Indonesian colonial architecture

The Influence of Indonesian vernacular style over Dutch architecture in the case of the city of Batavia

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Abstract

The city of Batavia was the administrative capital of the V.O.C (United East India Company). Initially, the city's construction followed the Dutch style, the Dutch administration going to enormous lengths and putting colossal efforts to segregate the ethnic groups present in the city and t exert their dominance. Over time, the city's built environment started to adapt to the surroundings and its inhabitants and created a so-called hybrid style. This thesis hypothesizes that the architectural style in the 19th century represents a merging between the Indonesian vernacular architecture and Dutch style.

In order to research this hypothesis, the thesis compares the situation of the archipelago prior to the European arrival with the initial situation of the city in the 16th century and with the19th century situation from an architectural point of view. As such, the thesis research is based on a series of images of the built environment of the city, obtained from the colonial archives and literature sources describing the city archipelago and its buildings from the European and Indonesian points of view.

Lastly, the thesis analyzes a series of case studies from the 19th century, such as the Grand Java Hotel, the 'Japan' house, and the 'woodhuis' houses, which shows the merges between the two cultures not only from an architectural point of view but also a social-economic perspective.

1. Introduction

The built environment can translate not only the aesthetic representation of a society and traditions of the inhabitants but can also express the area's socio-political background, especially when two or more diverging cultures meet and create a so-called hybrid architectural style[1]. The island of Java is an excellent example of such an area, being located at the crossroad of civilizations and being a hub for commerce since ancient times. Even before the arrival of the Europeans, the location and importance of the island and the archipelago as a whole led to the merging of different cultures such as the local Javanese ethnic group, Malay, Chinese and Arab cultures. This merging was done organically and gradually over the centuries[2].

Starting from the 16th century, the European colonial powers tried to gain a foothold in the Indonesian archipelago to facilitate the development of the spice trade, which was limited in nature. This fostered rivalry between different countries such as the Netherlands, Portugal, and England, which competed for dominance over the archipelago. The arrival of the Europeans is usually seen as a sharp breaking point in the organic merging of cultures. The newly established oppressive regimes tried to force their model over their new domains. This can also be said in the case of the arrival of the Dutch in 1595 and the establishment of the V.O.C. (United East India Company), which culminated with the creation of the new administrative capital, the city of Batavia, Java[3].

1. Deetz, James. 1977. In small things forgotten: the archaeology of early American life. Garden City, New York: Anchor Press/Doubleday. Accessed 02 14, 2022. https://openlibrary.org/books/OL4904416M/In_small_things_forgotten.

2. Hariadi, Langit Kresna. 2007. Gajah Mada. Edited by Sukini. Solo : The Triumvirate.

3 .Kop, G. G. van der. 1926. "The Story of Batavia: The Founding of the Capital of the Netherlands East Indies." In Batavia, Queen City of the East, by G. G. van der Kop, 3-11. Batavia: G. Kolff & Company.

5. Warsono, H. R. 1992. Face of the City of the Dutch East Indies (Het Indische Stadsbeeld voorheen en thans). Jakarta: Tarumanegara University.

6. Kolff, N. V. G. 1938. Batavia als handels-, industrie-, en woonstad / Batavia as a commercial, industrial and residential center. Batavia: Gemeente Batavia. Leiden University Libraries, Colonial Collection, Leiden.

7. Tajudeen, Imran bin. "Colonial-Vernacular Houses of Java, Malaya, and Singapore in the Nineteenth and Early Twentieth Centuries." ABE Journal, 2017, no. 11 (2017). https://doi.org/10.4000/abe.11008.

8. Lukito, Yulia Nurliani. 2015. Exhibiting Modernity and Indonesian Vernacular Architecture: Hybrid Architecture at Pasar Gambir of Batavia, the 1931 Paris International Colonial Exhibition and Taman Mini Indonesia Indah. Springer Fachmedien Wiesbaden.

9. Schefold Reimar, Peter J.M. Nas, Gaudenz Domenig, Bart Barendregt, Marcel Vellinga, Fiona Kerlogue. 2004. Indonesian Houses: Tradition and Transformation in Vernacular Architecture. Edited by Peter J.M. Nas, Gaudenz Domenig Reimar Schefold. Vol. 1. 3 vols. Singapore: Singapore University Press.

The city of Batavia was initially designed to resemble a Dutch city with canals that would connect the city's different districts and purely Dutch architecture in order to create an artificial perception in the mind of the inhabitants, going as far as importing all the bricks from the Netherlands mainland. The design was intended not only to create an aesthetic appearance but also to segregate the different ethnic groups and create a social hierarchy that would assure the dominance of the VOC's ruling class[4]. Over time, the city faced multiple problems ranging from the inadaptability to the local climate, hydrologic cycles, and geography to the cultural background and needs of the local ethnic groups, which represented the city's majority population. These problems were amplified by the city's architecture, which passed through a series of transformations to ease the tensions in the city[5].

While there are multiple analyses of the transformation of the architecture and the city organization in the following centuries, most of them focus on the climate aspect and how the Dutch architecture borrowed a minimum amount of elements from the local vernacular architecture to adapt to the surroundings. Moreover, the literature addressing this subject either separates the European from the local vernacular architecture, which sometimes is not even considered architecture[6], or just considered how the local architecture was influenced by the Dutch style[7]. While the research into the influence of the European architecture over the local vernacular architecture is essential in the understanding of the historical context and the current built environment, this creates disadvantages, ignoring the importance of the cultural merging, following the same hierarchization attempted by the colonial powers instead of the perspective of an organic process which takes the strength of each style in the creation of the hybrid architecture. This hierarchization created the image of a "superior" style of architecture over another and its need to adapt to better integrate the climate. On the other hand, many studies focus exclusively on the Indonesian vernacular architecture developed before the arrival of Europeans and the survival of the traditional practices into the present[8] [9]. This creates a research gap by considering the newly formed style as an artifact of the colonial area that should be disregarded.

This thesis tries to establish a broader picture and present the evolution of the architectural style of the historical city of Batavia as a hybrid style that resulted from the organic and gradual merging of multiple architectural styles. Trying to understand this merging in the case of Batavia can help create a different viewpoint on the importance of the emergence of such hybrid styles throughout history in different areas of the world. As a result, this thesis analyses the evolution of the merging of two architectural styles in the context of colonization. The main research question of this thesis is: How did local vernacular architecture and spatial and cultural practices affect Dutch residential architecture in Batavia in the 19th century?

In addition, the thesis presents the debate of whether the newly created style can be appropriated by the local population or represent just the image of the oppression and the discrimination during the colonial past. The research hypothesizes is that the architectural styles of colonial history represent the merging of different cultures and the creation of a hybrid system that can be used to understand not only the evolution of architecture but also the socio-political background.

To answer the research question, the thesis outline will try to include as much background information as possible, starting from explaining the historical context, including the social-economic and cultural context before and after the Dutch arrival in the archipelago. As a result, the thesis includes a critical analysis of articles about the history and cultural framework, such as The Javanese Travels of Purwalelana (2021), which presents the image of the Java island from the perspective of a local noble. This is compared to literary works acquired from the colonial archive of Leiden University such as Batavia, Queen City of the Sea (1930), and Batavia as a Commercial, Industrial and Residential Center (1937), which present the perspective of the Dutch visitors to the island and the administration point of view. Furthermore, the second chapter will analyze the Javanese vernacular architecture separately, explain the building techniques and traditions present on the island of Java, and the initial concept in the creation of Batavia.

The research done by Reimar Schefold in the Indonesian houses, Tradition, and transformation in vernacular architecture (2004), and by Yulia Nurliani Lukito in the Exhibiting Modernity and Indonesian Vernacular Architecture (2015) will represent the foundation of this chapter which is going to be split into three sections corresponding to the main external influences over the archipelago's architecture, namely the Austronesian, Hindu-Buddhist, and Arabic influences. The third chapter will focus on Batavia's founding and the initial segregation system established. Based on this information, a case study consisting of the Grand Hotel Java's building which was converted from a residential building at the beginning of 19th century Batavia will be analyzed to understand the influence of the local vernacular architecture over the Dutch colonial style alongside the influence brought over the Woonhuis houses which were the main typology of buildings inhabited by the European population. This chapter will represent the results of this research, and a discussion of the results will follow it.

2. Indonesian Vernacular architecture traditions prior to the European's arrival

10. Schefold Indonesian Houses: Tradition and Transformation in Vernacular Architecture, 1-3,

11. Schefold, Indonesian Houses: The Southeast Asian-type house, 5.

12.Schefold, Indonesian Houses: The Southeast Asian-type house, 52.

13. Schefold, Indonesian Houses: The Southeast Asian-type house, 5.

14. Fox, James J. 1995. "Austronesian Societies and Their Transformations" In The Austronesians: Historic and Comparative Perspectives, by James J. Fox, Darrell Tryon Peter Bellwood, edited by James J. Fox, Darrell Tryon Peter Bellwood, 241-252. Canberra: ANU E Press The Australian National University. doi:10.22459/a.09.2006.12.

