Revisiting the Caribbean Architectural Mode

A study of the structures at the Late Ceramic site of El Flaco, Dominican Republic and the early Colonial site of Argyle, St. Vincent

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1. Introduction

During the excavation in 2015 on the site of El Flaco, located in the northwestern part of the Dominican Republic, numerous archaeological features were uncovered, of which many postholes which most likely were part of various architectural structures. Irvince Auguiste, former chief of Kalinago territory on the island of Dominica, was present during the fieldseason of 2015. He explained that the structures encountered at El Flaco and the built landscape of the site were very similar to the Kalinago village he lives in at present. Auguiste recognized the way in which the structures had been arranged and how the posthole features related to each other. For instance, the diameter and distance between posts in various structures were similar to the buildings in his village with only some small differences in actual dimensions. For me, it was quite interesting to realize that the site of El Flaco which is located in the Greater Antilles presumably displays similarities with a present-day indigenous village in the Lesser Antilles.

Based on settlement type several components can be expected to be found in an archaeological site. For instance, a settlement normally has household structures. These structures can be communal or nuclear. These then surround a plaza, a large open space. In and around the settlement the vegetation is removed so it creates more space, which is called the domestic area. Outside of this domestic area there are refuse middens where waste of the settlement is discarded (Hoogland 1996, 174).

The focus of this thesis is on the domestic structures themselves and more specifically how their construction varies or not throughout the region and if their construction complies to the so-called Caribbean architectural mode as defined by Samson, Hoogland and Hofman (2015). Over the past decennia, several Caribbean scholars have studied settlement layout, features and

structures in the archaeological record(see Boomert 1986; Hofman and Hoogland 2015; 2016; Hofman *et al*. 2015; Hoogland 1996; Kaplan 2009; Knight 2015; Kooijmans 1994; Roth 2002; Samson 2010; Siegel 1990; Versteeg and Schinkel 1992). Only a few of these studies have, however, compared structures in both the Greater and the Lesser Antilles. One of these is the study carried out by Samson, Hofman and Hoogland '*Resilience in Pre-Columbian Caribbean house-building: Dialogue between archaeology and humanitarian shelter'*, which discusses the 'Caribbean architectural mode' (Samson *et al*. 2015). The notion of 'Caribbean architectural mode' reflects a collective of common structural features emerging in similar ecologies. The Caribbean is a hurricane effected area due to the Intertropical Convergence Zone (TCZ). This is a zone were the trade winds collide, which causes cyclones and hurricanes. These are extreme forms of weather resulting in strong winds and heavy rainfall (Ouatarra and Strobl 2012, 106). Samson *et al*. (2015) argue that people in this area adapted to this weather by building their structures so that these could withstand extreme weather conditions. Samson *et al*. (2015) further argue that islands with higher elevations and larger islands endure more precipitation and that the settlements on the Atlantic coast of islands are more exposed than those located on the Caribbean coast. The article only discusses sites that are located on the Greater Antilles and the Northern Lesser Antilles and in coastal settings (Samson *et al*. 2015, 325). However, as can be seen in figure 1, the southern Lesser Antilles are also effected by the TCZ. This is supported by data on hurricanes today, since several of the southern Lesser Antilles were affected by hurricanes in the recent past (Ouatarra and Strobl 2012, 108). On the other hand, it would also be interesting to compare the original dataset from Samson *et al*. (2015, 325) with sites situated in the interior of the islands, in order to verify if the Caribbean architectural mode would also be applicable to other than coastal settings. Further, ethnographic examples of the South-American mainland can clarify whether the construction

techniques seen by the 'Caribbean architectural mode' are specific for the Caribbean and its weather conditions.

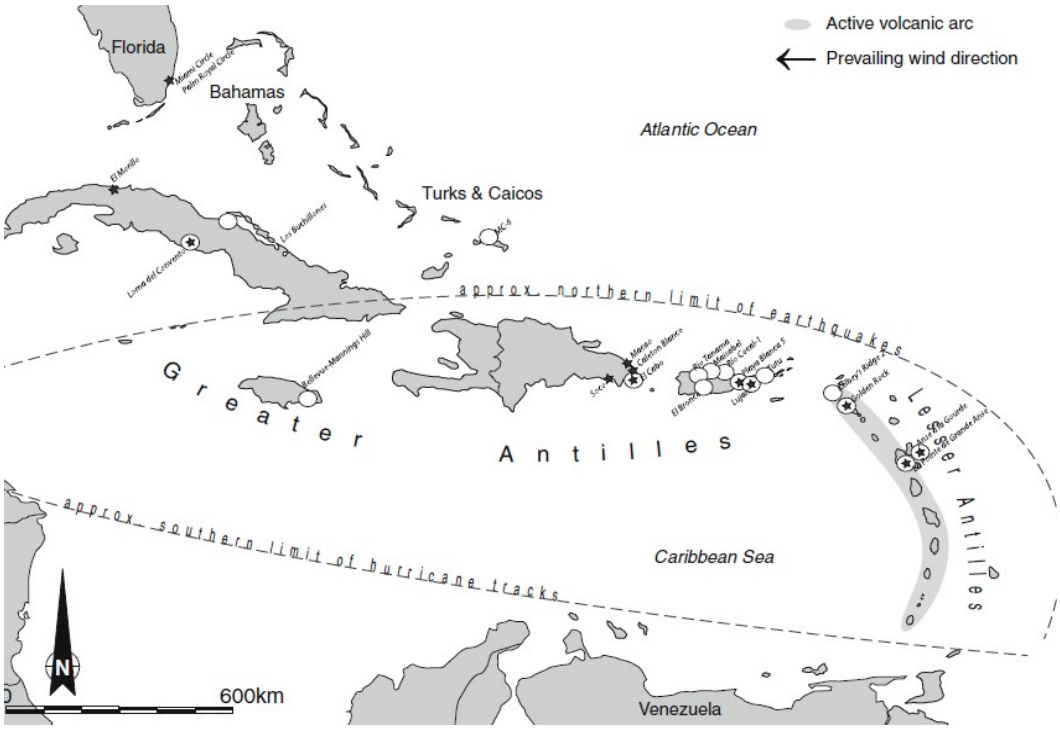


Figure 1: Location of the sites used in the original paper (Samson et al. 2015, 326)

Comparing the information provided by Samson *et al*. (2015) with datasets from other contexts could enhance our understanding and validate the applicability of the 'Caribbean architectural mode' within a broader regional and ecological perspective. It should be noted that as is mentioned in Samson *et al*. (2015, 329) there is a general shortfall of radiocarbon dates for the region and therefore micro-chronological trends cannot yet be determined. Furthermore, it also should be remarked that settlements can differ because of site function (Kaplan 2009, 125). Obviously, it is not certain how many structures were built in a settlement during a particular period and this could give a slight distorted image of the actual reality. It could mean that certain settlements would have had multiple structures and smaller and/or bigger ones. Nonetheless, by adding more

data to the dataset from different locations and more radiocarbon dates will provide a solid basis for further research.

1.1 Objective

The objective of this thesis is to advance our understanding and to validate the applicability of the 'Caribbean architectural mode'. By analyzing structures of more sites with other regional and/or ecological contexts a better insight can be created on possible trends in housebuilding, during the late pre-colonial and early colonial periods in the Caribbean.

1.2 Research questions

The main research question is:

How do the house structures at the late Ceramic site of El Flaco and the early Colonial site of Argyle and comply with the Caribbean architectural mode as defined by Samson *et al*. (2015)?

To answer this question various sub-questions have to be answered.

1. The first question focuses on the Caribbean architectural mode: What exactly is the 'Caribbean architectural mode', what does it consist of?
2. The next question focuses on the site of El Flaco: How does the Caribbean architectural mode comply with El Flaco?
3. The next question focuses on the site of Argyle: How does the Caribbean architectural mode comply with Argyle?
4. The final question builds on the three preceding questions: How do the results from the study of the El Flaco and Argyle structures contribute to our understanding of the 'Caribbean architectural mode'?

1.3 Theory, Methods and Approach

The 'Caribbean architectural mode' is based on the standpoint that people in the Caribbean had to adapt to climatic and environmental challenges and this is

visible in the way they construct their houses. Therefore, through comparative research our understanding of the adaption of the people on the climate in the Caribbean can be increased. For both sites a thorough description of the structures will be given based on the published data. Other factors besides the structures will be considered. For instance, climate and vegetation. In the original paper the sites were selected based, among other things, on the climatic setting, namely the hurricane area. Different circumstances might demand different settlement locations and approaches of housebuilding and the Caribbean is known to have regional differences due to climate and geology (Cooper 2013).

For this thesis, new settlement data from the sites of El Flaco, northwestern Dominican Republic and Argyle, southeastern St. Vincent (Hofman and Hoogland 2012, 2015, 2016) will be analyzed in the framework of the 'Caribbean architectural mode' and then compared to the dataset compiled by Samson *et al*. (2015). Both sites date to a similar time period as sites like El Cabo in the southeastern Dominican Republic and Los Buchillones in north-central Cuba reported by Samson *et al*. (2015, 327).

The site of El Flaco is chosen for this thesis because it is located in a very different environment than the sites that are mentioned in Samson *et al*. (2015) (see fig. 2). While those sites are no further than 13 kilometers from the shore (Samson *et al*. 2015, 326), El Flaco is located more land inwards (fig. 2) (Samson *et al*. 2015, 326). As the excavations at El Flaco are still ongoing and not all the data has yet been published, only the structure excavated in 2015 will be used for this analysis.

Argyle is located on the island of St. Vincent in the Windward Islands (see fig. 2). As the islands of the southern Lesser Antilles of which the windward Islands are part, have not been included in the analysis by Samson *et al*. (2015, 325). It is very interesting to include them here with the site of Argyle. In total 13

structures have been documented at Argyle of which 11 are with certainty thought to be house structures (Hofman and Hoogland 2012, 67).

Subsequently, the results of the analyses will be compared to the data published by Samson *et al*. (2015) and previously published in articles on the sites themselves (see Boomert 1986; Hofman and Hoogland 2015; 2016; Hofman *et al*. 2015; Hoogland 1996; Kaplan 2009; Knight 2015; Kooijmans 1994; Roth 2002; Samson 2010; Siegel 1990; Versteeg and Schinkel 1992) in order to confirm or contradict the compliance of El Flaco and Argyle to the 'Caribbean architectural mode'.

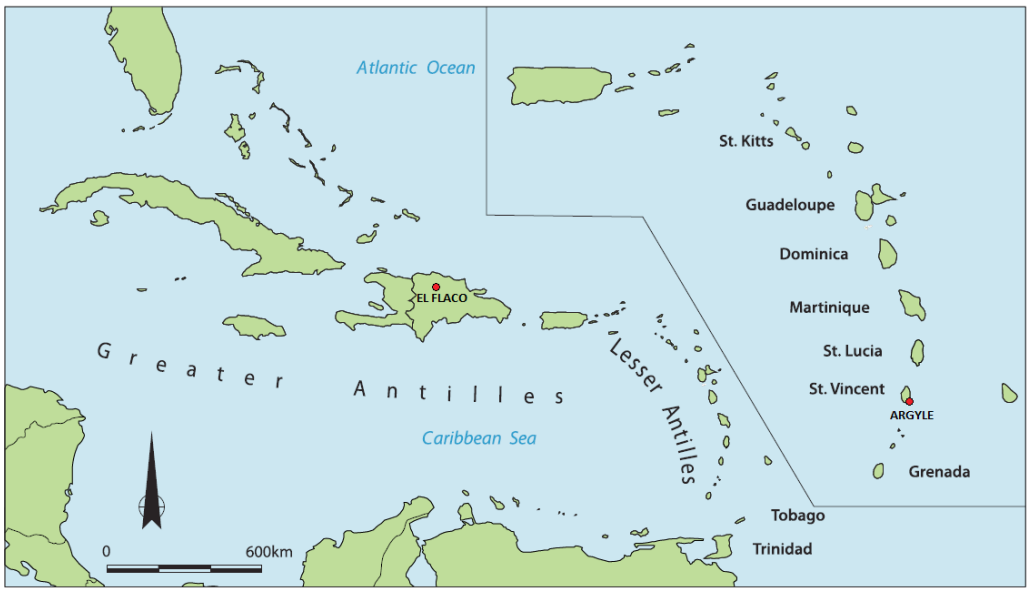


Figure 2: Map of Caribbean with the location of El Flaco and Argyle (Hofman and Hoogland 2012, 64).

