First Forts

Essays on the Archaeology of Proto-colonial Fortifications

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HIGH VERSUS LOW: PORTUGUESE AND DUTCH FORTIFICATION TRADITIONS MEET IN COLONIAL BRAZIL (1500–1654)

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Introduction

When Christopher Columbus discovered America in 1492 for the Spanish Crown, new opportunities presented themselves to traders and adventurers. The scope of this 'New World' was as yet unknown. The two great maritime powers of the time, Spain and Portugal, wasted no time in dividing the booty in 1493 and, at the same time, the rest of the world. Pope Alexander VI acted as arbitrator. The following year, the final division was laid down in the small Spanish town of Tordesillas. Spain was given control over all the regions west of the meridian which ran 370 *legas* (c. 600 km) west of the Cape Verde islands. Portugal received the territory east of this, which amounted to the Atlantic region and the possessions in Asia.

Thanks to this Treaty of Tordesillas, Portugal was able to claim Brazil. To fill in this immense territory, the king divided it into fifteen *capitanias*, and to each of these states was appointed a Governor. The capital of Brazil was São Salvador on the Baía de Todos os Santos (All Saints' Bay) in Capitania of Bahia. Several European countries opposed this division of the world and sent expeditions to the area. At the beginning of the sixteenth century the French attempted to gain a firm footing there by setting up small trading posts along the coast. Since it was impossible for the Portuguese to control the 8000-km-long coastline, these outposts often went undisturbed for some length of time. They traded with the Indians mainly in brazilwood, tobacco, cotton, herbs and spices. Between 1612 and 1615 the French even had a small colony in the northern state of Maranhão.

From the end of the sixteenth century, the Dutch, French, English and Irish established a number of trading posts and settlements at the mouth of the Amazon in order to trade with the Indians.[1] In 2002, the

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[1] L. A. H. C. Hulsman, *Nederlands Amazonia* (Amsterdam 2009), 197–99.

Figure 10.1. Dutch Brazil in 1643. E. Van den Boogaart & F. J. Duparc (eds.),
Zo wijd de wereld strekt (Den Haag 1979).

soil scientist Wim Sombroek, who died in 2003, reported that he had
found evidence for the locations of two of these forts, Fort Orange and
Fort Nassau, along the bank of the Rio Xingu, a tributary of the
Amazon. An orientation campaign of the Atlas of Dutch Brazil
research team discovered these two spots in 2008 and will conduct
further investigation here in the next years.[2] In 1616 the Portuguese
managed to expel these Northern Europeans from the Amazon delta
and built a fort on the south of the estuary, at Belém (Pará). From here
various military expeditions were sent out, and within ten years they
had the entire territory under control. This 'peace' was sustained until
the Dutch started to think bigger, and several years later sent a fleet
across the ocean to conquer the whole of Brazil (Figure 10.1).

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[2] See 'www.atlasofdutchbrazil.org'.

Portuguese Defensive Traditions

Portugal is the most westerly country in continental Europe. To the east it borders Spain, and for the rest the Atlantic Ocean. It is divided, roughly speaking, into a mountainous area north of the river Tagus, and the lower-lying south.[3] Natural stone, such as granite, slate and limestone, is abundant, and since ancient times has been the main building material for castles, buildings, houses, bridges and roads.

The original Iberian population was inundated by Celtic, Greek, Phoenician, Roman and Moorish influences over the centuries. The population traditionally retreated to higher-lying places when under threat. The earliest inhabitants lived in caves in the mountainous area. With the advent of agriculture, the population increased and settlements developed. Again the hilltops were sought out, and here the first primitive military fortifications were built. Some fine examples of early settlements called *citânias* or *castros* can still be seen in Northern Portugal. Inside primitive walls the inhabitants lived in houses built of piled up stones. The Portuguese archaeologist Martins Sarmento specialized in the subject. In 1875 he discovered, among other things, the impressive remains of the *citânia de Briteiros*.[4] It was a settlement with stone houses and streets, surrounded by three walls.

When the Romans invaded *Lusitania*, as they called Portugal, in the first century BC, they only managed to conquer the North after a lengthy guerrilla war. This had always been a region that was difficult to subdue because of its inaccessibility. The Romans built their fortifications on hilltops too. From here one could survey the surrounding countryside and one had an advantage over one's opponent. These sites often formed a base for medieval castles. From the fifth century the Visigoths took power until they were ousted by the Muslims at the beginning of the eighth century. In the flatter and more accessible South trade flourished, but, like the Romans, the Muslims had great difficulty in conquering the mountainous interior. In the ninth century Viking raids on the coast began, and these had a great influence on urban developments. Apart from fishermen and merchants, many people fled to the safer hinterland. They built their houses against the protective walls of the landowners' castles, and gradually these houses

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[3] A. H. de Oliveira Marques, *History of Portugal, Vol. 1: from Lusitania to Empire.* (New York/London, 1972), 1–5.

[4] E. A. Gutkind, *Urban Development in Southern Europe: Spain and Portugal*, 3 (New York/London, 1967), 187–91.

became walled in as well, giving rise to fortified towns. The rest of the country was hardly developed. The fields were no more than a few hours' ride by horse or donkey from the safety of the town, so that one could go there and back in a day.