15. Kerlogue, Fiona. 2004. Cultural changes and the Jambi Seberang houses. Vol. 1, in Indonesian Houses: Tradition and transformation in vernacular architecture, by Peter J.M. Nas, Gaudenz Domenig, Bart Barendregt, Marcel Vellinga, Fiona Kerlogue Reimar Schefold, edited by Peter J.M. Nas, Gaudenz Domenig Reimar Schefold, 178-181. Singapore: Singapore University Press.

16.Schefold, Indonesian Houses: The Southeast Asian-type house, 51-53.

17.Schefold, Indonesian Houses: The Southeast Asian-type house, 1.

The Indonesian archipelago is located at the crossroad of civilizations being the land that divides the Indian Ocean from the Pacific and the maritime connection node between the Indian subcontinent and China. The civilizations present in the archipelago developed in parallel with many cultures and borrowed elements from various sides of the world, and incorporated them into their society by adapting them to the surroundings. Although the study area of the Indonesian archipelago is vast and contains hundreds of cultures that developed independently and sometimes in rivalry with each other (Figure 1.), they found different solutions for the same problems or incorporated the same element from neighboring cultures in different ways[10];as explained by Reimar Schefold, a professor of cultural anthropology and sociology of Indonesia at Leiden University:

> The vernacular houses of the several hundred ethnic groups of Indonesia are extremely varied, and all have their own specific history. Underlying this rich diversity are fundamental correspondences rooted in the ancient heritage shared by all the people of our field of study.[11]

Although many features can be assigned to climate adaptation, ecology alone cannot be considered the central point for adopting them, as it is seen in the implementation of the same system in the tropical rainforests of Sumatra and the dry savannah-like climate of Tanibar[12]. These features can be attributed to the presence of a similar ancestor group[13]; the current theory pointed at by James J. Fox at the colonization of the archipelago by the Austronesians group, which inhabited the land in ancient times[14]. In addition, the exposure from exterior cultures such as the South-East Asian ethnic groups, the Hindu traders and emissaries, and later the Arabic and Chinese traders have left an imprint on the societies present in the archipelago. The newcomers were able to integrate into the local communities by intermarrying while maintaining their traditions and life philosophies[15].

2.1 Austronesian heritage

Austronesian inhabitation of the archipelago started to be visible from the Bronze Age with the development of craftsmanship and tools used to establish the bedrock of architectural style, which can still be distinguished in modern times[16]. Their life revolved around the sea, and as such, their cosmic interpretation was represented even in architecture; as noted by Reimar Schefold, "attention was directed at symbolic issues and at how architectural structures express ideas about the right order of relationships within the social and cosmic universe ".[17] Life on the sea and navigation was the most crucial element of Austronesian society, with each part holding particular importance. Starting from the sea itself, the underneath, which on the one hand, was sustaining the boat and incubated the flourishment of life and, on

Figure 1. Ethnic Groups map of Indonesia

the one hand, was sustaining the boat and incubated the flourishment of life and, on the other hand, was considered dangerous and unpredictable. The second element was the boat which, as mentioned before, was sustaining life, and the final element, the divine sky, which provided guidance and knowledge[18]. The Austronesian sailors were known for their navigation techniques, using the stars to form a mental map and natural elements such as clouds and birds to find land and sailing routes[19]. These elements were transferred in the symbolic representation of the house and resulted in a tripartite structure named 'gestalt' (Figure 2). This translation was implemented in the typical

18. Fox, The Austronesians: Historic and Comparative Perspectives, 48–108.

19. Wu, Chunming. 2021. In The Prehistoric Maritime Frontier of Southeast China: Indigenous Bai Yue and Their Oceanic Dispersal. The Archaeology of Asia-Pacific Navigation. Edited by Chunming Wu. Vol. 4. Singapore: Springer. doi:10.1007/978-981-16-4079-7

Figure 2. Indonesian traditional pole house following the 'gestalt' tripartite structure

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20. Schefold, Reimar. 1995. "Function Follows Form: On the Ritual Efficacy of Plants and Textiles in Indonesia." Indonesia Circle. School of Oriental & African Studies. Newsletter 23, no. 66 79–99. https://doi.org/10.1080/03062849508729840.

21.Halim, Erwin Ardianto, Tessa Eka Darmayanti, and Citra Amelia, 2017 "The Symbolic Meaning of the Traditional Roof in the Houses of Karo North Sumatera, Indonesia." International Conference on Arts and Humanities, 4, no. 2 (2018): 1–8. https://doi.org/10.17501/icoah.2017.4201.

pole house, which follows the image of the cosmic tripartite, the underneath of the house floor is associated with the sea, the 'underworld'. At the same time, the living area was considered the middle world and the roof the upper world[20]. Being associated with the divine and protective element, the roof was also the most ornate element, with every cultural group having a different style to represent the status and the values of the society and the individuals[21]. Furthermore, the construction of the houses follows the image of a boat, as in the case of the 'Lampung' houses in South Sumatra with their curving upwards floors. Reimar Schefold also mentions that the term 'Lam-

protecting roof/
upper world

living area/
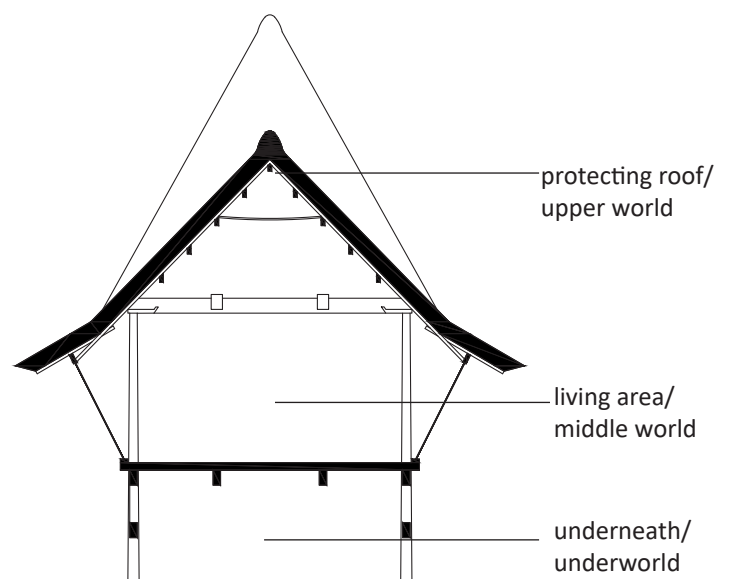middle world

underneath/
underworld

Figure 3. Sketch of the Indonesian pole house following the 'gestalt' tripartite structure

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pung' means 'floating on water' and that the local population refers to themselves as the 'crew of a ship,' having the terms of the social roles also borrowed from nautical practices. This highlights the critical impact of Austronesian culture on the development of the local cultures[22].

2.2 Hindus-Buddhist influence.

Following the development of the ancient civilization, the archipelago became one of the most important trading hubs in the world due to the location between the markets of China and India and the navigation traditions left by the Austronesians[23]. This led to the influence of the neighboring civilizations' philosophical views, which drove the centralization of power in different areas of the archipelago starting from the first century A.D. Two examples of such instances are the development of the Srivijaya and Majapahit empires, which developed as trading hubs of the area in the 7th century and 13th century, respectively[24]. These states developed simultaneously with the mainland and fostered the merging of the Hinduist and Buddhist religions,

Figure 4. Multi-level floor house

22.Schefold, Indonesian Houses: The Southeast Asian-type house, 38-39.

23. Fiona Kerlague, "Indonesian Houses: Cultural changes and the Jambi Seberang house" 178-181

24. Barendregt, Bart. 2004. Architecture on the move Processes of migration and mobility in the South Sumatra highlands. Vol. 1, in Indonesian Houses: Tradition and transformation in vernacular architecture, by Peter J.M. Nas, Gaudenz Domenig, Bart Barendregt, Marcel Vellinga, Fiona Kerlogue Reimar Schefold, edited by Peter J.M. Nas, Gaudenz Domenig Reimar Schefold, 108-109. Singapore: Singapore University Press.
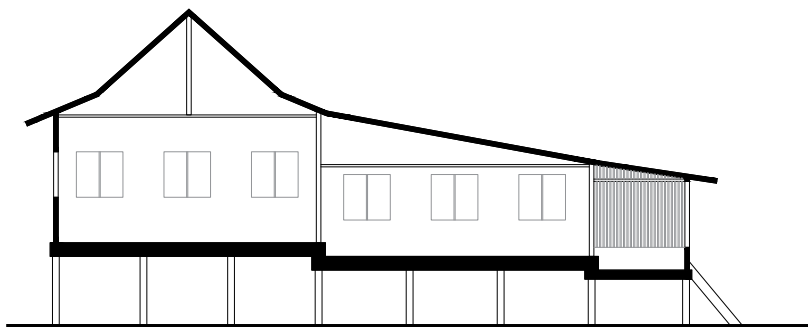
Figure 5. Multi-level floor house section

25. Manggala, Pandu Utama.2013. The Mandala Culture of Anarchy: The Pre-Colonial Southeast Asian International Society. JAS (Journal of ASEAN Studies) 1, no. 1 (2013): 1–13. https://doi.org/10.21512/jas.v1i1.764.