1.4 Outline

In chapter 2 the so-called 'Caribbean architectural mode' will be introduced. The characteristics of the mode will be described one by one in order to determine what the concept exactly entails and how it is determined. Subsequently, in

chapter 3 and 4 the structures of the sites of El Flaco and Argyle will be presented and compared to the characteristics of the ‘Caribbean architectural mode’. The ecological setting of both sites will also be considered to see how the TCZ effects them. Chapter 5 includes the data analysis to determine whether the structures of El Flaco and Argyle comply the ‘Caribbean architectural mode’. Comparisons between the dataset presented by Samson *et al*. (2015) and that of El Flaco and Argyle are made. Subsequently the discussion follows in chapter 6 which ends with the conclusions.

2. The Caribbean Architectural Mode

The ‘Caribbean architectural mode’ is a term ascribed to several sites in the Caribbean that have similarities in construction techniques. The sites that are used by Samson *et al*. (2015) are all dated in the Ceramic Age, i.e. between AD 400 and 1492, with a few exceptions like Los Buchillones which continues until AD 1690 (Samson *et al*. 2015, 327) and El Cabo which continues to be inhabited until the early 1500 (Samson 2010) In Appendix 1 an overview is given of the data described by Samson *et al*. (2015). As said in the introduction, the selection of the sites used by Samson *et al*. is based on the fact that the Greater Antilles and the northern Lesser Antilles are located in a hurricane area which is caused by the Intertropical Convergence Zone (TCZ). This is quite a difference with the South American mainland which is not effected by the TCZ in the same way the Caribbean islands are. Samson *et al*. (2015) note that the people in the Caribbean had to adapt their construction techniques, so their structures would not be destroyed every time a hurricane passed the settlement and efficient reparation was possible. The sites included in the study by Samson *et al*. (2015) are spread throughout the Greater Antilles and the northern Lesser Antilles as can be seen in figure 1.

2.1 Structure characteristics

According to Samson *et al*. (2015) there are seven shared construction characteristics that were encountered on the analyzed sites. These are: the architectural footprint, house size, high-pitched roof, monumental facades, prepared floors, securely anchored foundations and durability. In the following paragraphs each of these characteristics will be discussed as to allow proper comparison when analyzing the data from the sites of El Flaco and Argyle. The same structure as in Samson *et al*. (2015, 328–332) will be followed for the

discussion of the characteristics. It should be noted that the sites that are analyzed for this chapter are not mere copies of each other but rather show resemblances in certain characteristics, which are described in the following chapter. This means there is some variation in the occurrence of the characteristics. One small difference should be noted, however, because not only residential structures will be analyzed, but also the communal structures.

2.1.1 Architectural footprint

The first characteristic is related to the imprint of the posts that the structures left behind in the archaeological record. This varies considerably between the different sites.

The site of El Cabo on Hispaniola had over 200 features and eventually 52 identified structures, while Loma del Convento on Cuba only had two structures which were identified (Knight 2015, 10; Samson 2010, 156). While El Cabo is an extreme exception, most sites revealed between one and 24 structures (Samson *et al*. 2015, 327).

Despite the variation in number of identified structures, the settlement lay-out is quite similar throughout the Caribbean, with only little variation. According to Hoogland (1996, 174) a settlement consists of several components. It is dependent on the type of settlement how this is displayed and what the lay-out is, but most settlements have at least one residential structure which is surrounded by a domestic area. This area consists of a plaza, paths to the gardens, other smaller structures (for instance cooking huts) and refuse discard areas like sweeping areas and middens (Hoogland 1996, 174). On almost all the sites, plazas and other aforementioned characteristics of a domestic area, were identified. The features at Golden Rock for instance indicate that windbreaks would have surrounded the structures (Kooijmans 1994, 30, Versteeg and Schinkel 1992). The lay-out of the sites in the Caribbean is connected to the

shape of the structures. As Ramcharan (2012, 26-27) notes, most villages had a horseshoe form with mostly circular structures. According to Ramcharan the lay-out of the islands settlements is connected to the cosmological view of the settlements on the South American mainland. The lay-out is determined by the shape of the structures. This means that most sites in the Caribbean have circular structures. The difference in the shapes of the structures range from rectangular to oval, elliptical to circular. On Saba at the site of Kelbey's Ridge 2 all identified structures are circular, which also applies for the structures at Golden Rock, St. Eustatius (Bradford 2001, 87; Hoogland and Hofman 1993, 166; Kooijmans 1994, 28). However, at some sites oval and rectangular structures can be found alongside the circular structures. For instance, one of the two structures of Loma del Convento on Cuba is rectangular and the other more oval (Knight 2015, 11).

While the shape of the structures speaks for a homogenous mode, their sizes seem to vary. The elliptical structure of Loma del Convento measure three by five meters, which means it is approximately 12 m^2.[1] This while the other identified structure only measures 6m^2 (Knight 2015,10). At Tutu, which is located on the U.S. Virgin Islands, the diameter measurements range from 3.6 to 12.5 m^2. On Kelbey's Ridge 2 the residential structures mostly have a diameter of 8 meter (Hoogland 1996, 185). Throughout the islands the diameters vary (Samson *et al*. 2015, 18).

While the size makes the mode less homogenous, the construction techniques advocate a more homogenous mode. Most of the structures that are analyzed are post-built, with the exception at Los Buchillones on Cuba and MC-6 on the Turks and Caicos. The first has both post-built as stilted structures and the latter has round pit structures (Samson *et al*. 2015, 327). Samson *et al*. note that the structures with a diameter of 12 m^2 or less are not in need of internal roof support as shown by European roundhouse studies (Pope 2008 in Samson *et al*. 2015, 328). Most structures of the analyzed sites would comply to this. However,

1 π x 1,5m x 2,5m = 11,78 m^2

throughout the Caribbean several construction methods are adopted (Pope 2008 in Samson *et al*. 2015, 328 - 329). Structure I at El Cabo shows an internal roof support with eight posts in a square. Other structures at El Cabo show the same pattern (Samson 2010, 155-159). However, the map of Kelbey's Ridge 2 does not show any features that show a special kind of roof support (Hoogland and Hofman 1993, 169). It is suggested that structures at MC-6 have one central internal roof support post (Roth 2002, 26). Other sites show two or more posts that support the roof. The posts are mostly thrusted far into the soil. As for instance in structure 4 at Golden Rock can be seen that the roof supporting posts reach a depth of three meters and others 1,05 meters (Kooijmans 1994, 30–31). The features and their dimensions indicate that the posts were large and heavy. The posthole features that are more shallow (<50 centimeters) are mostly part of the windbreaks, which protect the house from the strong winds (Kooijmans 1994, 31; Hoogland 1994, 183). The depth of the posts will be further elaborated in 2.1.6.

2.1.2 Size

In Samson *et al*. (2015, 325) it is noted that several historical sketches and descriptions show that house size is an indication of status and especially the differences therein. House area size can help determine how many people could have resided in the settlement and can help determine whether the structure was a communal dwelling or a (nuclear) family dwelling. According to Samson, Hoogland and Hofman the house size in the Greater Antilles and the northern Lesser Antilles largely falls between 20 to 60 m^2 (Samson *et al*. 2015, 329). There are some aberrations that range from bigger to smaller. On the site of Golden Rock this varies more since structure 5, a *Maloca*, had a diameter of 15 meters while structure 4 had a diameter of 19 meters (Kooijmans 1994, 29-31; Versteeg and Schinkel 1992, 30–33). The floor area of structure 5 would measure a floor

area of circa 177 m^2 and structure 4 circa 227 m^2.[2] These structures were inhabited by 30 people or more. [3] The structures of Kelbey's Ridge 2 had an area of 57 m^2 to 80 m^2. Hoogland used Antonio Curet's formula to calculate that the dwellings of Kelbey's Ridge 2 must have been inhabited by 11 to 15 persons (Curet 1998, 368; Hoogland 1996, 185). Samson (2010, 239-244; 302) estimates that the houses on El Cabo, whose diameters range from 6 m to 11 m, were inhabited by 5.8 to 17.5 persons. As Samson *et al*. (2015) mention, most of the sites fall into the category of smaller houses. It is also mentioned that the residential structures on the Greater Antilles are smaller than the ones on the Lesser Antilles. While El Cabo has smaller structures than Golden Rock, the structures at Kelbey's Ridge 2 have similar dimensions as El Cabo, which does not support the claim that the residential structures on the Greater Antilles are smaller than those on the Lesser Antilles.

It is also stated by Samson *et al*. (2015, 329) that the residential structures in the Caribbean are smaller than in ethnographic cases of the South American mainland. However, both Jimmy Mans and Peter Siegel show examples of habitual structures that have a similar size or are even smaller. For instance, the Trio village Amotopo in Suriname has an average house floor plan of 30.16 m2 (Mans 2012, 62). In Guyana, in the village of Shefariymo, the house areas have similar floor area as the Caribbean examples mentioned above. Most floor areas fall between 30 m^2 and 60 m^2, with a few smaller and bigger outliers (Siegel 1990, 326-327). The longhouse in Venezuela, described by Jose R. Oliver, has a larger floor area, namely 234 m^2 (Oliver 1995, 137). This means that there is some variation in size of the floor areas both in the Caribbean as in the ethnographic examples of settlements in the South American mainland, of which the latter

2 7,5m x 7,5m x π = 176,6m^2, 8,5m x 8,5m x π = 226,8m^2

3 Number of occupants = 0.50636 + 177m^2 (0.16949).

may, for instance, be caused by the fact that these are different groups of people or the fact that this area is not affected by the hurricane zone .

2.1.3 High-pitched roof

The features suggest a high-pitched roof according to Samson, Hoogland and Hofman. It is mentioned that on El Cabo the roof pitch was 40°. This is based on the incline of the outside wall posts. Samson notes that this is not unlike Piaroa or Trio houses (Samson 2010, 239). The Amatopo village also shows similarities. The roofs are high pitched and steep (see fig. 3) (Mans 2012, 153).