In 1143 the leader Alfonso Henriques became, by combat, marriage and inheritance, King Alfonso I of a Portuguese kingdom, independent of Castile. He led the recapture of Portugal from the Muslims, the *Reconquista*. The battle was initiated from the impassable and mountainous North, and here large castles were built. In many cases no moat was necessary because the rocks on which the castle was constructed were already enough of an obstacle for the assailant. When the last Muslim stronghold Faro was captured in 1249, a period of peace and prosperity dawned. Slowly but surely farms and villages appeared in the countryside. A fine survey of settlements in Portugal from the beginning of the sixteenth century is to be found in Duarte Darmas' *Livro das Fortalezas*, adapted by João de Almeida.[5] In this survey of forts and strongholds along the Spanish border one can see how most towns were built on hills. Castles with high walls offered protection to the settlements underneath them. The same author has made a more recent survey of Portuguese defences; black-and-white photographs show the high-lying stone fortresses and castles.[6]

From the second half of the sixteenth century building methods in accordance with the Old Italian System of Fortification made their entry. For the dead angles caused by round and square towers small bastions with retired flanks were devised. The *Forte de São Julião da Barra*, built in 1556 at Oeiras, at the mouth of the Tagus, demonstrates this new influence. In the seventeenth century, methods advanced under the influence of Dutch engineers, and fortifications were constructed along the lines of the Old Netherlands System of Fortification. This method of building is typified by earth ramparts, moats and bastions with straight flanks which stood at right angles to the curtains.[7] In Portugal this was adapted to local conditions. The fill of the walls consisted here of earth and loose material, but the outer cladding, faithful to tradition, remained stone. A good example of this method

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[5] J. de Almeida, *Livro das Fortalezas de Duarte Darmas*, reprodução anotada (Lisboa, 1943).

[6] J. de Almeida, *Roteiro dos Monumentos Militares Portugueses* (Lisboa, 1945/1946).

[7] See 'www.coehoorn.nl', sub: Oud-Nederlands stelsel.

is the fortified town of Elvas on the Spanish border.[8] Wherever it was of economic importance, at ports, for example, defences were built on the coast, preferably on a high clifftop as at Sagres.[9] In Lagos, also on the south coast of Portugal, the square *Forte da Ponta da Bandeira* from 1679–1690 has its foundations on the beach.[10] Forts were also built in the water. The *Torre de Belém* from 1519 in the harbour of Lisbon is a fine example of a medieval fortification built to protect ships in the harbour.[11] A tower was also built later in the Tagus estuary, the *Forte de São Lourenço* or the *Torre de Bugio*.[12] Together with the *Forte de São Julião da Barra* in Oeiras mentioned above, this sea fort was designed to safeguard the entrance of this river.

Since Portugal does not lie in the immediate sphere of influence of the Mediterranean countries it was able to develop in its own way. Portugal's outlook was more on the open sea, and this is what shaped its history. It is not surprising therefore that the Portuguese focused more on the African coast and the islands of the Atlantic. Prince Henry the Navigator (1394–1460) gave the initial impetus to an overseas empire with the capture of Ceuta on the coast of North Africa in 1415. Gradually the African coast was discovered, Cape Bojador (1434), Congo (1483) and in 1487 Bartolomeu Diaz finally succeeded in sailing round the Cape of Good Hope, opening up the sea route to Asia. Vasco da Gama reached Calicut in India in 1498. Subsequently Goa (1510), Malacca (1511), the Moluccas (1512/1513), Japan (1542) and Macao (1557) were reached. In the Atlantic Ocean Madeira (1419), the Azores (1427), the Cape Verde islands (1460) and Brazil (1500) were put on the map. Trading posts and forts were built at these places, creating a worldwide trade network. The forts, which were built in the late-fifteenth and first half of the sixteenth century, resembled Portuguese medieval castles with their high stone walls. *Sao Jorge d'Elmina* (1485) on the Gold Coast, now Ghana, is an impressive example. Fort Tolukko (1510) on the Indonesian island of Ternate is also a medieval castle complete with round corner towers, built of stone and on a hill. After the introduction of the Old Italian System

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[8] E. Paar, 'De Nederlandse school der fortificatieleer: de theoretische en praktische invloeden op de Portugese militaire architectuur in de zeventiende eeuw', *Bulletin KNOB* 95 (1996), 12–23.

[9] J. Gil, *Os Mais Belos Castelos de Portugal* (Lisboa/São Paulo, 1986), 300–303.

[10] Ibid., 294–95.

[11] Ibid., 166–69.

[12] Ibid., 174–75.

Figure 10.2. The Castelo de São Jorge towers over Lisbon, Portugal. Photo by O. F. Hefting.

of Fortification, bastioned forts were spread around the world by the Portuguese from the second half of the sixteenth century.

