Bonaire's undocumented typologies

The development of the church, school and house in three consecutive periods

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Abstract

This thesis examines various aspects of the influences on Bonairean architecture. The focus of this thesis is to add to the research gap of buildings on Bonaire, as Bonaire has been considered less important than the bigger islands. This thesis looks into how the development of the architecture of Bonaire in the period of slavery up to the modern day can be understood from a history of colonization. The research is done through interviews, literature and archival research, and a series of case studies. The conclusion indicates that throughout history Bonaire has changed ownership several times, from Spanish colonizer to the British and Dutch, with the Dutch being the ones who had the most influence when it comes to buildings and architectural expression.

When it comes to buildings before and after the abolishment of slavery, there are a lot of resemblances. The typologies: church and school have a direct relationship with each other due to Religion being an important aspect at that time. When talking about the materials it can be concluded that coral rocks, lime, and wood have been the main choices for buildings dating back before and after the Dutch colonized Bonaire. Furthermore, reinforced concrete, glass, and steel were used in the modern period. The period after the abolishment of slavery , Bonaire had buildings that were still connected to the Dutch influences and architectural styles and not directly connected to world trends. However, in the mid-20th century modernization related to Europe and the Americas can strongly be seen, when Modern styles like Functionalism were internationalized.

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Chapter 1: Introduction

The community and developments of the islands in the Caribbean were built from scratch and are directly connected to the history of colonization. Architecture heritage on these islands is an interesting topic, each island has its own conflicts related to heritage, with islands having to deal with the violent past and maintaining what colonizers left behind. Therefore, architectural heritage and preservation have led to a debate, but also similarities in the way of thinking. Since the mid-20th century, the architecture of the Caribbean has been a topic of research. Important elements in this discussion are the environment, the influence of colonizers, local vernacular, materials, and tradition.

The environment of the colonies had a dominant influence on architectural development. Architecture styles and designs that were often graceful and charming from the mother countries were often not suited for the tropics (Crain, 1994). Additionally, there is an even greater number of "locally developed creole house types" (Edwards, 1983). But Bruisseret (1980) looks at this from a different point of view, he mentions three influences: "tradition, the availability of materials; and the climate" (Bruisseret, 1980). Furthermore, Crain (1994) sets his focus on the islands that through his eyes are more important throughout history and have a "greater" architectural value. Nevertheless, the architectural framework is narrowed and only constantly focused on one part of the Caribbean, the supposedly part that has "better" architecture. Therefore Edwards (1983) argues that there is a small framework of literature on Caribbean architecture and explains how there is a small amount of data documented about the buildings in the Caribbean islands and how there needs to be a collective data system for the islands (Edwards, 1983).

Edward's article presents the collecting of data as complicated, because of the diverse and unique architectural theme each island has and therefore these themes are mostly seen as separate from the parental European and American traditions. Each island has its own uniqueness and history that influenced the architecture. There is a gap in the knowledge of architecture on the smaller islands as they have been considered less important than the bigger ones. An interesting island that has been researched a little is Bonaire. The history of Bonaire is connected to a dark past related to trade that was directly linked to slavery, therefore Bonaire has changed ownership several times, from Spanish colonizer to the British and Dutch. The Dutch have been one of the biggest influences in the history of Bonaire and have had ownership the longest. Only around the abolishment of slavery were colonizers allowed to establish on the island, therefore Bonaire was built from scratch and has an interesting development that marks important changes throughout its existence, with Bonaire's architecture developing in the period of slavery up to modern times (Hartog J. , 1978).

Within the field of architecture history, relatively few to no examples of actual historical and spatial research have appeared on buildings on Bonaire (Edwards, 1983). They do focus on islands in the Caribbean but they rather choose Curacao over Bonaire. So most buildings have remained undocumented and will end up being demolished without any research done on them (Coomans, Newton, & Coomans-Eustatia, 1990). Since most historians always study the main islands in the Caribbean, they should start setting their focus on the smaller islands.

This research aims to gain more understanding of the architecture of Bonaire to then add to the research gap of buildings on Bonaire. It is therefore important to obtain knowledge to fill in this gap. This thesis examines various aspects of the influences on Bonairean architecture. The research question is: 'How can the development of the architecture of Bonaire in the period of slavery up to the modern day, be understood from a history of colonization?'
The following sub-questions must be regarded in order to answer this research question:

- What are three important time periods on Bonaire?
- Which three building typologies were important during these time periods on Bonaire?
- Which buildings were important during these time periods on Bonaire?

To answer the research question three important periods of Bonaire with three buildings per period will be researched and analyzed as cases. Because Bonaire started from scratch it would be interesting to see how each of the three typologies: church, school, and house have evolved depending on the period and the influences the island had during that time.

Due to the lack of documentation and the lack of basis for preserving the Bonairean heritage, minimal material will be worked with. With the help of literature research and the use of the archive in Bonaire, Curacao, and Aruba, archival drawings and books will be found and used to gather research materials. Also, several locals will be interviewed about the different cases and will be categorized as heritage experts, public servants involved in planning and transformation, and the users of the buildings. Thus, with the help of interviews, archival, and literature research, the aim is to collect more information on the history and buildings of Bonaire and to understand in what context and period certain buildings were built.

In this thesis, chapter 2 sets its focus on the History of Bonaire and focuses on the three important periods. Chapters 3 to 5 look at the different periods and start with a short introduction mainly about the architecture of the Western world during these periods and look at three buildings on Bonaire during each period with a different typology. Thus, Chapter 3 will focus on the period before the abolishment of slavery, so before 1863. Chapter 4 will focus on the period after the abolishment of slavery till the modernization period, so from 1863 to 1939. Chapter 5 will focus on the modernization period from 1940 to 1970. Furthermore, Chapter 6 concludes how each building's function has changed through time by comparing them to one another, and will have a general conclusion that will answer the main research question. Lastly, Chapter 7 will have extra information like the list of interviewees.

It is hoped to be able to get more information on the history and buildings of Bonaire and to understand in what context and period certain buildings were built to be able to document a part of Bonaire's heritage by adding to the research gap of buildings on Bonaire.

Chapter 2: Bonaire's History

Bonaire is currently a Dutch island located in the Southern Caribbean Sea in the Leeward Antilles. Bonaire lies 80km off the coast of Venezuela and together with Curaçao and Aruba they are collectively known as the ABC islands (Aruba, Bonaire, and Curaçao) colonized by the Dutch. The island's historical roots are deeply intertwined with the history of the surrounding area and the European nations that colonized it. For more than 7000 years humans have inhabited the island, and its history can be divided into separate periods.

2.1 Before Slavery (<1662)

The oldest remains found on Bonaire were from the Archaic indigenous people that date back to 2300 BC located near the lake "Gotomeer" at Slagbaai. These Indians were originally from South America and arrived in Bonaire with canoes. They hunted big prey like sloths and later when these prey got less they aimed at hunting around the coast (Alofs, 2018). The Archaic population disappeared in 950 AD shortly after the appearance of the Neo-Indian Caquetíos who in 1500 AD belonged to the Arawak tribe. Alofs (2018) notes that it is conceivable that it was due to the Archaic Indians adapting to the Caquetíos or it was due to the Caquetíos chasing away the Archaic Indians. The Caquetíos came from South America especially from the West of Venezuela to the ABC islands and started a life based on fishing, farming, and hunting (Hoefte, Dalhuisen, Donk, & Steegh, 1997). Because these newcomers introduced the practice of agriculture and pottery-making, they belonged to the Neo-Indian period (Alofs, 2018). Some Indian inscriptions are seen in the caves of Bonaire, so one can conclude that these Indians used to live in these caves looking over at the Sea.

1499 it is thought that Alonso De Ojeda or Amerigo Matteo Vespucci "discovered" Bonaire first (Alofs, 2018). It should be noted that De Ojeda was a Spanish explorer who sailed from Santo Domingo to Trinidad, but because of not finding any documentation or logbook it is not sure what route he sailed, he could have passed by the coast of Venezuela passing by Bonaire or he could have sailed directly across the Caribbean. While Vespucci an Italian merchant sailed on behalf of Spain on a different ship and wrote about how he went from Trinidad along the coast with a map, indicating that he might have also passed by the ABC islands (figure 1) (Formisano, 1992).

After the discovery of Bonaire, the Spaniards enslaved the Bonairean Caquetíos. In 1527 the Spaniards brought livestock of European origin like horses, donkeys, sheep, pigs, and goats. During this period, the first settlement was founded "Rincon" in the North of Bonaire between the mountains. They chose this area as a precaution to not be seen by other ships (Hoefte, Dalhuisen, Donk, & Steegh, 1997). All in all, there was not a lot of attention from the Spaniards regarding the colonization of Bonaire.

Adolf (2018), Hoefte et al (1997), and Hartog (1957) all mention how in 1623 a Dutch ship anchored off the coast of Bonaire. At that time there was a lot of dye wood growing at the shore. This wood was also called Brazil wood and reckless cutting in subsequent centuries left most of this tree to disappear. On April 10, 1626, a Dutch Corsair and later admiral, Boudewijn Hendricksz had Spanish and Portuguese prisoners of war on his ship and he released his

prisoners on Bonaire because they were heavy eaters on his ship. These prisoners settled in the middle of Bonaire in the neighborhood now known as Antriol (Hartog J., 1957; Pater Brada O. P., 1946). Hartog (1957) adds that in 1634 The Dutch West India Company colonized Curaçao and used this land as a naval base to intimidate and attack the Spanish because at that time the Netherlands and Spain were at war with each other. Shortly after the colonization of Curaçao the Dutch secured Bonaire on March 23, 1636, and Bonaire was used to export animal meat to Curaçao. At this time Bonaire was also valuable for its exports of dyewood and sheep wool.
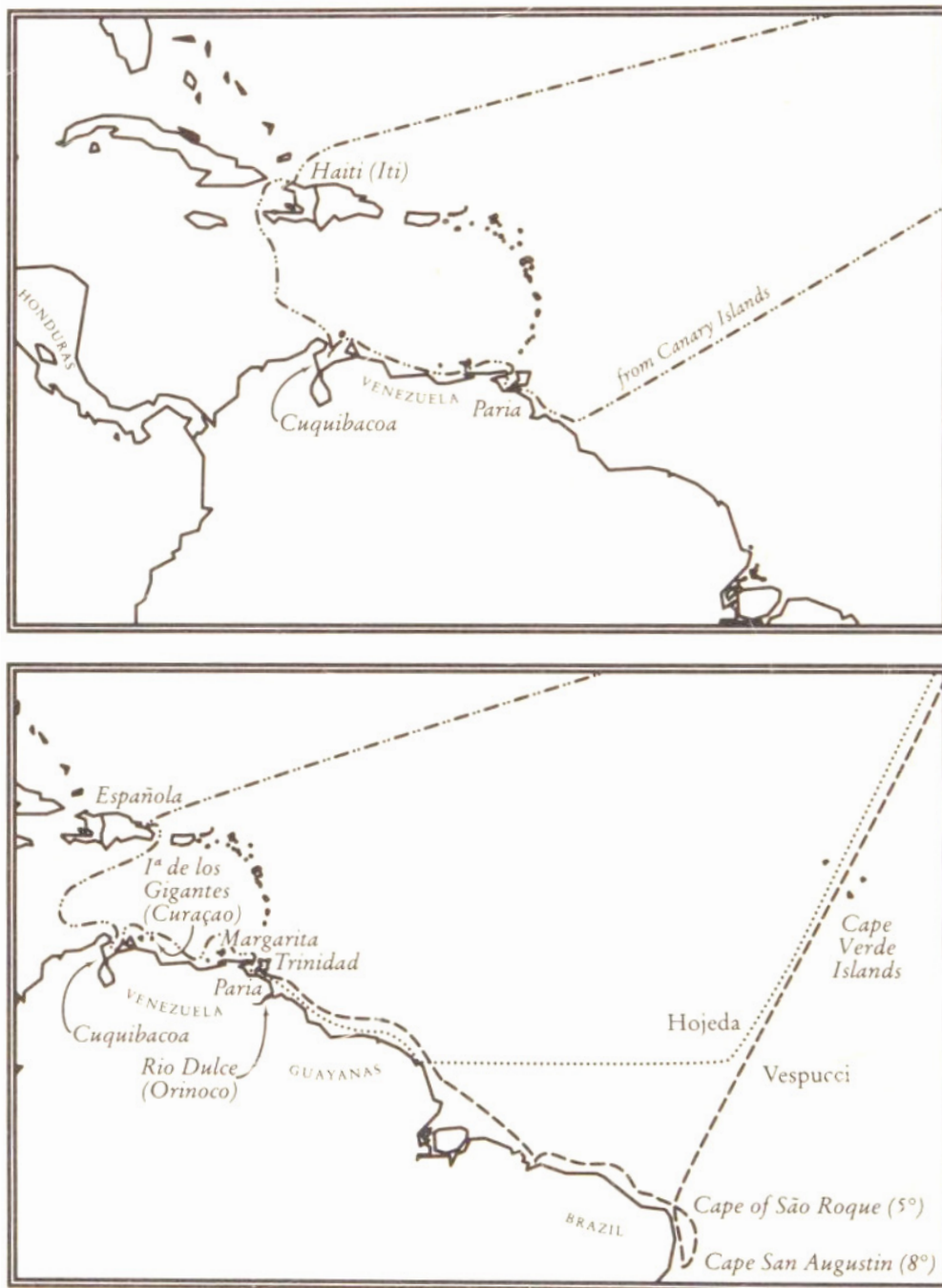