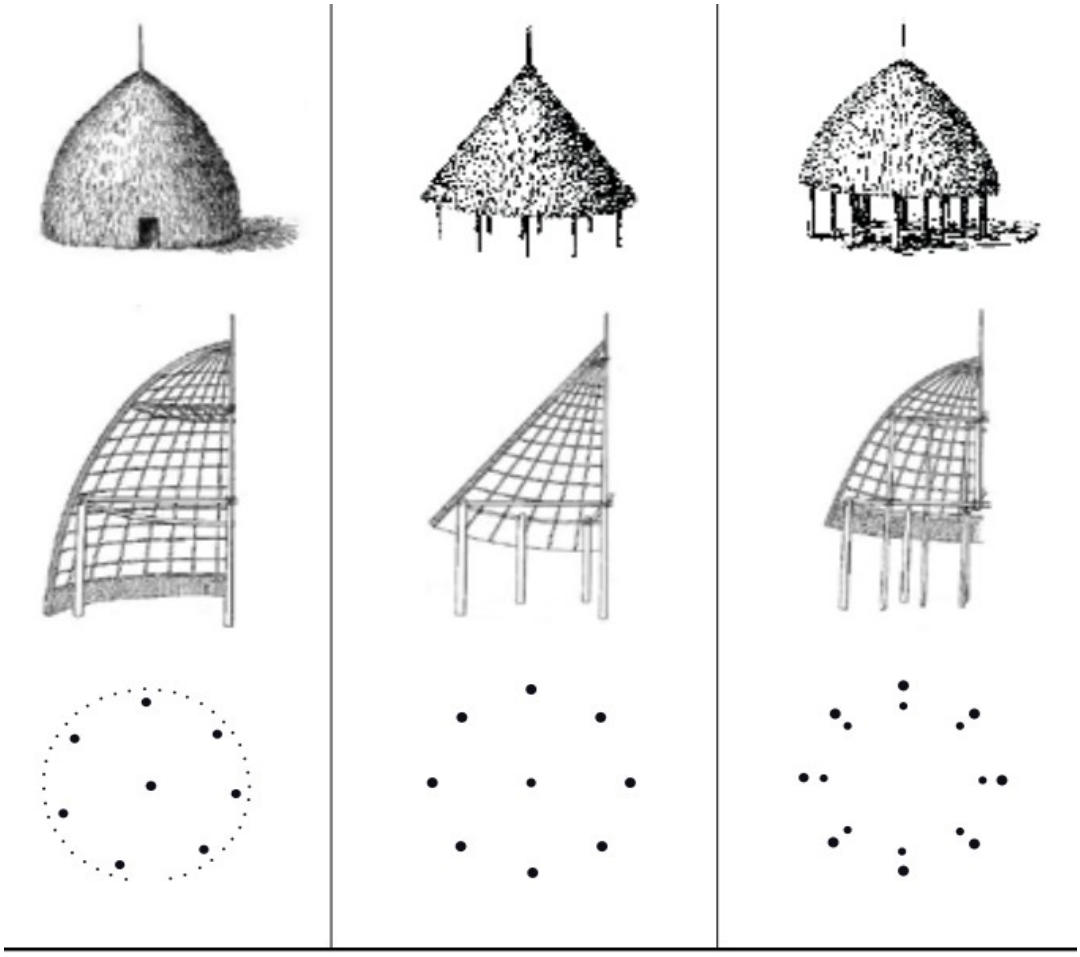


Figure 3: Circular house plans of the Trio (Mans 2012, 153).

2.1.4 Monumental Facades

In Samson *et al*. (2015) it is mentioned that some sites had structures that had double or enlarged entrance features. This is most clearly visible at El Cabo (see fig. 4). Sites that are mentioned that show the same characteristic are Tutu, Anse à la Gourde and Lujan I. However, other published house plans do not exhibit this characteristic and it is not mentioned in the literature. For instance, Kelbey's Ridge 2 does not have a post ring that goes from larger, near the entrance, to smaller in the back (Hoogland 1996, 132). Neither do the typical ‘turtle' house plans of Golden Rock. What is shown on the maps of structure 5, *Maloca*, is a triangular projection on the south-west side of the structure. This would be the entrance according to Kooijmans (1994, 31).

The entrances of the structures are thought to be low and would maybe require people to duck to go in (Samson *et al*. 2015, 330). The entrance would be aligned with a clearing that most structures align to. In Puerto Rico, for example, the structures are placed in horseshoe form with the entrances focused on a central plaza (Curet 1992, 322).

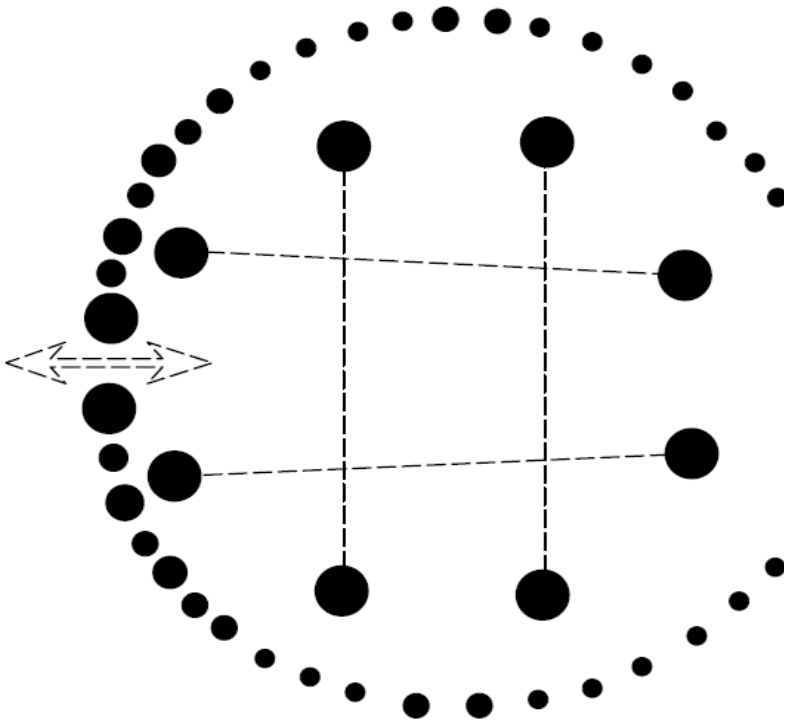


Figure 4: Schematic representation of structures at el Cabo, which shows how the posts became larger towards the entrance (Samson 2010, 239).

2.1.5 Prepared floors

The fifth characteristic that is mentioned focusses on the floor. The floor of the living areas on the distinct sites seem to have been cleared and levelled. The floors have been prepared. This is seen on several of the sites (Samson *et al*. 2015, 330). For instance, Playa Blanca 5 in Puerto Rico has indications of a prepared floor. The bedrock is relatively soft and the harder rocks have been removed. Also El Cabo has prepared floors (Samson 2010, 21). The same applies to MC-6. There rocks were found outside the central area of the village, which is thought to be an indication that the rocks came from the central area, but the central area was prepared for inhabitation and agricultural activities (Roth 2002,32-33). This is also very apparent on the site of Loma del Convento. Structure I was built directly on the bedrock. The limestone bedrock is quite soft and all irregularities have been removed (Knight 2015, 10). At Playa Blanca 5 the

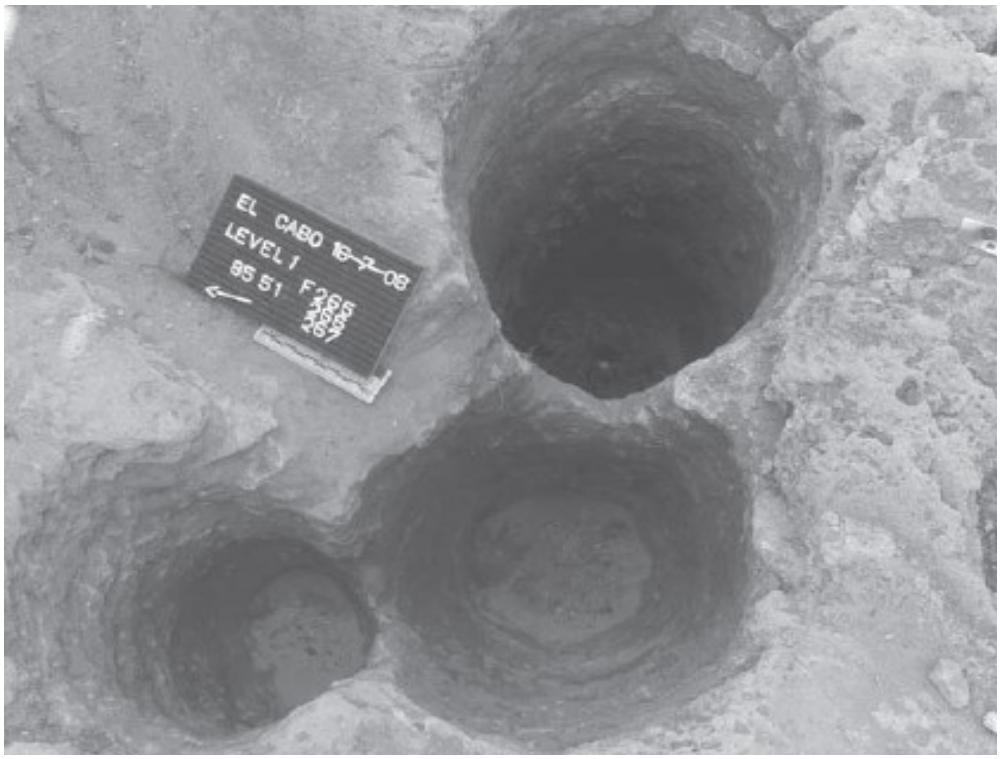
irregular surface of the soft bedrock had also been evened out (Samson 2010, 21; Samson *et al*. 2015, 331).

2.1.6 Securely anchored foundations

On several sites the posts are anchored deep into the soil. There is an evident preference in the region to secure the posts into the bedrock. The posts are thrusted or hewn into the bedrock. By securing the posts this way, the posts could withstand extreme weather and the posts are easier to replace, because there is a hole for the post. Not all posts are placed that deep that they are indeed in the bedrock, but especially the larger and the ones that bear the weight (Samson *et al*. 2015, 330). At Golden Rock several posts are anchored into the volcanic rock, the tuff layer, one as deep as 3 meters. In Versteeg (1994) this layer is described as 'the hard, concrete-like, tuff-layer' (Versteeg 1994, 32). At Maisabel similar depths of postholes were found, which range from smaller than 0,50 meters to 2 meters. The posts are also thrusted into the soil which produced the same traces (Siegel 1992, 282). As described in the previous paragraph, the bedrock, limestone, at Loma del Convento is relatively soft. Here the posts were also secured in the bedrock (Knight 2015, 10). Lujan I and El Cabo also show this characteristic. On both sites the posts are directly dug into the bedrock (Samson 2010, 20).

Figure 5: Example of postholes of El Cabo (Samson 2010, 137).

This characteristic is especially visible at El Cabo, because the posts dug into the bedrock are very apparent. The pits must have been carefully excavated so the posts could fit in. This obviously means not excessively loose and not too tight. (see fig. 5) (Samson 2010, 134).