26. Setiya, Tri. 2018.An Indonesian. An amateur content writer. "Traditional House of South Sumatra - Characteristics - Facts." FactsofIndonesia.com, https://factsofindonesia.com/traditional-house-of-south-sumatra.

27. Schefold, Indonesian Houses: The Southeast Asian-type house, 28-32.

28. Volkman, Toby Alice. 1985. Feasts of Honor: Ritual and Change in the Toraja Highlands. 16 from Illinois studies in anthropology. Champaign and Urbana, Illinois: University of Illinois Press.

29. Schefold, Indonesian Houses: The Southeast Asian-type house, 37-46.

30. Domenig, Guadenz. 2004. Consequences of functional change Granaries, granary-dwellings, and houses of the Toba Batak. Vol. 1, in Indonesian Houses: Tradition and transformation in vernacular architecture, by Peter J.M. Nas, Gaudenz Domenig, Bart Barendregt, Marcel Vellinga, Fiona Kerlogue Reimar Schefold, edited by Peter J.M. Nas, Gaudenz Domenig Reimar Schefold, 85-90. Singapore: Singapore University Press.

which coexisted and introduced the Mandala system. This system established the hierarchization of each phase of society and adapted to the already existing cosmological beliefs. The 'Devaraja' (the god-king), which ruled by divine grace, was at the center of this system. The king's surroundings were represented as overlapping concentric circles that divided each level of the society based on status[25]. This hierarchization translated into the architectural style, with each household following a strict ranking of members and the house following a multi-leveled floor, as shown in Figure 3[26]. The kinship relations represented the most critical aspect of the multi-level structure. This indicates each inhabitant's status; for example, the parents were considered the owners and the head of the household. This also showed the difference between the younger and older children, which was noticeable[27]. The highest part of the floor, usually located to the south, was considered the most sacred space, and it was reserved for the head of the household or important guests[28].

Furthermore, this structure was then covered with a roof that either stretched over all levels that could be constructed over time or made in such a way to be extended if another level was supposed to be added. This roof was traditionally built to follow the different phases in the life of the inhabitants starting from the creation of a small room by a newly wedded couple with a roof that would extend outside, creating an outdoor veranda. Over time the inhabitants would add new spaces for a growing household and enclose the veranda[29]. In some cases, such as in the 'sopo' houses, the roof would be extended with so-called suspended roof plates, which were 'flying' planks that came down from the 'ursus' (rafters) (Figure 5.). Initially, these elements would protect the building from rain, and over time such in the case of the transformation of the building into a public building that had to shelter a growing population, would be used to extend the walls without changing the configuration of the structure and would provide a larger living area [30](Figure 2.) (Figure 6.).
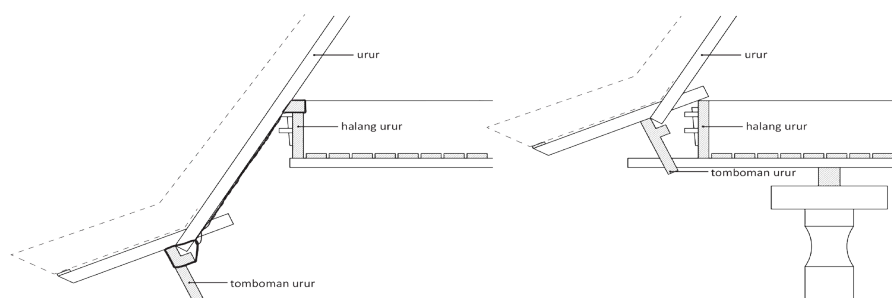

Figure 6. Flying-plank structure

Figure 7. Sopo house using flying-planks structure

2.3 Malay-Muslim influence

The development of the centralized states mentioned before, the Sri-vijaya and Majapahit empires, attracted traders from around the world, these states controlling not only the trade between the east and west but also established a monopoly over spices such as nutmeg, which was controlled by the Majapahit Empire[31]. This brought the establishment of communities of Arab, Chinese and Malay traders in critical locations over the coast, becoming essential ports on the islands of Java and Sumatra, to name just two examples. This led to an exchange of knowledge between the traders, which assimilated into the local population. This brought not only a new religion, namely Islam, and knowledge through the distribution of paper but also new ideas in the organization of dwellings and life. On the island of Sumatra, the local highland population migrated toward the coast, closer to the Malay cities, adapting their buildings to the new surroundings[32]. Such an example can be found in the Serawai 'rumah' houses (Figure 7.) which were constructed through the addition of small buildings. In the beginning, only the 'luan' was built, which was the core element of the building. At a later stage, the 'tempura,' the salon, which represented the area where the guests were invited, was added. In the last step, the 'garang,' which was the entrance veranda, was added in parallel with the 'biting,' the open working area, each room having a different roof structure. Bart Barendgegt noted that each element was constructed on a different level, following the multi-level hierarchization inherited from the ancient traditions. This addition process is similar to the Malay houses, creating variations, sometimes each room being separated into small houses or connected all together, which showed a higher status[33].

31. Hariadi, Gajah Mada. Solo: Tiga Serangkai,

32. Bart Barendregt, Indonesian Houses: Architecture on the move, 102-120

33. Bart Barendregt, Indonesian Houses: Architecture on the move, 112-121

| garang | tempuan/salon |
| binting | luan |

Variant 1

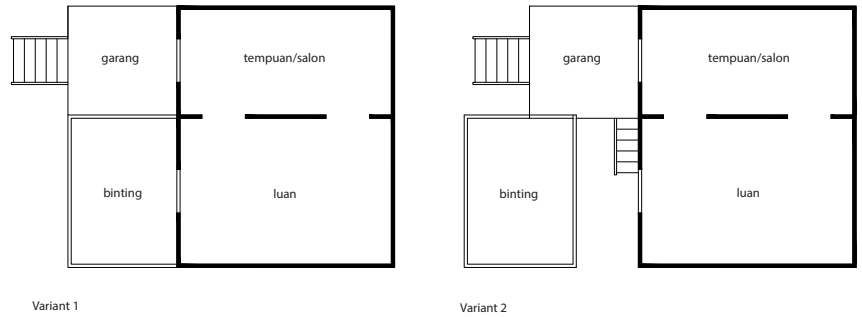| garang | tempuan/salon |
| binting | luan |

Variant 2

Figure 8. Serawai rumah houses variants

Another example found on the island of Sumatra is the houses from Jambi, which resemble the Malay counterparts and have roofs adorned with Chinese decorations (Figure 8). As mentioned by Fiona Kerlogue, "The relationship between house use and cultural values underline the importance of tradition and stability in Jambi society." While the houses in this area vary in size, they follow the same structure, divided into three parts. The front part, the 'serambi,' is considered the 'male' area of the house, being the most public space where sometimes businesses would be located or where people would come to socialize. The opposite side of the house was considered the 'female' area, and it was where the utilities were located, such as the kitchen 'dapur,' the rice deposit 'belubur', and the 'laren,' which was where the family would spend their time and eat together. Although the front was
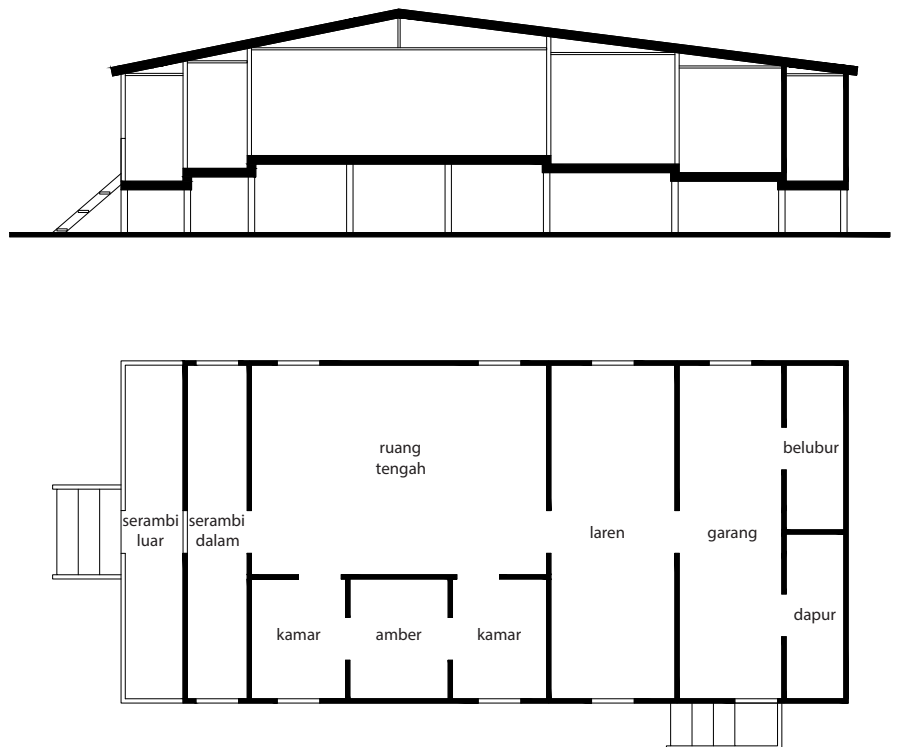

Figure 9. Jumbi house organization floor plan and section

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considered the main social area of the house, the back was actually the core of the house, having the 'garang,' which was the main entrance area, the front entrance being used only by guests. The entrance from the 'garange' was the physical interconnection with the surrounding houses, which were organized around a central back garden from where the 'garangs' of all houses were accessible. The 'ruang tengah' was located in the center of the house; this was considered the most important room, being the "symbolic core of the house, neither private nor public"[34], and where the extended family would unite with the guests who were hosted in this area. Behind this were the 'kamars,' the bedrooms, the most private area reserved for the nuclear family or the newly married couples. This organization represented all the society's values and incorporated all the traditions of the hybrid society formed[35].