Figure 1 - Amerigo Vespucci first and second voyage reconstructed by Luciano Formisano (Formisano, 1992)

2.2 Before the abolishment of Slavery (< 1863)

In 1662 the slave market started, and the Dutch brought African enslaved people to Curaçao with the Dutch West India Company (WIC). On the island of Curaçao, colonists had occupied the land owned by the WIC, but settling on Aruba and Bonaire was deemed forbidden due to the lack of proper supervision. As a result, except for the Commander, his family, and some soldiers, there were no white people residing in Aruba and Bonaire, and thus no houses (Alofs, 2018).

Since the year 1700, salt production became the main source of revenue for Bonaire, and as a result, many enslaved people were brought over to the island, initially settling in Rincon, where the "Kas di Bara", houses of branches were built (Booi, 2023). Hartog (1957) explains that these enslaved people had to endure a 6-7 hour walk along the coast via "Caminda di Piedra" to get to the salt ponds, and Rincon was recognized as a significant "breeding place of slaves." As the population of white settlers grew, private enslaved people were also introduced to the workforce. After the Dutch West India Company ended in 1791 due to financial problems, the Netherlands claimed the companies enslaved people and defined them as government- or crown slaves (Hartog J. , 1957).

In 1807 the British gained control over Curacao, and they were faced with the question of what to do with Bonaire, so they opted to rent Bonaire and its 300 enslaved people. Around 1810 during British rule, there were no strict commands the English had to follow, so British tradesmen settled secretly around where they dropped anchor in Playa, now known as the capital "Kralendijk" (Hartog J. , 1957). There is no known information on what type of house the British stayed in, but Hartog (1957) does mention that four canons are still seen at Fort Oranje, a military fortification in Kralendijk, that the British used for firing salutes. One could conclude that the British stayed in Fort Oranje and did not build their own houses, to be able to stay secretly on the island. Furthermore, the Caquetíos slowly disappeared on Bonaire and in 1810 no Indians were remaining on the island (Hoefte, Dalhuisen, Donk, & Steegh, 1997). The Netherlands' authorities gained control of Bonaire again and started exploiting Bonaire as a government plantation. After the Dutch took control, several Houses in Kralendijk were built in the Kas di Hala, and Hadrei styles, meaning Wing, and Gallery houses (Booi, 1984).

The Catholic religion moved to Bonaire by different Roman-Catholic priests and pastors visiting the island and baptizing the enslaved. The first Catholic church was built in Kralendijk in 1829 (Pater Brada O. P., 1946). Hartog (1978) adds to this that this church was replaced in 1948. After that, the Lieutenant Governor's home was built in 1837. In 1843 the Protestant congregation was established and in 1847 the Protestant church was built in Kralendijk because of the small population of Dutch slave owners being Protestants on the island (figure 2) (Minister van Koloniën, 1858; Pater Brada O. P., 1946). Shortly after, the first school opened, a government school under the leadership of a Protestant minister. Most of the enslaved people and Indians during this period were being baptized by Catholic priests, mostly priests coming from Latin America to keep the faith alive (Hartog J. , 1978).

The Dutch government tried different ways to get money by exploiting enslaved people through salt production, stock-raising, aloe-, tobacco-, flax- and cotton-growing. The most

successful product was salt production. During this time enslaved people could pay for their freedom, but when set free they were still bound to certain services, they formed a separate population group and each group had a ruler who had to take orders from the Commander (figure 2) (Minister van Koloniën, 1858). In 1863 slavery was finally abolished and the 607 government slaves and 151 private slaves were freed (figure 3) (Hartog J. , 1957).

II. BONAIRE.

Te Bonaire bestond de bevolking op hetzelfde tijdstip uit:

vrijen.	1,563
niet-vrijen (met inbegrip van 653 gouvernements-slaven).	761
Te zamen	2,324

Hiervan waren:

Roomsch-katholijken.	2,204
Protestanten	119
Israëlieten.	1
Te zamen	2,324

In 1852 zijn aldaar:

geboren { vrijen.	67	
niet-vrijen	26	93
overleden { vrijen.	35	
niet-vrijen	11	46
meer geboren dan overleden		47

DEN 1sten JULY 1863,

den dag, waarop de Slavernij in de Nederlandsche West-Indische Bezittingen is opgeheven, waarby meer dan Vyftig duizend menschen van den band der Slaverny zyn ontslagen. Heil met dezen dag!

Wy wenschen onze landgenooten geluk met deze gewigtige gebeurtenis. De tegenwoordige bevolking dezer kolonie heeft zeker geen gewigtiger, geen meer verblydenden dag beleefd dan den dag van den 1sten July 1863.

Wy moeten hiervoor onzen dank betuigen aan Zyne Majesteit onzen geeerbiedigden en beminden Koning en aan de hooge regering in Nederland.

Wy vertrouwen dat allen, die op dezen dag als vrye burgers in de maatschappy zyn opgenomen, deze weldaad naar waarde zullen schatten en door een voorbeeldig, ordelyk gedrag hunne erkentelykheid aan den dag leggen; men kan dankbaarheid niet beter betoonen dan door een waardig gebruik der genotene weldaden.

Het zal grootendeels van de vrygewordenen zelven afhangen heilzame vruchten van hunne vryheid te plukken. Door vlyt, arbeidzaamheid en spaarzaamheid zullen zy in staat gesteld worden hun huisgezin te onderhouden en met den tyd onafhankelyke en welgestelde ingezetenen te worden, en hunne kinderen eene goede en beschaafde opvoeding te geven. De verandering van stand zal hun weinig baten, wanneer zy niet trachten door werkzaamheid en een ordelyk leven hunnen toestand te verbeteren.

Wy kunnen hen niet te zeer op het gemoed drukken om te zorgen dat hunne kinderen schoolonderwys genieten, waartoe zy kosteloos in de gelegenheid zullen gesteld worden. Dit is van het grootste belang; daardoor zullen hunne kinderen tot bekwame en nuttige leden der maatschappy gevormd worden, van wie zy alsdan in hunne oude dagen, wanneer zy niet meer werken kunnen, bystand en ondersteuning zullen kunnen erlangen.

Met veel genoegen kunnen wy mededeelen dat de dagen van den 30sten Juny en den 1sten July rustig zyn afgeloopen, en men geene ongevallen, noch ongeregeldheden te betreuren heeft; de vrygewordenen hebben hunne blyd-

Figure 2 - The population of Bonaire in 1851 showing the amount of freedman, enslaved people, Roman Catholics, Protestants and also the deaths and births. (Minister van Koloniën, 1858)

Figure 3 - Announcement in De Curaçaosche Courant (News Paper of Curacao) the abolishment of slavery on July 1st 1863 (De Curaçaosche Courant, July 4th 1863)

2.3 After the abolishment of Slavery 1863-1940)

After the abolishment of slavery, the government sold nearly all the crown land in 1868 causing private property holdings by two families: J.F. Neuman Gzn. & Co and E. B. F Hellmund (figure 4) (Hartog J. , 1957).
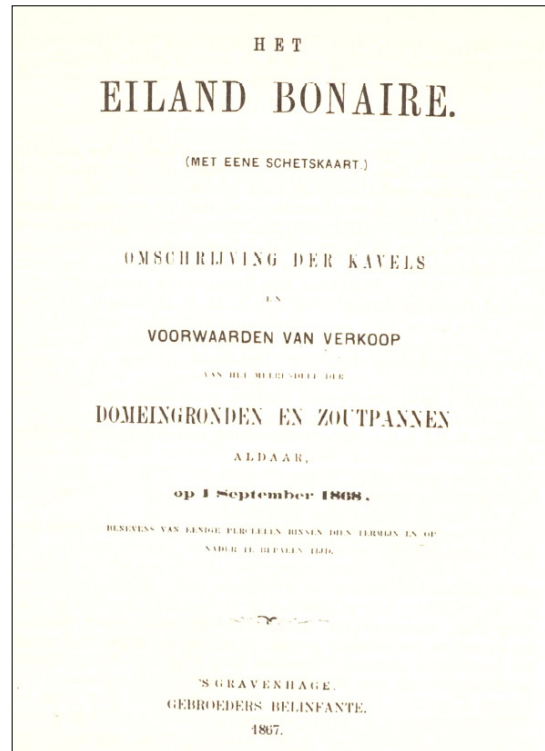

HET

EILAND BONAIRE.

(MET EENE SCHETSKAART.)

OMSCHRIJVING DER KAVELS

EN

VOORWAARDEN VAN VERKOOP

VAN HET MEERE DEEL DER

DOMEINGRONDEN EN ZOUTPANNEN

ALDAAR,

op 1 September 1868,

BENEVENS VAN EENIGE PERCEELEN BINNEN DIEN TERMIJN EN OP NADER TE BEPALEN TIJD.

'S GRAVENHAGE,
GEBROEDERS BELINFANTE.
1867.

Figure 4 - leaflet offering the government land of Bonaire for sale (Hartog J. , 1957)

This led to the emancipated enslaved people and moneyless freedmen not being able to get their land, which effectively meant that they had to work for these two families in return for a very small salary. The men who were freed before this, who were allowed to have their own animals on government properties, were no longer allowed to have them. These freedmen could no longer produce their own food and were forced to buy food from these two families that were way more expensive (Hartog J. , 1978). This meant that the freedmen were in fact not free, there was no freedom to be gained on the island if the land was all owned by two family companies. Furthermore, there was also a rise in plantations that were named after countries and religious names like Colombia, Bolivia, America, San Mateo, and Tres Cruz, which led to the building of Manor Houses (figure 5).