2.1.7 Durability: Repair and rebuilding

The seventh characteristic is related to the longevity of the structures. On the Caribbean it seems that through replacing posts, the structures could last longer so building a new house would not be immediately necessary when something in the structures was broken. Several house plans show replacing of the posts. Other structures are placed over others. This is visible in the house plans of El Cabo (see fig. 4). The features overlapping each other or doubling, indicate that structures have been replaced by completely new structures or posts have been replaced/repaired. According to Samson *et al*. (2015) most of the sites they analyzed for their study show that posts have been replaced or structures have been rebuilt, as can be expected at sites that had a long inhabitation span. They note that an occupation of several centuries results in at least two building phases. This can also be seen at El Cabo (see fig. 6), but also at Golden Rock. For instance, on the site plan, it can be seen that Structure 2 is overlapped by Structure 4, Structure 6 overlaps Structure 3 and as such five phases have been distinguished at Golden Rock (Kooijmans 1994, 28-29). An indication of post- or building replacement is feature clustering (Samson *et al*. 2015, 330). This means that some features found are overlapping each other which indicates in this case, that several posts have been placed on nearly the same spot. Kelbey's Ridge 2 is also a great example for feature clusters. Four structures overlap each other and this is visible in the archeological plan through features that intersect (Hoogland and Hofman 1994, 169). Anse à la Gourde is obviously also a great example of feature clusters. On the site, 900 features were identified. About 350 of those features have been classified as postholes (Delpuech *et al*. 1997, 280). According to Samson *et al*. the Caribbean architectural mode can actually be recognized in features from various sites from AD 550 and on (Samson *et al*. 2015, 326).

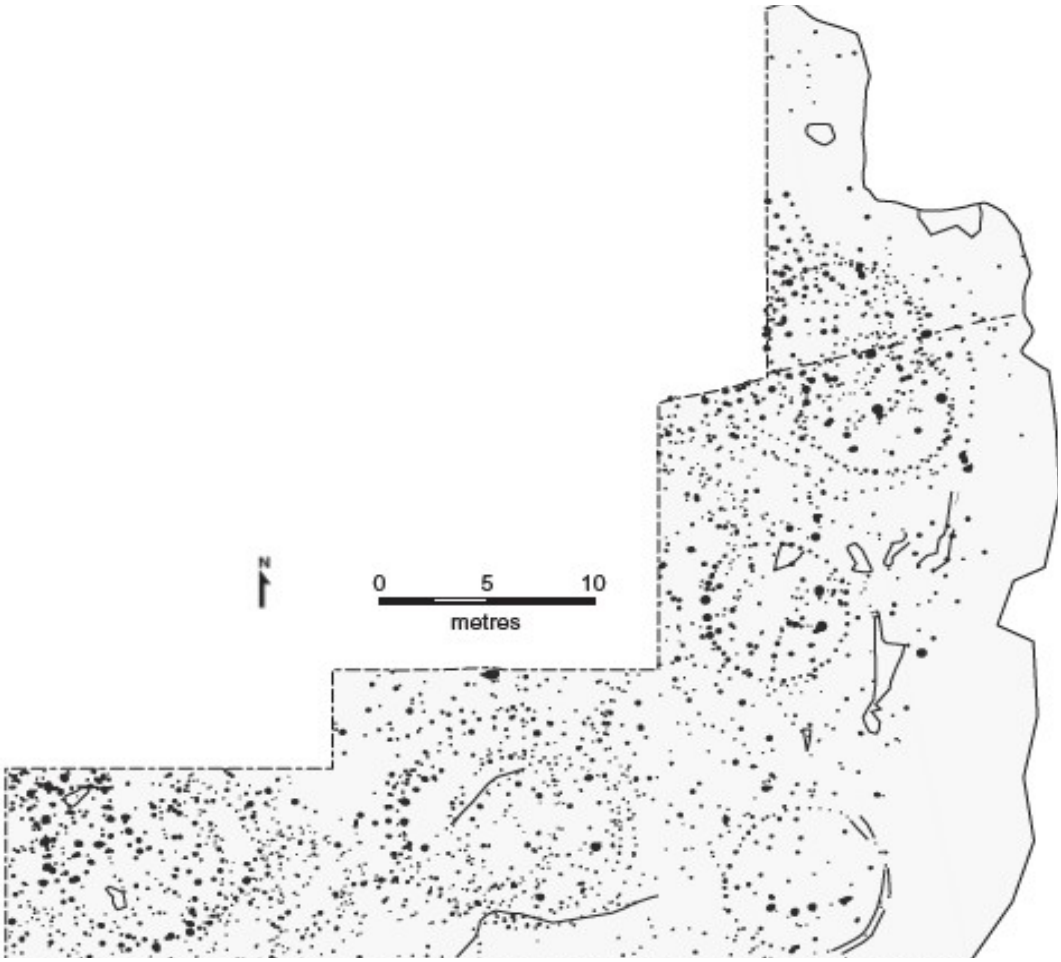


Figure 6: The main excavation unit at EL Cabo. The layout of the features is well documented and show the structures very clearly (Samson 2010, 134).

2.2 Settlement location

As mentioned in the introduction the sites studied by Samson *et al*. are located no further than 13 km of the shoreline (Samson *et al*. 2015, 326). As is known the indigenous people of the Caribbean, especially those who lived in coastal settlements, mostly searched for protein in marine resources (Samson 2010, 83). This does not automatically mean that agricultural resources or other terrestrial resources were not used or needed. Golden Rock is an example of this. It lies approximately in the middle of St. Eustatius which is a small island of 21 km^2. This way both agricultural and marine resources could be exploited (Versteeg and Schinkel, 1992, 33). Loma del Convento is also located somewhat more inland. The site lies on only four kilometers away from the (present) shore (Knight 2015, 4). El Cabo is located close to the shore and as Samson (2010, 104) describes it, the cliffs are right behind the site. However, she then also mentions that the sea is not very accessible from this point but the presence of fish remains and mollusks indicate that the people at el Cabo were exploiting the marine environment. It was also hypothesized that the location of the site, was favorable for the network with other coastal sites in the area (Samson 2010, 104).

2.3 Final Remarks

In this chapter the Caribbean architectural mode has been described according to Samson *et al*. (2015) and explored more thoroughly using publications on the sites themselves. The overview the data presented by of Samson *et al*. (2015) in appendix 1, clearly demonstrates the similarities and differences in the sites which are ascribed to the 'Caribbean architectural mode'. It is apparent that not all the above mentioned characteristics of the 'Caribbean architectural mode' are in archaeological sites and that there is some variation between the sites regarding several of the characteristics. Some characteristics are represented to a greater extent than others. For instance, the securely anchored foundation occur

in many sites, while others are less common like the monumental facades. To ascertain whether the differences are culturally or ecologically determined, more study is needed. By comparing sites that differ ecologically and/or culturally to the sites in the dataset by Samson *et al*. (2015) this could become more evident.

3. The structure at El Flaco

To test to what extent an archaeological site complies with the Caribbean architectural mode it should be determined what that site consist off. Hence an extensive description of the known data is needed. Firstly, in this chapter the site of El Flaco is discussed.

The site of El Flaco is located on eastern Hispaniola in what is now the Dominican Republic (see fig. 2). The island of Hispaniola is part of the Greater Antilles which results in a differences in ecology, geology and also the population compared to the Lesser Antilles. Excavations at El Flaco are part of the ERC-Synergy project NEXUS1492: New World encounters in a globalizing world directed by Prof. dr. Corinne L. Hofman. This project focuses on the transformations of indigenous cultures and societies across the historical divide and on raising awareness of the indigenous Caribbean heritage (www.nexus1492.eu).[4]

Excavations at El Flaco are carried out under the responsibility of Professors Corinne Hofman and Menno Hoogland. The excavations at El Flaco (2013-2016) produced ceramics of the Ostionoid (AD 700-800), Meillacoid (AD 800 – 1200) and Chicoid (AD 1200 – 1500) series. The main occupation of the site was probably in the 13th – 15th century which makes it a Late Ceramic Age site. The site is located alongside the so-called Ruta de Colón, the first route taken by Christopher Columbus and his men from La Isabela, the first Spanish town on the north coast of Hispaniola to the interior of the island (Hofman and Hoogland 2015, 62). First, an insight will be given on the location of the site and its natural environment. Then a thorough description of the structures found on the site will be presented (Hofman and Hoogland 2015; 2016).

4 http://www.nexus1492.eu/?page_id=21, consulted on 14 October 2016.

3.1 Site setting of El Flaco

The site is situated in a different kind of environment than the sites described in Samson *et al*. (2015). While the latter are located in a vicinity of 13 kilometers to the shore, El Flaco is situated 20 kilometers from the north coast (fig. 2). There was a small stream alongside the site, which has dried out. Similar to the sites studied by Samson *et al*. (2015) the site of El Flaco is located on higher grounds. The site is situated on the southern mountain slope of the Cordillera Septentrional (the Northern Mountain chain). It is located at the foot of Paso de Los Hidalgos, which Columbus crossed from the coast to Valle del Cibao. From the Cordillera Septentrional he had a splendid view of the entire valley (Hofman and Hoogland 2015, 65).

The geological characteristics of this area can possibly have been of influence on the building strategies of the indigenous inhabitants. The area is mostly composed of shale, siltstone and conglomerate (Erikson *et al*. 1998, 475). The Northeast trade winds that blow from the east that carry moisture, result in rain shadowing on the leeward side of the mountain chain, which ensures a higher humidity than in the parts further south in the Dominican Republic (Bolay 1997, 63; Horst 1992, 205). The difference here with the sites described by Samson *et al*. (2015) is that these are located on the windward sides of the islands, which makes them more exposed to the strong winds than El Flaco.

The trade winds that blows over the mountains does not carry sufficient moisture to result in an evergreen forest, but rather in a dry forest. This is the vegetation in the area where the site of El Flaco is located. This can be represented by thorn bushes, cacti and *Prosopis juliflora* which can all withstand varying rainfall conditions and drought (see fig. 7) (Bolay 1997, 103–105; Lane 2007).

The indigenous peoples of the Caribbean are known for their reliance on marine resources, which influenced the position of the settlements (Samson *et al*. 2015, 326). In the case of El Flaco this must have been different, since the site is located more landward. This could indicate a shift to terrestrial resources, like

Figure 7: The Prosopis juliflora in a semi-arid region (http://www.fao.org).

agriculture. Nowadays, due to the soil and aridity, the agriculture is dependent on irrigation (Bolay 1997, 133). It could also mean that the people of El Flaco traded with the people of sites closer to the shore which would fit in the character of the indigenous people of the Caribbean as can be seen on Loma del Convento (Hofman and Hoogland 2016; Knight 2010, 6).

3.2 Settlement characteristics

Figure 8: One of the montículos at the site of El Flaco (copyright Nexus1492).

The site of El Flaco is noteworthy, because the landscape unmistakably displays indications of inhabitation. It was common practice in the pre-colonial Caribbean

that people managed the landscape to meet their requirements and moved the soil around. This practice is visible at the site of El Flaco (fig. 8). The areas where structures were build were flattened and surrounded by mounds or *montículos*. Those *montículos* mostly consist of debris. In the case of El Flaco, the mounds clearly have multiple functions, these contain ashes, burnt debris, ceramics and land snails, Hearth features and sometimes burials (Hofman and Hoogland 2015, 66-68). The postholes of the structures that were encountered in the flattened areas adjacent to the mounds, were dug into a layer of limestone similar to what has been described in Samson *et al*. (2015). This makes them quite distinguishable and somewhat easier to record.

3.2.1 Structures

Several structures have been found at the site of El Flaco over the course of the excavations. One of those structures (structure 1) has been thoroughly described in Hofman and Hoogland 2015. This structure consists of two circular rows of posts of which the inner row has larger posts and the outer row smaller posts. The diameter of the inner row is 6 meters. The outer row has a diameter of 8,40 to 9 meters. The distance between the two rows measures 1,20 meters. Hofman and Hoogland (2015) suggest that the space between the two rows was used to hang *hamacas* (hammocks). The floor area would measure to at least 56,74 m^2.[5] With a floor area of 56,74 m^2 this building would have provided housing for about nine people when following the formula of Curet (Curet 1998).[6] Hofman and Hoogland (2015) further argue that the outer, smaller posts supported the roof, which is something that is more commonly found in the archaeology of the Caribbean (Hofman and Hoogland 2015, 67; see also Kaplan 2009, 32).