Such examples are present all over the archipelago and show the organic merging of different cultures prior to the arrival of Europeans. This arrival must not be understood as an abrupt ending to the formation of a transcultural style but as a continuation. Understanding the complexity of the cultures formed in the Indonesian archipelago and the influences that transformed not only the built environment but also the societies themselves is crucial to the understanding of the relationship of these societies with the newly arrived European powers. This chapter presented three essential steps in the cultural formation of the ethnic groups present in the archipelago and their effect on the Indonesian vernacular architecture that can be seen to this day. This description of the building technics and the spatial organization of the Indonesian houses will be used in the next chapter to understand what elements were adopted by the Dutch colonial architecture and to understand the influence over the colonial style.

34. Kerlague, Indonesian Houses: Cultural changes and the Jambi Seberang house, 185

35. Kerlague, Indonesian Houses: Cultural changes and the Jambi Seberang house, 183-190

3. The establishment of the Dutch dominance

36. Ricklefs, M. C. 1993. The Arrival of the Europeans in Indonesia, c. 1509–1620. In: A History of Modern Indonesia since c. 1300. Palgrave. 22-23 London: Springer. https://doi.org/10.1007/978-1-349-22700-6_3

37. Asni, Fathullah. "The Development of Islam and Mazhab Al-Syafi'i during the Post-Arrival of Islam in the Malay Archipelago." International Journal of Academic Research in Business and Social Sciences 9, no. 3 (April 3, 2019): 1198–1200. https://doi.org/10.6007/ijarbss/v9-i3/5789.

38. Kop, Batavia, Queen City of the East, 7–8.

39. Asni, The Development of Islam, 1198-1199

40. Kop, Batavia, Queen City of the East, 9-11

41. Kehoe, Marsely von Lengerke. "The Paradox of Post-Colonial Historic Preservation: Implications of Dutch Heritage Preservation in Modern Jakarta," n.d., 1–3.

The arrival of the Europeans in the archipelago marked a turning point in the history of the area's development. Contrary to the most common view, which presents the arrival of Europeans as an abrupt change[36], the influence of the newcomers was somewhat restrained in the beginning, the Europeans only searching for new trading routes to obtain spices. This kind of interaction was quite common in the archipelago. Over the centuries, the local kingdoms saw the introduction of various merchants from diverse areas such as India, China, the Arab peninsula, and even traders from East Africa, the archipelago being part of the 'maritime silk road' that connected the Indian Ocean with the South China Sea[37].

3.1 First Contact

The first expedition to the archipelago from a European kingdom was made in 1511 by the Portuguese, who arrived at a point of upheaval[38]. The newly introduced religion of Islam provoked tension within the local population. However, the arrival of the religion was done peacefully initially through the conversion of the ruling class, which sought better relations with the Arab merchants. Over the following centuries, the newly established sultanates became more intolerant of the local beliefs. This tension culminated in all-out wars between the sultanates and the local Hindu-Buddhist population[39].

The Portuguese expeditions resulted in the signing of a treaty by the ruler of Bantam (on the island of Java), which allowed the establishment of a trading hub that led to the creation of a direct trading route to Portugal. This route briefly transformed the port city of Lisbon into the most prosperous port in Europe. This prompted other European countries to follow suit and create their own routes to the so-called 'spice islands' (the Moluccas islands in modern-day Indonesia), such as the English, who first arrived in the archipelago in 1577, and the Dutch, who decided to establish direct trade with the 'East Indies' after the closure of the port of Lisbon for Dutch ships in 1594[40]. After providing evidence of trade profitability within the Indonesian archipelago, many private companies were formed in Holland, seeking wealth and prestige. This proved to be problematic since now the Dutch companies did not have to compete only with the English and Portuguese but also between themselves, lowering the prices of the luxury commodities. As a result, in 1602, all companies operating in the archipelago were called to form the 'Vereenigde Oost Indische Compagnie' (United East India Company), formally known as the V.O.C., which soon became the leading trader in the Indonesian archipelago. The newly appointed Governor-General established the headquarters of the V.O.C. in the city of Jacatra, which was a tributary of the Bantam Sultanate, after a disagreement with the Sultan[41]. This angered the local rulers, and over the following years, the relationship between the Dutch and the local population would deteriorate. As a

result, the Sultan of Bantam allied with the English company and attacked the V.O.C.'s fortress established in the city to protect the factories and warehouses. After a series of battles lasting one year, the Dutch became victorious and burned the city of Jacatra to the ground, establishing in 1619 the colony of Batavia on the ruins of the old city[42].

3.2 Batavia's Urban Plan

The city of Batavia was constructed by the Governor-General of V.O.C of the time, Jan Pietersz Coen, to host the V.O.C. headquarters and to become the 'east capital' of the company. Over the years, the city would become the foundation of the dominance of the Dutch over the archipelago; as such, all attempts to subjugate the local population can be first-hand visible in the city's establishment[43].

At first glance, the city's structure can be identified as typical Dutch planning from the 17th century, inspired by the ideal planning of a city by Simon Stevine, following a rectangular grid and using the natural element of the lowlands to create canals for transportation. Robert Weebers, a historian from the Malay University, who is specialized in colonial planning in South-East Asia, noted that this structure represents the ideals of the Dutch society and their aspiration toward equality, offering access to all residents to the main facilities such as public buildings: "There should be a clear positioning of functions and their positioning in the plan. All places shall be easily accessible especially by water or by a network of perpendicular streets"[44](Figure 10).

42. Kop, In Batavia, Queen City of the East, 9-20

43. Ibid

44. Weebers, Robert C.M., Zuraini Md Ali, and Yahaya Ahmad. "Simon Stevin's Ideas on Settlements." Proceedings 2011 International Conference on History and Society Development, November 2011, 3–5.
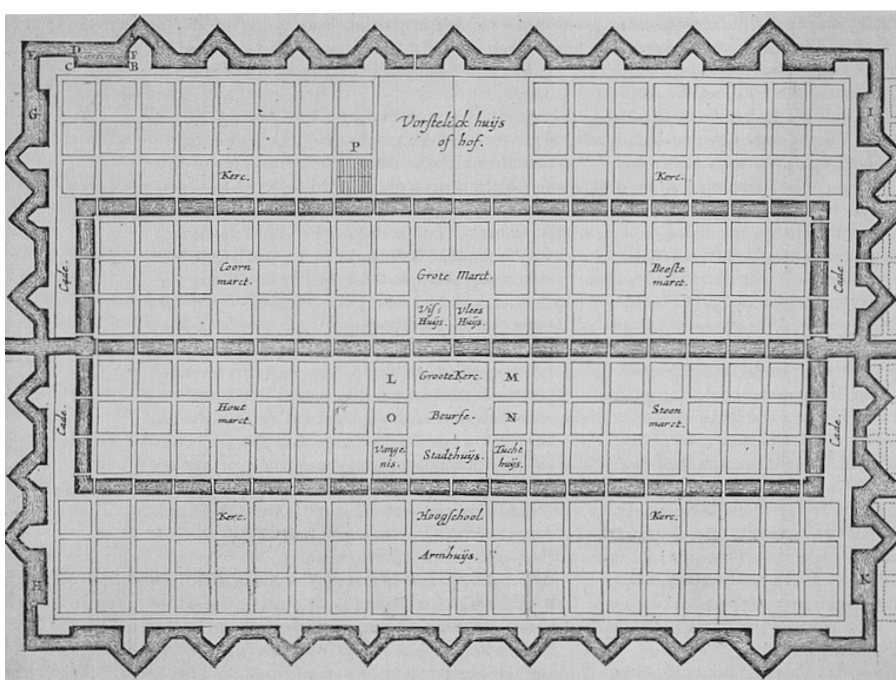
Figure 10. Ideal planning of a city by Simon Stevine

45. Kehoe, Marsely von Lengerke. 2008. "The Paradox of Post-Colonial Historic Preservation: Implications of Dutch Heritage Preservation in Modern Jakarta." Journal of Historians of Netherlandish Art 7 2 (1): 15-21. https://doi.org/10.5092/jhna.2015.7.1.3.