The rise of plantations led to the appearance of a middle class which drew retailers to the island, causing a decrease in forced buying at the company stores after 1931. Economically things got worse because several resources like salt, charcoal, and hat-weaving suffered a decline in exports. The owners of the salt ponds were required to make ends meet in 1923 by selling gravel for the production of concrete (Hartog J. , 1978).

Therefore after 1868, Bonaire was drowned in poverty and dissatisfaction and the freedman could not make their own living or home. This also led several Bonaireans to move elsewhere to Venezuela, Colombia, Suriname, Cuba, and Puerto Rico for work (Hartog J. , 1978).

After 1864 some small factories were built to produce tiles and bricks. Due to oil findings in Venezuela, Royal Dutch Shell established their oil refinery in Curacao in 1915 (Nationaal Archief Curacao; S.AL. Maduro Foundation; Nationaal Archeologisch en Antropologisch Museum, n.d.). The bricks produced on Bonaire were used for the building of homes for the employees, creating so-called "Oliedorpen", meaning Oil towns (Nationaal Archief Curaçao, n.d.). Also in 1929, an oil plant was established in Aruba. The establishment of Shell in Curacao and Lago Oil in Aruba created jobs, causing lots of Bonaireans to immigrate to these islands (Hoefte, Dalhuisen, Donk, & Steegh, 1997). This effectively meant that there was a shift in the power balance. The Bonaireans working abroad supported the families they left behind, causing 500.000 to 600.000 guilders to get sent yearly to Bonaire (Hartog J. , 1957).
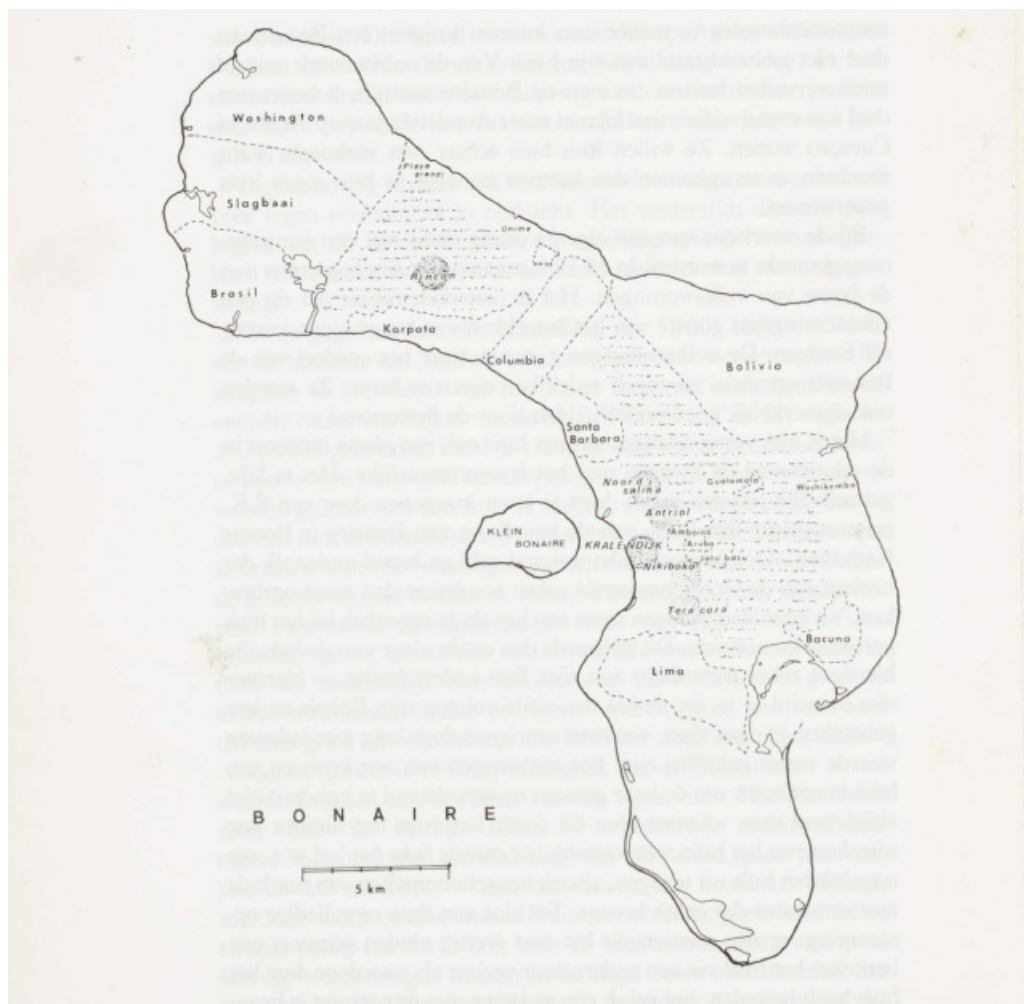
Figure 5 - Sketch map of Bonaire with an indication of the residential areas an plantations mentioned in the text. Names of other countries can be seen as areas like: Columbia, Brasil and Bolivia . The agricultural area of the (former) small farmers are shown with the hatched lines. (Klomp, 1981)

2.4 Modern period (1940-1970)

The rise of the oil industry allowed Bonaire and the rest of the Netherlands Antilles to increase their profits, making it possible for new developments on the island that were not possible before. This led to certain improvements like recovering roads by using asphalt, introducing telephones and electricity, bettering healthcare and education, and building an airport (Hoefte, Dalhuisen, Donk, & Steegh, 1997). Furthermore, the first "Kas di Porchi" was built, porch houses built fully out of concrete blocks. The use of concrete also led to a commercial-styled building called "Kas di Hanchi", meaning alley house, to be built (Groenenboom, 2021).

Bonaire was outside of most world development and was never directly engaged in the First World War. However, because of the Netherlands' involvement in 1940 with the Second World War, Bonaire introduced an internment camp where the Germans and the Dutch who were harmful to the people of the State were detained. By May of that year, 461 people were brought by ferry to Bonaire and were imprisoned there (Hartog J. , 1978).

After the war Hartog (1978) mentions that Bonaire became more known and different high officials came to the island and lodged there. To house tourists Lodewijk D. Gerharts, a Dutch merchant, had the idea to change the internment camp's wooden barracks into hotel rooms, making this the first hotel on Bonaire "Hotel Zeebad" (Hotel Seabath) in 1952. With tourism becoming successful, new hotels were being built along the coast. With all these adaptations and external influences, it is safe to say that Bonaire was adapting to modern times.
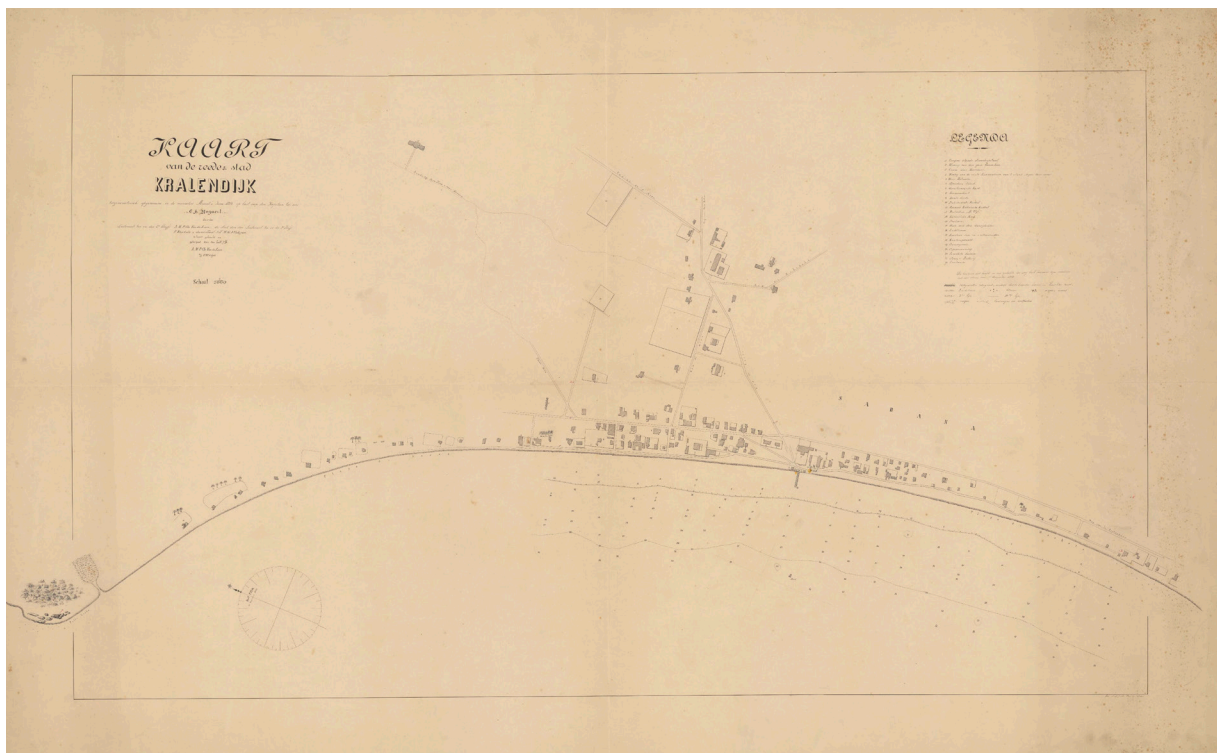

Figure 6 - Urban plan of Kralendijk the capital of Bonaire in 1886 by A. M. P. Chr Van de Laar (Natioaal Archief, 1886)

Chapter 3: Before abolishment of Slavery on Bonaire (<1863)

3.1 Europe, North America, and South America Before 1863

In Europe there was a so-called Baroque Period between 1580 to 1750, architecture was expressed using Baroque features like ostentatious and dramatic ornamentations, unlike the Renaissance period where architecture had a more "balanced and rational attitude" as Kilicaslan (2012) explains it.

Furthermore, architecture was also linked to religion, causing a difference between the Catholic Flanders and the Protestant Netherlands. Architecture would be expressed in the churches of Catholic countries, but not in Protestant countries. New churches in the Netherlands, therefore, were very plain brick boxes. Images and most furniture from existing Gothic churches were removed leaving the white-washed rooms of today (Sutton, 1999). Around 1800 Sutton (1999) notes that the knowledge about the current and past architectural styles at that time became complete, making architects able to choose which style they wanted to use for their buildings.

