Renaissance Fortresses in the Far East: The Case of Taiwan

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Abstract

Countries like Portugal, Spain and Holland set up their colonial realms in the 16th and 17th centuries in the East bringing along their trade and culture supported by military might, which was epitomized by their fleets and military architecture. Under the shadow of the fortresses, usually protecting the entrances of harbors, knowledge, goods and people circulated, creating centers of multicultural societies. These were important commercial entrepôts, like Batavia, Malacca, Manila, which had their own branches, like Tayouan (West Taiwan), Macao or San Salvador (North Taiwan) respectively, as well as others like Deshima or Nagasaki, most of them defended by military forts. Nowadays, while in many cases the colonial and even the cultural impact is almost vanished, some of those fortresses are still standing, included in the local heritage, and used by the tourism industry.

This paper will present the beginning of the modern military architecture in Europe, its transmission to America and to the East and their military effectiveness. Then, it will focus particularly on the European fortresses of Taiwan (San Salvador and Tayouan), made by a probably Flemish or Dutch military engineer, with the aim to show how these buildings did really play a strategic role in the hazards of the colonial history.

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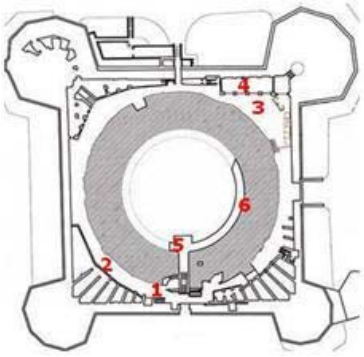
1. The new shape of the Renaissance fortifications

The invention of powerful powder-fired cannons in the 15th century made obsolete the old medieval castles and led to a new concept of military defense, implemented by Italian humanists. For example Alberti in his *De Re Aedificatoria* (presented to Pope Nicholas V in 1452, but not published until 1485) stated that a star-shaped configuration might be the best,[1] opening the way to different formulas of design.

The transition to modern fortresses can be observed in places like the Castle of Saint Angelo (Rome), a building that had experienced many transformations since the Roman times. After many modifications during the Middle Ages, Pope Alexander VI Borgia—in his attempt to protect Rome from the French invasion of Italy (1494-1498) by the French king Charles VIII—requested Antonio da Sangallo the Elder to fortify the Pope's residence in the Hadrian mausoleum. He modernized the outer round towers, placing low heptagonal proto-bastions in front of them.[2]



Castle of Sant Angelo

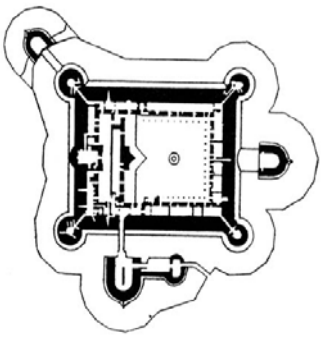
Proto-bastion in the castle of Sant Angelo (Photo of the author)

[1] Leon Battista Alberti, *De Re Aedificatoria*, Akal, 1992.

[2] Konstantin Nossov, *The fortress of Rhodes, 1309-1522*, Osprey Publishing, 2010, Oxford, p. 15. The definitive transformation into a modern fortress was initially prompted by the sacking of Rome by the Imperial army in 1527, and then the constant threat of Turkish incursions in the 1530s. This time it was the younger Antonio da Sangallo who started the discussion for a modern project (1542-46), which was finally reconfigured by the military architect Francesco Laparelli between 1561 and 1565 placing the area within a pentagonal fortress.

At the same time, other modern castles abandoned the hills, went to the plain areas, and had circular bastions in the corners. This evolution led the architects to put the artillery in those towers, to lower the highness of the curtains and to make thicker and slope-shaped walls. One of these new models during this transitional period was the Fortress of Salses, [3] built in the Rosellon by the Spanish architect Ramírez between 1497 and 1503.

It includes some modern concepts like wider and shorter walls to offer lesser target, but they have to be accompanied with a moat (to compensate the lack of vision), steep walls to offer bigger resistance, barbicans, and still four round towers and a rectangular floor map (Sobradiel, 2006:57). This last feature became very soon old fashioned, in the face of the new equidistant geometrical bastions, since the square (and later pentagonal) shape started gaining ground.



Fortress of Salses

Low defenses in the fortress of Salses

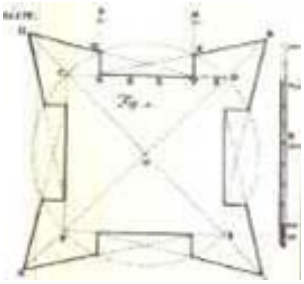
[3] A clear original drawing called "Vista de la fortaleza de Salsas" in Francisco de Holanda, *Deshenos das Antigualhas que vio Francisco d'Ollanda*, book that can be seen in the Biblioteca del Escorial.

Also Leonardo da Vinci from 1485 to 1490 produced studies on war, flying and work machines, water and land devices as well as architecture (including churches and fortresses), coming up with new concepts. In 1502 Leonardo entered the service of Cesare Borgia, duke of Romagna and chief general of Pope Alexander VI. As the duke's chief architect and engineer, Leonardo supervised work on the fortresses of the papal territories in central Italy. He designed a triangular ravelin that helped later in the design of the offensive aspects in the fortresses.

Model of a ravelin made after a drawing of Leonardo

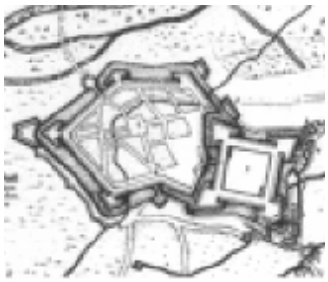
In this new military architecture the bastions (stronghold or bulwarks) were covered with stone or bricks in their external face, ending in a triangular shape, and controlling all the points of the fortress, started a new concept of war. Many treatises on military architecture were written, following Neo-Platonist and humanistic ideas, for example comparing the fort to a “boxing” body; these concepts were so appealing that were repeated for a long time. Even a treatise written in 1700 by Fernández de Medrano states: "All parts in a fortress must be done according to some proportions ... Because a fortress can be compared to the human body, in which if only a small part is sick the whole body will suffer" (Fernández, 1700:8).

In the second part of the 16th century the circular-Vitruvian towers were definitely abandoned and the walls became thicker, then the bastion appeared as natural consequence to defend the angles of the new walls of the fort that was designed initially in a square shape, a figure that still was praised by the treatise of Medrano: “The square is good to fortify a corridor in the open field, or to protect a line of circumvallation, or to make a fort in a wide road leading to a city under siege, and finally as citadel of a town” (Fernández, 1700:14-15) .



For bastions square fortress

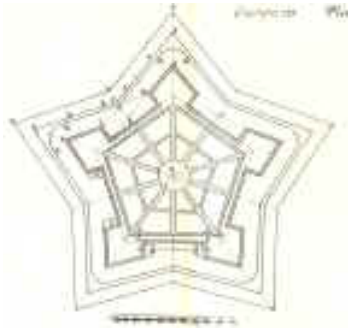
Precisely a new concept had appeared, the citadel, that Medrano defined as: "a fortress of four, five or more bastions, which is placed, attached to a city; so, both names keep the same relation as the one of the two areas" (Fernández, 1700:34). In the second part of the 16th century, the Italian methods were spread all over Europe. Just to mention one case, Italian architect Pasqualini, was requested to go to Germany to start the construction of the square citadel of Jülich, in 1548.