The usual Dutch planning included a series of bridges over multiple canals to provide transportation connections on land. In contrast, a close look at the organization of Batavia shows a lack of bridges. Marsely L. Kehoe noting, a renounced art historian, who is specialized in Dutch art history and the colonial world, notes that this is probably a result of the desire of the ruling class to segregate the population, creating quarters for the local population which are isolated and do not have many access points to control the city in the case of a revolt. Overlapping the map of the city with the ethnic distribution map shows this segregation exactly. While the Dutch population lived mainly on the primary canals and had many access points to public amenities, the local population was segregated. Such an example is the Bandanese population which was restricted toward the North-East corner and lacked the bridges connecting the quarter to the rest of the city. In addition, the groups considered the most 'dangerous' ones are kept outside the walled city, such as in the presence of the Chinese quarter and the slave units[45](Figure 11).
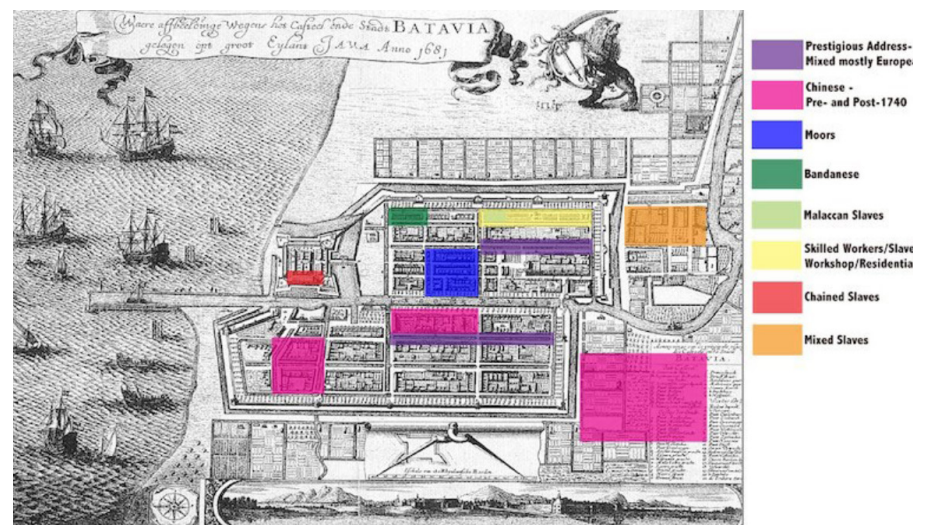

Figure 11. Ethnic distribution of Batavia map

46. Manggala, Pandu Utama.2013. The Mandala Culture of Anarchy: The Pre-Colonial Southeast Asian International Society. JAS (Journal of ASEAN Studies) 1, no. 1, 1–13. https://doi.org/10.21512/jas.v1i1.764.

47. Vellinga, Marcel. 2004. The use of houses in a competition for status. Vol. 1, in Indonesian Houses: Tradition and transformation in vernacular architecture, by Peter J.M. Nas, Gaudenz Domenig, Bart Barendregt, Marcel Vellinga, Fiona Kerlogue Reimar Schefold, edited by Peter J.M. Nas, Gaudenz Domenig Reimar Schefold, 155-173. Singapore: Singapore University Press

Although this brutal segregation created a strict hierarchization of the society, this organizational style is not new to the archipelago. The Dutch only built on the existing societal divisions embedded in the Mandala system of ruling, which created a strict hierarchization[46]. This is visible in the case of the Arab merchants, who were regarded as a superior layer of the society due to their religious status and wealth accumulation. These traders usually lived in separate quarters than the rest of the population, such examples being seen all over the archipelago[47]. This division was exacerbated by the structure of the city, which at the time was praised as a model of colonial organization. Over time, the situation of the city deteriorated due to the fact that

the Dutch planners did not take into account the local climate, landscape, and social behavior, considering that the Dutch model can be applied all over the world[48]. This led to an insalubrious city with many canals blocked due to the different hydrological systems. While the Dutch canals from the Netherlands rely on a constant supply of running water to drain the ground, the local climate is based on the presence of the Monsoon twice a year which transforms the canals into static bodies of water that can become fertile grounds for diseases [49]. In addition, the demography of the city, which consisted of only a small European minority, created social tension, the Dutch population feeling anxious and imposing ever tighter rules to 'equalize' the population and hide the created hierarchy[50]. These two elements were the main reasons that led many Europeans to leave the walled city at the end of the 18th century and establish a new quarter on higher grounds from where they could exert dominance over the local population[51].

3.3 Batavia's Architectural Style

Initially, the city was designed in a typical Dutch fashion, following the architecture present in the 17th century; "Batavia was built entirely as a Dutch town, the houses in an unbroken row, with canals and drawbridges"[52]. Kehoe noted that the construction of buildings went as far as to import all the bricks from the Netherlands' mainland to create an authentic Dutch atmosphere[53]. This construction had two main reasons. On one hand, the creation of a Dutch city with Dutch houses would attract colonists who would feel comfortable surrounded by a familiar atmosphere and living in houses similar to the ones they were living in before to maintain a similar lifestyle in this part of the world, surrounded by foreign culture and land. On the other hand, this was used to enforce dominance over the local population, who were initially forced to live inside Dutch houses that were not suited for their behavior, household organization, or religious beliefs.
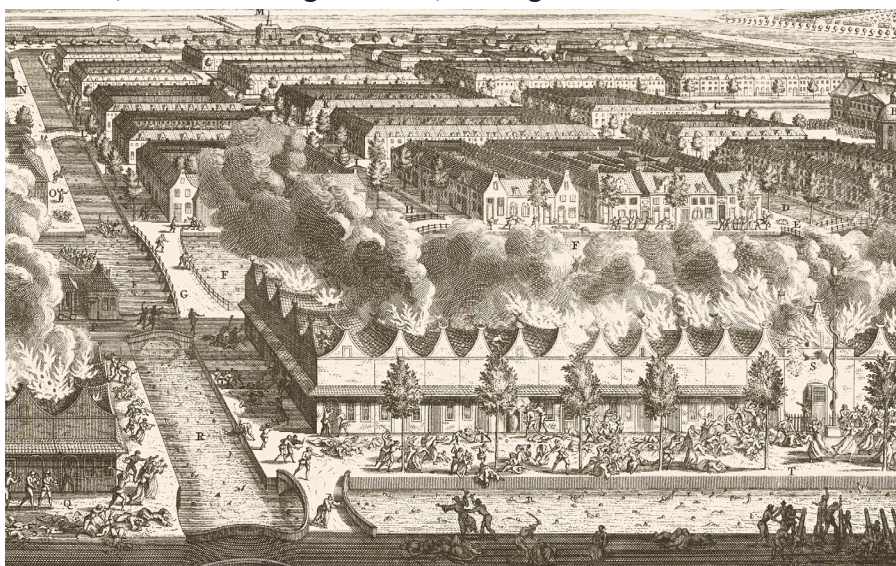

Figure 12. Painting of the initial design of Batavia with row houses and canals

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48. Kehoe, Dutch Batavia: Exposing the Hierarchy of the Dutch Colonial City, 8-13

49. Kop, G. G., Rika Roovers, and K. H. Dronkers. 1937. Batavia Als Handels-, Industrie- En Woonstad, Samengesteld in Opdracht Van De Stads- Gemeente Batavia = Batavia as a Commercial, Industrial and Residential Center, Written for the City Municipality of Batavia. 45-51. Batavia: G. Kolff.

50. Kehoe, Dutch Batavia: Exposing the Hierarchy of the Dutch Colonial City, 3-10

51. Kop, Batavia, Queen City of the East, 20–32.

52. Kop, Batavia as a Commercial, Industrial and Residential Center, 39-40

53. Kehoe, Dutch Batavia: Exposing the Hierarchy of the Dutch Colonial City, 10

54. Kehoe, Dutch Batavia: Exposing the Hierarchy of the Dutch Colonial City, 8-13

55. Kop, Batavia as a Commercial, Industrial and Residential Center, 33-46

56. François Valentyn, Salomo Keyzer. 1862. François Valentijn's Oud en nieuw Oost-Indiën. Amsterdam: Van Kesteren

By being surrounded by colonial architecture, the local population would become aware of their subjugation, although the European population represented only a small portion of the entire population. In addition, initially, the newly established administration tried to regulate not only the lives and behavior of the local population using the built environment but also the lives of the European population to create uniformity and the appearance of equality[54].

The establishment of the Dutch framework regarding buildings in the new location proved to be difficult, the Dutch houses not being suited to the local climate and cultural background. Shortly after the city's founding, the buildings were modified, adopting local elements. Initially, these elements consisted only of climate adaptation, such as the use of the local roof shape and the use of the 'flying planks'. This was probably a result of the fact that the typical Dutch row houses were unable to adapt to the local monsoon season twice a year which brought high quantities of rain, and the shape of the house with a short façade to the street was not able to distribute the accumulated water. In addition, the high moisture and rainfall were not just problematic for the European inhabitants but also for the materials imported. Over time the materials used were substituted by local harvest materials, which were easier to acquire and better suited for the local environment[55] [56].