Due to the fact that the Portuguese built their edifices of durable material such as stone, many of these castles and fortifications can still be found in the landscape. Generally speaking, the castles and forts in Portugal are well maintained and are open to those interested and to tourists.[13] The *Castelo de São Jorge*, built of great blocks of stone, towers over Lisbon (Figure 10.2). It reflects an accumulation of Portuguese building traditions and is a splendid example of the Portuguese perspective of this article. Archaeological research has demonstrated that the hill was inhabited since the sixth century BC.[14] In addition to pre-Roman and Roman remains, the structures of the Visigoths, Moors and Christians can be observed on top of each other. From the eleventh century there was a Moorish castle which was only captured after a lengthy siege by King Alfonso in 1147. It was a strategic site with a fantastic view over the river Tagus and the Atlantic Ocean. When Lisbon became the capital of Portugal from 1256, the castle became the royal seat and would remain so until the end of the sixteenth century. Since the advent of gunpowder, the age of safe cas-

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[13] See 'www.amigosdoscastelos.org.pt'.
[14] Gil, *Belos Castelos*, 162–65.

tles with high walls was over, and a new royal palace was built in the lower city in the *Praça do Comércio*.

Dutch Defensive Traditions

The Netherlands owes its name to its low-lying position. The territory lies in northwest Europe, in the river delta of the Rhine, Meuse, Scheldt and IJssel. To the east the Netherlands borders on Germany, and to the south, Belgium. A large part, just like Portugal, borders the sea. 40% of the present country of the Netherlands is under sea level. The soil consists largely of sand, clay and peat. A well-known saying is: 'God created the world and the Dutch created the Netherlands'. The grain of truth in this saying is that land was reclaimed from water. After a dike or dam had been built in a watery area, the surplus water was pumped away, resulting in a new piece of land, often clay, which could be used for agriculture or building. Since there was no local natural stone available, a completely different building tradition grew up. Sand and clay were used to build dikes and forts; deep-rooting plants were planted as reinforcement and to prevent decay.

Towns and military fortifications had been built at strategic locations at sea level since ancient times. The Romans too built their frontier posts in strategic positions along the rivers. The river Oude Rijn was the northernmost frontier of the Roman Empire, also known as the *Limes*.[15] If there were higher places such as Kops Plateau in Nijmegen they built their fortifications on these. The further west they went, ending up in the river delta, the more they were compelled to build at sea level. Military fortifications, often built of palisades, such as *Lugdunum* (Brittenburg/Katwijk), *Castellum Matilo* (Leiden), *Castellum Traiectum* (Utrecht) and *Castra Herculis* (Arnhem) were constructed along this frontier.

In the Middle Ages castles were built along waterways. Baked clay, in the form of bricks, proved stronger than wood, so many castles and houses were built of it. The higher the walls, the more difficult it was for the besiegers to climb over them, and this was an effective measure in times when the weapons used were swords and bows and arrows. *Kasteel Loevestein* at the fork of the Rhine and Lek and *Muiderslot* at the mouth of the river Vecht are fine examples which can still be seen.

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[15] See 'www.limes.nl'

They are entirely built of brick, as were most of the other castles mentioned above.

In the first half of the sixteenth century the Catholic king of Spain, Charles V, incorporated the Netherlands in his 'empire in which the sun never sets'. After his son Philip II assumed power in 1555, unrest gradually developed in this area. A war began in 1568 which was to last for 80 years. Between 1580–1640 Portugal was annexed by Spain, which drew it into the war with the Netherlands. Taxes in the Netherlands were high and insurgence was hardhandedly crushed. Prince William of Orange-Nassau (1533–1584) set himself up as leader of a group of rebels, but was murdered in 1584. His son and successor was Prince Maurits (1567–1625). He reorganized the army and gave much attention to national defence.

Since the use of gunpowder in warfare, the construction of fortifications changed; walls were built lower and instead of brick, ramparts were of earth. Now a cannonball no longer made a hole but fell into the sand and clay. One of the great engineers of defences was Adriaan Anthoniszn from Alkmaar. He was summoned to every 'rebellious' town to design and build a plan for new town defences.[16] One might say that the system of fortification with earth ramparts was the secret weapon of the Dutch, one that intercepted the Spanish cannonballs and secured freedom. In 1594 Simon Stevin recorded instructions on building the ideal fort in his book *de sterctenbouwing*.[17] The demand for military engineers led the start of an official course at the School of Engineering in Leiden. The Netherlands was the laboratory for 'modern' warfare, and engineers came from far and wide to observe. Everywhere they saw low-lying towns protected by moats and earth ramparts. A counterpart to the Portuguese Duarte Darmas was Ioannes Blaeu. More than a century after the *Livro das Fortalezas* he published the *Toonneel der Steden van 's Konings Nederlanden, met hare Beschrijvingen*.[18] This gives an impression of the Dutch forts and defences from the peak of the Golden Age.

As a result of changes in the political and military situation, Dutch merchants began to venture outside Europe from 1585 on and to take an interest in overseas trade. At first these were small rival companies,

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[16] F. Westra, *Nederlandse Ingenieurs en de Fortificatiewerken in het Eerste Tijdperk van de Tachtigjarige Oorlog, 1573–1604* (Alphen aan den Rijn, 1992), 36–44.

[17] S. Stevin, *De Sterctenbouwing* (Leiden, 1594).