During the slavery period, European countries like Portugal, Britain, France, Netherlands, Spain, and Denmark would use religion as an ethical reason to colonize lands and would bring their architecture to their colonies. Several authors like Knippenberg (2006) and Christian (1981) have shown how Christianity was a predominant faith in Europe. With different Religious wars and the Reformation of the Catholic Church happening at that time in Europe. Each European country had its own branch of Christianity with the Netherlands, Britain, and Denmark being mainly protestant, and France, Portugal, and Spain having mostly Roman Catholics, shown in Figure 7 (Knippenberg, 2006; Johnston, 1854).
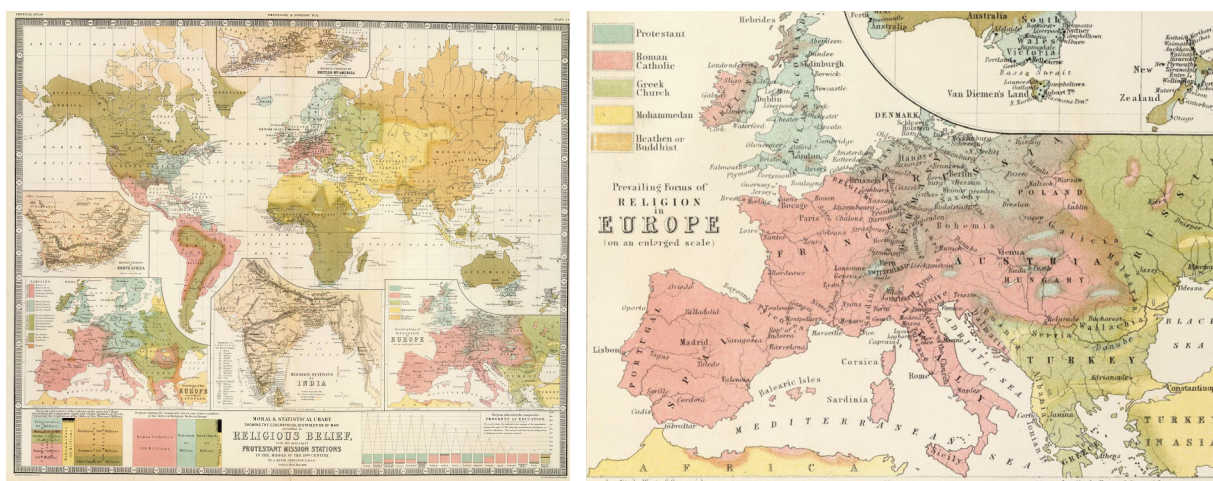

Figure 7- Left: Moral & statistical chart showing the geographical distribution of man according to religious belief middle of the 19th Century. Right: Zoomed map of religion in Europe (Johnston, 1854).

3.2 Church: Protestant church March 1847

The first protestant church built on Bonaire was built in 1847. The original shape of the building was rectangular, creating one room. With time they built the tower in 1868 and added furniture (Hartog J. , 1978). On the north side, they also added a Consistory room, a room where protestants meet. It should be noted that the church has a building span of approximately 8 meters shown in Figure 12. The walls of the buildings were built with coral rocks and stones and were plastered with lime making the walls look white (Coffie, 2023). With time and till this day Coffie (2023) mentioned that the building had problems with "Salpeter" which could be considered niter, this is an occurrence when the salt goes out of the coral rock and shows as white crystals on the surface of the wall. The roof is made of wooden beams and the roof cover seems to have been made out of wooden shingles seen in Figure 8. In Figures 9 and 11 it is visible how the roof cladding has changed to corrugated plates. The windows are located on the east and west sides making the building naturally ventilated according to the standard eastern wind direction.

Figure 8 - Picture taken before 1904 by Soublette & Fils.

Figure 10 –Protestant church during WWII between 1940-1945 (Nationaalarchief, 1940-1945)

Figure 9– South view of church in mid- 20th Century. By: unknown

Figure 11– East view of church in 1966 by Temminck Groll

Small classical architectural elements that are added that can be connected to the Dutch influence are the cornice around the gutter and the arched windows. The shutters, however, add a Bonairean twist and help with natural ventilation.

The protestant church was renovated in 1987, where a kitchen on the west side of the building and a room that functioned as a consistory and storage room on the north was added. The original state of the gate was made of corals stones and wooden fencing. The wooden fencing was renovated and changed to a metal fence. Furthermore, stained glass was added to the arches of the windows (figure 14). Inside a second level was added, which made room for a small organ. A small platform was made for the pulpit adding elevation to the floor inside (Coffie, 2023).
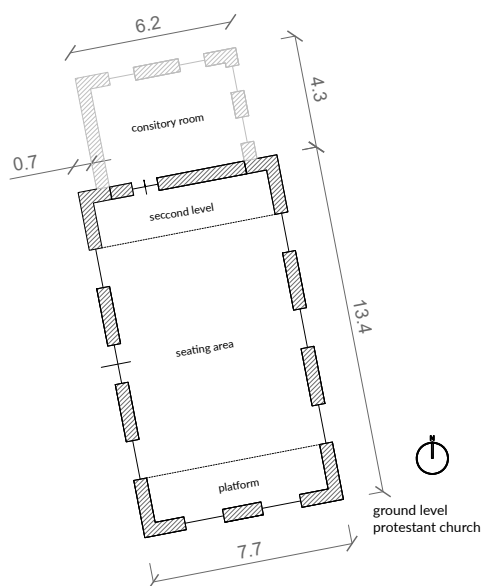
Figure 12– Sketch floorplan protestant church (own work)

Figure 14 - current stained glass window (own picture)

Figure 13 – Gate with gap between pillars with wooden fencing. Picture by Temminck Groll

Figure 15 – Church tower. picture by Temmink Groll

This protestant church has quite some resemblance with protestant churches in the Netherlands. An example of a similar-looking church is the Hervormde Kerk in Oud-Zuilen Utrecht built in 1848. In 1594 the old churches were assigned to the Protestants and the monasteries to the province. De "Nederlandse Hervomde Kerk" meaning the Dutch Reformed Church, were churches built in the 17th and 18th centuries in new villages during the Protestant Reformation. These buildings have the characteristics of Classicism and Lodewijkstyles (Wobbes, 2019). French architecture was predominant in the 18th Century in the Netherlands, which is why "Lodewijkstijl" meaning Louisstyle was named after the King of France at that time. Both the Protestant church in Bonaire and the Hervormde Kerk in Oud-Zuilen Utrecht were built in the same period and have a similar size. Elements like arched windows, number of windows, gable roof, and tower can be seen in both churches. However, building materials are different due to the context and location.

Figure 16 - Hervormde kerk (Oud-Zuilen) built in 1848 with the ruins of before in Dorpsstraat 10, Utrecht (Edwin Raap, n.d.)

3.3 School: Oranjeschool 1849

After the Protestant church was built a school building and park followed in 1849, and construction lasted till November 14, 1850 (Naaijkens, 2019). The name of the school was "Oranjeschool" and the education was given by Willem F. Meijnhardt. The creation of the building cost 3254,55 Dutch guilders of which private inhabitants paid 537,50 guilders and Curaçao sent 292 guilders. The building had two floors initially, with the second-floor housing Meijnhardt. With the help of Huub Groot, the current owner of the building, the old floor plan can be drawn from the current one.

The Oranjeschool was a government-owned building and was meant for kids that had a different belief than the Catholic religion, it was thus considered to be a public school. During an interview with Walter Coffie, an old student of the Oranjeschool during the 1940s, he explains that the school was fully gated with coral stone pillars that connected to the protestant church in the south. He continued by saying that as a kid when he entered the school he went through a small gate and ended up on the small playground and when exiting the school there was a big gate. He adds that when entering the school building you went through a porch to one spacious room with tables that would function as a classroom. At the backside of the school (east side), there was another porch with a storage room on the south side (Coffie, 2023). He also does not quite remember if there was a toilet. Furthermore, the school also had a cistern where rainwater was stored (Groot, 2023).

The walls were, just like the protestant church, made of coral stone and thus had the same niter problems. The roofs were constructed with wooden beams that were visible and still visible from the inside (Groot, 2023).

This building had different functions throughout its existence. After being a school, it was changed into an office, a dentist, and a Carnival association. To this day the government still owns it and in 2013 it was renovated into its current function, a restaurant, and club run by Huub Groot (Groot, 2023).
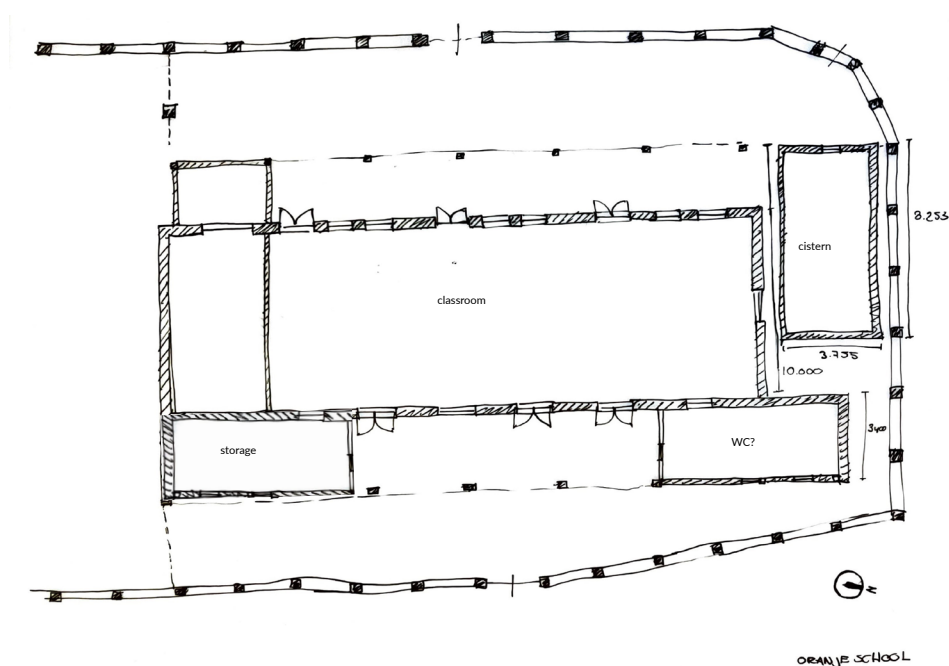

Figure 17- Floorplan Oranje School. Own drawing with the help of current floorplan received from Huub Groot

Figure 18 - Old building of Oranje School before renovations for the current restaurant (Groot, 2023)

Figure 19 - Current building, now known as Cuba Company (own picture)

The Oranjeschool can be compared with the first designed school buildings in a Dutch journal from 1807 called "Bijdragen, ter bevordering van het onderwijs en de opvoeding, voornamelijk met betrekking tot de Lagere Scholen in het Koningrijk der Nederlanden", that was written for all the municipalities. This journal showed three designs for village schools for around 50 to 100 pupils (figure 20). These school designs are detached buildings with a gable roof and a rectangular floor plan. These designs also had a small extension for the toilet or had the toilet at the back of the school (Spoelstra, 2009). The architectural design of the schools in the Dutch journal has similarities with the church buildings of that time known as Reformed Churches mentioned in chapter 3.2 (Wobbes, 2019).