Figure 13. Painting of Batavia showing the row houses implementation of the flying plank

This explanation of the founding of Batavia shows that even though initially the city was constructed to dominate the local population and create an artificial image of a Dutch city, over the decades, the rules established to segregate the population and keep the appearance of a unified Dutch group failed. This allowed the continuation of the organic evolution of the interchanges and the creation of a hybrid culture. The built environment transformed not only through the adoption of the Indonesian vernacular architecture of European technics and spatial organizations but also the reverse is accurate, as will be proved in the following chapter.

4. 19th-century situation and the influence of the Indonesian vernacular architecture

The socio-political situation of the colony of Batavia and the Dutch East Indies as a whole underwent profound changes at the beginning of the 19th century. The French revolution and subsequent appointment of a French governor over the Dutch East Indies in 1808 following the conquest of the Netherlands brought new enlightenment ideas to the colonies. The following decades saw the succession of the administration from French hands, to English governments, back to the V.O.C. control, and finally to the Netherlands government's direct control after the company's bankruptcy in 1796[57]. In addition, this instability brought a state of disregard over the problems of the city, which, combined with the new administrative model established, allowed a certain degree of relaxation of regulations and increased freedoms regarding segregation as long as the quotas established of resources such as spices were met, accelerated the formation of the new transcultural architecture[58].

While looking at a panoramic picture of a canal in the city in the 19th century, it can be observed that the adoption of elements from the local vernacular architecture was no longer a limited example but became the norm. Kop, a high-ranching in the local administration, notes in his description of the city in the 19th century for the Batavia's municipality, extracted from the archives of Leiden University, that there were two types of residential buildings in the colony, the so-called 'brick houses' and the 'kampong' houses. This separation of

57. Kehoe, The Paradox of Post-Colonial Historic Preservation, 2-4

58. Kop, Batavia as a Commercial, Industrial and Residential Center, 42-44

Figure 14. Panoramic view over a canal in Batavia in the 19th century

59. Kop, Batavia as a Commercial, Industrial and Residential Center, 46-52

terms does not necessarily define the shape or material of the building but more the ethnic category of the inhabitants. Usually, the 'brick houses' were populated by Europeans, while the 'kampong', which were considered by the local administration as 'primitive' and having bad living conditions, were occupied by the local population. Although this separation represented the majority of cases, it was not a definite rule; cases of interchanges between these typologies existed[59]. This chapter illustrates how the 'brick houses', which were constructed in colonial style, adopted consciously or unconsciously not only climate elements but also elements from the organization and behavior of the so-called 'primitive' houses, which were seen as inferior, answering the research question of: How did local vernacular architecture and spatial and cultural practices affect Dutch residential architecture in Batavia in the 19th century?

4.1 The Ensemble Street

Figure 14 illustrates a canal from the old walled area of Batavia. At first glance, the buildings present in the picture do not resemble the strict implementation of the Dutch architectural style described in the city's founding. A closer look reveals that the buildings are actually 'brick houses', inhabited initially by the European population. The construction of the ground floor in colonial style, using European materials such as bricks and natural stones, presents the initial appearance of

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the buildings. The upper levels, in contrast, seem to be added more recently to adapt the structures to the current setting. While the use of the 'flying planks' was adopted almost since the beginning of the city's founding for climate protection[60], here the adoption of the local purpose of extending the building without modifying the structure creating overhanging balconies, which over time can be enclosed, can also be observed. This is done in order to enlarge the interior space according to the needs of the household without changing the structure of the building. In addition, these extensions are constructed using local materials, as can be seen in the roof in the right corner of the image. Furthermore, on the building in the left corner of the picture, the implementation of the 'flying planks' prior to the enlargement of the building can be observed. This shows the adoption not only of the techniques but also the thinking of the construction of the buildings in stages according to different aspects of the inhabitant's life. The newly created veranda could be used to build an extension of the house in the future. This way of thinking is probably borrowed from the 'sopo' houses, which, as Guandenz Domenig explained, used the 'flying planks' initially to protect the building from rain and later to create a veranda that could be closed up if the organization of the house needed to be enlarged in the case that the building would become a public space of shelter a growing population of the household[61].

In addition, the image shows an crucial aspect of the street, namely the absence of people in an area that resembles a residential part of the city during the day according to the shadows created by the sun's position. This bizarre aspect could be associated with the dire living conditions of the city at the beginning of the 19th century. As explained in the previous chapter, the spread of diseases and the anxiety felt by the European population convinced them to abandon their houses inside the walled city and create the Weltevreden quarter, which was populated with 'woonhuis' houses (countryside villas). The remaining buildings were transformed into commercial spaces or offices, this being probably the reason for the extension of the buildings and the transformation from residential buildings into public ones [62]. Such an example of a residential building being transformed into a commercial building is the case of the Grand Hotel Java.

Grand Hotel Java was a hotel on Rijswijk Street inside Batavia's old Dutch walled city. It was initially constructed for a wealthy Dutch family and later was transformed into a hotel in 1834. Analyzing the images obtained from the archive shows the organization of the hotel composed of the main building surrounded by a series of small bungalows where most of the hotel rooms were located. The Grand Java Hotel was a small hotel consisting of only 70 rooms and was considered a more 'provincial' establishment compared with the Hotel Des Indes, which was the most important hotel, constructed in the modernist style, representing the image of the modern movement in the archipelago[63].

60. Kehoe, Dutch Batavia: Exposing the Hierarchy of the Dutch Colonial City, 9-10

61. Domenig, Indonesian Houses: Consequences of functional change, 85-90

62. Kop, Batavia, Queen City of the East, 20–32.

63. A New Home in the East Indies - Nicole C. Vosseler. Accessed April 10, 2022,7-11. https://nicole-vosseler.com/archiv/Archiv%20Englisch%20Feuerinsel%20A%20New%20Home%20in%20the%20East%20Indies.pdf.

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Figure 15. Grand Java Hotel Main Entrance

According to the images extracted from the archive, it can be observed that there were two entrances to the hotel, the main entrance oriented toward Rijswijk Street and another entrance that led toward the inner courtyard from where the small pavilions were accessed. The main entrance consisted of an imposing veranda, and the positioning toward the street indicates that this was the public area of the building, probably being inspired by the Malay style which was present in Sumatra through the development of the 'Jambi' house and on Java. The bungalows present around the main buildings could represent the evolution of the Dutch behavior, the small initial buildings probably being designed for the servants and later adapted and extended for hotel use.
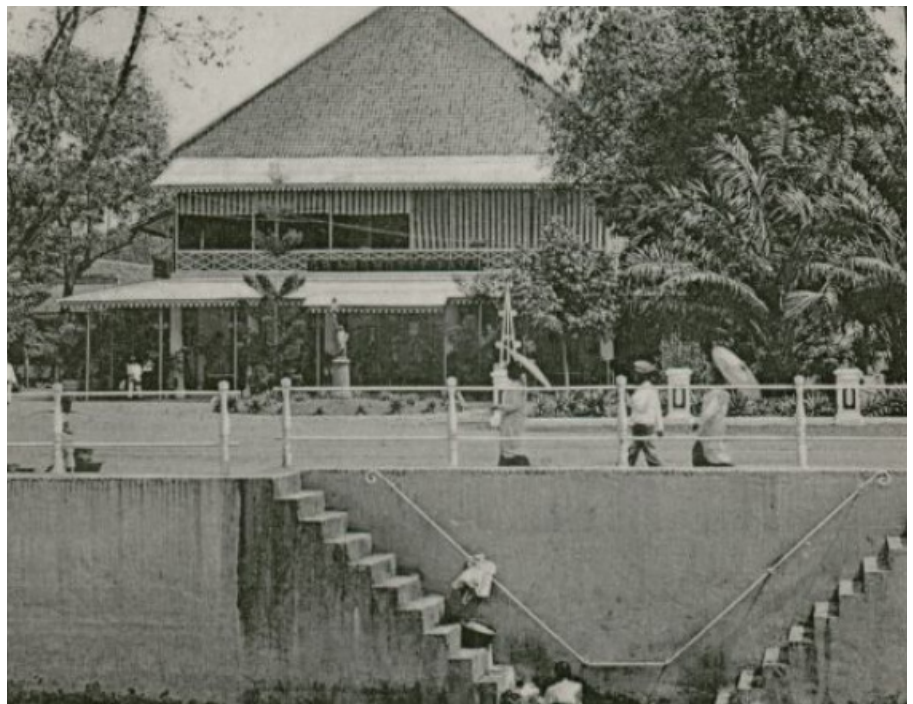

Figure 16. Grand Java Hotel

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This practice of constructing servants' quarters in the detached building is probably borrowed from the local noble class[64]. The administration tried to stop the practice of the wealthy Dutch population of acquiring servants or enslaved people by limiting the number of servants allowed for a household in order to cover the created hierarchization[65]. In addition, the pavilion buildings use local construction methods such as the use of flying-planks to create initially a veranda and later to enclose it, as explained in the initial chapter. This use of local technics and organization became widespread around the 19th century in the Dutch house, the bungalows of the Grand Java hotel being similar to the 'woodhuis' houses that were present in the Weltevreden quarter.