Citadel of Jülich, 1548

Soon later the Germans and Dutch engineers created fortresses with offensive systems, allowing the defenders to enter in the enemy lines and to break the enemy siege. This was possible by reducing the curtains, creating external forts, designing glacis in order to put far away the siege of the enemy, thus making difficult the precision of their artillery, and making covered and safe pathways to facilitate the retreat of the defenders when they approach to the enemy grounds.

Other modern method in fortress building was the pentagon that Medrano praised even more than the square shape: "The pentagon is the most convenient figure to make a citadel in a town, also is good for a fort in an open space, or to protect a circumvallation line." (Fernández, 1700:16). By the end of the 16th century the pentagonal fortress of five bulwarks was the most common for reasons of maintenance, economy and efficacy; although the hexagonal shape was considered better one.



The inner structure of those pentagons had a "parade ground" able to gather all the soldiers defending the fortress, and radial streets from the center to the bulwarks and to the curtains, wide enough for fast movement of soldiers and cannons. Additionally, a church was placed as well as rooms for officers, soldiers, storage rooms and stables (Sobradiel, 2006:102).

Citadel of Pamplona (Photo of the author)

Jaca

Citadel of Pamplona (Photo of the author)

Citadel of Jaca (Photo of the author)

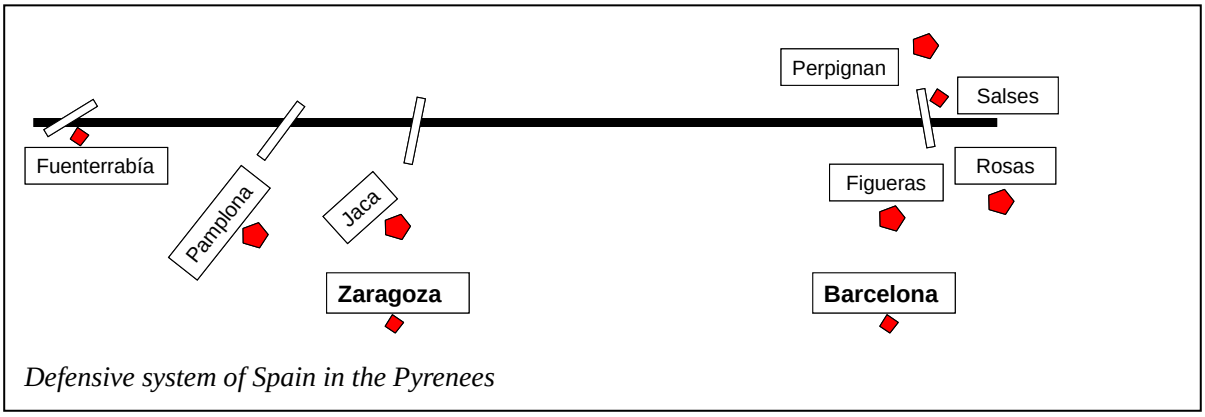
Since the beginning of the 16th century, the pentagon citadel was very common in European cities, from the Low Lands (Antwerp, 1545) to Poland (Kostrzyn). But this shape hardly was replicated in America or Asia in the early modern times, although we can see it the 18th century fortress of El Callao (Peru). On the contrary the squared system was the most common fort design in the colonies during the 16th and 17th centuries (like the Castle of San Marcos in St. Augustin, Florida, made in 1672), that in most of the case worked as a citadel.

2. The defensive system of the Spanish empire

a) The case of the Pyrenees border

In 16th century we can see in Spain the renovation of the defensive system of the kingdom in three different regions: in the frontier of Portugal (even though from 1580 to 1640 both countries were under the same crown), watching the frontier with France in the Pyrenees, and defending the maritime routes. The Pyrenees area is very relevant to consider now, not only because it was modernized at the end of the 16th century, equipped with the most accurate design of fortresses of their time, and because the model expanded 40 years later to the Far East into the Iberian fortresses; but also because they tried to form a strategic line along the pre-Pyrenees, with a certain degree of similarity that we can see later in the fortresses' distribution of the Philippine Islands.

Since the Pyrenees form a natural defensive curtain; the only need for protecting the Peninsula was to secure their four "gates" or mountain ports. Basically, from East to West, these were La Junquera, Somport, Roncesvalles and Fuenterrabía. The defensive system is quite similar in all the cases, first a rosary of small strongholds along the entrances of the gates in the border itself, and second a huge modern fortress (around 50 km south), to protect the path way to big cities, like Barcelona or Saragossa.



Defensive system of Spain in the Pyrenees

Modern town of La Junquera was not really the place to defend, because at that time the Rosellón (currently French territory at the north of the Pyrenees) was under the suzerainty of the Spanish king. The whole entrance was kept by the city of Perpignan and the above-mentioned fortress of Salses in the north of the Pyrenees, and in the Southern part by the fortress of Rosas.[4] As we had mentioned the modernization started in Salses, then continued in Rosas, when Charles V assigned in 1543 the construction of the fortress to the engineer Luis Pizaño; which **pentagonal** shape was not introduced until the project of **1552** by the Milanese engineer, Juan Bautista Calvi, who also made the one of Perpignan, and was trained by Antonio Sangallo "The younger".[5]

[4] The system was completed with the castle of San Fernando in **Figueras**, built in the 18th century.
[5] http://foro.todoavante.es/viewtopic.php?f=44&t=1965

The gate of Roncesvalles was controlled by the magnificent **pentagonal** citadel in Pamplona (100 km south) to face the pressure of the Huguenots, following the model of the first great one that Philip II order to construct in Antwerp, under the command of the Duke of Alba, with a project of Francesco Paciotto, who started it on 23 October **1567**. The citadel of Pamplona started contruction in 1571 by Vespasiano Gonzaga and Jacome Fratín.

The Western Pyrenees gate, in 1512 was protected by Charles V with a triangular small fort, but in 1539 it proved to be of little use and he ordered it to demolish, which happened in 1542. Most of the stones were sent to Fuenterrabía which was built in a **pentagonal** alike shape by Fratín and Spanocchi, the main military engineers of Charles V. The city of San Sebastian certainly benefited of the Fuenterrabía city-fortress.

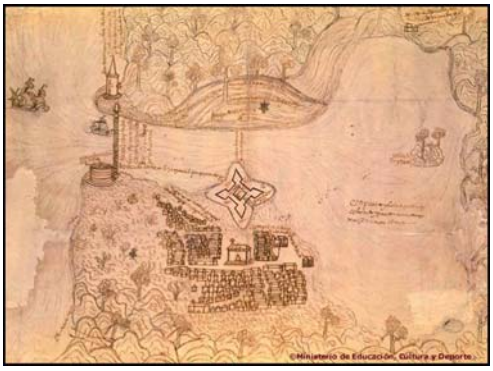
As for the Somport entrance, in **1592** Tiburcio Spanoqui started the construction of the pentagonal citadel of Jaca to protect the Somport Pyrenees' gate, and at the same time the city of Saragossa. It was the same Spanoqui who was in charge in **1593** of the new fortification of the old **Aljafería**, the main palace-fortress outside Saragossa. He preserved the former palace adding a square new fortress with a ravelin. In that case he was very much constrained by the previous structures.

Castillo de la Aljafería (Zaragoza) (Photo of the author)

b) The case of the Caribbean archipelago

After the end of the Reconquest Spanish kings set out to occupy some points in the North of West Africa in order to better control the **Mediterranean** Sea. Charles V established as points of suzerainty Oran, Mazalquivir, etc., that according to Sobradiel (2006:58) their defensive shapes reflected those new Spanish and Italian defensive ways to protect the maritime routes from the naval enemy, the Otomans. The same can be said in the case of Malta set up as a defensive front line of Naples and Sicily from the Moors.