[18] J. Blaeu, *Toonneel der Steden van 's Konings Nederlanden, met hare beschrijvingen* (Amsterdam, 1649).

but in 1602 they joined forces to form the Verenigde Oost-Indische Compagnie (VOC) or Dutch East India Company.[19] In the years following the formation of the VOC, plans evolved to set up a united company for the west, the West-Indische Compagnie (WIC) or Dutch West India Company, and this was finally achieved in 1621. The method of building fortifications. The Old Netherlands System, became an export product taken by the Dutch on their overseas voyages in the first half of the seventeenth century. Traces of this building method can still be observed from Indonesia, Sri Lanka as far as South Africa. The Dutch settled in the New World as well. From the New Netherland colony, roughly the present state of New York (U.S.), they traded with the Indians, mainly in beaver and otter skins. To protect themselves against other Europeans and Indians they built a fort at the riverside of the Hudson, Fort Orange, near the modern city of Albany. Fort Orange was a square fort with four bastions and is comparable to contemporary forts in the Netherlands. Archaeology has revealed the remains of a wooden structure of horizontal logs or timbers stacked between vertical posts and the inside slope of a moat reinforced with round, hard cobblestones, probably an adaptation after flooding in 1648.[20] Similar forts were also built at other sites in New Netherland. In 1625 the WIC commissioned the building of a large fort with five bastions on the southerly point of the island of Manhattan, which would encompass the town of New Amsterdam. Eventually it turned out to be a smaller fort with four bastions, situated inside the town. A preliminary version of the fort was built according to the instructions with earth ramparts. This was later reinforced with stones and palisades.[21] In a contemporary depiction of New Amsterdam we see a Dutch town, low-lying by the water, with timber and brick houses with stepped gables. That the fort was covered with grass as a reinforcement is apparent from a mention in 1654 that cows, horses and pigs grazing and rooting about was not beneficial to the quality of the defences.[22]

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[19] F. S. Gaastra, *De Geschiedenis van de VOC* (Zutphen, 2002), 16–23.

[20] P. Huey, 'Archaeological Excavations in the Site of Fort Orange, a Dutch West India Company trading fort, built in 1624', *Bulletin KNOB* 2/3 (1985), 71–73.

[21] P. Meurs, 'Nieuw-Amsterdam op Manhattan, 1625–1660', *Vestingbouw Overzee* (Zutphen, 1996), 24–25.

[22] J. Jacobs, *New Netherland: A Dutch colony in seventeenth-century America* (Leiden/Boston, 2005), 223–24.

On the island of Sint Maarten in the Caribbean the Dutch built Fort Amsterdam in 1631. Archaeological research in 1987 revealed that the original fort was built of earth ramparts according to the tradition of the Old Netherlands System of Fortification. After capturing it in 1634, the Spanish adapted it in the Iberian building tradition by strengthening it with blocks of stone, in this case reef limestone.[23]

In the Netherlands, several fortified towns have been preserved, partly because they contributed to defence of the country up to the Second World War. Naarden and Willemstad are still virtually intact. In recent years there has been a great deal of interest in cultural heritage in the Netherlands. Archaeological research is given a free rein and defences from the seventeenth and eighteenth centuries are in many cases being restored and opened to the public. Because forts in the Netherlands were built of soft soil, many of the fortifications have disappeared or have been built over. Nevertheless, traces of structures have been exposed during excavations, for example in Bourtange (Province of Groningen).[24] The archaeological groundplan corresponds to that drawn up by Simon Stevin, with extensions added in the eighteenth century. An employment project in the 1970s created a reconstruction of the fortified town as it was in 1742. Although this is a century later than the period dealt with in this article, in general the construction of the gate, moats and earth ramparts have remained unchanged (Figure 10.6). In the neighbouring town of Oudeschans restoration work shows how a small fortified town was constructed.[25] And during the restoration of *De Schans* on the island of Texel, with the help of historical sources and archaeological research, a brick gate was rebuilt into the earth ramparts. At Aerdenburg, one can see the *Olieschans* (1604), an impressive imitation of a redoubt from the first half of the seventeenth century. In the province of Zeeland in the South Netherlands, an attempt was made to reconstruct an entire line of defences, including redoubts.[26] All these projects allow us to assess the information that Dutch engineers took with them to the colonies.

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[23] J. Baart, W. Krook, and A. C. Lagerweij, 'Fort Amsterdam, Archeologisch onderzoek op Sint Maarten, Nederlandse Antillen', *Bulletin KNOB* 1988–6 (1988), 270–72.

[24] J. J. Lenting, H. van Gangelen, and H. van Westing, *Schans op de Grens, Bourtanger bodemvondsten, 1580–1850* (Sellingen, 1993), 33–53.

[25] J. J. Lenting, 'Archeologische Vondsten uit de Vesting Oudeschans', in H. Buiskool, et al., *Oudeschans*. (Scheemda, 1983), 94–105.

[26] See 'www.staatsspaanselinies.nl'.