4.2 Woonhuis Houses

The popularization of the 'woonhuis' houses shows the adoption and transformation of the European population's lifestyle and behavior and the effect of the transcultural architecture created. The style of the country-houses known as the 'old Indie style' became common at the end of the 18th century as a result of the extension of the European ruling class in the periphery of Batavia since the city became unhealthy and very noisy, and due to the political background which transformed the outskirts of the city, which were vulnerable to raids and animal attacks into a development area[66]. These kinds of country-houses are present throughout the archipelago and show the merging of the two architectural styles, such as in the case of the Landhuis Djipang house, known as the 'Japan country-house'. This house was constructed in 1790 by Adries Hartsinck, a high-ranking officer in the local administration. Adries built multiple country-houses at the periphery of Batavia, combining the Dutch style with local architectural elements[67]. Looking at the 'Japan country-house', it can be observed that the main aesthetic feature which also gave the nickname of the house is the roof, constructed using local techniques as a projecting roof that covers not only the entire house but also the front and back veranda[68]. In contrast, the positioning of the house at street level is a Dutch trait, typical tropical houses being commonly raised on

Figure 17. 'Japan' house main entrance and surroundings

64. Kop, Batavia as a Commercial, Industrial and Residential Center, 60-70.

65. Kehoe, Dutch Batavia: Exposing the Hierarchy of the Dutch Colonial City, 3-4

66. Heuken, Adolf. 1982. History sites of Jakarta. 193-195 Cipta Loka Caraka.

67. Pertiwi, Ni Luh Made. "Lonceng Penanda Awal Denyut Peradaban Palmerah Halaman All." KOMPAS. com. Kompas.com, September 26, 2014. https://travel.kompas.com/read/2014/09/26/201700227/Lonceng.Penanda.Awal.Denyut.Peradaban.Palmerah?page=all.

68. Heuken, History sites of Jakarta, 206-207.

69. Heuken, History sites of Jakarta, 197-198

70. Heuken, History sites of Jakarta, 206-207.

poles as protection against floods and animal attacks[69]. In addition, while the front veranda is a sign of the adoption of the local organization techniques and lifestyle, the large and high entrance and the top part made of glass window shows strong Dutch influences. Furthermore, Adolf Heuken mentions in his description of Historical sites of Jakarta that the interior of the 'Japan country-house' was organized around a central corridor that ran through the entire house and to the back veranda and had rooms on both sides of the corridor[70]. This organization style was prevalent at the time, being inspired by the Malay plan and which was the inspiration for the 'woodhuis' houses from the Weltevreden quarter in the 19th century.
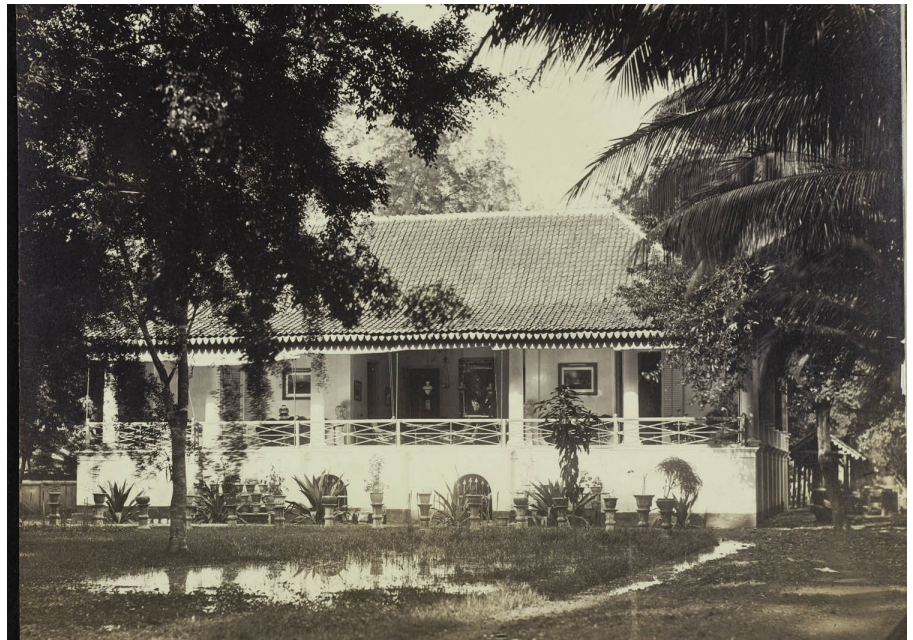

Figure 18. 'Woodhuis' house located on Batavia's outskirts

The description of the typical 'brick house' present in the Weltevreden quarter made by Kop in the depiction of the city of Batavia at the end of the 19th century and the beginning of the 20th century shows a close resemblance with the 'Jambi' houses and the Malay plan present in the southern part of Sumatra and which were further spread on the island of Java before the European arrival.

71. Kop, Batavia as a Commercial, Industrial and Residential Center, 69-70.

> As a rule, one enters a house through the more or less roomy front porch where tea is served in the afternoon, the contents of the newspapers are digested, and calls are received in the evening. In accordance with the classical division of the house, one finds behind the front porch an inner gallery… and behind it the back porch or combined drawing and dining room. Alongside of the 3 compartments is – formerly separated therefrom by a passage – a number of rooms the front one of which is used as an office or study and the rear rooms as bedrooms. At the back of the main building, there is furthermore a number of outbuildings that contain one or more pantries, the kitchen, the bathroom, the W.C., and the servants' room[71].

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The Jambi houses, which follow the Malay style of planning as explained by Fiona Kerlogue, organizing the house according to religious and social beliefs, can be compared with the description of the woonhuis houses. These houses include a veranda used for social purposes inspired by the 'Serambi' present in the Jambi houses, which served the same purpose. In addition, the organization of the house alongside a central corridor is identical to the Malay planning, the only addition of the 'woonhuis' houses being the presence of an office adapted for the European inhabitant's routine. This area, which includes the bedrooms and office, was considered the most private space, similar to the 'ruang tengah'. Furthermore, the positioning of the kitchen and the pantry behind a back veranda is a very atypical organization of a Dutch house that usually positioned the kitchen at the front of the house in order for the people cooking to be able to observe the activities taking place on the street. In addition, the remark made by Kop that this part of the house could sometimes be a separate building resembles the 'garang' of the Jambi houses, which showed the status of the inhabitants according to the attachment or not of the kitchen to the house[72].
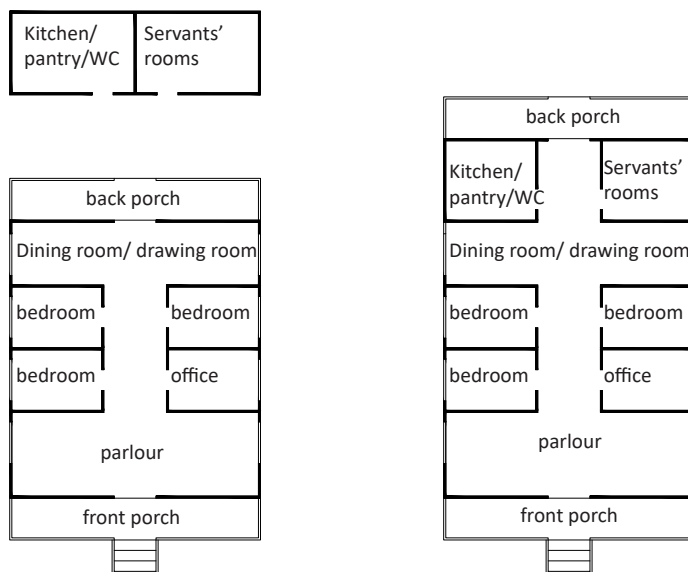
Figure 19. 'Woodhuis' house organization according to Kop's description

The typical 'woodhuis' house followed the configuration of a threshold wall that divides the house plot into a front yard and an inner compound, as mentioned by Imran bin Tajudeen in his research of the influence of the Malay Plan over the 'woodhuis' style. These thresholds demarcated the difference between the public part of the house, which was displayed to the street, and the private area oriented to the backside, probably inspired by the Javanese organization of spaces. This area also included a side door similar to the Jambi house, which acted as the entrance point for the household[73].

73. Tajudeen, Imran bin. 2017. "Colonial-Vernacular Houses ofJava, Malaya, and Singapore inthe Nineteenth and EarlyTwentieth Centuries: Architectural Translations in the." ABE Journal Architecture beyond Europe (Open Edition Journals) 14-17. doi:10.4000/abe.11008.