The system was replicated in America, and one of the earliest fortress in Spanish America was the castle of **La Real Fuerza** as a citadel of La Havana, which begun construction in **1558** and was completed in **1582**. This small castle is the second oldest in the New World,[6] and the first square one brought there. It was built on the water's edge on the site of an earlier stockade destroyed by French pirates in 1555, and protecting the entrance of the bay.



La Real Fuerza (Cuba), 1588

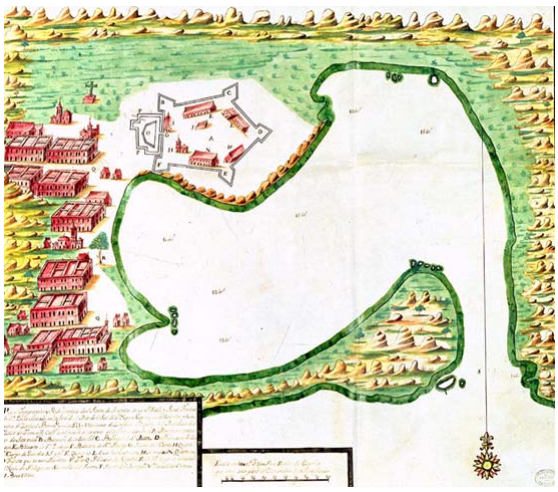
[6] The first one can be considered the Castillo San Felipe del Morro and La Fortaleza, (1539), in San Juan de Puerto Rico, a city founded by Spanish settlers in 1521

Certainly, the fortresses in America had a different function than in the Pyrenees or even in the Mediterranean Sea; usually it was to protect a city or a harbor. In 1581 there was a project to build a fortress in the Magellan Strait, but it failed and the only achievement was the foundation of the cities of Nombre de Jesús (Cabo Vírgenes, en Argentina) and Ciudad del Rey Don Felipe (al Sur de Punta Arenas, Chile). In 1586 the engineers **Giovanni Batista Antonelli** and **Tejeda** arrived to Cartagena de Indias (Colombia) to make a general plan of defense of the Caribbean Sea. Soon later they arrived in Havana to make another plan for the defense of the harbor. Spanoqui approved the projects in 1588 and entrusted to Antonelli its implementation. Antonelli still remained several years in the Caribbean Sea designing the fortress of San Juan de Puerto Rico, which worked as citadel. Later he passed by Santo Domingo and in 1590 went to Havana, where he remodeled the fortifications at the entrance of the bay with the castles **Los Tres Reyes Magos del Morro**, and **San Salvador de la Punta**. This was finished in 1600. In moments of danger a big chain was placed across the river mouth between the Punta and the Morro forts to prevent ships from entering.

The first pentagonal fortress in America (though irregular) was **San Diego in Acapulco**, constructed in an early period from 1615 to 1617, in order to defend the strategic port of Acapulco where luxury goods arrived from China, and were coveted by pirates like Francis Drake, Henry Morgan or Thomas Cavendish. Initially, it was a castle on top of some rocks, at the end of the bay, with irregular pentagonal shape designed by the Dutch engineer **Adrian Boot** (who had worked in the project for the defense of San Juan de Ulúa, and in the project of the drainage of the city of Mexico.

Lithography of the harbor of Acapulco in 1628 by Adrian Boot

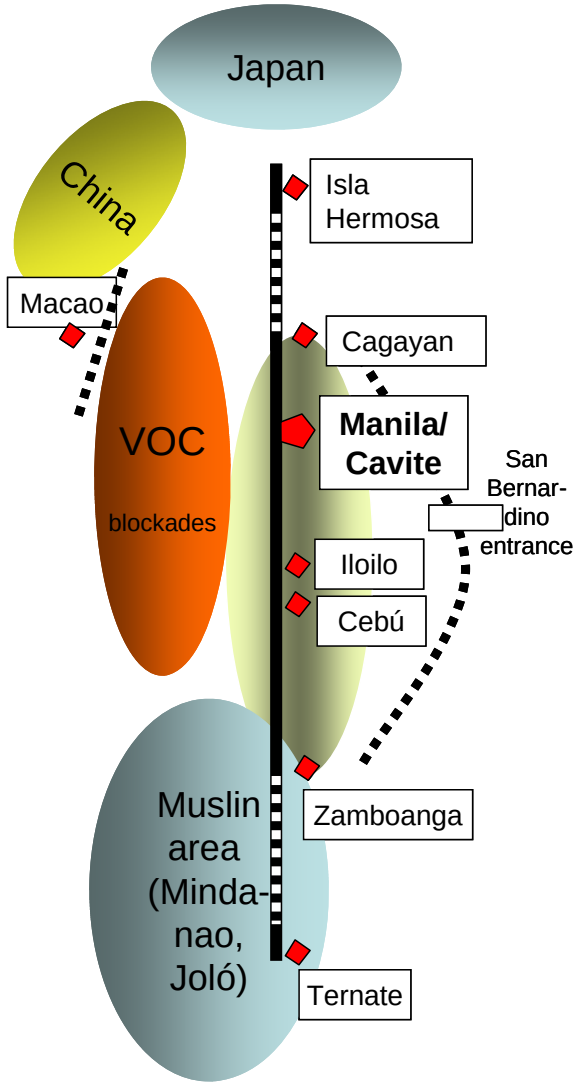
Being the supervisor of the fortification project Gaspar Vello de Acuña (Sluiter, 1949:69). The fortress only was challenged in 1624 by a Dutch fleet, but later stood firm and only was destroyed by an earthquake in 1776, being rebuilt more magnificently in 1783. Certainly, most of the other great pentagonal fortress that Spain built in America, like the one in El Callao, were made in the 18th century.



Acapulco, 1730, AGI

c) The case of the Philippine archipelago

Something new and relevant in the geo-strategy, after the control of the routes to **America** and the Caribbean Sea, was the access and defense of the Philippines for their role in the trade with China. The challenge was how to convert a terrestrial line of defense, like the Pyrenees, into a maritime one. The solution was based in two principles: first of all, "the help of local population"; this means that the problem of the impossibility of controlling all the territory can be minimized by the help of native population who effectively is occupying some areas; so, it will not be so easy for the enemy (at least in the first moments) to establish there. Second, that "an archipelago can work as a mountainous barrier", consequently the most important military action would be to defend the strategic places, like the natural gates of an archipelago (i.e. the Embocadero, or San Bernardino entrance, in the eastern and central area of the Philippines) and the already established harbor cities, or entrepôts. Since this logic was also shared by the enemy, most of the colonial battles, at least in the East (particularly in Manila) took the form of harbor cities' blockades.



Defensive system of the Philippines from Ternate to Isla Hermosa (Taiwan)

The **Filipino** archipelago was certainly different from limits of the Iberian peninsula, but resembled somehow the dissemination of the territories that the Spanish king had over Europe (Low Countries, Milan, Naples, etc.), which have to be defended from their enemies or rivals (Otomans, Holland, England, France,...). To some extent the North-South line of defense that Spain established along the Filipino Archipelago has a counterpart not only with the West-East defensive system in the Pyrenees but also with the communication of the Spanish territories in Europe along the so-called "camino español" (Milano, Engadina, Valtelina, Tyrol, south of Germany, Alsace, Lorena, and Low Countries), years ago re-examined by Parker (2005). In the Philippines, the first fortress was established in Cebú, the small island where

Magellan was killed and Legazpi arrived fifty year earlier. But, the first big fortress was Fort Santiago (1571) in Manila, which served as citadel of the future city nowadays called Intramuros. This walled city only was defeated by the English in 1762, which they hold for two years. Probably, this place was the most logical to have created a pentagonal citadel, or squared one (as it appears in the project of Gómez in the 19th century), but probably due to limitation of resources and better adaptation to the entrance a simple triangular structure of Fort Santiago was erected at the entrance of the Pasig River.