The Building Traditions Meet in Brazil

In 1500 Brazil was discovered for Portugal by an expedition led by Pedro Álvares Cabral. On 21 April he landed on the beach of what is now known as Porto Seguro, in the state of Bahia. The new territory received the name Terra de Santa Cruz ('Land of the Holy Cross'). According to the Treaty of Tordesillas, this country belonged to Portugal, and it became the only Portuguese part of South America. Until the arrival of the Dutch in the seventeenth century, the Portuguese had an hegemony in the South Atlantic. Introducing Portuguese traditions, language, and the Roman Catholic church, they ruled the country in their fashion and typically built their towns and forts on heights and in stone as in their homeland.[27]

During the first thirty years the Portuguese did not get any further than the Brazilian coast. In 1530, by order of King João III, Brazil was divided into fifteen *capitanias* (districts), under the command of *donatários* (heads of districts). For twenty years these *capitanias* enjoyed relative economic, administrative and judicial independence. In this way the Crown hoped to be able to develop more of the immense territory, and thus reinforce its claim to a coastline over 8000 km long. The first structures looked more like fortified trading posts, and were built preferably on hills, as in Portugal, and defended by dry moats and palisades. Wooden towers were sometimes set at the corners, with several cannons on top. In some places, such as Olinda, medieval stone towers were built, in which the *donatário* took up his abode.[28]

In 1549 the first governor-general, Tomé de Sousa, arrived in São Salvador. His task was to develop the country. He transformed the small, high-lying town of São Salvador into the country's capital, and made arrangements for its defence. Moats were dug and thick walls and bastions of *taipa* (a construction of timber and loam) were erected around the town.[29] He wanted to colonize the country seriously, and to this end brought over immigrants, even convicted criminals, from Portugal. The new colony exported brazilwood, cotton and tobacco,

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[27] C. R. Boxer, *The Portuguese Seaborne Empire, 1415–1825* (London, 1969), 106–27.

[28] P. Dias, *História da arte Luso-Brasileira: urbanização e fortificação* (Coimbra, 2004), 41–43.

[29] M. Mendonça de Oliveira, *As Fortificações Portuguesas de Salvador, quando Cabeça do Brasil* (Salvador-Bahia, 2004), 56.

but the main product was sugar. Sugar cultivation had arrived in 1520 from the Canaries and the other Atlantic islands of Madeira and São Tomé, and from 1550 intensive exploitation was encouraged. The number of sugar plantations rapidly increased, and in 1623 there were over 350 *enghenhos* (sugar plantations with mills) in Brazil.[30] The Portuguese needed an enormous number of workers for the plantations, and imported slaves from Africa, mainly the Gold Coast (now Ghana) and Angola.

The first information about Brazil outside the Iberian peninsula came from adventurers who had signed on as sailors on Portuguese ships, like Hans Staden who wrote about his two voyages to Brazil (1548–1555) in his *Warhaftige Historia.* Not until late in the sixteenth century did other European ships appear before the coast of Brazil. French colonists were the first 'non-Iberians' who attempted to trade with Brazil. In 1555 a group of colonists made an abortive attempt to establish the settlement *France Antarctique* on the island of Serigipe in the Baía de Guanabara, now Rio de Janeiro.[31] The settlement at Maranhão in 1612 was the second attempt by the French to found a colony in Brazil. To this day the capital of this state bears the name São Luís de Maranhão, after Louis XIII, recalling this brief French period, but no physical evidence had been ascribed to the French presence. After the Portuguese expelled the French from Maranhão, they built *Forte do Presépio* (*Forte do Castelo*) in 1616 near Belém, on the southern estuary of the Amazon, to deter further intrusions. The primitive fort was constructed with a ring of two wooden fences filled with clay and in 1621 reconstructed in *taipa*, with bastions and a breastwork.[32] Forts were also constructed according to the newly introduced Old Italian System of Fortification. The *Forte de Reis Magos*, dating 1598, in the State of Rio Grande do Norte is a good example. Strategically situated at the entrance of the Rio Potengi it was built with impressive stone walls and two typical half-bastions with retired flanks.[33]

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[30] C.R. Boxer, *The Dutch in Brazil, 1624–1654* (Hampden, Connecticut, 1973), 18.

[31] H. S. van der Straaten, *Hollandse Pioniers in Brazilië* (Franeker, 1988), 10–16.

[32] F. L. T. Marques, 'Investigaçao Arqueológica na Feliz Lusitânia, ' in P. C. Fernandes, ed. *Feliz Lusitânia* (Belém, 2006), 151–54.

[33] H. Galvão, *História da Fortaleza da Barra do Rio Grande* (Rio de Janeiro, 1979), 52–53.

At the end of the sixteenth century the first Dutchmen went to South America, attracted by the new trade prospects there. Merchants from West Frisia took salt from Punta Araya (Venezuela), and Zeelanders made their first contacts on the Wild Coast (the Guyanas) and in the Amazon region. The interested parties joined together and a *groot desseyn* or grand plan was drawn up.[34] The plan was to establish a South Atlantic empire between South America and West Africa. After the example of the VOC (East India Company) the aim was to acquire the monopoly of a product, and thus control prices to ensure WIC (West India Company) profits. This had been done in the East, in the Moluccas, with the monopoly on nutmeg and mace. It was now attempted in the West, with sugar. The majority of sugar production was in Brazil and thus in the hands of the Portuguese.