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Figure 20. Small 'Woodhuis' houses in the Weltevreden quarter

74. Kop, Batavia as a Commercial, Industrial and Residential Center, 50-53.

These additions and the new beliefs of the roles of each room show not only the newly adopted organization of spaces by the European population but also the alteration of the behavior of the Europeans in order to adapt to the new surroundings. It must be noted that these new behaviors were appropriated from the local population. As Kop mentioned, these 'woodhuis' houses were not inhabited only by the European population but also by the local one[74], showing their shared views on the conduct of life and their similar behavior, showing the merging not only of the two architectural styles but also the cultural merging, these houses being the transcription of this merging in architecture and showing that the newly formed hybrid style belongs not only to one ethnic group or another.

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5. Conclusion

Analyzing the built environment of 19th century Batavia is a topic that requires the creation of a complete image that includes not only background information from the architectural field but also the development of the cultural, social, and political aspects of the city, as demonstrated by this thesis. The understanding of the transformation of Dutch colonial architecture throughout the centuries is visible through the comparison between the initial architectural description of the city and the case studies from the 19th century.

This thesis presents the transformation of the Dutch colonial style and responds to the research question: How did local vernacular architecture and spatial and cultural practices affect Dutch residential architecture in Batavia in the 19th century? by analyzing a series of elements that were adopted from the local vernacular architecture. The understanding of this transformation is crucial for the recognition of the cultural merging in the archipelago, which was present during the colonial time. The disregard for the transformation of the formed hybrid style would ignore the cultural evolution of the archipelago, which cannot be characterized only from the point of view of the local population or one of the European settlers. The two groups interacted with two fundamentally different civilizational systems initially. The system presents in the archipelago prior to the European arrival, although based on a rigid hierarchization was already adapted for transformation and assimilation of newcomers' beliefs, not only from an architectural point of view but also from a cultural and social one. This is visible in the analysis of the local vernacular architecture, which focused on three turning points in the development of the archipelago, namely the Austronesian ancestry, the Hindus-Buddhist impact, and the Muslim-Malay influence. These three critical points built on top of each other and created the local architectural style, which developed organically through the merging of different beliefs and techniques. In contrast, the analysis of the system that the Dutch colonists tried to implement shows the desire for segregation and the repeated attempts to stop the merging of cultures which failed and resulted in the creation of the hybrid system present in 19th century Batavia.

In the case of the 'woodhuis' houses, the new architectural style formed represents exactly the transformation of the Dutch colonial style, which was amplified by the European population's adoption of the local behavior and beliefs. Comparing the early architecture of Batavia with the one present in the 19th century highlights the transformation of the Dutch colonial style and the creation of a hybrid style that does not belong only to one ethnic group, instead representing the merging of multiple cultures. The adoption of the flying-planks not only as a climate element but also as a way of thinking for the future and the inclusion of the Malay plan, which was present throughout the colonial buildings within the archipelago shows the degree to which the built environment became the transposition of the socio-political

context. While the merging was initially lethargic due to the imposed restrictions and the segregation, the exponential increase in the 19th century shows the evolution of the architectural background and the creation of the trans-cultural style. This merging does not differ substantially from the evolution of the archipelago's architecture styles prior to the European arrival. This arrival represents an important chapter in the evolution of the local architecture, and while the architecture present in Batavia in the 19th century, which was so-called 'colonial architecture', resembles more the local vernacular architecture rather than the Dutch style.

The results of this thesis support the initial hypothesis, proving that the created hybrid style resembles the socio-political and architectural evolution. This thesis tries to give an answer to the research gap in the analysis of the hybrid system formed, which is usually regarded only as an artifact of the colonial era that does not represent the local environment. The results are similar to some research already present, such as the case of the research done by Imrar Bin Tajudeen, which analyses the 'woodhuis' style, being one of the only research projects done on this subject. In contrast, most of the research focuses only on the influence of the Dutch style over the local vernacular architecture.

Although this research was limited to the examples presented and the lack of information regarding the architectural style in 19th century Batavia, this thesis tries to create a better understanding of the complex evolution of trans-cultural styles which are present all over the world. Further research is needed on the evolution of the 'woodhuis' style present in Batavia but also on the multiple merges throughout the archipelago not only between the Dutch and Javanese and Sumatran styles but also the importance of the Chinese and Arab influences over the local architecture.

List of illustrations

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Fig. 1 Ethnic Groups map of Indonesia. Image by Elliot, "Ethnic map of Indonesia – Reproduced from National Museum in Jakarta", An Introduction to Indonesian Ethnic Groups and Languages, THE SPICE ROUTE END, ACCESED APRIL 13, 2022. HTTP://THESPICEROUTEEND. COM/INTRODUCTION-INDONESIAN-ETHNIC-GROUPS-LANGUAGES/

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Fig. 5 Multi-level floor house section. By author

Fig. 6 Flying-plank structure. By author

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Fig. 8 Serawai rumah houses variants. By author, made after drawing by Bart Barendregt, "Map of the rumah Serawai and its development through the process of addition" Architecture in movement. Vol. 1, in Indonesian Houses: Tradition and transformation in vernacular architecture, by Peter J.M. Nas, Gaudenz Domenig, Bart Barendregt, Marcel Vellinga, Fiona Kerlogue Reimar Schefold, edited by Peter J.M. Nas, Gaudenz Domenig Reimar Schefold, 117, Figure 5a-c. Singapore: Singapore University Press.

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Fig. 10 Ideal planning of a city by Simon Stevine. Drawing by Simon Stevin, "Ideal Plan for a City", c. 1650. From Simon Stevin, Materiae Politicae: Bvrgherlicke Stoffen; vervanghende ghedachtenissen der oeffeninghen des doorluchtichsten Prince Maurits van Orangie (Leiden: Justus Livius, 1650) (artwork in the public domain)

Fig. 11 Ethnic distribution of Batavia map. Image by Kehoe, Marsely L., "Distribution of Population in Batavia", Dutch Batavia: Exposing the Hierarchy of the Dutch Colonial City, 19, Figure 13, Journal of Historians of Netherlandish Art 7:1 (Winter 2015) DOI: 10.5092/jhna.2015.7.1.3.

Fig. 12 Painting of the initial design of Batavia with row houses and canals. Painting by Jakob van der Schley, "Tableau de la Partie de Batavia, ou s'est fait proprement le terrible Massacre des Chinois", c 1740. (1715–1779), 224 x 160 mm, from Kessler Collection, 10402, Accessed April 13, 2022, http://hdl.handle.net/1885/157301

Fig. 13 Painting of Batavia showing the row houses implementation of the flying plank. Painting by Johannes Nieuhof, "Tijgersgracht (detail)", 1682. From Johannes Nieuhof, Gedenkwaardige Brasiliaense zee- en landreis (Amsterdam: Widow of van Jacob van Meurs, 1682). Lieden University Colonial Architecture Archive (artwork in the public domain)

Fig. 14 Panoramic view over a canal in Batavia in the 19th century. Photograph possibly by the Netherlands Indies Topographic Bureau, c. 1870s, albumen prints, left side 196 x 302 cm % right side 201 x 300 cm, collection of the author, Melbourne, https://issuu.com/equinox-publishing/docs/batavia19thcentury

Fig. 15 Grand Java Hotel Main Entrance. Photograph by Tan Tjie Lan, "1890 – 1910 Grand Hotel Java", 182 x 247mm, form Tropenmuseum Collection, TM-60015184 (artwork in the public domain), accessed April 13, 2022, https://hdl.handle.net/20.500.11840/17603

Fig. 16 Grand Java Hotel. Photograph by N.V. Handelmaatschappij Het Centrum, "Grand Hotel Java in Rijswijk te Batavia", c 1905, from Lieden University Colonial Architecture Archive, KITLV 86883, accessed April 13, 2022, http://hdl.handle.net/1887.1/item:917314

Fig. 17 'Japan' house main entrance and surroundings. Photograph by Georg Friedrich Johannes, "Landhuis Depan bij Paal Merah, Batavia", c. 1920-1935, 163 x 227 mm, from Tropenmuseum Collection, TM-60016082 (artwork in the public domain), accessed April 13, 2022, https://hdl.handle.net/20.500.11840/474959

Fig. 18 'Woodhuis' house located on Batavia's outskirts. Photograph by Woodbury & Page, "Particulier woonhuis in Batavia", c. 1875, 365 x 275 mm, from NMvWereldculturen Collection, RV-A42-1-12, (artwork in the public domain), accessed April 13, 2022, https://hdl.handle.net/20.500.11840/889533

Fig. 19 'Woodhuis' house organization according to Kop's description, By author

Fig. 20 Small 'Woodhuis' houses in the Weltevreden quarter. Photograph by Batavia gemeente, "The building of small houses at Batavia-C. is not
neglected. (Chapter I—C—2)", from Kop, G. G. van der. 1926. "The Story of Batavia: The Founding of the Capital of the Netherlands East Indies." In Batavia, Queen City of the East, by G. G. van der Kop, 69, Figure 40, Batavia: G. Kolff & Company.