of infantry and the navy.

At Thien Trao village, in Cau Yen area there was the place name of Don Thuy; it was the place Dinh Dynasty installed navy commanding headquarter. The fact that Ngo Nhat Khanh showed the way for Champa troops to attack our country by the waterway through Dai Ac/Dai An tributary of Day river and Tieu Khang tributary/Can tributary (that is, Dai Hoang tributary later) has revealed that from Hoa Lu royal ancient capital the waterway along Truong river to go to Van river to reach Dai Ac tributary and Tieu Khang tributary was shorter than the waterway from Hoang Long river to Day river to go to the sea. From here by sea route, it was convenient to go up or to the South.

About the road system, the stele texts at Eastern Gate or Thay Boi stelae have stated "This road of Eastern Gate Truong Yen was the place the civil and military courtiers in the old days often went by when they retired from attending court or to go to the court". The excavation in 2009 – 2010 discovered a lot of vestiges and relics helping to define the system of castle ramparts including Inner Castle ramparts and Outer Castle ramparts with the gates (waterways and roads) and ways and lanes. The survey pit (1969 – 1970) cutting through

the East castle rampart connecting Thanh Lau Mountain to Cot Co Mountain and the North-East castle rampart connecting Cot Co Mountain to Che Mountain revealed that the structure and technique of building the castle rampart was very elaborate. In 1991, Ha Nam museum also discovered a wall section at the area of Chem Arroyo and supposed that it was the rampart surrounding the North-East of the area of Tu Cam Thanh.

The results of archaeological studies have revealed that the system of royal palaces in the central area might be situated between the temple of King Dinh Tien Hoang and the temple of King Le Dai Hanh. Most noticeable was the discovery by the Archaeological Institute of the chunks of foundation paved with square tiles decorated with phoenixes and lotus flowers. The site of the discovery was adjacent to the temple of King Le Dai Hanh where there was the horizontal lacquered board written *Truong Xuan linh tich* (Sacred vestiges in Truong Xuan) allowing us to suppose the above chunks of foundation are the remaining trace of Truong Xuan Royal Palace written in historical books. In a stage of excavation by the Vietnamese historical museum in 2009 – 2010, the trace of an architectural project was also defined by the enforcement of the foundation and the wooden building components. This is the signals of extreme importance reflecting the presence of royal palaces in this place. They have helped us to put forward scientific suppositions that the architectural work of magnificent and monumental royal palaces existed here. However a good deal of related problems such as the scope, structure and floor space and accordingly the matter of architectural history, the art of

decoration and sculpture...have not been defined; it is very necessary to contribute funds for future research and excavation.

Besides the system of castle ramparts and architectural enterprises, the projects of religion, belief and worship are also very abundant and diversified which need systematical research in order to outline a complete complexion of famous vestiges in history. Moreover we know that around the religious vestiges, there is always a covering layer of legends; if it is studied elaborately, we can decode many unknown numbers of history. And it is this fact that has made each site of vestiges become extremely animated and attractive pages of history (Nhat Tru Pagoda, Phat Kim Temple, Vuon Thien Goddess-worshipping Temple, the Mausoleum of King Dinh Tien Hoang and King Le Dai Hanh, Am Tien Grotto, Whirlpool, Tower...).

In addition, the system of vestiges of landing stages, expanses, rivers and those related to waterways and roads...are also very noticeable in researches with a view to contributing to examine more completely Hoa Lu Ancient Royal Capital.

The results of above-mentioned researches have disclosed that many enigmas have still remained under the ground of Hoa Lu ancient royal capital; they need more exploration. It is necessary for us to have more funds to do systematical excavations in order to supplement more complete materials about Hoa Lu Royal Capital – the golden page in our national history.

#### ***About Thang Long Ancient Royal Capital***

Au Lac ancient Royal Capital was schemed in the construction in the water quadrilateral, Hoa Lu Ancient Royal Capital was built with the advantage of the obstacles

and difficulty of accessing mountains and forests at the back and Sao Khe river from the North bank to the East, Thang Long ancient royal capital of Dai Viet country was large and beautiful; it was built on the bank of Cai river (Honghe river). Honghe river twisted and curved around Thang Long ancient castle from the North to the East. It was enclosed by To Lich river and Kim Nguu river in the West and the South. In the 17<sup>th</sup> - 18<sup>th</sup> centuries, Hanoi castle was designed and built in the same combination and maximum advantage of the natural conditions. To Lich river was improved and connected to the system of ditches in the North-East to supply water to the system of trenches around the castle, then it flowed to Honghe river at Giang Khau tributary (in Cho Gao street at present). Restored Sword Lake took shape by the change of current of curved Honghe river. Once upon a time, there was a period it was called Thuy Quan lake (Navy lake). The rivers were made full use as the natural trenches, as the traffic system and waterfall. La Thanh was the defense rampart, the dyke to prevent flood and the road. At present the trace of La Thanh is La Thanh Dyke which has implied the combined function of Rampart – Dyke – Road of this circle of rampart, quite similar to Co Loa Outermost Rampart. In Ly and Tran period, the area surrounded by the Middle rampart circle was called Long Thanh (Dragon castle), Phuong Thanh (Phoenix castle) or Long Phuong Thanh (Dragon - Phoenix castle). In Le Dynasty, the area surrounded by Phuong Rampart or Long Phuong Rampart was called Hoang thanh; it was the rampart defending the working place of the central organ, the locus of appreciative entertainment of high-