Hofman and Hoogland (2015) note that several features indicate that posts have been replaced or repaired, which is similar to the sites described by Samson *et al*. (2015) which had the feature clusters. This is indicated by features of additional placed posts or replacement of the former post. Hofman and Hoogland (2015) suggest that these features imply a long period of occupation that was ultimately ended through either demolition, abandonment or the construction of a new house on a similar location.

A number of smaller structures (average 3 to 4 m in diameter) were found nearby structure 1. It is hypothesized that these functioned as cooking structures. Near the entrances of the smaller structures, burned rocks were found that were probable part of hearths. This may indicate that the structures were part of the cooking area. The posts of these structures have been dug or pushed into the limestone bedrock (Hofman and Hoogland 2015, 67).

5 π x 4m x 4m = 56,74

6 Number of occupants = 0.50636 + 55,40m^2 (0.16949).

3.3 Final Remarks

In this chapter the site of El Flaco was examined carefully. It is clear that El Flaco ‘s location is very different from the other sites studied by Samson *et al*. (2015). Even though the location is different than the sites in the dataset of Samson et al. (2015), the site does show some similarities with the ‘Caribbean architectural mode’. For instance, that the posts were secured in the bedrock. In chapter 5 a more in-depth analysis of these similarities will be made. The next step is to analyze Argyle. Then in the subsequent chapter, comparisons can be made between the structures of both sites and the structures of the sites of the original paper of Samson *et al*. (2015).

4. The structures at Argyle

The site of Argyle is located in the southeastern part of the island St. Vincent which is part of Windward Islands unlike the sites described by Samson *et al*. (2015) (see fig. 2). It is one of the only early Colonial sites found in the region thus far (Hofman and Hoogland 2012, 64). The site has a long history of investigation. Initial excavations were executed by Louis Allaire in 1990. He then found Cayo ceramics alongside European artefacts. Cayo ceramics are associated with the Island Carib or Kalinago, the indigenous peoples who inhabited the Windward islands at the time of the European encounters. Cayo ceramics were first identified on St. Vincent by Earle Kirby and then studied by Arie Boomert in the 1980s. Cayo was then dated between AD 1250 – 1500 (Boomert 1986, 3, 38).

In 2009 and 2010 rescue excavations were conducted by Hofman and Hoogland in collaboration with the St. Vincent and The Grenadines National Trust and the St. Vincent and The Grenadines Airport Development Company, Ltd. due to the construction of a new runway at the Argyle International Airport (see fig. 9) (Hofman and Hoogland 2012, 64–65; 2015; 2016, 15).

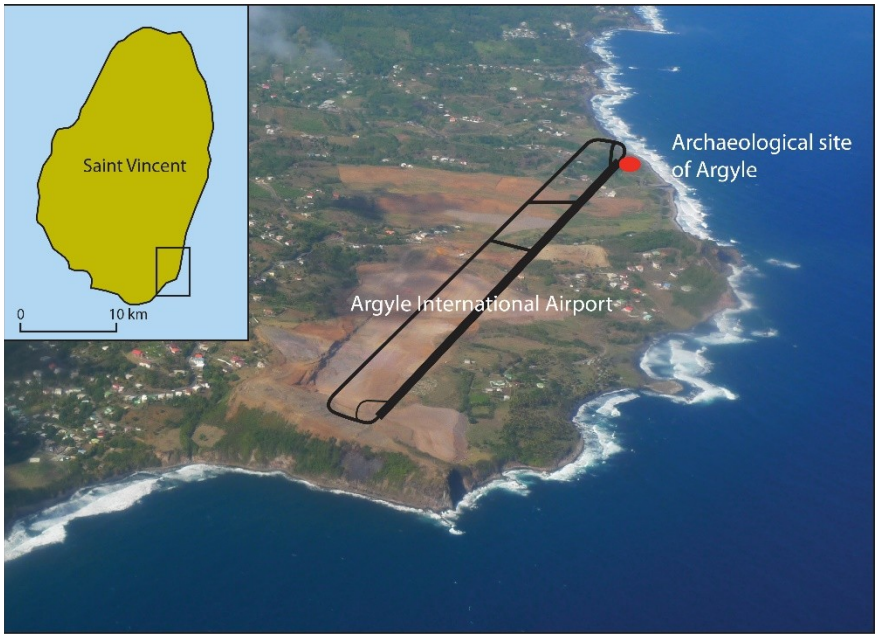


Figure 9: Location of the site of Argyle (copyright NEXUS 1492).

The site was further analyzed in the context of the HERA-CARIB project under the direction of Prof. dr. Corinne L. Hofman. During these excavations a large number of postholes were identified pertaining to 13 structures. Samples from one of the posthole features were taken for radiocarbon dating, and provided dates between cal. AD 1540–1620 (Hofman and Hoogland 2016, 14–15). The features do not show any palimpsest. According to Hofman and Hoogland, this confirms the short period of occupation (Hofman and Hoogland 2012, 67). During the colonization of the region, Argyle was one of the last settlements to remain. Overall, St. Vincent became more densely inhabited in the Late Ceramic/Early Colonial period (Bright 2011). European artefacts that were collected at the site could be dated in the 16th-early 17th century (Hofman and Hoogland 2012, 2016). First, before describing the posthole features, the site setting, location, history, ecology and origination of the site of Argyle will be given.

4.1 Setting of Argyle

The island of St. Vincent is a volcanic island, as are the other southern Lesser Antilles. This means, obviously, that there are volcanic mountains and one that is still active today: La Soufrière which is 1210 meters high. This volcano is located on the northern side of the island (Grandjean 2015, 17). The island thus consists of volcanic rock and layers of alluvial deposits.

The site is located on the windward side of the island near a ridge. This means that this is where the trade winds arrive on land and go further land inward. The trade winds bring moisture which results in heavier rainfall on the high elevations such as the volcanic mountain range. Just as most sites described by Samson *et al*. (2015), this site is subjected to strong winds and the structures would have to be adapted to that. The rainfall ends up in the river. Argyle is located at the mouth of the Yambou river (fig. 10) (Bradford 2001, 18–19; Hofman and Hoogland 2015, 42).

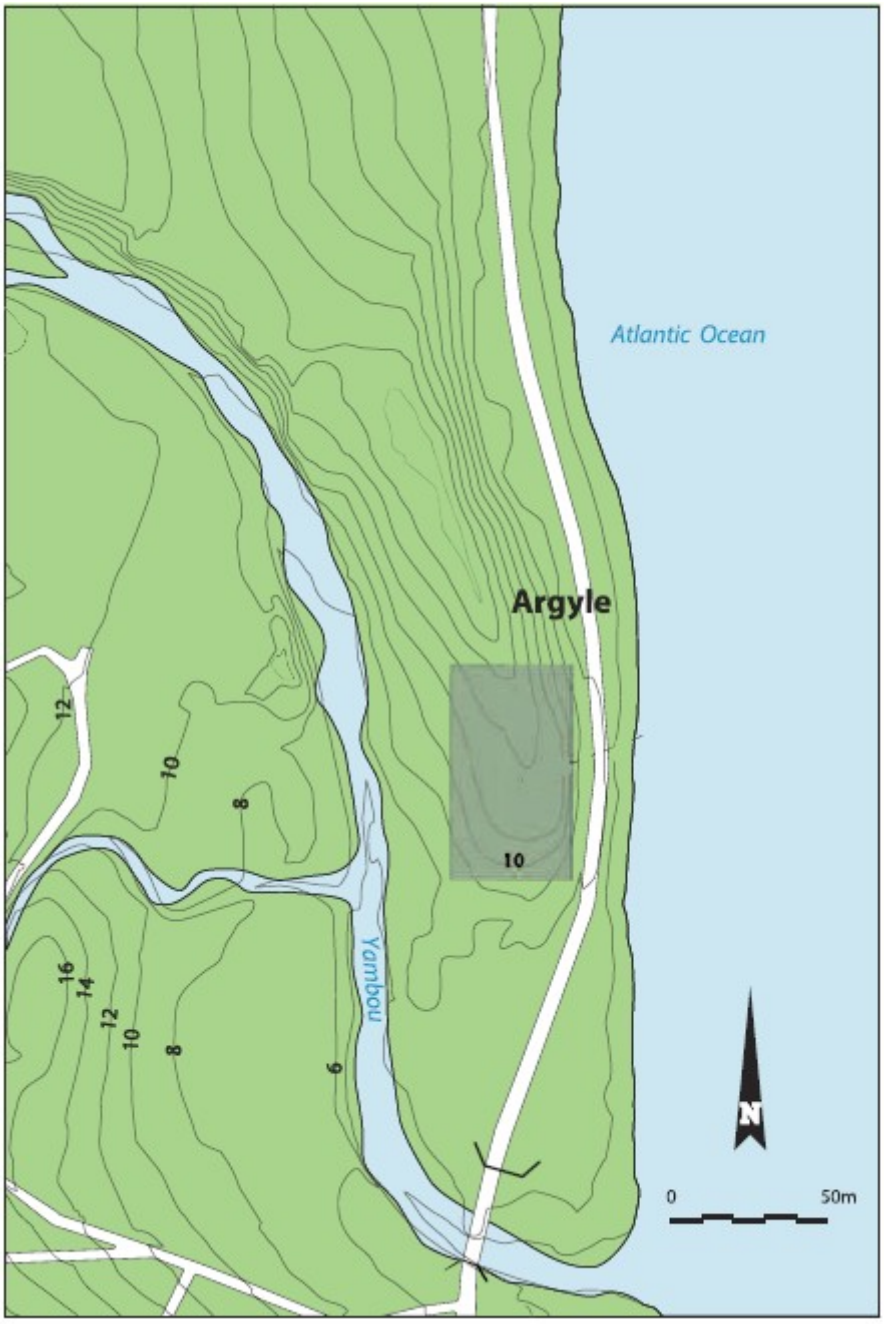


Figure 10: Position of the site of Argyle with respect to water (Hofman and Hoogland 2012, 69).

St. Vincent is one of the few islands of the Lesser Antilles that has freshwater streams. These conditions result in secondary rainforest, woodland, mangrove and some other kinds of vegetation. The combination of rain and the mineral rich soil makes the island very suitable for agriculture. Bradford argues that the marine resources were not sufficient, because the reefs cannot develop of the river deposit (Bradford 2001, 19–23). Therefore, the people of St. Vincent would

be more reliant on trade for marine resources, than them being able to collect that themselves.

4.2 History of the site of Argyle

St. Vincent is one of the islands of the Caribbean archipelago that has been inhabited until 1700 by indigenous people. Among other things, due to the resistance of the Island Carib the colonizers were not able to occupy the southern Lesser Antilles (Bright 2011, 63–64). During the occupation of the sites, African slaves were also absorbed by communities on some islands, including St. Vincent. This lead to the formation of a Black Carib identity. Black Carib, today known as Garifuna were later deported to the coasts of Central America by the British in the 18th century (Hofman and Hoogland 2012, 63–64). Even though Argyle was not occupied for a very long time, the site is extremely important in light of the European encounters in that region.