A Dutch fleet was equipped to capture the capital of Portuguese Brazil, São Salvador, which was defended by forts, batteries, moats and the *Forte do Mar*, also known as *Forte da Laje*. On May 8, 1624 the fleet under Admiral Jacob Willekens arrived at the Baía de Todos os Santos and took the high-lying town (Figure 10.3). Most of the town's inhabitants fled. Under the command of bishop Dom Marcos Teixera a permanent guerrilla war was then waged from the surrounding area, forcing the Dutch to remain within the town walls.[35] They thus were imprisoned in an unfamiliar environment, with sloping streets and alleys and houses and walls of stone. On 30 April 1625 they were compelled to surrender to the commander of a Spanish-Portuguese fleet.

One of the pillars of the WIC was privateering. The company gave official permission to seize Spanish and Portuguese ships, and the income from this practice was substantial. The years following the loss of São Salvador were the most successful. Many richly laden ships were captured, and so much remained after distribution of the spoils that the WIC decided to invest the money in a new attempt to capture the sugar plantations of Brazil. A fleet of sixty-seven ships was dispatched with more than seven thousand men, including engineers.[36] The plan was to conquer quickly northeast Brazil, and then to take Rio de Janeiro, São Salvador and Buenos Aires.[37] In 1630 Dutch forces

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[34] H. den Heijer, *De Geschiedenis van de WIC* (Zutphen, 2002), 35–54.

[35] Straaten, *Hollandse Pioniers,* 26–37.

[36] Heijer, *Geschiedenis van de WIC*, 39; S. P. L' Honoré Naber, *Iaerlyck Verhael van de Verrichtinghen der Geoctroyeerde West-Indische Compagnie, 1624–1636*, vol. 2, adaptation of book by J. De Laet ('s Gravenhage, 1932), 133.

[37] Boxer, *The Dutch in Brazil*, 50.
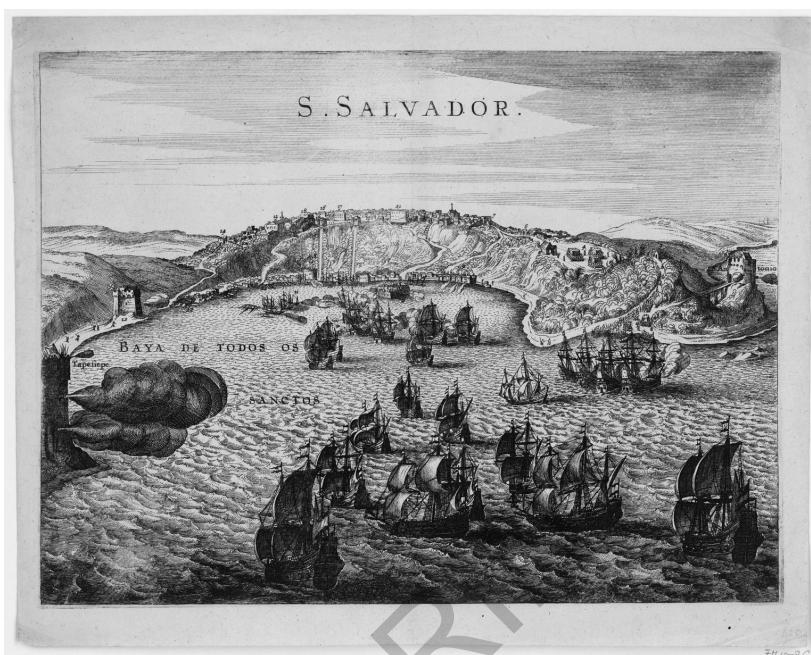
Figure 10.3. The conquest of the high-lying capital of Portuguese Brazil São Salvador by the Dutch fleet under Admiral Jacob Willekes in 1624. Collection Rijksmuseum, Amsterdam.

captured the first target, Olinda, the capital of Capitania Pernambuco. The town was built on hills overlooking the small port of Recife, situated on the estuary of the Capibaribe and Beriberibe. The sugar harvest of the hinterland had to go through Recife, which is where the great depots were. The centre of activities was in Olinda, however, and again the Dutch were imprisoned in a typically Portuguese town. But this time they tackled things differently. Because of its low position Recife provided the ideal conditions for building a familiar Dutch town. They decided to leave Olinda and make Recife a new centre. Olinda was destroyed and the usable building materials transported to Recife.[38] A chain of forts and redoubts was constructed around the new capital, one might say a Dutch water line (a series of water based defences) in Brazil. Large forts were built, such as Fort de Bruyn (*Forte do Brum*), Fort Frederik Hendrik (*Forte das Cinco Pontas*), Fort