Let us mention that besides these three Spanish models other ones were proposed, like the terrestrial one in China, defended by a long wall that was completed in the Ming dynasty: "The most conspicuous display of demarcation in China's frontier zone is, of course, the Great Wall, or *Chang-cheng* (長城), "Long Walls", that many Chinese dynasties built on the northwestern frontier. Not until the sixteenth century did the Ming dynasty construct a single, nearly continuous defensive barrier" (Perdue, 2005:42).

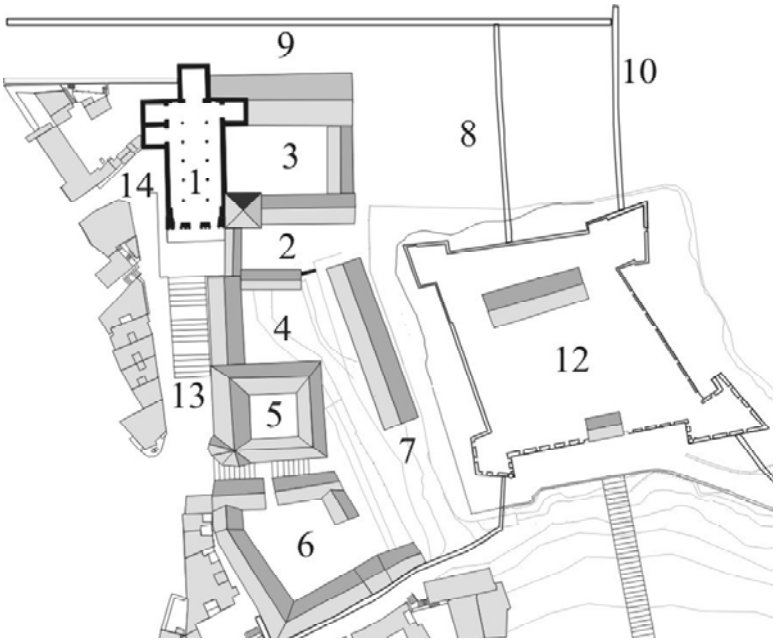
3. The European colonial expansion in Far East and the square Fortresses

The colonial expansion of the European powers along the 16th and 17th centuries brought along with them their military fortresses, which some of them still remain in the same place, as a testimony of a former colonial past. Under the shadow of the fortresses, usually protecting the entrances of harbors, knowledge, goods and people circulated creating points of multicultural societies (Borao, 2010). These were important commercial entrepôts defended by military structures, like Batavia, Malacca, Manila, which had their own branches, like Tayouan (Taiwan), Macao, San Salvador (Taiwan), respectively; or Deshima or Nagasaki entrepôts in Japan shared by different colonial powers. In the case of the **Portuguese Imperial Routes** the settlements of Malaca and Macao should be mentioned. In the first case the Portuguese never created a proper citadel (probably because a hill within the city played the same role), but they did create a citadel in the case of Macao.

The original town of **Malacca** was created inside a sultanate extended throughout the lower half of the Malay Peninsula. In 1509, the Portuguese arrived and tried first negotiation, but in 1511 they conquered Malacca under the excuse that the Malaccans had attacked their fleet, commanded by Alfonso d' Albuquerque. The Sultan Mahmud fled to Johor, from where he tried to recover his city but without success, because the Portuguese started the construction of a massive fortification, allowing the city to remain Portuguese during 130 years, until the conquest of the Dutch in 1640.

Malacca 1630s. Livro das Plantas, Fortalezas, Cidades e Povoaçoes Do Estado da India Oriental.

As for **Macao**, where it is not clear the exact moment of the middle of the 16th century when Portuguese arrived to that place, but it took several decades to start the citadel of the city in 1620. This fortress is also located in a hill inside the town, and it was the central link of the city walls. In 1622 was very efficient in putting off the Dutch in their main attempt to conquer the city.

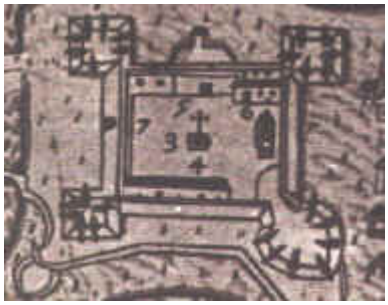


Macao in the 17th century, by Francisco Vizeu Pinheiro

The arrival of Portuguese galleons to the Far East were followed by the **Spanish ones** through the Acapulco-Manila route, crossing the Pacific Ocean from Mexico to the Philippines; but, in fact, the influence of this route was extended to the presidios that Spain had in the nearby territories, like Cebu (the only triangular fortress in the Far East, made in 1565 by Legazpi), Cavite or Zamboanga in the archipelago itself, and the ones in Terrenate (Moluccas), or in Isla Hermosa (Taiwan), in the area called Quelang (modern Jilong). In this second place the Spaniards built the small city and the fortress of San Salvador, the biggest fortress in East Asia (100x100 mts), which was renamed as Nord-Holland, after the Dutch conquest.

Manila was founded in 1571 by Legazpi, the first governor of the Philippines. Later on the fortifications of the city of Manila went through many projects. Miguel Antonio Gómez made a fortification project in the 19th century, which never was implemented, converting the Santiago fort in a square fortress, with only three bastions. The defensive system of revelins was completed in the 18th century.

The Spaniards in the Philippines built, besides the San Salvador fortress in Taiwan (1626) two other similar square fortresses: Iloilo (1619) and Zamboanga (1635). Since the one of San Salvador will be extensively discussed later, let us say something now about the fort of Nuestra Señora del Pilar (Zamboanga).



San José de Zamboanga, 1635

Zamboanga, 1635 (Map 1719)

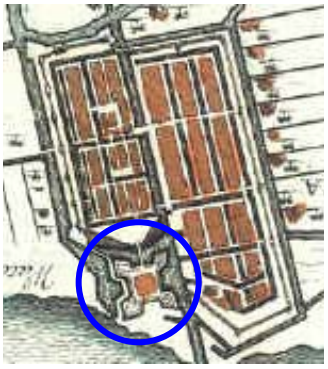
Iloilo, 1619

The Spaniards arrived for the first time to **Zamboanga** in 1598. But, only until March 1633, the Governor General Juan Cerezo de Salamanca sent Juan de Chaves to establish this fortress in the South of Mindanao to give protection to the Jesuit missions. The plan of the fortress was made by the Jesuit Melchor de Vera, and construction began on 23 June 1635 under the name of San José. The next Governor General, Sebastian Hurtado de Corcuera, regretted the construction of this fort, but later gave his support. In 1662, when Philippines received the threat of Koxinga, all the strength was concentrated in Manila, and the fortress was abandoned. In 1672, the Spanish government issued a decree for the reestablishment of the fortress, but the lack of resources delayed this action. Only in 1718 the fortress was rebuilt, reoccupied and renamed as Nuestra Señora del Pilar.

Other squared fortresses to mention in the Philippines are the ones in **Iloilo** (1619), and those mentioned in the report of Valdés Tamon (1738), [7] like the San Francisco Fort in **Cagayan**, Sta. Isabel Fort in **Paragua** Island, or Ntra. Señora de la Concepción Fort in **Pangui**, or the experimental one (without curtains) of **Iligan** (both in Mindanao). In the modern illustrated survey of fortresses, forts, towers, etc., in the Philippines made by Javellana (1997), is mentioned that they totally amounted more than 300.