Just like the Reformed Churches, both the Oranjeschool and the school in the journal have a simple floor plan and small Neoclassical details like the spout gable and the profiled gutter bearer. The Oranjeschool has just like the school design in the journal, a space at the back that is the same length as the building. However, in the school in Bonaire, this space is open for ventilation and is used as shading. Additionally, in the school in Bonaire this gallery is also added at the front to help against direct sunlight and the school makes use of shutter windows.
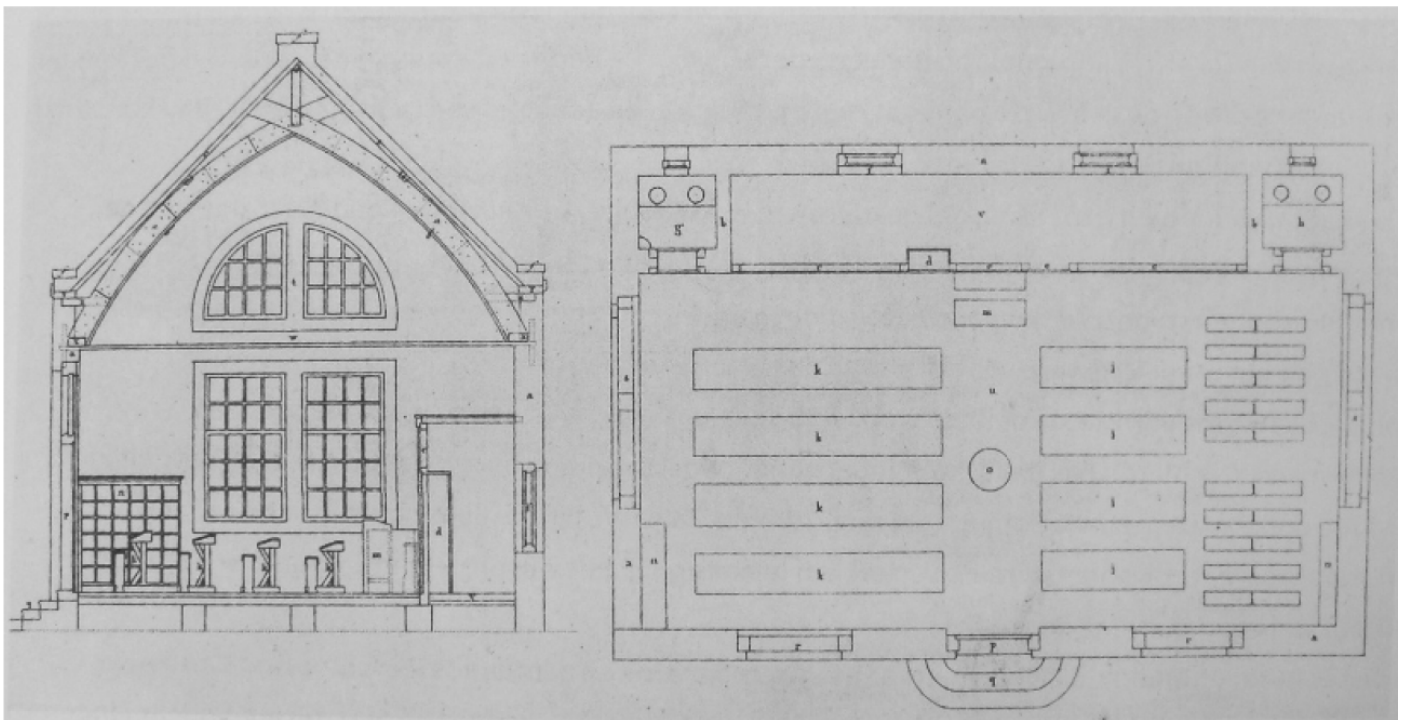
Figure 20 - School design for 100 student from the journal " Bijdragen, ter bevordering van het onderwijs en de opvoeding". (Spoelstra, 2009)

3.4 House: Van der Dijs House 1860s

The house van der Dijs was built in the 1860s by the family Boyé. Later the van der Dijs family moved in, and it was known as "Kas di van der Dijs" translated as House of van der Dijs. With time this building got different functions and changed from government offices to a music school. And was fully renovated in 2015-2016 to its current function as a historical museum. A lot of buildings in Bonaire are linked to a style. The house of van der Dijs has a "Kas di Hala" style meaning Wing House, that dates back from 1850 onwards. The floorplan is rectangular or square, reliant on a front or back gallery that has the same length as the core of the building. Another characteristic of this building style is, that it consists of one to three floors (Groenenboom, 2021). The van der Dijs house surely fits into this description. This house has two levels with the upper-level functioning as an attic.

A person who as a kid would visit this building and then teach music in this building is Robby Swinkles. Swinkles (2023) mentioned that the original state of this building was completely different. Originally the building had a cistern on the Northside where rainwater was stored. Furthermore, the stairs to the attic were located on the east side of the building. He adds that the building had very thick walls of almost 50cm made of rocks and clay. The walls on the east and west sides were thicker, indicating that this was due to there being another level. The front and back spaces were around 3x3.5 meters meaning that the rooms were quite small. The size of the rooms was limited due to the available materials (Swinkles, 2023). Swinkles (2023) ads that Bonaire had no wood that was big or firm enough for the roof construction, so during that time wooden beams would get shipped from Trinidad and Tobago or Jamaica that could span between 3.6m and 4.9m and the purlins were no longer than 3 meters. The wooden beams that were shipped, had the country's name on them (Swinkles, 2023).

The outer walls used to have a white lime finish, which was removed and now it has a cement finish. The lime looked like paint, but it was due to the white color of the lime. During that time there was no paint on Bonaire and the government buildings would use pigments to add color to the white lime.

Other materials being shipped were the roof tiles of 40cm from the Netherlands. With time these roof tiles were replaced with asbestos plates. The windows and doors are narrow, so the wall does not weaken. Furthermore, the window and door frames were made of wood (Swinkles, 2023).

Figure 21 - The current state of the old Van der Dijs house, now functioning as Terramar Museum (Terramar Museum, 2022)

Figure 22 - The current state of the old Van der Dijs house, now functioning as Terramar Museum (Bruns, 2016)

Figure 23 – East façade of the van der Dijs building. (Temmick Groll)
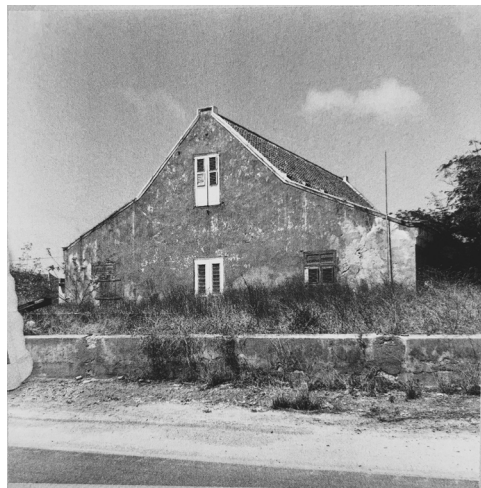

Figure 24 – west façade of the Van der Dijs building by Orco Bank

20

The House of van der Dijs is similar when it comes to spatial plan and façade design compared to some manor houses where the Colonizers from the WIC stayed in Curaçao. An example is the Landhuis Stenen Koraal built in mid- 19th century. This manor house belongs to a period where the gable end was simplified compared to the gable ends of manor houses of the centuries before (Newton, 1990). Landhuis Stenen Koraal has a spout gable that is derived from the Lodewijk XVI style that was popular from 1775 in the Netherlands (Erfgoedbekeken, 2023).

Therefore, one can conclude that the House of van der Dijs also has elements derived from the Lodewijk XVI style. Landhuis Stenen Koraal also has a gallery on each side of the house just like the house of van der Dijs. However, the gallery attached to these traditional styles, used as a buffer between the warm outside climate and the cooler inside climate, derives from the 17th century from Brazil after the Dutch conquered Brazil. The Dutch learned the Portuguese warm climate designs and brought the idea of the gallery to Curaçao (Newton, 1990). The reason this style came to Bonaire could be during the time the land was owned by the government and Dutch colonists from Curacao would visit Bonaire and settle on Bonaire around the time slavery was abolished.

Figure 25- Landhuis Stenen Koraal picture 1981 (Newton, 1990)
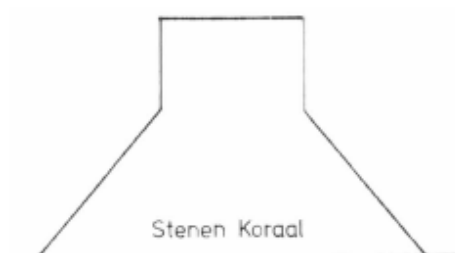
Figure 26 - Landhuis Stenen Koraal's example of its Gable End in the 19th Century (Newton, 1990)
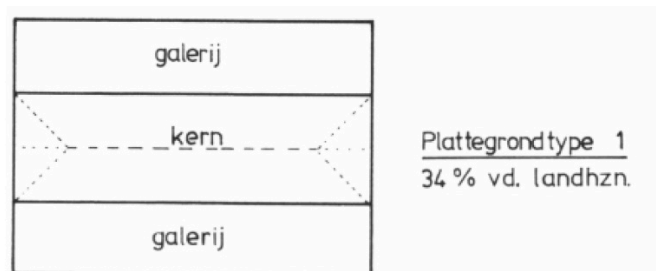
Figure 27 - One of the six basic floorplans manor houses in Curacao used (Newton, 1990)

Chapter 4 After the abolishment of Slavery on Bonaire (1863-1939)

4.1 Europe, North America, and South America after 1863

The end of slavery also enhanced the migration of people from the colonial mother countries to the Americas (Emmer, 1986). The Portuguese emigrated to Brazil, the Spanish to other South American countries and the Dutch to the old Dutch colonies like Curacao, Guyana, Aruba, and Bonaire.

Around this time Europe and South America have already been experimenting with new materials like Iron and glass together with new building techniques and knowledge to make modern structures that have not been seen before. This would be considered part of the Modernism period (Sutton, 1999). "Modernism can be taken as a response by artists and writers to several things, including industrialization, urban society, war, technological change, and new philosophical ideas." (Childs, 2017, p. 19) From Modernism, different avant-garde movements followed like Post-impressionism, Cubism, Futurism, Constructivism, de Stijl, and Expressionism. All of these movements were active in the early 20th century after World War I (Kuiper, 2023).

4.2 Church: Present St. Ludovicus Bertrandus Church 1903

In 1858 the Catholic services arrived in Rincon and the first parish was established, leading to a church being built that year. This church was destroyed in a storm and the current St. Ludovicus Bertrandus Church building was built in 1908, which is dependent on the Roman Catholic Diocese of Willemstad Curaçao (Antoin & Sealy, 1998). The church is located directly in the middle of Rincon and served as a very important place for the enslaved people to go to and to be heard. The Catholic religion brought solidarity and protest for the enslaved living in Rincon as Antoin and Sealy (1998) mentioned.

  The St. Ludovicus Bertrandus Church is the tallest building in Rincon (figures 28, 29 & 31). The walls are built out of rocks and limestone that come from the hills in Rincon. These materials were transported to the sight with the help of donkeys (Beautiful Bonaire, n.d.). Because of how big these rocks are it can be expected that the walls were between 400-500 mm thick.

  The church used to have a rectangular floorplan and during the big four-phase restauration between 1977-1984, a new tower, chapel, and sacristy shown in gray in Figure 32 were added, which cost a total of 585.000 Dutch guilders (Amigoe, 1984). This indicates that the church finally could afford its extensions and receive the traditional "cross-design" floorplan that most Roman-Catholic churches have. The span of the church is around 10 meters shown in Figure 32.