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[38] L'Honoré Naber, *Iaerlyck Verhael*, 150.
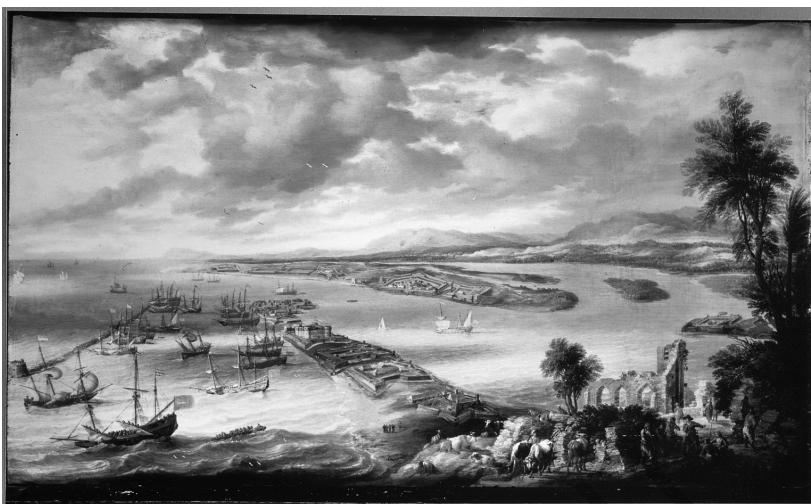
Figure 10.4. Recife, the low-lying capital of Dutch Brazil, seen from Olinda. Gilles Peeters, 1637. Photo by RKD, copyright Sotheby's.

Ernestus (*Forte do Ernesto)* and a water fort Fort Waerdenburgh (*Forte Waerdenburgh/ Forte das Três Pontas)*, with town ramparts and redoubts in between. The soil of the river delta was eminently suitable for the system they were accustomed to. In a painting of Recife by Gilles Peeters one can clearly see how Recife with its fortifications was built in the river delta (Figure 10.4), and in the middle of the painting one can also see the Portuguese sixteenth-century *Castelo São Jorge Velho*, with high walls and round towers. Sand from the excavated moats was used to build ramparts, and branches were necessary to reinforce the construction. Because the Portuguese were again waging a guerrilla war against the occupying forces it was dangerous to venture outside the town, so expeditions were equipped to fetch branches and wood from the surrounding area, in addition to food.[39] Apart from the building materials taken from Olinda, bricks, beams, planks, and even entire houses were shipped in from the Netherlands.[40] These materials were used to build important buildings, houses, and gates. The street pattern used for Recife corresponded to that of a Dutch town, and even the plots of narrow houses reflected those of Dutch

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[39] L'Honoré Naber, *Iaerlyck Verhael*, 155–57.
[40] J. A. Gonsalves de Mello, *Nederlanders in Brazilië: De invloed van de Hollandse bezetting op het leven en de cultuur in Noord-Brazilië* (Zutphen, 2001), 95.

towns of the time.[41] After the Dutch were driven out of Brazil in 1654, the Portuguese expanded Recife. Now, with almost 3 million inhabitants it is the third largest city in northeast Brazil and the capital of the State of Pernambuco. The original street pattern and urban plots can still be seen in *Recife Antigo*, the old centre of Recife. During the 2002 excavation of the synagogue, it emerged that that the present house was built on Dutch foundations.[42]

Not until 1631 did the Dutch venture to continue with their plans for conquest. Expeditions departed for the northerly Capitanias Itamacá, Paraíba and Rio Grande do Norte. This colony, which lasted until 1654, was called New Holland. On a point on the small island of Itamacá they first built a redoubt which was later expanded into Fort Orange. The choice of site was once again a watery environment. In this case a dune was selected and the ground plan laid out. The top was hollowed out and made into a courtyard. Surplus sand that came from the excavated moat was used to strengthen the ramparts. Whereas the Dutch built their fortification on the beach, the Portuguese had built their fort and town Nossa Senhora de Conceição on a hill. Again the contrast was clear. The Portuguese felt safe in the stone houses on a high site with a good view, and the Dutch ensconced themselves behind the water and their ramparts. Remarkable about the building of Fort Orange is that the gate was built on the sea front. During the excavation of 2002/2003 this gate, built mainly of brick, was unearthed.[43] A possible explanation is that, with their ships nearby, they felt safer close to the sea. When the Dutch left in 1654, the Portuguese closed this gate and moved it to the landward side. They enlarged the fort, and following their traditions they also faced the ramparts with blocks of limestone still visible today.

In Paraíba too, the gate of the most important fort, Fort Margaretha (1634), was built on the water front, now *Fortaleza de Santa Catarina* in the municipality *Cabedelo*. And again, the Portuguese later opted for a gate on the landward side, but the Dutch gate built of small

[41] R. Van Oers, *Dutch Town Planning Overseas during VOC and WIC Rule (1600–1800)* (Zutphen 2000), 139–51.

[42] See 'www.magmarqueologia.pro.br', sub: Arqueologia da Sinagoga Kahal Zur Israel.

[43] Ibid., sub: *Arqueologia do Forte de Orange*; O. F. Hefting, 'Towards Restoration of Fort Orange: Research of Fort Orange in Brazil', in R. van Oers and L. G. W. Verhoef, eds., *Dutch Involvement in the Conservation of Cultural Heritage Overseas* (Delft, 2005), 157–70.