[7] María Lourdes Díaz Trechuelo, *Arquitectura española en Filipinas*, Sevilla, 1959, p. 351, 375.

Finally, it is worth to mention the case of the Dutch expansion and the construction of the square fortress of Batavia (Jakarta, Indonesia) in 1619, as the center and citadel of the capital of the VOC's expansion in East Asia. In the 14th century the area later called Batavia was under the control of the Hindu kingdom of Pajajaran. Later, in 1522, Portuguese merchants arrived there and signed a treaty with the King of Pajajaran to establish commercial activities, and they built a fortress, which was conquered in 1527 by Muslim forces, becoming a part of the Banten sultanate, and renamed the city Jayakarta.



Batavia

In 1618, the VOC arrived in that town, and few months later, they razed it completely and built a new walled city called Batavia. Several local forces mounted attacks on the Dutch over the next decade, but all of them failed, and Batavia became the center of Dutch trading and administrative activities in the East Indies.

4. The fortress of San Salvador (1626) and her evolution

Summarizing, we can say that, besides other interest, the fortress Santísima Trinidad in Isla Hermosa (modern Taiwan) was built by the Spaniards to protect their Manila-Fujian trade, which was threatened by the Dutch of Fort Zeelandia. The inner square of the fort was of 100 x 100 meters. The Dutch conquered the fortress in 1642, without the Spaniards offering much resistance (Borao, 2009:124), ant it remained in Dutch hands until 1662. Then they demolished the walls and leaving only standing the former bastion San Antonio el Grande which they have named Noort Holland. The Dutch forces reoccupied the fortress for a second time between 1664 and 1668. In 1666, they rebuilt the walls and reconstructed the bastions, two of them in a half-moon shape. The following year after suffering an attack from the Zheng troops, they rebuilt another bastion most probably according to the original shape. The way Spaniards and Dutch dealt with the fortress reveals that, first, it was an element of control, stalemate and stability between the colonialists; and, second, it was strong enough to last a long time in the same hands, so in case of abandonment it was better to destroy it than to leave it to the enemy. Let us see the process in detail.

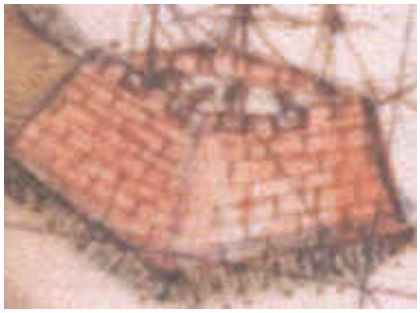
a) The Spanish period (1626-1642): The foundations

Particularly, the first news about this fortress came from the first year of the Spanish Period. They confirm the information offered by Pedro de Vera's map of 1626: **"Aqui se fortifica"** (Here fortifications are been made). So, the Spaniards started to build the fortress as soon as they reached the island.

1626, Pedro de Vera, AGI

Thus, in those last years of Spanish presence, the bulk of the work consisted in demolishing the fort Santo Domingo in Tamsui and La Retirada, which was rebuilt shortly before the final battle. After the fortress underwent a series of reconstruction and demolition work, depending on the strategic requirements of the Island's new masters.

By 1629, the construction was at an advanced stage, as stated in the report made from the Dutch ship the *Domburch*, accompanied by a map drawn by Gerbrantsz Black. This map shows a view of the fortress from the said ship, probably the main bastion, because comparing the size of its figure with that of the ship stationed behind it, one can ascertain that the figure in question represents the main bastion of **San Antonio el Grande**.



1629, by Gerbrantsz Black, ARA

We know that the engineer-planner who was in charge of the construction was a man named **Nicolás Bolem**, whose surname already hints that he was at least of Flemish or Dutch descent. We can also know that the Chinese contributed to the building of the fortress, because they either provided the materials or worked as hired brick layers. The construction of the fortress was finished a few years before the final engagement with the Dutch in 1641 and 1642 (Borao, 2009:133).

b) The first Dutch period (1642-1662): Only one bastion

When the Dutch seized San Salvador (usually called La Santísima Trinidad by the Dutch) in 1642, the VOC destroyed three bastions and the walls between them, leaving only the bastion San Antonio el Grande intact to guard the entrance of Quelang Bay. The Dutch renamed this bastion **Noord Holland**. What remained of San Salvador was used to build fortifications in Tamsui. The Dutch lived in this situation for 20 years (1642-1662) because, as they acquired greater control over Taiwan, they no longer saw the need to maintain a fortress that would defend them against external attack. Certainly, they enjoyed good relations with the English and the Ming loyalists, and had successfully kept the Spaniards in Manila at bay.

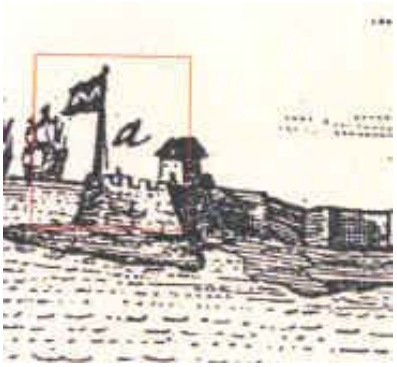
Besides, the Japanese had closed their doors to all foreigners and the Chinese had their own internal problems to solve on account of the Tartar invasion. This is why the map of Simon Keerdekoe (1654) clearly shows the then-current state of the fortress as well as how it looked during the Spanish period. But, finally, Quelang, was abandoned by the Dutch in 1661 out of fear of the arrival of the Koxinga's fleet.

1654, Simon Keerdekoe, ARA

b) The second Dutch period (1664-1668): Strategic stronghold against China

Dutch attempted to regain again control of the China coast, and Kelang was chosen again for two reasons: on the one hand, it was feasible to control shipping to China and Japan, and on the other hand, it could serve as a springboard to establish a new, flourishing trade factory. This "New Taiwan Factory" would have to function as a relay station for Chinese sugar, gold, silk, etc. Chinese merchants crossing the Taiwan straits were supposed to furnish these goods in exchange for Japanese silver, and spices from the Indonesian Archipelago or deer meat from Taiwan. The goods were to be stored in warehouses, awaiting the favorable monsoon winds that would take them to far-flung destinations all over Asia. The VOC envisioned the "New Taiwan Factory" to be large-scale enterprise, which was why the company had plans to invest a huge amount on improving the defense facilities in Kelang. Still, trade never took off.

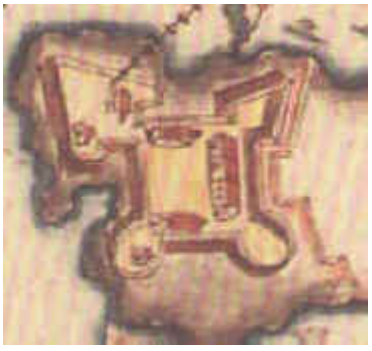
In 1664, the Batavian authorities instructed commander **Balthasar Bort** to reoccupy Kelang, to rebuild the redoubt Victoria and to protect the bay's entrance. If deemed necessary, he was ordered to rebuild La Santísima Trinidad using as much as possible its old foundations. On 20 August 1664, the yacht *Niewendam* appeared in Kelang. Commander Bort immediately set out to reconstruct the redoubt Victoria and then began working on the reconstruction of the other three bastions of the old fortress La Santísima Trinidad.