4.3 Settlement characteristics

Many structures were found during the excavation at Argyle which illustrate a complete settlement (see fig. 11). The features are well documented and described in detail. 50% of the features that were found were ascribed to structures (Hofman and Hoogland 2012, 67; Hofman *et al*. 2015, 46). In the 17th-18th century, French missionaries and travellers like Father Raymond Breton, Sieur de La Borde and Barrère described and drew the structures they encountered. This helped develop an understanding of the features found at Argyle. Hofman and colleagues (Hofman *et al*. 2015, 8) have used the descriptions in Father Breton's dictionaries Francois-Caraibe and Caraibe-Francois from 1665 and 1666 to make their reconstructions. Based on the early chroniclers, they describe that the Kalinago settled in places that were not directly visible for Europeans. This does not mean that the sites were located as land inward as possible but instead relatively close to the sea. The inhabitants of the site simply did not clear all the trees around the village. The location of the site is quite similar to that of the sites studied by Samson *et al*. Like those sites, Argyle is also located in the vicinity of water and on somewhat higher ground.
Their *icháli* (gardens) were situated further land inward on the fertile grounds of the Mesopotamia Valley (Hofman and Hoogland 2012, 69). The village had two plazas, both from a different phase, which were located near the two *Táboüi* and those were surrounded by nine smaller round structures (fig. 9).

Around the village there were supposedly some small gardens (Hofman *et al*. 2015, 44–45). It is not clear where inhabitants left their trash, because it is hard to determine if the ridge which is near the site was a trash area or just a sweeping area (Hofman and Hoogland 2012, 65).

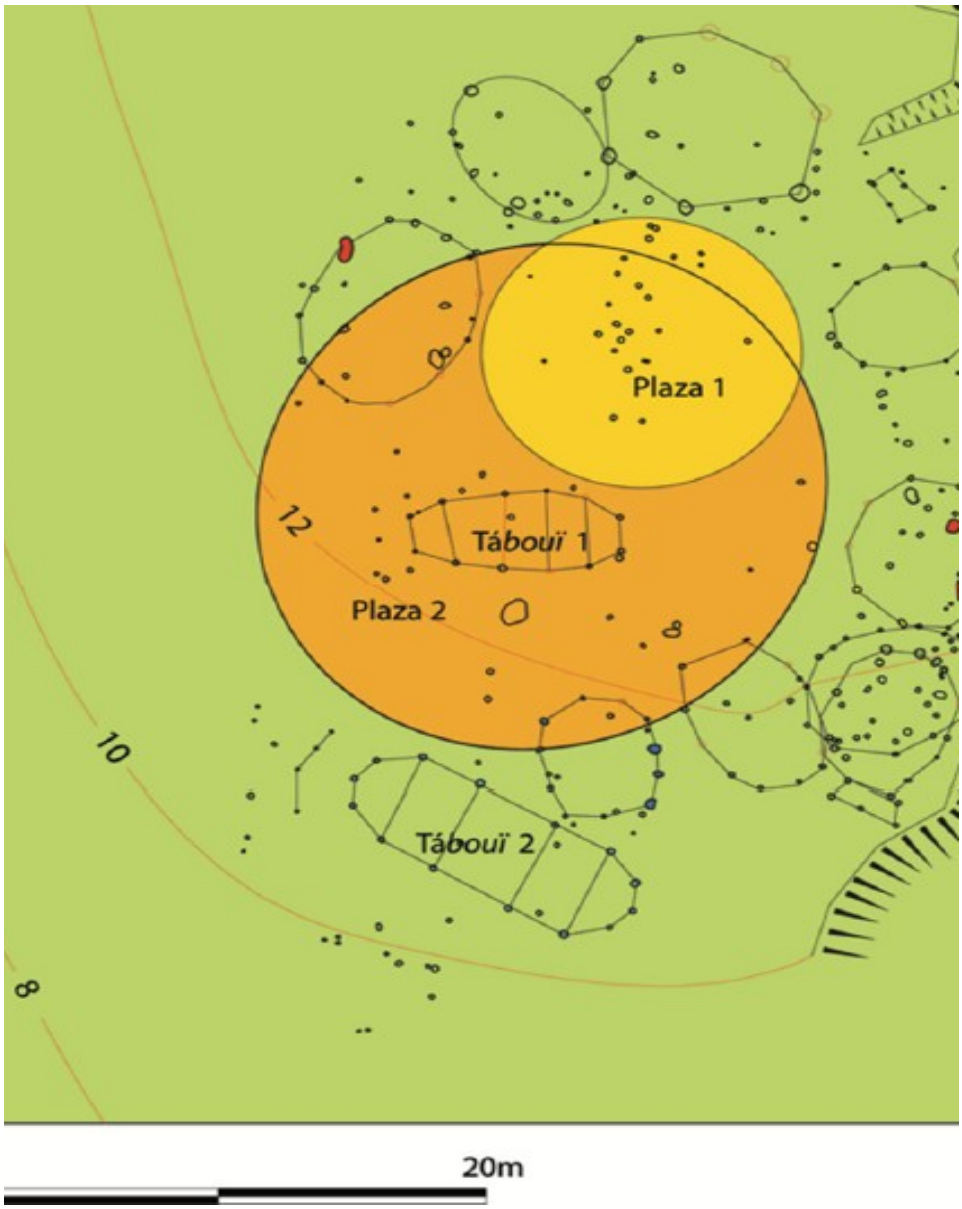


Figure 11: Layout of the settlement at Argyle (Hofman and Hoogland 2016, 15).

4.3.1 *Táboüi*

The first structure that will be discussed is the *Táboüi*. This is an oval/elliptical shaped structure where, according to Breton, the men of the village came to unwind or bring in their guests. Women could not enter the *Táboüi* except for serving the men (Hofman and Hoogland 2012; Hofman *et al*. 2015, 44).

At the site of Argyle, two *Táboüi* structures were identified. The fact that there are two *Táboüi* most likely means that there have been at least two phases

during the occupation (Hofman and Hoogland 2012). The first *Táboüi* has 12 posts. It measures 7,7 × 3,5 m. This would amount to a floorplan of around 21 m2.[7] The plaza belonging to this first phase was around 10 × 15 m. In the second phase a new *Táboüi* was build more to the south and the plaza was moved also more south. Both the plaza and the structure are bigger than the former. Plaza 2 almost covers both the first *Táboüi* and the plaza. It measures 15 × 25m and the *Táboüi* 11,80× 4 m. This would mean this *Táboüi* would yield a floor area of about 37 m2.[8] This time 14 posts were used to support the building with having a varying depth of 35 to 50 cm. It was not excluded that a second row of smaller posts would have existed to support the roof. These were not found but that can be due to the field conditions at the time of the excavations (Hofman pers. comm. 2016). Hofman and Hoogland (2012; 2015) turn to the description of Raymond Breton to create a better understanding of how the structures must have looked like. According to Breton the post must have been around 2m high and ending in a fork so the two large beams can rest on the main posts. Then secured to those beams are cross bars, which measure between 2,30 to 3m where the hammocks could be fastened. Breton notes that the number of crossbars determines how many men can fit in the building. Based on this Hofman and Hoogland (2012; 2015) argue that 24 to 30 men could fit in the second *Táboüi*. The roof rest on small, again, forked posts in the ground that measure between 20 to 40 cm. The roof consists of rafters that are secured with lianas in the ridge. The heads of reeds are used to make the roofing which are tied with the stems. Hofman and Hoogland (2012) argue that the second *Táboüi* probably had two entrances (Hofman *et al*. 2015, 46-47). In figure 12 a 3-D model of this *Táboüi* is shown.

7 π x 3,85m x 1,75m

8 π x 5,90m x 2m

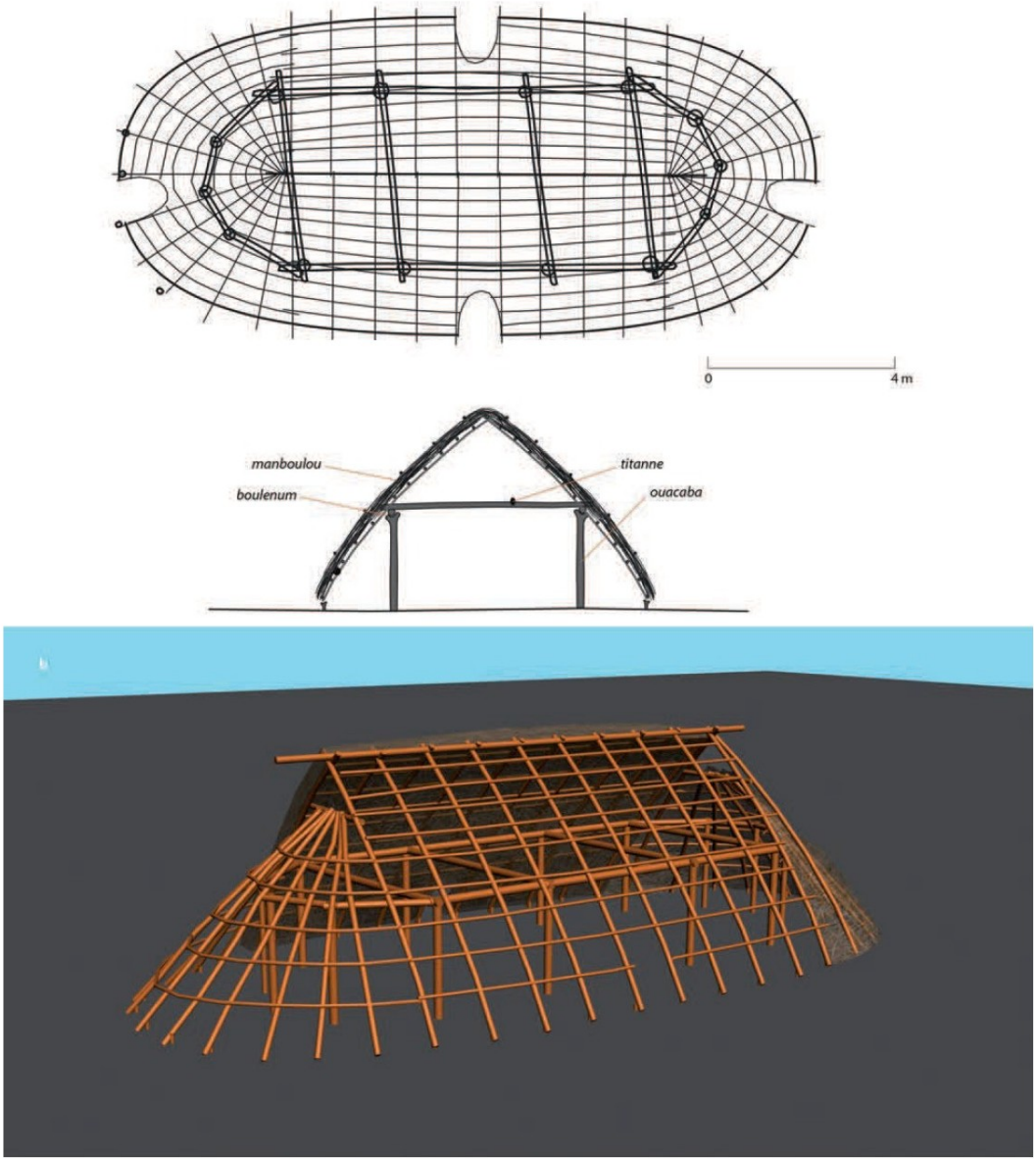


Figure 12: The Táboüi of Argyle reconstructed by Menno Hoogland and Walter van de Laan (Hofman and Hoogland 2012, 71).