Figure 10.5. The waterfront gate of Fort Margaretha, Paraíba (1634), constructed of small Dutch yellow bricks. Photo by O. F. Hefting.

yellow bricks can still be seen (Figure 10.5). The Dutch eventually built a chain of forts along the coast of New Holland. Occasionally, for the sake of convenience or for other reasons, they chose to make use of a Portuguese fort. A good example is *Forte Reis Magos* or Fort Ceulen, as the Dutch called it, where probably for convenience the Dutch decided not to build a new fort. Fort Ceulen became the military base in the Capitania of Rio Grande do Norte.

Archaeological research was conducted in *Forte das Cinco Pontas* and *Fortaleza de Santa Catarina* in the 1970s, and in the 1990s excavations were carried out in *Forte do Brum*.[44] Although many Dutch artefacts, such as pottery, pipes, and coins were found, the excavations located no traces of the Dutch fortresses. Since the investigation of Fort Orange in 2002/2003 has demonstrated that the Dutch also built their forts in Brazil of sand and clay, we must look at the landscape in a different way in the future.

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[44] U. Pernambucano de Mello, *O Forte das Cinco Pontas: Um trabalho de arqueologia histórica aplicado à restauração do monumento* (Recife, 1983); 'www.mag marqueologia.pro.br', sub: *Arqueologia do Forte do Brum.*

Much experience has already been gained on this topic in the Netherlands. The *Stichting Archeologie en Monument* (Archaeology and Monument Foundation) has been a trendsetter at excavations in Bourtange (Groningen). On the basis of many years of research, a reconstruction of the fortification has been made, and this is now a tourist attraction (Figure 10.6). Various 'lost' redoubts and forts in the region have been found through surveys in the Netherlands, based on thorough historical investigations and the help of modern aids such as aerial photography and remote sensing.

The Atlas of Dutch Brazil project is now working on mapping Dutch cultural heritage in Brazil. Never before has this landscape been studied this way, and a great deal of new information is expected. A first inventory of seventeenth-century forts in Brazil shows that at least 48 have a Dutch background.[45] It is quite possible that some original Dutch forts with earth ramparts still lie within later Portuguese walls. Although Pernambuco was the Dutch centre of power where most building took place, remains of built cultural heritage can also be found in most of the other coastal states of Brazil. Although use was often made of the Portuguese foundations, one can still find the typically Dutch building traditions. For example, in Recife and on Itamaracá they built at sea level with sand, clay and bricks. Their typical organization of the landscape is also visible in the land allotment system and building of canals. The project focuses on mapping the sites of defensive works, and future objectives will be religious, administration and commercial sites, habitations, ports, and shipwrecks. Wherever possible, restoration will be encouraged and recommendations for preservation will be passed on to IPHAN, *Instituto do Patrimônio Histórico e Artístico Nacional,* the Brazilian Historic Buildings Council. Small memorials will be erected at sites, so that they can be included in tourist routes. Setting up local museums and heritage centres will contribute to the propagation of knowledge and will promote employment and tourism.

Conclusions

Portugal and the Netherlands are both small European countries that border the sea. Whereas Portugal had its period of major economic growth in the sixteenth century, for the Netherlands this came

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[45] See 'www.atlasofmutualheritage.nl', sub: Brazil.

Figure 10.6. Reconstruction of the bridge and gate of the low-lying Fortress Bourtange in the Netherlands. Photo by O. F. Hefting.

a century later. Portuguese possessions were targeted across the oceans. In Asia this was largely successful, and the Portuguese were ousted from India, Sri Lanka and Indonesia. In Brazil, however, they remained in control.

Here one can still see how the various European building traditions met in the proto-colonial period (1500–1654) and how they left their mark on the society. The Portuguese were accustomed to building their safe castles and forts on higher sites such as hills and mountain-tops. In doing so, they made use of the material available, namely stone. They did the same in Brazil in the sixteenth century. This can be clearly seen in towns like São Salvador and Olinda. The Dutch who conquered São Salvador in 1624 did not feel at ease here, and could not put up a convincing defence when the Portuguese recaptured it a year later. When the Dutch took Olinda during a new attack on Brazil in 1630, they did not want to fall into the same trap a second time. The small port of Recife was transformed into a Dutch town in the tropics, complete with narrow brick houses and forts and town ramparts of sand and clay. Olinda was largely destroyed, so that the Portuguese

could no longer profit from it. A similar contrast can be seen on the island of Itamaracá. To protect themselves during an attack on the Portuguese town on the hill they built their Fort Orange at sea level. The gate of this fort faced the sea, indicating that the Dutch felt safer on water.

After the Dutch were driven out of Brazil in 1654, the Portuguese expanded Recife. Now, with almost three million inhabitants it is the third largest city in North East Brazil and the capital of the State of Pernambuco. Low-lying Dutch earthworks and forts, such as Fort Orange on the island of Itamaracá, were put into use by the Portuguese after some adaptations. Here historical and archaeological research in 2002/2003 gave new insights into the building methods used for constructing Dutch forts in Brazil. Recently the international project Atlas of Dutch Brazil has been launched to investigate the Dutch built cultural heritage in Brazil and traces of at least 48 proto-colonial defence works related to the Dutch presence there are expected.

Acknowledgements