1664

Of utmost importance was the bastion **Oosterpunt**, also called the Half Moon Bastion, which was the eastern bastion. The northern bastion, called **Zeeburg**, protected the fortress from sea attack. The bastion **Zuijderpunt**, also called the Small Half Moon Bastion, was the southernmost bastion that controlled all shipping within the bay; its firepower could easily reach mainland Formosa. By the end of 1665, the bastions were up and in operation and La Santísima Trinidad had regained its old glory. The Dutch renamed it fortress **Noord Holland.**

On 4 February 1666 elders of several aboriginal villages informed that 500 soldiers of Zheng's troops had reached Tamsui from Anping by land and about 700 or 800 were already stationed in Tamsui, and that 30 junks with more troop reinforcements were expected to arrive two months later. To deal with this threat, the VOC started to build extra fortifications. On 21 February 1666, the Council of Kelang resolved to start constructing a small redoubt on the foundations of a former Spanish fortress (el Cubo). The small redoubt was called **Nobelenburg**.



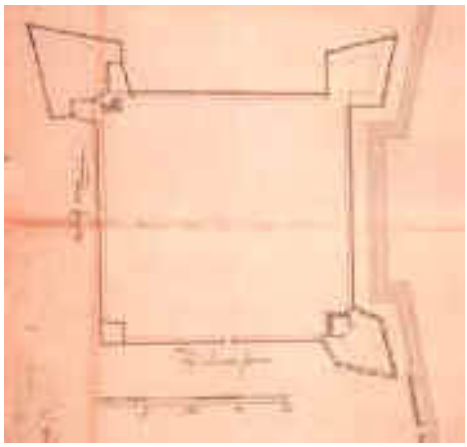
Cornelis Vichbee, ARA, VEL 307

1666

As an invasion of Zheng's troops became more and more evident, the Quelang Council resolved on 17 April 1666 to further reinforce its defenses. Orders were issued to raise the walls of Noord Holland, to build extra walls, and to make gabions. Most of the straw roofs of

the buildings in the fortress were removed to diminish the risk of being set on fire. The Zheng army landed on 11 May 1666 and launched a relentless attack on the fortifications for several days. An estimated 6,000 Zheng soldiers partook in the operation, engaging the 300 VOC defenders. After a siege of nine days, the Zheng army, having about 1,000 wounded or dead (according to a Dutch account), withdrew to Tamsui. The reconstructed fortress had passed its first serious test.

Redoubt Victoria was reinforced after the Zheng attack. The ruins of the former Spanish cloister were leveled to prevent the enemy from using it as a battery facility against the fortress. The bastion Oosterpunt (Half Moon Bastion or Bultenberg bastion) proved to be a weak spot in the entire defense system because it was built on sand and had no solid foundation. The walls of the bastion fell beneath the enemy's artillery and even threatened to collapse when the Dutch fired their own cannons. So, the Dutch decided to reshape again the whole fortress following the original foundations.



1667

Bastion Oosterpunt had to be replaced with a **new bastion (with a cellar)** on the foundations of the former Spanish bastion. Stones from the said Spanish cloister were used as building material. Construction began on 13 December 1666 and the bastion was finished on 15 January 1667. (This bastion was excavated by Japanese scholars in 1936).

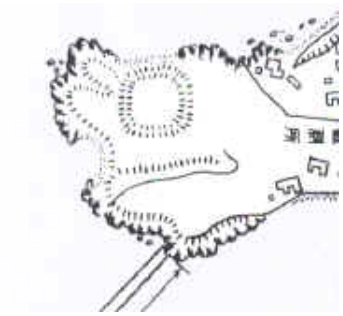
Inside the fortress, a new smithy and a shop that also functioned as a dormitory were added. The cellar under bastion Noord-Holland was also expanded. Outside the fortress, a new hospital, a carpenter's shed and a pigsty were built. But, unexpectedly, on October 1668, the VOC garrison abandoned Kelang after blowing up the defense works. The other buildings were demolished, leaving nothing behind.

d) The Chinese period (1668-1895): abandonmment

The area was abandoned and hardly used by Chinese settlers. But still an ideal view of the castle appeared published in 1696. When the "Macedonian" ship of Commodore Perry passed by Jilong in 1854. In his way to Japan he made a detailed map of the area with a reference to the ruins of Kelang castle. The same happened in 1884, during the French invasion. In the book of Captain Garnot appeared a reference to the ruins of the castle, as a "Vieux Fort". We have to wait for Japanese to get new relevant information.

1696

5. Do old ruins really matter?



1920

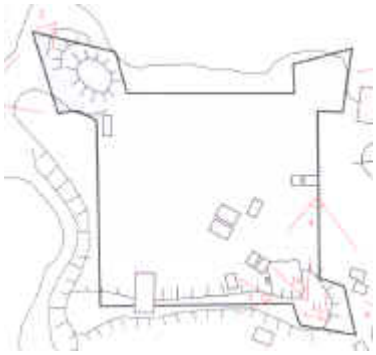
a) Japanese period (1895-1945): Protection and banishment

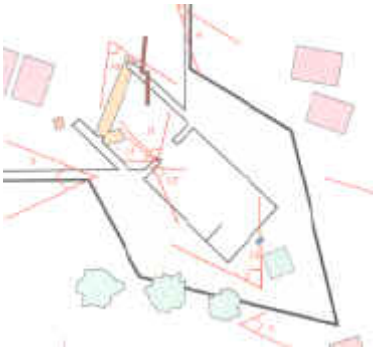
To answer this question we can focus to the later history of the fort, related to the development of Jilong Harbor, the third phase of which, according to Ms. Lu Yueh-E dissertation on the topic, took place from 1929 to 1934. The new expansion happened because of the increasing scale of trade and fishery.

She Liao Tao was remodeled to accommodate in its southern side the fishing port that was previously located in the inner harbor; this inner harbor was no longer used for simultaneous business and fishing activities. In addition, the Japanese government began to "feather-bed" the fisheries industry by providing equipment and social benefits. At that time, the ruins of San Salvador were not threatened by the new reforms and the development of the harbor; in fact, the new legislation expressly provided protection of this historical spot.

Scholars began to get involved in the matter. In November 1931, Prof. Murakami Naojirō of Taihoku University published a long article on the history of the fortress, based in Dutch sources. At the end of the article he mentioned that the southwestern bastion was still standing. Soon later, in July 1932, the Bureau for Internal Affairs of the colonial Government published a cyclostyle pamphlet entitled *Report on Designated Historical Sites*. In Chapter 2 of this work, Prof. Murakami Naojirō repeated his former ideas, mentioning that even Zheng Jing attempted a reconstruction in 1673 and installed there a garrison of soldiers. Murakami concluded: **"Because this construction dates back to the San Salvador castle's times, it is worth to be preserved for ever".** He ended the article quoting briefly from Osaki and Ite's 1931 report.

Finally, at the beginning of October 1936, the Office started to prepare for the diggings. A chronological account of the project is recorded in the journal of the Institute. Days 9, 12 and 15 of the preparatory phase were presided by Prof. Utsurikawa Nenozo and probably by Prof. Murakami Naojirō himself. Actual fieldwork started on Day 19, under Prof. Iwao Seiichi, Miyamoto Nobuto, Matsumnoto Masanaga, and Nakamura Takashi.





The team hired the services of famous Japanese photographer **Kobayagawa Tokushirou**, who produced a comprehensive hundred-photo collection of the excavation. This may be the same one preserved in the Museum of Anthropology of National Taiwan University. Selected photos from this collection are published for the first time in this book.