Figure 28 – 1908 St. Ludovicus Bertrandus Church with its old tower. By Stadsmuseum Tilburg
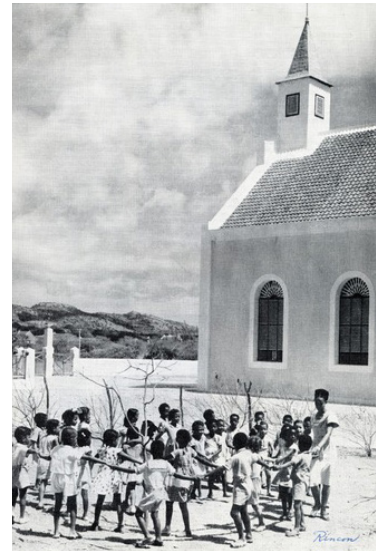

Figure 31 old picture of church by stadsmuseum tilburg

Figure 29 – Present St. Ludovicus Bertrandus Church with a new clocktower renovated between 1977 and 1984. by unknown
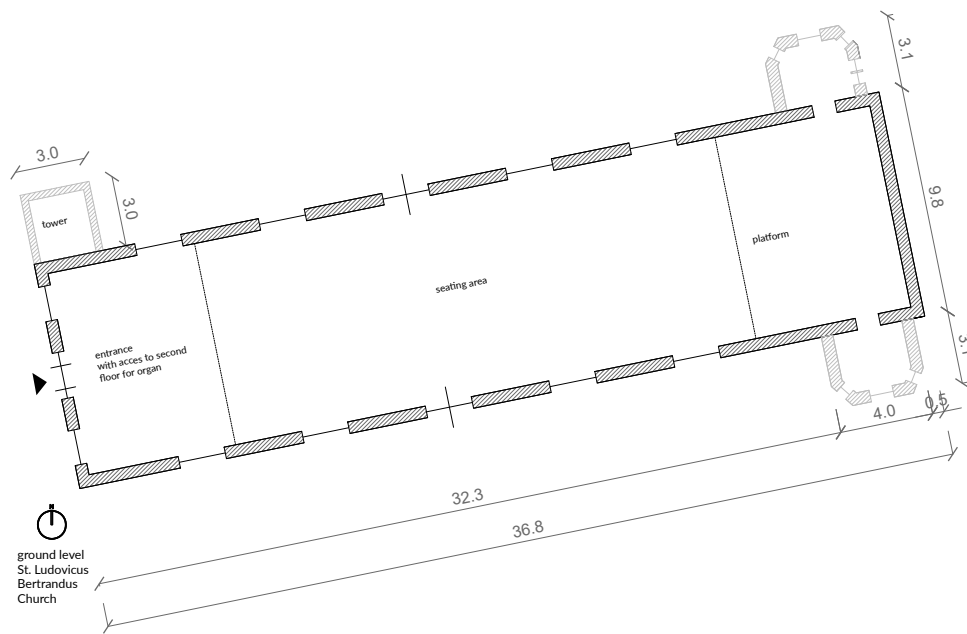

Figure 30- Present interior (Andres, 2023)

Figure 32 - Sketch floorplan of St. Ludovicus Bertrandus Church with extensions in light gray (own work)

St. Ludovicus Bertrandus Church can be compared with Onze-Lieve-Vrouw Visitatiekerk located in Oosterblokker Netherlands and the Heilige Nicolaaskerk in Edam Netherlands (figure 33 and 34) (Vereniging Oud Edam, 2017; Kerkfotografie Nederland, 2022). Both churches belong to the Waterstaat style, which is a style that dates back to 1824-1875 for the new Roman-Catholic churches built by the Ministry of Infrastructure and Water Management after the revolution in 1795 in the Netherlands. The primary characteristics of the Waterstaat style, are the use of a decorated façade, with the use of engaged columns and a triangular tympanum, and a wooden clock tower (Wobbes, 2019). The use of columns was determined by the amount of money there was available, so they would either be shown as actual columns or as engaged or they were not added at all.

All three churches have very similar façade and use the same elements to express their architecture. Firstly the churches make use of rose windows on top of the entrance, which is a Gothic characteristic. Secondly, the entrance of both churches has the same division with two arched windows that are a bit higher than the ground floor on the sides of the main entrance door, with the exception of the Nicolaakerk which has its windows closed off with bricks. Thirdly, on top of the door, there is also the use of an arch. Lastly, the proportions of the churches are very similar, with the width and tower being comparable to one another and the churches using the same gable roof. The only big differences between the three are the materials, and that Vistatiekerk has an offset in the façade right under the tower.

When looking at the old façade of the St. Ludovicus Bertrandus Church one can conclude that it has a lot of resemblance with the Heilige Nicolaaskerk and Vistatiekerk, making St. Ludovicus Bertandus Church in Bonaire also influenced by the Dutch with their Roman-Catholic Waterstaat style.

Figure 33 - Heilige Nicolaaskerk in Edam, Netherlands (Unknown, 2010)

Figure 34 - Onze-Lieve-Vrouw Visitatiekerk built in 1846 in Oosterblokker, Netherlands (Kerkfotografie, 2022)

4.3 School: Roman-Catholic school building 1895

The Roman-Catholic school in Rincon dates back to 1866 after slavery was abolished in 1863. As Pater Brada (1946) mentioned, four of the Sisters Franciscanessen from Roosendaal were coming from the Netherlands to Bonaire to teach at the school for the (Catholic) children of the formerly enslaved people of Rincon. The pastor of Rincon at that time, J. te Welscher, converted the clay building of the old Sint-Maarten church into a Roman-Catholic school.

With time the successor of Welscher, pastor J.MG. Meyknecht, built another building in 1895 with his own recourses and a bit of help from the government (Pater Brada O. P., 1946). This second building was built because more families became Catholics, and this indicates that more children were attending this school. This building had five classrooms and an extra classroom was built when the school had 261 students (Beaumont, 2023). Both Camita Beaumont (2023) and Crispina Cicilia-Janga (2023) went to this school in the early 20th century, and they mentioned that it was a school for both girls and boys. They both mentioned that when they attended this school the toilet was in a small shed outside, that later was converted into a small building (figure 37)(Cicilia-Janga, 2023).

Furthermore, another building was built where the 6th graders were moved to (Beaumont, 2023). Beaumont (2023) remembers it being a class of around 50 students and four students on each bench, she adds that the teachers had no office of their own and sat from 8 am till 3 pm with them in the class. The Sisters left in 1974 causing the school to be abandoned for years (Stichting Cocari II, 2015).

When looking at the old pictures of the school before it was renovated in 2015 the

rawness of the building can be seen. The walls are made of big rocks that are 440mm thick. One can conclude that these rocks were the same ones that the St. Ludovicus church used from the hills of Rincon. Also, the old wooden beams and window frames can be seen going through the rough walls, and are surprisingly still standing in the pictures. This indicates that the wooden structure of the roof must have been fixed well. It is also quite interesting to see how they incorporated small neoclassical details like the thick profiled gutter bearer and the Neo-Renaissance details like the white discharged arch on top of the windows (figure 37).

Also, horizontal framing can be seen where the corrugated roof plates were attached. These corrugated roof plates are seen on the construction site in Figure 38, and are expected that they were shipped from the Netherlands to Bonaire, because Bonaire did not produce these plates that time.

Now after renovations, the pictures indicate that current building materials and techniques were used like cement and concrete to smoothen and rebuild the façades (figure 38). Roof tiles are seen in the current pictures as the current roof cover.

Figure 35 - Old pictures of St. Ludovicus (Stichting Cocari II, 2015)

Figure 36 - Floorplan of the second building of St. Ludovicus school. Own drawing with the help of a base floorplan of RNO (Own work)

Figure 37 - Abandoned St. Ludovicus school building, with old toilet building outside (Stichting Cocari II, 2015)

Figure 38 - Renovation of St. Ludovicus school building (Stichting Cocari II, 2015)
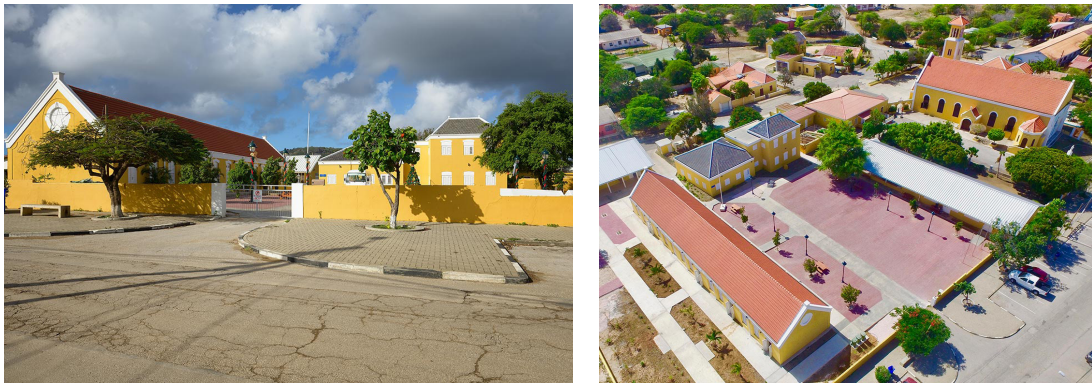
Figure 39 - Current building of the old St Ludovicus school. Now in use as a care center for the eldery (Stichting Cocari II, 2015)
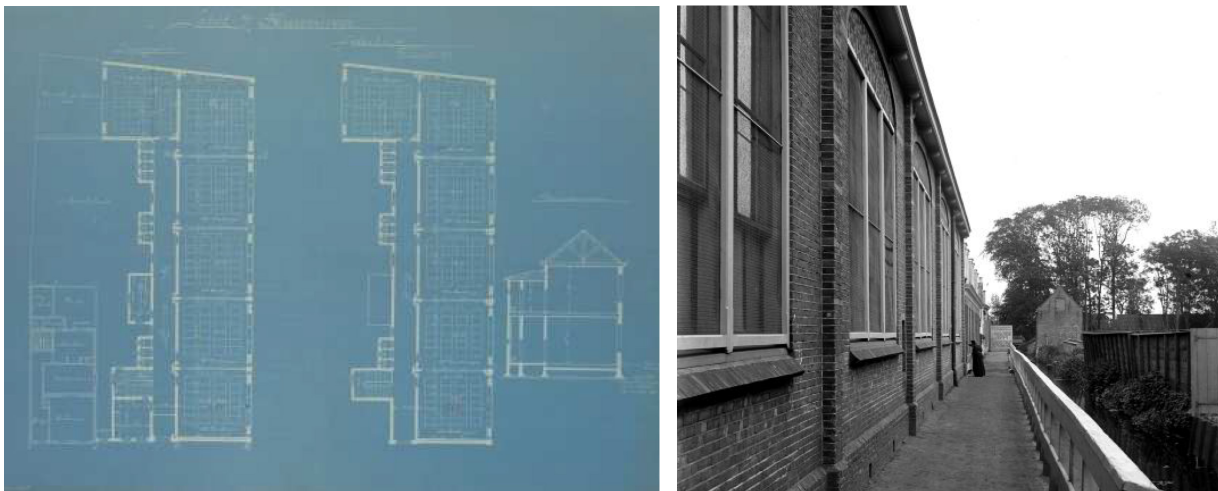
Figure 40 - Floorplan Herenstraat school and view from gallery on the first level (Spoelstra, 2009)

When talking about the architectural style the St. Ludovicus school has a lot of resemblance with the church designs from that time like the St. Ludovicus church that has the Waterstaat style like the Roman-Catholic churches in the Netherlands. However, since for schools, the floorplan is an essential element when it comes to design, it can be linked to the corridorschool type that introduced more classrooms, due to there being more pupils and the new law to make classrooms smaller and for grades to have their own teacher. This Primary School Law was set in 1878 and thus these corridorschools belong to a new category of school buildings (Spoelstra, 2009). An example of a corridorschool Spoelstra (2009) mentions is the now demolished school in the Herenstraat built at the end of the 19th century in Leiden (figure 40). This school had two levels with six classrooms on each level. Each classroom had its own entrance, and in the second picture, you can see how you can enter it from a gallery. However, the difference between the Herenstraat school and the St. Ludovicus school is that the school in Bonaire was smaller and did not have a fixed gallery, making it possible to enter each classroom from the playground.