4.3.2 *Mánna*

Around the *Táboüi* the Carib build *Mánna* (see fig. 3). On the site of Argyle nine were found. While the *Táboüi* was meant for the men to gather and relax, the *Mánna* were the houses of each household that were part of the village. The *Mánna* vary in size and measure between 4,5 × 5 m and 6 × 8 m. The structures do look circular and the floor plan is calculated accordingly. The smallest floor

area is around 15,90 m2 and the largest 50,24 m2.[9] The first accommodate three people and the larger ones approximately nine people[10]. The difference in size also means a difference in quantity in posts. This varies between 10 to 14 posts. Hofman and Hoogland note that the excavated *Mánna* match the description of Breton (Breton 1665, 354-355 in Hofman and Hoogland 2012, 72; Hofman *et al*. 2015, 47). The entrance of the *Mánna*, which had a height of 1,20 meters, pointed to the plaza. Everyone would keep the plaza clean by sweeping the part of the plaza in front of their *Mánna* (Breton 1665, 303 in Hofman and Hoogland 2012, 69). Three remnants of burials were found in two of the roundhouses. According to Hofman and Hoogland this coincides with the description of the chroniclers. They described that the dead were buried under the floor of the houses. First the burial would take place and over this burial a small structure would be built (Breton 1665, 237-238 in Hofman and Hoogland 2012, 72).

4.3.3. Other features

Hofman and Hoogland also encountered other structures which Breton equally describes. They found features of supposedly *boucans*, which are racks over a fire on which for instance meat can be dried or roasted. The cooking place was formed out of three stones. Other than that smaller auxiliary structures were identified (Breton 1665, 237-238 in Hofman and Hoogland 2012, 72).

4.4 Final remarks

In this chapter it has become clear that the Argyle structures have a similar lay-out as described for the sites by Samson *et al*. (2015). The site is also located

9 π x 2,25m x 2,25m & π x 4m x 4m

10Number of occupants = 0.50636 + 15.90 (0.16949), Number of occupants = 0.50636 + 50.24 (0.16949).

near the coast. This, and the fact that Argyle is also located in the hurricane zone already indicate that the site complies to the ‘Caribbean architectural mode’. In the next chapter I will discuss the more elaborate analysis of the structures of El Flaco and Argyle in the context of the ‘Caribbean architectural mode’.

5. Data analysis

In this chapter, the data of Argyle and El Flaco are compared to the seven characteristics that the Caribbean architectural mode consists of. In total there are 18 sites that will be considered in this chapter. In appendix 2 an overview is given of the data of Argyle and El Flaco. In appendix 1 part of the data of El Flaco and Argyle is added to the overview that shows the original data from Samson *et al*. (2015). It is instantly evident that no major differences occur between the original data and the two newly added sites. In this chapter an overview will be given per characteristic and how El Flaco and Argyle comply with it. In table 1 an overview of the data of El Flaco and Argyle is given on which this analysis is based.

Table 1: Overview of El Flaco and Argyle ordened in a similar fashion as the table of Samson et al. (2015), seen in appendix 1.

Island	Site name	Period	Number of structures	Number of house plans	Environmental setting
St. Vincent	Argyle	AD 1540-1620	12	9	Mountain area, dry forest
Hispaniola	El Flaco	AD 13th-15th	1	1	Shore, secundary rainforest
Site name	**Phases**	**Area m2**	**Diameter**	**Residents**	**Construction**
Argyle	2	15,90- 50,24	4,5 - 8	3 to 7	Post built, Circular
El Flaco	?	28.30	8,40 - 9	5	Post built, Circular

5.1 Architectural footprint

The architectural footprint for the sites discussed by Samson *et al*. (2015) evidences a homogenous settlement lay-out. A plaza surrounded by residential structures and a domestic area. There is yet no evidence for the presence of a plaza at El Flaco. The general layout of the site shows a number of structures surrounded by mounds and earthworks (Hofman pers. comm. 2016). At Argyle, on the other hand, the lay-out is evidently similar to the 'Caribbean architectural mode'. The two plazas at the site, were subsequently both surrounded by residential structures and one communal structure in two different occupation

phases. Around the site of Argyle there was a domestic area as can be seen in figure 11. Hoogland and Hofman (2012) also mention that the site potentially had paths to a garden. The site is horseshoe shaped with the ‘open’ side of the horseshoe turned away from the coast.

What both El Flaco and Argyle do have in common with the ‘Caribbean architectural mode’ is the fact that most structures have a circular shape. As seen with ‘Caribbean architectural mode’, there is some variation in and between sites. For instance, Loma del Convento had an oval and a circular structure (Knight 2015, 11). El Flaco has solely circular structures, while at Argyle the communal structures

are oval and the residential structures are circular. It is noticeable that the structures at El Cabo and El Flaco, both located on Hispaniola, are all circular. This is not a common characteristic of the Greater Antilles, because, for example, Loma del Convento on Cuba has no circular structures. The circular structures might be distinctive for the sites of Hispaniola which should be confirmed by analyzing more sites on the island. This does not mean that circular structures do not occur at sites on other islands, but this will be elaborated upon in the next chapter. Another shared element of the architectural footprint of the ‘Caribbean architectural mode’ is the fact that at both El Flaco and Argyle the structures are post-built. At both sites the structures exists of posts supporting the roof and on both sites there are no varations in the way the roofs are supported.

5.2 Size

As said in chapter 2, Samson *et al*. (2015) argue that the structures on the Greater Antilles are smaller than those of the Lesser Antilles. Since El Flaco is located on the Greater Antilles and Argyle on the Lesser Antilles, these sites can confirm or negate this assumption (see tab. 1). The floor area of the large (residential) structure at El Flaco measures to 56,74 m^2 and the largest *Mánna* of

Argyle measures up to 50,24 m^2. Based on this data these two sites do not confirm the assumption. Samson *et al*. (2015) also argue that house size ranges between 20 m^2 to 60m^2 (see tab. 2). However, the largest structures at El Flaco and Argyle have similar sizes and both can hold up to nine people (as calculated on the basis of Curet's formula).

Table 2: Overview of the floor area the sites of the original dataset and El Flaco and Argyle (after Samson et al. 2015, 327).

Site name	Area (m2)
Los Buchillones	45 to 530
Loma del Convento	13
MC-6	20
Bellevue Mannings Hill	10
El Cabo	19 to 100
Maisabel	576
El Bronce	20 to 24
Lujan I 8 (10 inc.	13 to 346
Rio Tamaná	20 to 50
Playa Blanca 5	37 or 200
Rio Cocal-1	10 to 24
Tutu	12 to 19
Kelbey's Ridge 2	57 to 80
Golden Rock	41 to 283
Anse á la Gourde	27 to 130
La Pointe de Grande Anse	165 (from plan)
Argyle	16 to 50
El Flaco	55

5.3 High-pitched roof

Samson *et al*. (2015) argue that a high-pitched roof is shared a characteristic throughout the Greater Antilles and the northern Lesser Antilles. While for El Flaco it is not clear whether the structures had high-pitched roofs, on Argyle this seems to be the case. In January 2016, an experimental programme was launched through a collaboration between Hofman and Hoogland and the Ministry of Tourism, the St. Vincent and the Grenadines Airport Development Company ltd., the National Trust and Garifuna association, in which one of the oval and five round houses of Argyle were built on the location of the archaeological site (see fig. 13).

Figure 13: The reconstructed village of Argyle (http://www.nexus1492.eu).

These (re-)constructions are based on the archaeological findings and the descriptions by Father Breton. The *Mánna* are built with a conical shape and a steep roof, similar to the one from Trio village of Amotopo in Suriname as seen in figure 4 (Hofman and Hoogland 2016, 15–16).[11]

5.4 Monumental Facades

From the plans of both sites it is not deducible if the structures at El Flaco or Argyle had monumental façades. As Samson *et al*. mention, it is not clear whether structures of settlements on the Lesser Antilles share this characteristic (Samson *et al*. 2015, 329–330). The plans of both El Flaco and Argyle do not show emphasized features which would indicate the presence of a monumental

11http://www.nexus1492.eu/?portfolio=reconstruction-of-amerindian-village-st-vincent-completed-by-local-volunteers, consulted on 29 October 2016.

façade. This does not mean that they were not present, but it is just not visible in the plan view.

5.5 Prepared Floors

Both sites have prepared floors. At El Flaco the soil has been evened out and the floor is relatively smooth. At Argyle the floor also seems to have been prepared. This is also due to the fact that the burials have been placed in the structures and the floor has later been evened after the burial.

5.6 Securely anchored foundations

A recognizable characteristic of the ‘Caribbean architectural mode’ is the securely anchored foundations. The posts are thrusted in the bedrock, which makes them more secure and less prone to strong winds and heavy rain. At El Flaco this is clearly visible in the plan view. The features are evidently visible. At Argyle the posts were placed in the clayish substrate. Since the lay-out is similar to the descriptions of Breton and other chroniclers, it is very plausible that the posts were securely positioned in the ground (Hofman and Hoogland 2016, 15). Further, as can be seen in figure 11, the round features of where the posts have been, show many similarities with El Flaco and other sites of the ‘Caribbean architectural mode’.

5.7 Durability: Repair and rebuilding

The last characteristic is for both sites very visible on the plan views. The clusters of features indicate reparation or replacement of a certain posts or the rebuilding of an entire house. Hofman and Hoogland note that feature clusters are apparent at El Flaco (Hofman and Hoogland 2015, 67). Several of the posts have been replaced or posts have been added to the original post. At Argyle the second

Táboüi indicates a second phase and rebuilding of a structure but at another location. Figure 11 also shows that some of the *Mánna* were rebuilt on the same place as former structures. On the site plan they overlap each other, which also evidence the two occupation phases.

6. Discussion & Conclusion

The main purpose of this research was to better understand what the ´Caribbean architectural mode' consist off and to explore if the sites of El Flaco in the northwestern Dominican Republic and Argyle on St. Vincent comply with this mode. An attempt to reach this goal was made by comparing data from the two sites with the dataset of the 'Caribbean architectural mode' presented by Samson *et al*. (2015). First, an in-depth description of the seven characteristics which define the 'Caribbean architectural mode' have been presented. This was needed for the analysis of the structures at the sites of El Flaco and Argyle Comparing the datasets, it became quite evident that on most levels there were not many differences between El Flaco, Argyle and the structures presented by Samson *et al*. (2015). When looking at the results (see tab. 1; 2), these do not match nor mismatch completely with the characteristics of the 'Caribbean architectural mode'. It is unclear whether either El Flaco or Argyle had monumental façades, but the size and especially the capacity of the structures are very comparable to the capacity of the structures studied by Samson *et al*. (2015). Some characteristics were not visible in the plan views of El Flaco or Argyle. In the case of the El Flaco, it is not yet known what the angle of the roof was. Even though one (or more) of the characteristics of the 'Caribbean architectural mode' are missing, El Flaco and Argyle still comply to the definition of the 'Caribbean architectural mode'. A complete match was also not the case in the original dataset. Therefore, the results presented here suggest that both El Flaco and Argyle comply to the 'Caribbean architectural mode'. Since Samson *et al*. (2015) link the Caribbean architectural mode to the environmental setting, namely the hurricane area, dissimilarities in the characteristics are not immediately a reason to argue that a site does not comply to the 'Caribbean architectural mode'. The ecological environment should be considered, because

this is the first reason for the people of the Greater and the Lesser Antilles to adapt their construction techniques.