The excavation team measured the castle's remaining walls and they photographed any interesting thing, like some parts of bastion San Antonio el Grande. But their main job was to clean **the northeastern bastion**, and to unearth its **inner cellar**, and outer cellar, where they found other foundation that had nothing to do with the Dutch castle. Their scholarly report on the job using the measurements taken from the castle and all their findings remains unedited until now. The only known report of the entire project was a brief account that was published a few months later in the miscellaneous section of the journal of the Institute.

1937

1937

Thus remains a series of unanswered questions. For example, we do not know precisely when the plans to remodel the area of the castle started. Neither do we know the real interest behind the Jilong government's request to the Taihoku University, or the political motives of the other institutions involved in it. Did the Governor General withdraw abruptly the castle from the list of protected monuments? Was the Jilong government aware of what was going to happen to the fortress and so proposed the excavation as the only way to "preserve" it? Neither do we know if the members of the archeological expedition knew of such a "conspiracy". We can only guess that all these events that happened at the same time are sort of interconnected.

b) The case of Fort Zeelandia

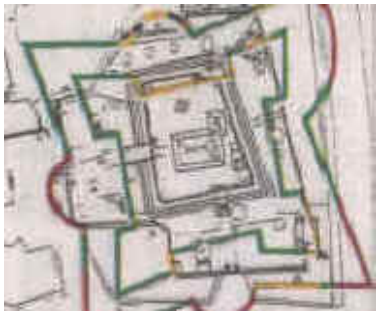
Modern times bring modern and more committed interests. In Taiwan the other example of a fortress, the Dutch fortress of Tayouan, has experienced now an archeological new historical spring. It was founded by the Dutch in 1624, and conquered by Koxinga in 1662 after nine months of siege, proving its effective system of defense, that only was overcome after the betrayal of some Dutch soldiers.



1626

The fortress of Zeelandia behaved as a real citadel for the city of Tayouan that was very flourishing in the thirties and the capital of a real colonial expansion in the island. In recent years excavations have allowed us to know more about the Chinese and VOC trade in the 17th century. Probably the first application in Taiwan of the Ground Penetrating Radar (GPR) system to archeological research was done in this fortress of Anping. The research was conducted by the team of Prof. Der-her Lee (李德河) from the Department of Civil Engineering of National Chenggong University (成功大學土木系). They were able to identify which parts of the underground structures of the castle still exist.

Ticket for entering the ruins of Anping fort



Courtesy of the Department of Civil Engineering of Chenggong University (2002)

We did the same exploration in Jilong with the same team of Prof. Der-her Lee, and we identified the possible location of the remains of the foundations of the fortress. Consequently we were put in front of the big challenge if discovery what remains underneath of the fortress and of the whole city of San Salvador, a project that the NSC of Taiwan started in cooperation of the CSIC of Spain for three years 2011-2013. We hope that some questions will be answered at the end of the project in December 2013, but for the meantime we discovered that the question of "Do old ruins really matter?" is not a rhetorical one. The fortress is located in recently a privatized shipyard, and since then on the permission of excavation is denied. The shipyard nevertheless was kind enough to allow excavation in a nearby parking, where some possible structures of the old city of San Salvador had appeared. Nevertheless, the interest of the local authorities still is far from a real involvement in recovering that part of their history.

6. Did the Western military Renaissance development have an impact in the East?

When discussing about East and West interaction in the early modern period the first ideas that anyone recalls are related to the Jesuit contributions, like the maps introduced by Mateo Ricci, the clock making introduced by his companion Pantoja, the studies of astronomy made by Adam Shall, the concepts of perspective[8] incorporated to the illustrated life of Jesus sponsored by Aleni, etc. But at the same time, other aspects of Western influence can be considered, like the warfare brought by the Portuguese to Japan (as stated in the folding screens of Tokugawa Art Museum in Nagoya representing the harquebusiers dispositions in the battle of Nagashino, 1557), or the cannons sent to the Ming court to resist the Manchu invasion,[9] or the shipbuilding concepts introduced in Japan by Sebastian Vizcaino, that probably developed in the Japanese Red Seal ships of the 1630's and even the helmets on some aboriginal cultures (Taiwan is an example), probably influenced by those of the conquistadores. Other Renaissance concepts less commonly discussed are those of gardening or orchard distribution also developed in the East that maybe did not have special impact in local cultures. One example of this can be those introduced by the VOC in Kelang

In any case, the cultural and technical structures that remained longer were those made by stone, churches, blockhouses, governor houses, and particularly the fortresses, not only because they still could be reutilized, but also because they were made of ticker walls much harder to destroy. But can the Renaissance systems of fortifications be traced in the Japanese or Chinese fortifications?

This topic has been discussed without clear answer. There are similarities in the shape of the stone walls, especially in the inclination of them in order to minimize the impact of the cannon balls. But, is it possible to trace a chronological correspondence? It is interesting to mention when the first Spaniards arrived in Manila in 1570 there were two small settlements one with around twenty Japanese and the other with near forty Chinese.[10] The first Spanish ship that arrived in Japan was in 1584, to the City of Hirado, and the following year this city sent one to Manila, starting a small Japanese colony in this city, that was regarded with certain suspicion. Especially in 1589, when 30 to 40 Japanese arrived in Manila dressed as pilgrims to visit the churches of the city. They wore rosaries hanging from their collar. They walked around the whole city reconnoitering everything. Nobody bothered them and they went back. The governor believed sometime later that their mission was a kind of espionage. But to which extent this must be influenced the new military architecture in the Japanese fortresses? We think there is no relation, since Manila at that time was not yet a walled city,

[8] José Eugenio Borao Mateo, "La versión china de la obra ilustrada de Jerónimo Nadal *Evangelicae Historiae Imagines*," *Revista Goya*, No. 330, January-March 2010, pp. 16-33.

[9] The Manchus had initially some problems in conquering Ming China. For example tey were defeated in 1627 by the Ming forces' newly acquired Portuguese cannons. They started to be more succesfull after 1634 when they incorporated European design, after the capture of some Chinese artisans

[10] Borao, "La colonia de Japoneses en Manila", en *Cuadernos CANELA*, ...

its perimeter was made by a stockade, and only a tiny structure made by stone (actually within the bastion San Felipe) was constructed. And at that time the new revolutionary Japanese castles were already constructed or under construction, Azuchi in 1576 by Oda Nobunaga and Osaka in 1583 by Hideyoshi. Some scholars argue that not only Azuchi, but also the Japanese castles in Korea made during the Korean War, like those of Sunch'on and Ulsan) incorporated some Portuguese elements (Vizeu, 2007). If this is the case, it should be in relation to the walls and bulwarks made by Captain Tristao Vaz in Macao in 1568, or the advice of Portuguese, or Jesuits, in Japan, but not in relation with Manila. Some other scholars consider that similar challenges, like those brought by the new stronger cannons, resulted in similar solutions, but in different places.

A different story is the design of ships. Without a doubt the Japanese learned how to make ships following the Western style when Vizcaino returned to Japan in 1611 and 1612 searching for the Rica de Oro and Rica de Plata Islands. He shipwrecked in Japan and with the help of Japanese constructed the galleon San Juan Bautista, the same one that brought the famous Japanese embassy of Hasekura and Luis Sotelo to Spain.

Conclusions and assumptions

Modern concepts of military Renaissance architecture that appeared at the end of the 15th century and consolidated along the 16th century were immediately transplanted to the Portuguese, Spanish and Dutch colonies in America and East Asia, in a speed that can be roughly exemplify by this table that we will use as reference in the following conclusions:

1. The European fortresses of the 17th century were built through different policies:
- in kingdoms with little political unity and military might like in Java (Fort Batavia)
- in places which chiefdoms became allies (Cebú, Manila, Cavite, Iloilo)
- by a mixture of chieftain alliance, force, and as a matter of fact (Fort of Tayouan)
- by force applied by surprise (forts in Pescadores, Kelang, Tamsui, Zamboanga)
- by special agreement with local authorities (Fort Saint Paul in Macao, foreign quarter of Deshima).