ranking officials, royal family, royal blood... This rampart circle also had rampart and trench and was built on the basis of making the most of natural conditions, rivers, lakes and high mounds. Therefore the outermost and middle rampart circles were designed and built not in accordance with the proportioned and well-matched form and in keeping with the conception of open geomancy, taking convenience, solidity and maximum advantage of the natural conditions as the prime requirement. This was the common characteristic feature of Co Loa and Hoa Lu, the royal capital castles before Thang Long. In the same manner, similar to two royal capital castles Co Loa and Hoa Lu, Thang Long royal capital castle was schemed in the most advantage of the permitted natural conditions.

## **2. About the Structure**

### ***2.1. The Structure of Castle Rampart Circles***

Co Loa castle was constructed with three circles of ramparts and trenches: Innermost Castle, Middle Castle ramparts and Outermost Castle rampart, the circumference was 18,000m long (Outermost Castle rampart), the area was 100,000m<sup>2</sup>. Hoa Lu royal capital castle was also built up with two circles of rampart and trench: The Outer castle and the Inner castle with the total area about 300 hectares. The sections of rampart connecting between one range of mountain and the other had different distances, some sections were about two hundred meters long, some others were nearly 1,000 meters long. Thang Long royal capital castle in Ly –Tran – Le period kept Dai La royal capital castle intact in the main, with three castle ramparts: Dai La castle, Hoang castle and Tu Cam Thanh with the circumference nearly 6,000 km long.

The common structure of three royal capital castles Co Loa, Hoa Lu and Thang Long was the area surrounded by the innermost circle rampart (the innermost castle rampart of Co Loa, Tu Cam Thanh of Hoa Lu and Thang Long) being used as the working place of the court and the offices of the central power, the place of courtly audiences, national ceremonies and the abode of kings, mandarins and royal families... The construction projects in Cam Thanh had changes from time to time.

### ***2.2. The Structure of Castle Gates***

Co Loa castle: The innermost castle rampart opened only one gate - the South gate; 18 fire-return mounds were heaped up; the middle castle rampart opened 5 gates: South gate, East gate, North gate, North-West gate and South-West gate; the outermost rampart opened 4 gates: South gate, North gate (or Khau gate), East gate and the South-West gate. One unique point of Co Loa royal castle was that it had the South gate (South Garrison Gate) common to the outermost rampart circle and the middle rampart circle. As the water gate was concerned, Co Loa royal castle had two systems of gates to connect the systems of three rampart circle trenches and to Hoang Giang. The system of water gates in the North-East flowed from the trench system in the innermost castle rampart, passing by Cong Song gate to join the trench of the middle castle rampart and passing by Dam Ca to Hoang Giang river through Cua Khau. The system of South water gates flowed from the innermost castle through rivulets in Dong and Lan Tri hamlets, joined the trench of the middle castle to flow to Ao Van, then it flowed to Hoang Giang by the water gate lying just under Cot Co mound (Mit hamlet).

Hoa Lu Royal Castle: According to ancient books, investigation and archeological excavation, Hoa Lu Ancient Royal Castle had 7 land and water gates. Now the position of each gate has not been defined exactly. However, the following materials can help us imagine the castle gates as well as the lines of road and the walls dividing the border lines of different areas in the castle. In the innermost as well as the outermost castles, each area has a section of earth rampart lying in nearly similar positions separating in the middle of each castle area, called Thanh Vau. Therefore it is possible to say that Hoa Lu ancient royal castle had many lines. It was capable to go from the Innermost Castle to the Outermost Castle in a short time by a mountainous alley running through between two areas, called Quen Vong. About 3 km from Truong Yen in the East, there is Thien Ton Grotto which was a well-known beauty-spot in Ninh Binh province; legend has it that here was the gate of Hoa Lu ancient royal castle, before entering the castle, it was necessary to stop here for checking and interrogation. The stele text “*Tu phuc Truong Yen dong mon... lo bi*” (Repairing and restoring Truong Yen grotto gate... revealing stele) under Posterior Le Dynasty engraved on the cliff at the side of the road from Thien Ton to Truong Yen recording the repair of the road to East gate (Truong Yen gate). The relics of wall foundation and the sections of wall discovered in the archaeological excavation pits (1998 and 1999-2000) have been defined as the solid walls separating Tu Cam Thanh from the other areas...