6.1 Caribbean architecture

Not all the sites from the original dataset have all characteristics. At least, this is not obvious from the published datasets. Especially the monumental facades are something that many sites do not seem to have. El Flaco nor Argyle show this characteristic. Samson *et al*. (2015, 330) already indicate that it might not be the case in the Lesser Antilles, since this area is relatively unknown. In the case of El Flaco, this could be simply due to ongoing analyses. The other characteristics, however, are apparent at most of the sites, including El Flaco and Argyle. Both sites had posts dug or pushed into the substrate or bedrock so they would be securely embedded, but also easy to remove and placed back if needed. All the sites that have been used in this study show the replacement of posts and rebuilding of structures. Even though Argyle has a relatively short period of occupation there have already been two building phases, which can be clearly seen in the site plans. House size is not fixed. It varies more than the other characteristics between the sites, but all the residential structures are relatively small and could, according to Curet's formula, fit four to fifteen persons. Some characteristics are not visible in the plan views. At Argyle we can clearly see that the high pitched roof has been the norm, which is based on historic sources. For El Flaco, however, there is not enough data available to identify if, or support the assumption that the roofs were high pitched.

Further, both sites show that there was a levelled floor at the site. This characteristic is shared throughout the Caribbean. However, its existence does not seem to have a connection with it the weather conditions in the area. It could be that the levelled floor occur because of other reasons. The floor could have

been evened out after burials, for instance, and this is a reason that there are levelled floors.

6.2 Differences

The main differences can be found in the location and time period. As mentioned in the introduction, these differences were also the reason the sites of El Flaco and Argyle were chosen for the analysis. While time period is not per definition an important criteria of the 'Caribbean architectural mode', it is interesting to note that Argyle bears very similar constructions, while the site was occupied during the early Colonial period. Argyle is clearly the odd one out as can be seen in appendix 1, regarding location and time period. Even though some sites still existed at that time, those were already present before the Europeans arrived in the Caribbean. Argyle is also different from the other sites in terms of location, since St. Vincent, is part of the Windward Islands. This has provided new insights into the fact that the sites throughout the whole Caribbean have more in common than was previously known in terms of house building. In the case of El Flaco, which bears many characteristics of the 'Caribbean architectural mode', except for the above mentioned differences, the location of the site also clearly varies. While, all the sites studied by Samson *et al*. (2015) as well as Argyle, are located relatively close to the sea, El Flaco is located further away from the shore, at approximately 20 km.

With these results it is now easier to determine what the 'Caribbean architectural mode' is and when a site is part of the mode. Samson *et al*. note that the location of all these sites is in the hurricane zone. The structures are adapted to the climate. While the seven characteristics are originated from that climate, the climate is not seen as a characteristic. I would argue that climate should be a characteristic of the 'Caribbean architectural mode', because it seems that the climate, and thus location, (hurricane zone) is the first condition for the other

characteristics to occur and most characteristics or that the climatic conditions, as seen on the sites studied in this thesis, should be a requirement for the 'Caribbean architectural mode'.

6.3 Housebuilding trends in the Caribbean

Samson *et al*. (2015) note that trends cannot yet be determined. This thesis does not make any change in that view. However, it did show that there might be a trend or at least similarities that are wider spread than previously documented. This would mean that ideas about a 'Caribbean architectural mode' may have circulated throughout the Caribbean. The research of the Samson *et al*. (2015) was focused on coastal sites and none of the sites used in their research is situated on the Windward Lesser Antilles. This research clearly shows that those can and should be included, because these are also affected by the hurricane zone. Samson *et al*. (2015) state that the indigenous communities throughout the Caribbean shared housebuilding techniques (Samson *et al*. 2015, 332). Both sites analyzed support this assumption. However, where Samson et al. affirm this for sites in similar ecological environments, this research shows that also slightly different ecologies like that of El Flaco supports the idea of shared housebuilding techniques. The trade winds that reach El Flaco could be the main reason that houses were built like this. The site of Argyle also supports the standardization of the village layout as suggested by Hoogland (1996). In the case of El Flaco there is not yet enough data published to support that theory. Argyle, however, has a domestic area surrounding the residential structures where the vegetation is cut away, a plaza and all other features that were mentioned by Hoogland (1996, 174). Settlement lay-out is another feature that is shared by several of the sites, namely the horseshoe shape. I would want to argue here that settlement lay-out should be considered as a characteristic of the 'Caribbean architectural mode', because the lay-out could be affected by the climate, for instance turned away from the winds.

6.4 Further Research

Argyle does comply with the ‘Caribbean architectural mode’, which means that other sites on the Windward Islands from that same time period also may. Samson *et al*. (2015) mention that not enough data is available to do that yet. This would, of course, be the first step. Hofman and Hoogland started fieldwork on Grenada, as apart of HERA-CARIB and NEXUS 1492 projects. Hopefully, more sites will follow. Also, sites that are not located less than 14 km from the coast would be interesting to include in future research. It would be worth to see whether more inland sites like El Flaco comply to the ‘Caribbean architectural mode’. Also more comparative research with contemporary settlements from the South American mainland, can showcase the similarities and difference with the ‘Caribbean architectural mode’. Because South American sites are not located in the hurricane zone, comparisons between sites of the Caribbean and the South American mainland can indicate what is specific for the Caribbean and for the adaptation to the insular climatic conditions. Lastly, only a few sites from the dataset of Samson *et al*. (2015) were not occupied during the Late Ceramic period. Interesting would be to see whether sites from earlier time periods comply to the mode. There is a shift visible from bigger structures, which is more standard for the South American mainland, to the smaller buildings before the Late Ceramic Age (Ramcharan 2004, 3). By determining how widespread in time the ‘Caribbean architectural mode’ is, we might be able to understand how the ‘Caribbean architectural mode’ originated out of the South American mode, because of the shift from the bigger to the smaller structures.

6.5 Conclusion

Through a comparative study, it has been analyzed whether El Flaco and Argyle comply to the ‘Caribbean architectural mode’. The main interest of this research was to see if the ‘Caribbean architectural mode’ was more widespread than was

thought previously. There are always slight differences because the villages are not built by the same peoples.

Ideas on housebuilding have been shared throughout the Caribbean. Most of these characteristics have been developed as result of the climate, the hurricane zone in which the Caribbean archipelago is located. More comparative research between structures of the South American mainland and the structures on the Caribbean can help our understanding of how the construction is affected by the climate and the hurricane zone. The climate is one of the most important indicators that a site might comply to the ‘Caribbean architectural mode’.

Overall the structures share most of the characteristics that define the ‘Caribbean architectural mode’. Therefore, the sites of Argyle and El Flaco do comply to the ‘Caribbean architectural mode’ and based on this thesis it can be said that the mode is not only bound to coastal sites in the Greater and northern Lesser Antilles.

Abstract

In the article *Resilience in Pre-Columbian Caribbean House-Building: Dialogue Between Archaeology and Humanitarian Shelter* of Samson *et al*. (2015) the Caribbean architectural mode is presented. The only sites used in that research are near the coast and on the Northern Lesser Antilles and the Greater Antilles. In this thesis a site that was located more land inward, El Flaco on Hispaniola and a site from the Southern Lesser Antilles, Argyle on St. Vincent, were analyzed to see if those comply with Caribbean architectural mode. This is supposed to contribute to the knowledge of housebuilding trends or widely shared similarities in housebuilding throughout the Caribbean. The addition of the two sites indicate that the mode might be wider spread in more distinct locations. Both sites do comply to the mode even though their situation is very different. Seven characteristics have been analyzed. These are formulated by Samson *et al*. (2015) and in this thesis the sites of Argyle and El Flaco have been studied concerning these characteristics. It was quickly evident that not all characteristics are directly visible in the site plans of Argyle and El Flaco, but most can be found which leads to the conclusion that El Flaco and Argyle comply with the Caribbean architectural mode.

Samenvatting

In het artikel *Resilience in Pre-Columbian Caribbean House-Building: Dialogue Between Archaeology and Humanitarian Shelter* van Samson *et al*. (2015) is het Caribisch architectonisch model gepresenteerd. De enige sites die zijn gebruikt in dat onderzoek liggen dicht bij de kust en zijn te vinden op de Noordelijke Kleine Antillen of de Grote Antillen. In dit onderzoek een site die meer landinwaarts gelegen was, El Flaco op Hispaniola en een site van de Zuidelijke Kleine Antillen, Argyle op st. Vincent, zijn geanalyseerd om te zien of deze sites voldoen aan het Caribisch architectonisch model. Dit kan bijdragen aan de kennis van huisbouwtrends of wijder verspreide overeenkomsten in huizenbouw in het Caribische gebied. De toevoeging van de twee sites indiceren dat het model waarschijnlijker wijder verspreid is in meer verschillende omgevingen. Beide sites voldoen aan het model ondanks dat de omgeving erg anders is. In Samson *et al*. (2015) zijn zeven karakteristieken geformuleerd. In deze scriptie de sites van Argyle en El Flaco zijn bestudeerd lettend op de karakteristieken. Het was al snel duidelijk dat niet alle karakteristieken direct zichtbaar zijn in de tekeningen van de sporen op Argyle en El Flaco, maar de meeste zijn wel terug te vinden en dit leidt tot de conclusie dat El Flaco en Argyle passen in het Caribisch architectonisch model.

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Appendix

Cuba	*Los Buchillones*	655–260	3 (of al least 5)	Stilted (?), post-build,circular and rectangular	45 to 530	Coasta
	Loma del Convento	650–450	2	Post-built, circular and rectangular	13	River v
Turks & Caicos	*MC-6*	550–450	8	Round pit structures in raised lime-stone bank	20	Coasta
Jamaica	*Bellevue Mannings Hill*	1050–450	1	Post-built, circular	10	8 km f
Hispaniola	*El Cabo*	1050–450	30	Post-built, circular	19 to 100	Coasta
Puerto Rico	*Maisabel*	1350–750	1 (and up to 3)	Post-built, rectangular	576	Atlanti
	El Bronce	1050–750 and 750–450	(at least) 3	Post-built, oval and circular	20 to 24	13 km
	Lujan I 8 (10 inc.	1050–750	8 (10 inc. mortuary structures)	Post-built, circular	13 to 346	3 km fr
	Rio Tamaná	970–460	7	Post-built, oval and circular	20 to 50	Alluvia
	Playa Blanca 5	750–450	1	Post-built, circular-oval	37 or 200	Wetlar
	Rio Cocal-1	1060–500	4 or more	Post-built, circular	10 to 24	Atlanti

Appendix 1: Overview of the sites that belong to the Caribbean architectural mode with Argyle and El Flaco added (After Samson et al. 2015, 327)

Saba	*Kelbey's Ridge 2*	650–600	5	Post-built, circular	57 to 80	Ridge t
St. Eustatius	*Golden Rock*	1350–1050	6	Post-built, circular	41 to 283	Centre
Guadeloupe	*Anse á la Gourde*	970–520	27 to 130	Atlantic coast		
	La Pointe de Grande Anse	1350–1150	1 (and up to 4)	Post-built, circular-oval	165 (from paln)	River b
St. Vincent	*Argyle*	410–330	9	Post-built, circular	16 to 50	Near th
Hispaniola	*El Flaco*	750–550	>1	Post-built, circular	55	Mount