4.4 House: Van der Ree House 1885

The house located in Kaya J.C. van der Ree 7 in the neighborhood of Sabana on Bonaire dates back to 1885. Arjen van Dorsten, the current owner, mentioned how this building used to be from a Venezuelan plantation family. It is not known who this person was, but Van Dorsten (2023) believes it was someone from the Herrera family. During that time, the plantations were sold, and this was the city house of these plantation owners. After the Venezuelan family, the family Cohen owned this house, and it was thought that they worked together with the Germans during WWII and were sent to the internment camp and later were sent to Venezuela. After the Cohens, Boy van der Ree bought the house, he used to live on the Washington plantation. He bought this house to sell the products he harvested from his plantation (van Dorsten, 2023). After Boy van der Ree passed away the government-owned this building and it was later used as offices in 2013 it was bought by Van Dorsten who transformed it into its current function, a museum (Figure 41).

This style of this building is in the "Kas di Hadrei" style, meaning Gallery house. This style was visible on Bonaire after the 1870s. The Gallery house has a T-shape with the gallery at the front (Groenenboom, 2021). The Van der Ree house has walls of coral and rubble stone seen in the picture on the bottom right. The roof is a gable roof with a closed gable end and a gable fronted dormer on the front and back sides of the building. The roof is finished with roof tiles, and van Dorsten (2023) mentions that currently he still finds the original roof tiles with Utrecht engraved on them. This indicates that the roof tiles were imported from the city of Utrecht in the Netherlands. Next to the house, there is a cistern where the rainwater can easily run from the roof to the gutter and the rain pipe to the cistern.

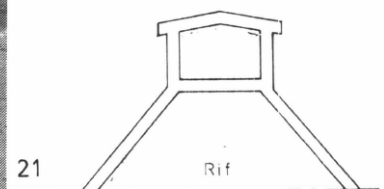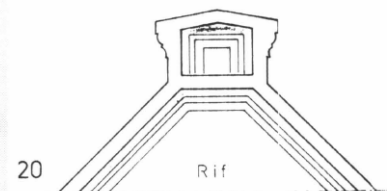*Figure 41- Current Bonaire Museum. Pictures by Arjen van Dorsten*

Figure 42 - Landhuis Rif Curaçao photo 1982 (Newton, 1990)

Furthermore, this gallery house has a dormer on the front and back side making it possible to ventilate the small attic space. This dormer was and is still currently seen in houses in the Netherlands.

Van der Ree House has its resemblance with the manor houses in Curaçao and thus also a resemblance with house van der Dijs in chapter 3. The house van der Ree has a similar gable end as Landhuis Rif, built in the early 1840s in Curacao, which makes use of a closed gable end with the use of a horizontal line on the dormers and the ridge ends (figure 42) (Newton, 1990). Newton (1990) adds that this style was also first seen at the beginning of the 19th century in Curacao which derives from the Lodewijk XVI style from the Netherlands, where pediments were an important design feature. The dormers of Van der Ree house and Landhuis Rif originate from Europe and could be seen on the Lodewijk styles in the Netherlands from 1700-1800 (Erfgoedbekeken, 2023). Dormers originally came from France in the 17th century and spread through Europe through the 17th and 18th centuries, due to the ventilation and daylight purposes for the attic (Britannica T. Editors of Encyclopaedia, 2019). This indicates that Van der Ree House used a lot of Lodewijk-style features, that were inspired by older houses and manor houses from Curacao and Bonaire.

Chapter 5 Modern period (1940-1970)

5.1 Europe, North America, and South America After 1940

Even though the modern period started earlier in the Americas and Europe, it also finally reached the Caribbean.

After World War II different movements became international. Functionalism architecture continued to be built long into the 1960s, with it also being referred to as International Style. Furthermore, Abstract Expressionism started in the 1940s. These different architectural movements and their spatial resources of modern technology were internationalized through air transportation, trade exhibitions, and spectator sports. Additionally, educational architecture innovations also became international (Timmers, Coffin, et al, 2022).

5.2 Church: Our Lady of Coromoto church 1955

Until November 11th, 1955, there were only two Roman-Catholic churches in Bonaire, one in Kralendijk and one in Rincon. Due to Antriol being closer to Kralendijk than Rincon, the people of Antriol had to go to the St. Bernard Church in Kralendijk, but this was still far for them. José Cornelio Provence insisted on another parish to be built in the neighborhood of Antriol. Originally this building was supposed to be a chapel in honor of The Virgin of Coromoto and the thought of it becoming a church later, but after a lot of communication between the ABC islands, it was decided that it should be a church immediately (Pastor Andres, 2023). This led to the third Roman Catholic church being built on November 11th, 1955 designed by architect Guido Vetter (figure 43) (Antoin, 2001). The building is in the form of a "Kas di Hadrei" meaning an alley house with characteristics of a symmetrical gable roof with eaves (Groenenboom, 2021).

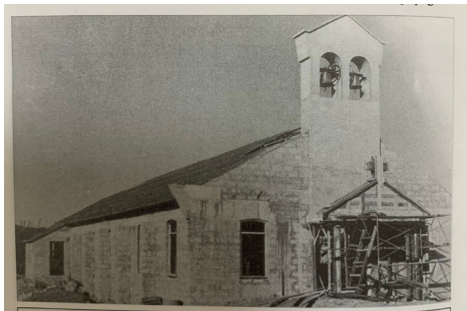*Figure 43 - South view on Lady of Coromoto church. Picture by Stadsmuseum Tilburg*

Figure 44 - Construction photos of the Lady of Coromoto church Antriol (Antoin, 2001)

When construction started in March 1955 there was some trouble with the making of the foundation, due to the ground having a 2 meters-thick layer of clay, and every time the ground would get dug up, water would come out. To solve this problem there was extra reinforcement of iron and concrete added to the foundation. Six thousand building blocks for the walls of the church were brought by Julio Gerarda from his concrete plant (Antoin, 2001). Current concrete blocks are between 10 to 20 cm wide, so this indicates that the walls of the Church might have been around 20cm making them thinner than the walls of the previous churches. The two church bells were made by the company Petit Fritsen in Aerle Rixel close to Helmond in the Netherlands. Antoin (2001) adds that the church benches were made and carved by Mauricio Damascus from imported Nicaraguan wood. Furthermore, steel rafters were used for the construction of the roof, indicating that this was a new material that could be used for bigger roof spans.

Figure 44 shows how wooden bracing was used for the concrete walls. Compared to the church of Rincon in Chapter 4, glass shutters instead of wooden ones were being used in Lady of Coromoto church. The concrete columns outside are positioned between windows just like the rafters. This indicates that the rafters rest on the columns.

The floor plan is designed like a cross similar to Roman-Catholic churches in Europe. What is interesting is that there is a hallway on the north that acts as a storage space. The sacristy and the chapel are both connected through the platform where the altar is. The church has a span of approximately 12m making it a bigger span than the other churches shown in chapters 3 and 4.
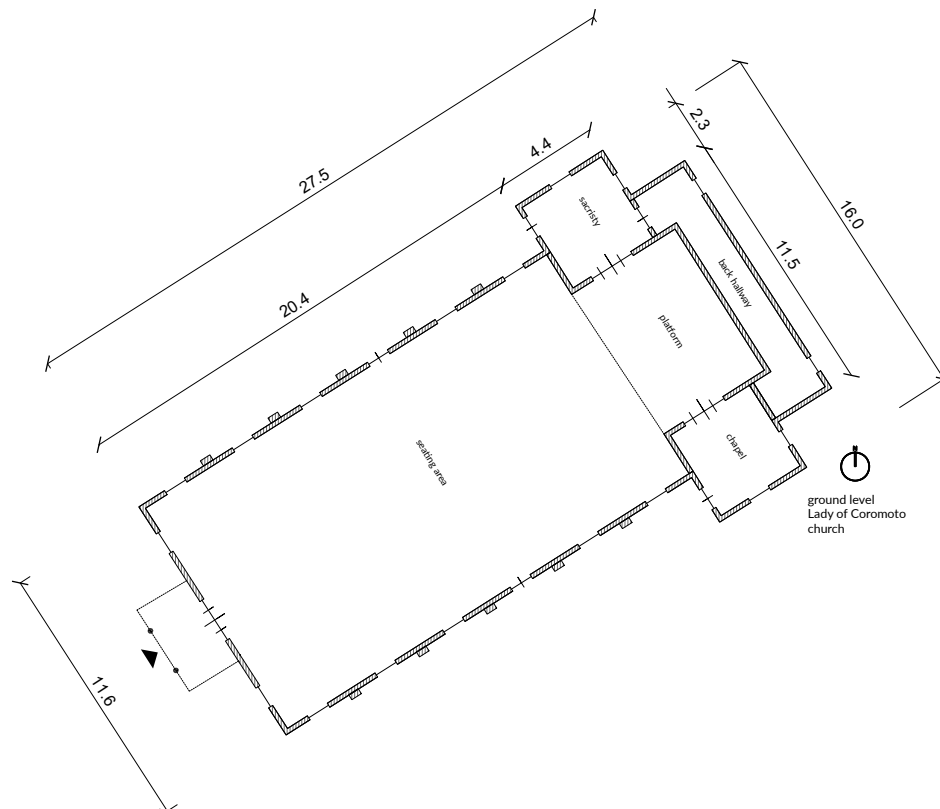
Figure 45 - Sketch floorplan of Lady of Coromoto church (own work)

With the current photos, it is visible how the gable roof is covered with corrugated orange roof plates, and it is also visible how the inside roof finish resulted. Two arches in the clock tower can be associated with being a neoclassical element in this church (figure 46).

Currently, the church is still in use and the tower is being renovated (figure 46). Between 2020 and 2021 Pastor Marc Hooijschuur (2023) mentioned that the storage area of the church was renovated together with some smaller renovations inside.

Figure 46 - Current Lady of Coromoto church (Hooijschuur, 2023)

The Lady of Coromoto church in Bonaire can be compared with the Coromoto church located in Mundo Nobo, Curaçao (figure 47). These two churches not only have the same name but have a lot of similarities. Firstly, the façade of both churches is quite similar when it comes to the positioning of the windows and the façade shape. What makes these two churches different from the other churches is the way the tower is built, it is a flat tower that is an extension of the wall. Secondly, both churches have a canopy at the entrance to help against sun exposure. Thirdly the churches are both built out of concrete blocks making them use similar building techniques. Lastly, the same details are used when it comes to the shape of the windows, the small white details around the gutter, and the positioning of the cross. However, the church in Bonaire only has two arches in the bell tower making space for two bells, while the church in Curaçao has three arches making space for three bells. This indicates that Curacao must have had more money for the construction of their church compared to the funds Bonaire had for the expression of the church.

While both of these churches seem to have a quite simple expression it is noticeable that they still have the same neoclassical characteristics, like the use of arches and a thin cornice around the gable. However, these characteristics are more nuanced, and the focus is set on the practicality of the church, making this church fit with the Functionalism style. Features like structure, overhangs, and materials are used to shape the church and are visible from the outside and inside.

Figure 47- Church of Coromoto Curaçao (Parokio Coromoto Curaçao, 2022)

5.3 School: Technical School 1952

In 1952 the Technical school was built under the initiative of the government (figure 48 - 51). Franklin Scherptong (2023) mentioned that the reason this technical school was built, was due to the importance of offering students a practical route they could take in life. It was important for Bonaire to have this option because not everyone was able to do an office job and work with numbers. Not everyone has the same intelligence type; some are better with practical jobs while others are better with theory. Most of these students ended up going to Middelbare Technische School (MTS) and Hogere Technische School (HTS) (Scherptong, 2023). These were part of the technical colleges the Netherlands had at that time. HTS is now known to be part of the current hogerberoepsonderwijs (Hbo) bachelors and MTS is now known as the middelbaar beroepsonderwijs (mbo) college of the Netherlands. Scherptong (2023) adds that the citizens found it a necessity to educate their people on a technical level. Everything we see around us is expressed with engineering and is made by craftsmanship.