Thang Long ancient royal castle: In Ly – Tran – Le period, although this castle had

not so many changes in its scope, the structure inside the rampart circles had many modifications. About the castle gates, the following events would be presented concerning the castle gates:

+ For the outermost rampart circle:

In 1010 (Autumn) King Ly Thai To transferred the royal capital to Dai La castle and changed its name into Thang Long royal castle. In this year, 8 temples and 3 imperial palaces were built, Can Nguyen temple was in the centre, then rampart was heaped up and trench was dug, four gates were opened at four surfaces of the castle: Tuong Phu gate in the East, Quang Phuc gate in the West, Dieu Duc gate in the North and Dai Hung gate in the South.

The East face of Dai La castle was adjacent to Nhi River bank; there were two river landing stages playing the role of two important wharfs of the ancient royal capital: Giang Khau was the tributary of To Lich river and Trieu Dong or Dong Bo Dau or Dong wharf (Hoe Nhai slope downward).

In 1230, Tran Dynasty enlarged the outer part of Dai La Castle, built four gates more in the outer part of Dai La Castle. According to existing historical materials, Dai La castle in Ly, Tran period was opened at the following gates: Trieu Dong (about Hoe Nhai slope downward), Tay Duong (Cau Giay suburb), Van Xuan (Dong Mac suburb).

+ For the middle rampart circle: From Ly, Tran period to Early Le period Hoang Thanh was more enlarged in the South-West in 1490. The scope and position of Hoang Thanh can be defined on the basis of locating the four castle gates in four directions East, West, South and North. Until now, the definition of positions of Tuong Phu gate in the East, Dai Hung gate

in the South and Dieu Duc gate in the North is relatively unanimous.

+ For the innermost rampart circle: Cam Thanh with the centre to be Can Nguyen palace, Thien An palace and Kinh Thien palace on Nung mountain were almost not changed in scope and position through dynasties and historical periods from Ly Dynasty to the end of Restored Le Dynasty. According to *Hinh luat chi* (Records of penal laws) Cam Thanh in Le Dynasty had many layers of gates; from outside to inside there were Doan Minh (Doan gate), Huu Duc, Tuong Huy, Dai Dinh, Truong Lac, Dai Khanh, Kien Binh, Huyen Vu, then came the first layer of “palace gates” To Vo, Van Minh, Thong Van and Sung Hoa, the second layer of “palace gates” Gia Huu, Thai Hoa; in the innermost were “imperial palace gates” Ta Dich, Huu Dich, Vong Van<sup>(1)</sup>.

- Hanoi Castle in the 19<sup>th</sup> century: According to the above-mentioned source of materials and maps, many researchers have defined the limit of Hanoi castle to be a square surrounded by Hung Vuong, Phan Dinh Phung, Phung Hung and Tran Phu at present. The castle was built in Vauban style, so the fortresses were arranged at the four corners and four surfaces of the castle with layers of trenches outside. The castle was opened at five gates: Three gates were the East, the North and the West and two gates in the South were South-East and South-West ones. Outside the castle gates, there were defensive ramparts with projecting obtuse turrets (we usually called *mang ca* [gill]); in the outermost part from the ramparts, there were trenches too.

Throughout the historical periods, the royal palaces were built and repaired many times (except in Le - Trinh period, the

political center was moved to the office building of lords). In Cam Thanh, there were only palaces and mansions dedicated to the abode of the king and the royal family and the building for holding sessions of royal courtly audience and the rituals of the dynasty.

From the perspective of scheme, Co Loa, Hoa Lu and Thang Long Ancient Royal Capitals were built on the scientific basis reflecting the thickness of historical and cultural tradition of sacred lands – ancient royal capital through many dynasties in rather continuous centuries. The design and scheme of these royal capitals have taken thorough advantage of the natural conditions; the circle lines have been arranged in a chain of links so that they were very effective in defense as well as in attacking by both the road and the waterway.

Co Loa, Hoa Lu and Thang Long ancient royal capitals had rampart circles built in the structure of Three similar inner and outer ramparts; each circle had its own function with suitable projects and reasonable and distinct structure to best protect the king, the court and the imperial family.

Co Loa, Hoa Lu and Thang Long ancient royal capitals had historical thickness; crystallization of the national culture; they had exchange of relations, broad reception and alteration with other areas and cultures. The specially precious and rare fact is that all these ancient royal capitals until now handed down a lot of historical and cultural vestiges and relics with vehement vitality and convenience for the present and future.

---

<sup>(1)</sup> Phan Huy Chu (1960), *Records of Regulations and Laws of Various Dynasties Written in the Form of Classification, Records of Geography in Vietnamese History*, History Publishing House, tome 1, Hanoi, p.93.