2. The forts offered mainly protection from local warriors; they started as palisades (like the one in Tamsui), but when other European power became the new enemy, they transformed into walled fortress.

3. Few walled cities were established, Malaca and Manila and to some extend Batavia and Tayouan, which were accompanied by a citadel. Practically all the cases mentioned above followed the **square model the fortress**, even if the square fortresses were considered inferior to the pentagonal ones, because:

Table 1. The spreading of the Renaissance fortresses from Europe to America and the Far East

(Only the fortresses cited in this paper are included in the table)

Europe	**America** (selection of the earliest)	**East Asia**
1494 **S** Castle of Sant Angelo (Rome)		
1497 **S** Fortress of Salses (Rosellon)		
		1511 Beginning of the city of ***Malacca***
	1539 **I** San Felipe-I (Puerto Rico)	
1548 **S** Citadel of Jülich (Germany)		
1552 **P** Rosas (Spain)		
	1558 **S** Real Fuerza (Habana)	
1560 **S** Spandau (Germany)		
		1565 **T** San Pedro (Cebú, Philippines)
1567 **P** Antwerp/Amberes (Belgium)		
		1568 Early ***Macao****'s walls*
1571 **P** Pamplona (Spain)		*1571 Beginning of the city of* ***Manila***
		1585 **S** San Diego (en Intramuros)
	1590 **I** Reyes Magos (Habana)	
	1591 **I** San Felipe-II (Puerto Rico)	
1592 **P** Jaca (Spain)		
1593 **S** Aljafería (Spain)		
		1595 **S** San Felipe (Cavite, Philipp.)
	1615 **P** San Diego (Acapulco)	1616 **S** San Pedro (Iloilo, Philippines)
		1619 Beginning of the city of ***Batavia***
		1620 **S** Sao Paulo do Monte (Macao)
		1622 **S** Pescadores (Taiwan)
		1624 **S** Tayouan (Taiwan)
		1626 S San Salvador (Taiwan)
		1631 **S** Batavia 1619 (Indonesia)
		1635 **S** Zamboanga (Philippines)
		1637 **S** San Pedro (Ternate, Indonesia)

T: Triangular shape; S = Square shape; P: Pentagonal shape; I = Irregular shape.

- In contrast with Europe, where they played the role of the citadel of a pre-existing city, in Asia the squared fortresses preceded the city, so they did no started in a big shape.
- It was the simplest and the cheapest way of construction, but at the same time it was a very efficient military structure thanks to the big bulwarks that controlled the external areas of firing.
- Usually they were placed at the entrance of a harbor or of a river's big covet, to protect the natural entrance to the inner land. The bastion facing the most exposed area to the entrance was usually bigger, modifying the ideal symmetrical design.
- When those locations were not suitable for a square structure, this one—after adaptation to the terrain—is was the most suitable (like in Macao).
- In few cases the defense was complemented with scientific method of external ravelins, glacis, etc. (being Intramuros the clearest case, already in the 18th century); in others cases

the main fortress was assisted with a "rosary" of external small forts, like the block houses in Batavia, or the three forts (el cubo, la retirada, la mira) in San Salvador (Quelang).

- In most of the cases they served more as images justifying the authority of the colonial power, than a real scenario of war.
- On the other hand the central parts (o parade ground) were always empty because there were those receiving the cannonballs that did not impact in the wall; thus the protected areas were at the back of the walls, the place for houses and barracks, as we can see in the Dutch maps of San Salvador.
- We still must say that the first pentagonal fortress in America (though irregular) was San Diego in Acapulco, constructed in an early period from 1615 to 1617, in order to defend the strategic port of Acapulco where luxury goods arrived from China, and were coveted by pirates like Francis Drake, Henry Morgan or Thomas Cavendish. Being the supervisor of the fortification project Gaspar Vello de Acuña (Sluiter, 1949:69). The fortress only was challenged in 1624 by a Dutch fleet, but later stood firm and only was destroyed by an earthquake in 1776, being rebuilt more magnificently in 1783. Certainly, most of the other great pentagonal fortress that Spain built in America, like the one in El Callao, were made in the 18th century.

4. Regarding the impact of the fortresses in local martial strategies the result varies:

- In those places where colonialism continued, like the Philippines, the fortress had the same important role as in the beginning: Intramuros, Malaca and Macao (even Moluccas) are probably the best examples.
- In the places that China took immediate control, like Pescadores, Quelang, Tamsui and Anping, they were semi-abandoned but presumably became under the control of the local Magistrate of War that is why they were more or less preserved until recent times.
- In any case, at the beginning of the 20th century, under the colonial power of America and Japan, some of these relics experienced an official protection.

5. The European military fortress arrived to the East—not only as internal defensive system, but also as geostrategic one—after half a century of development of scientific systems of warfare. Thus, the way they fortresses expanded along the borders of Spain, Flanders, Italy, along the whole Europe and particularly in the Nord of Africa during the times of Charles V (Oran, Alcazarquivir, …) or in America during the times of Philip II (Acapulco, …), had a resemblance in the Far East, specially in the Philippines, where a strategic line of defense moved from South to North, from Ternate to San Salvador.[11]

6. The most significant battles of the Dutch aggressions to the Iberian fortresses that changed the colonial future were the following:

[11] The situation was different to the case of China its colonies or new territories conquered by colonial expansion, because they "were in the interior of the Eurasian continent, without large arable land or dense population. The [Chinese] empire actively promoted the settlement of those regions, but they did not provide the raw materials or commodity demands comparable to those available to the settlers in the New World" (Perdue, 2005:538).

- The first important attempt against **Macao** was in 1622. A disembark was produced but a lucky defense from Fort Saint Paul, provoked the retreat of the Dutch. This target was postponed, but whole military Dutch campaign ended in the establishment of a small fort in Pescadores islands and in 1623 in Tayouan, which will become the center of operations of their main territorial colony.
- The city of **Malacca** –very much exposed to the opened sea— experienced Dutch blockades until the definitive one of 1640, when it passed to the Dutch control.
- After the fall of Malacca, the Dutch concentrated in **San Salvador** of Northern Formosa. They failed in 1641 but they succeeded in 1642. The next step was Manila
- Fort **Santiago** of Intramuros and fort **San Felipe** of Cavite (where the galleons where docked) played an important role on the defense of Manila in the seasonal blockades the Dutch made to the city from 1600 to 1648. The Westphalia treaty of 1648 supposed the end of the Dutch pressure that was very strong in the latest years, and helped the Filipino archipelago to be Spanish until 1898. The battles of the blockades never reached the city, because all of them were held in the entrance of the Manila bay. On the contrary, the most important moments when Intramuros was a real defensive fortress was during the sangley uprisings of 1603, 1639 and 1662.
- This progress of the final Dutch offensive proved that the fortresses were designed somehow in a related line of defense, where the points that matter are not the undefended ones, but those holding important garrisons.

7. Finally we can say that the European way of constructing fortresses had a relative small impact in the martial techniques of Eastern societies, and mainly in Southeast Asia, probably because the long experience in building similar fortresses (as it can be seen in the Ming walls of Beijing, made by parallels stonewalls, filled up in between with rammed earth) and different concepts of war.

Ming walls of Beijing. (Photo of the author)

On the other hand, other military developments, as galleons and cannons brought by the Portuguese had indeed a determinant impact in some particular battles.

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