The walls of the Technical School were made out of cement blocks and the roof was made of asbestos plates. The flooring was also cement and in the theory classrooms there were mosaic flooring (Scherptong, 2023). Round columns, and vertical and horizontal elements add a more modern touch to the building.

Figure 48 - Technical School outside view mid 20th century. (Archivo Boneiru, n.d.)

Figure 50 - Inside the old Technical School. (Nationaal archief, n.d.)

Figure 49 - Technical School outside view mid 20th century. (Archivo Boneiru, n.d.)

Figure 51 - Technical School opening in 1952. Picture by: Unknown

The current floor plan is completely different from how the technical school used to be. The building exterior stayed the same, but inside a lot more walls were put up. Originally the school's floorplan looked like the image below (figure 52). The school consisted of different spaces for different subjects spread over four buildings. These spaces were very spacious, making room for lots of students. Furthermore, the main building also had an office and a teacher's room, indicating that the teachers during this time no longer had to be in the same space as the students throughout the entire day. In addition, the four buildings are all built around a big central recreational square that currently is a parking lot.
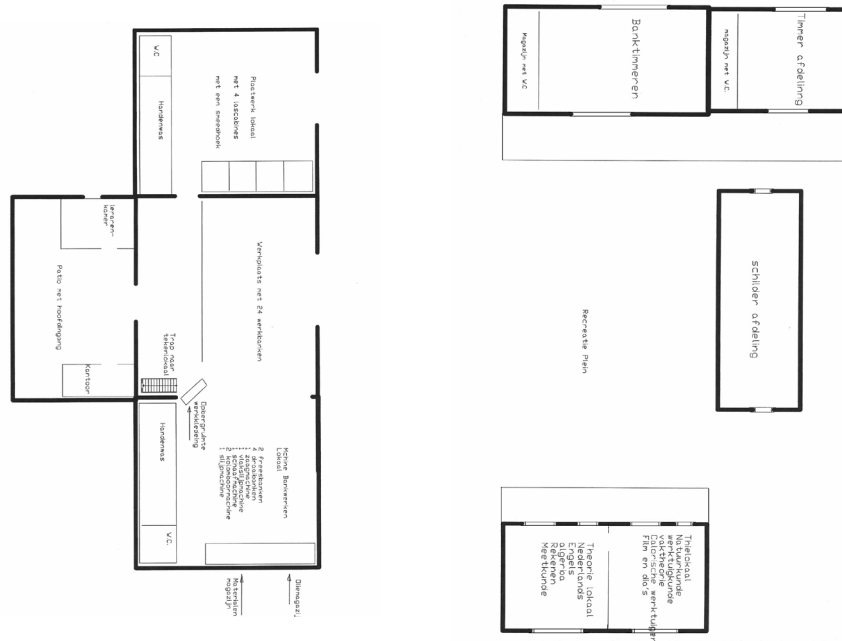
Figure 52 – Old floorplan of Technical School Bonaire (Scherptong, 2023)

Figure 53 – Aneheim High School, California (Unknown, 2014)

Figure 54 - Villa Savoya, France by Le Corbusier (Renato Savoya, n.d.)

Looking back at the building composition the idea of letting the first floor seem to float over the ground floor with the use of round columns could be seen as part of the Modernism movement. Furthermore, when looking at this technical school in more detail the circular window to the right, asymmetrical gable roof at the back, and the horizontal sticking slaps on top of the windows seem to have characteristics like the Art Deco style. The composition of the windows and the horizontal details between the windows of the first floor have a resemblance with the Art Deco Aneheim High School in California in Figure 53 and the idea of the form and shape of the building has a resemblance with the Modernism Villa Savoya of Le Corbusier in France (figure 54). This indicates that the building is not only an Art Deco inspired building as most Bonaireans call it, but it also overlaps with the Modernism style.

5.4 House: Kas di Porchi in Nikiboko 1930>

Arthur Sealy, a historian, and a teacher mentioned that the house located on the corner of Kaya Flamingo in Nikiboko was from the family De Palm, during that time there were no street names and the house had the number 240 A indicating that it was the 240th house. The owner was a farmer who had a big farm where they would sell goat meat and milk. At a certain point nothing has become of the land leaving the house neglected (Sealy, 2023). To this day, this house is uninhabited and is decaying.

This house is designed in the "Kas di Porchi" style, meaning Porch House. This building style dates back to the 1930s in Bonaire (Groenenboom, 2021). This one-story alone standing Porch house has a square floorplan and a pyramid roof, with a recess in the façade creating a covered terrace (porch) on the Northwest side. This covered porch is defined with concrete columns that create an arch. The walls are also made of concrete blocks and the roof was made of corrugated sheets. Furthermore, this house has a profiled gutter bearer.

The "Kas di Porchi" belongs to a new architectural period in Bonaire where building materials like cement, and concrete were being used. The Kas di Porchi was the first house type that was built with concrete and was built during and after World War II (Booi, 2023). Furthermore, the balustrade was a new element that was made using molds. Another characteristic of Kas di Porchi that the one in Nikiboko also has is the use of glass shutters in combination with a wooden shutter. Some of the original wooden shutter windows are still visible and a white concrete slap on top is added to protect these wooden frames from water. Most of the porch houses were built by retired Bonaireans who used to work at the oil refineries in Aruba or Curacao (mentioned in Chapter 2) (Oleana, 2010). The oil refinery on Curaçao used to have concrete Shell-employee houses that looked similar to the porch house (Booi, 1984). Since the shell-employee houses were there first, one can conclude that the Bonaireans were inspired by those homes and brought the Kas di Porchi to Bonaire.

Figure 55 – Current condition of a Porch House located in Nikiboko. Pictures by: Gino Obersi

Figure 56 - Kas di porchi Monte Bellostraat 12 (Newton, 2019)

The Porch House in Bonaire can be compared with the porch house located in Monte Bollestraat 12 in Curacao located in the historic inner city (figure 56). Similar to the one in Bonaire, it has a neoclassical profiled gutter bearer with a tent roof. However, the porch is located on the opposite side, uses a more defined column design, and has no arch when comparing it with the one in Bonaire. Furthermore, this porch house also makes use of concrete balustrades. The style of the porch house is very simple and straight, making it part of a more Modern building design.

The Kas di Porchi house type can be seen as part of the Modernism period with a resemblance to Functionalism. Architecture possessing a more practical function to fulfill in terms of the use, material, and structure is an example of Functionalism in which the building's function decides the outcome of the façade (Britannica T. Editors of Encyclopaedia, 2013).

Thus, the porch house, with its residential function, was designed with the idea of Functionalism while also incorporating traditional neoclassical characteristics like the profiled gutter, columns, and arches.

Chapter 6: Conclusion

In the previous chapters, the research question was investigated with the help of three sub-questions. The research question is: 'How can the development of the architecture of Bonaire in the period of slavery up to the modern day, be understood from a history of colonization?' The three periods that were studied were the period before and after the abolishment of slavery, and the modern period. The typologies studied were the church, school, and house typologies.

Church

When it comes to the church typology the sizes have changed a lot. A big difference is seen when it comes to the protestant church compared to a catholic church. Since Bonaire always had fewer Protestants than Catholics, it can be concluded that because of this reason, the protestant churches were smaller. The influence of the style of the protestant church is mainly derived from the Dutch Hervormde Kerk.

The St. Ludovicus Bertrandus church was a very symbolic building when it came to the Catholic community in Rincon. One can conclude that it had a connection to the Roman Catholic churches being built in the Netherlands with the Waterstaat style. Furthermore, the Lady of Coromoto built in a more modern period could be seen to have a bigger floor and roof span due to new building materials and techniques like the use of Iron rafters and reinforced concrete. One can conclude that the use of materials for the Coromoto church was internationally influenced by the Functionalism movement.

It can also be concluded that most churches were limited in funds when it came to architectural expression. It should be noted that mainly the churches before and after the abolishment of slavery would add extensions in the future when they had more money for this.

School

When looking at the evolution of the school typology a lot has changed. One can conclude when it comes to the school typology the spatial plan is very important. The school before the abolishment of slavery was very small and consisted of one big space for all the children, following the floor plan design the Netherlands used. After the abolishment of slavery, there were already more kids going to school, and multiple classrooms were made that have the same concept as the Corridorschool typology in the Netherlands. During those two times, it should be noted that school was directly linked with religion and that the parish was educating the students. The architectural expression of the school before and after the abolishment of slavery, therefore, was similar to the church next to the school. This led to the schools having the Waterstaat and Lodewijkstyle with neoclassical elements. However, in the Modern period, the Technical School is seen as separate from any church and follows the architectural style from that time, so Art Deco and Modernism Style.

In Bonaire the school and the church were also linked by the use of the same building materials: In Kralendijk before the abolishment of slavery coral and limestone were used, and in Rincon after the abolishment of Slavery big rocks from the mountains were used. One can conclude that, because Rincon was further from the coast it was easier to access big rocks rather than corals. In the more modern times, concrete blocks and iron reinforcement were new building materials, making it possible to create bigger spaces. The influence on the Technical School was international, while the previous schools could be seen as more local or related to the Dutch influence.

House

When it comes to the typology of the house before and after the abolishment of slavery the houses are seen as simple but inspired by the manor houses in Curacao that were built by the Dutch. Both the Van der Dijs House and the Van der Ree House use the principles of the Lodewijkstyles in the Netherlands that inspired the manor. However, the warm climate led to new design features like the gallery inspired by the Portuguese in Brazil.

In the Modern period just like for the church and school, concrete was a new building material, allowing the porch house to be expressed with the Functionalism style and migration caused individuals to get inspired by other architectural styles in different countries.

General conclusion

When it comes to buildings before and after the abolishment of slavery, there are a lot of resemblances. The typologies: church and school have a direct relationship with each other due to Religion being an important aspect at that time.

When talking about the materials it can be concluded that coral rocks, lime, and wood have been the main choices for buildings dating back before and after the Dutch colonized Bonaire. Furthermore, reinforced concrete, glass, and steel were used in the modern period.

The period after the abolishment of slavery, Bonaire had buildings that were still connected to the Dutch influences and architectural styles and not directly connected to

world wild trends. However, in the mid-20th century modernization related to Europe and the Americas can strongly be seen, when Modern styles like Functionalism were internationalized. It could be concluded that these styles arrived relatively late in Bonaire.

Chapter 7: Appendix

List of people interviewed and conversed with

Heritage-experts	Public servants involved in planning and transformation	The users of the buildings
Arthur Sealy (History Teacher)	Gino Obersi (Architect)	Franklin Scherpton (Former teacher at the Technical School)
Frans Booi (Historian and researcher)	Roxsen Schwengle (Architect)	Walter Coffie (Protestant Church)
	Margyene Booi (RNO: gebouwen)	Nilva Wout and Carmita Beaumont (Roman- Catholic church Rincon)
	Roland Bruijnesteijn (RNO)	Huub Groot (Cuba Company)
		Arjen van Dorsten (Van der Ree House: Bonaire Museum)
		Pastor Marc Hooijschuur (Church Antriol)
		Mr. Swinkles (Huis van der Dijs)
		Ginia el Hage and Crispina Cicilia-Janga (Roman-Catholic school Rincon)
		Pastor Andres (Roman- Catholic churches on Bonaire)

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Chapter 9: Figures list