

**LAGOS AS A METROPOLITAN ASSEMBLAGE:
READING THE LAYERING AND COMPLEXITY IN URBAN INFRASTRUCTURE**

A thesis submitted to the University of the Witwatersrand for the degree of Doctor of Philosophy in
Architecture, in the Faculty of Engineering and the Built Environment.

2024

PATRICIA THERON

Abstract

This thesis uses concepts that make up assemblage in Deleuze to explain an emergence of process and pattern in the urban setting of Lagos, as revealed through systems of physical infrastructure designed in relation to the network of waterways. Activities of the British Colonial Office, concentrated on accessibility of the Lagos port during the First World War, provide the initial focus. In the post-independence period, and after the Civil War (1967-1970), Lagos was a centre of exhibition for oil-wealth projects under the Nigerian Federal Military Government. Major infrastructure contracts were awarded to German-Nigerian firm, Julius Berger, which underwent a process of indigenisation in Nigeria. In 1975, a crisis of congestion resulted in a stasis at the Lagos port, with state-response involving infrastructural and legal resolutions. Julius Berger Nigeria (JBN) was to complete a new port at Tin Can Island in only 15 months, while simultaneously carrying out other extensive projects in Lagos. These undertakings would provide the blueprint for future operations at scale, and for the consolidation of the company's footprint in territorial terms. The conceptual contribution lies in an exploration of the uses of 'territorialisation' and 'coding' that stabilise or disrupt, consolidate or expand social territories. Infrastructural projects are subject to social interactions that are coded, decoded or overcoded in organisations that are themselves forming and shaping as groups. The way in which social territories are held together through language, visual symbolism, codes of conduct and national law, constitutes this study, enabling observation of Nigeria's complex infrastructural programmes, with emergent factors representing the binding elements at organisational and territorial levels. The archive is itself understood as an assemblage, bringing together resources of disparate origin, with Colonial Office and JBN records revealing an alternate and imagined Lagos, and effecting a reterritorialisation shaped in narrative terms. This reading attempts to speak to the complexity, in a vision of processes and interactions that were evolving and reacting in these historical periods, to respond to the question of how social territories are held together as a fabric, with processes of territorialisation and coding seen as manipulations of that fabric. Infrastructural projects are read in relation to wider strategic objectives of the Colonial Administration and the Nigerian State, involving intricate social and technical interrelations in implementation of programmes, with ideas functioning at the level of individual attitude and systemically.

Keywords: Lagos; Infrastructure; Assemblage; (De-), (Over-) Coding; (De-), (Re-) Territorialisation; Emergence.

Table of Contents

List of Figures	iv
Declaration.....	vii
Acknowledgements	viii
Editing Note	ix
Acronyms.....	x
Chapter One: Projects and Projections: Infrastructures of the Colony and Post-Colony	1
1.1. Problem Statement.....	5
1.1.1. Colonial Period	6
1.1.2. Postcolonial Period	9
1.1.3. Research Questions and Delimitations	11
1.2. Lagos: A Paradigmatic Setting for Research	13
1.2.1. Under the Colonial Administration and the Postcolonial State: Projecting Infrastructural Models in Two Periods	13
1.2.2. Lagos as a Paradigmatic Metropolis: Between Physical Environments and Texts	17
1.3. Concluding Thoughts.....	19
Chapter Two: An Assemblage Reading of Lagos' Historical Infrastructures: Aesthetic Realities and Explanations.....	21
2.1. Reading the Metropolis Through Intersections of Assemblage, Historical Method and Archives	22
2.1.1. Assemblage Theory, Periodisation and Place	23
2.1.2. Assemblage in Aesthetics and Explanations: Urban and Textual Archives.....	27
2.2. Definitions and Application	31
2.2.1. Territorialisation, Coding, and Double Articulation	31
2.2.2. Research Questions and Methodological Implications	37
2.3. Concluding Thoughts and Case Studies: Projects, Infrastructures, Organisations, and Territory	40
Chapter Three: Conceptual Framing, Archives and Overlaid Networks.....	42
3.1. Conceptual Framing, Debates, and Emerging Themes.....	43
3.1.1. Debates on Lagos, Elites, and the Location of the Capital.....	43
3.1.2. Phases of the Metropolis: Urban Transformation, Adjustable Parameters (the Generic) and Historic Depth (the Genetic).....	51
3.2. Archives and Contextual Literature	54
3.2.1. The Colonial Archive	54
3.2.2. The Bilfinger + Berger Archive	57
3.2.3. Secondary Sources and Themes	61

3.3. Concluding Thoughts and Contribution	64
Chapter Four: Territorial Ambition, Projects and Projections: The Colonial Port at Lagos as a Microcosm	66
4.1. The Colonial Administration and Attitudes to Infrastructure.....	68
4.1.1. The Dual Mandate: Amalgamation and Territory, Direct and Indirect Rule, and Justification of British Presence in Nigeria.....	68
4.1.2. War-time Priorities and the Problem of the Port at Lagos	70
4.2. The Nature of Colonial Investment in Lagos: Codes, Territories and Perception of the Environment	76
4.2.1. A Posting to Lagos: Impressions Revealing Perspectives and a Narrative of Topography.....	76
4.2.2. Port Systems, Communications and Harbour Rules: The Port as a Navigational Setting	81
4.2.3. Cross-Cultural Interactions: Colonial Intersections of Infrastructure, Disease Management and the Location of a Capital	88
4.3. Concluding Comment: Reterritorialisation and Superimposition of a Narrative Structure.....	94
Chapter Five: Capacity-Dynamics, Congestion and Flows: The Indigenisation of German-Nigerian Firm Julius Berger and the Project of Lagosian Port Expansion in the 1970s.....	97
5.1. The Causes of a Crisis: Port Congestion and Cement Orders	99
5.1.1. Port Congestion, Cement Orders and the Arrival of Julius Berger in Nigeria	99
5.1.2. The Ambiguous Role of the State.....	106
5.2. Julius Berger Nigeria and the Role of Elites: Conversations, Organisations, and Environments	107
5.2.1 Conversations, Language codes and Territorial Boundaries	109
5.2.2. Organisations and the Social Network of a Project.....	113
5.2.3. Flexibility, Fluidity, and the Overcoming of Environmental Constraints	117
5.3. Concluding Comment: Resonance at Different Scales and the Port as a Symbol ...	124
Chapter Six: Connectivity and Networking: The Expansion of Julius Berger Nigeria through Infrastructural Linkages and Visual Coding	128
6.1. The Need for Connectivity and Communication Controls.....	130
6.1.1. Military and Media: The Role of Communication and Infrastructure in State Territorial Control	130
6.1.2. The Merger of Bilfinger and Berger: A Company's International Expansion and the Inverse Fortunes of Germany and Nigeria in the 1970s	135
6.2. Visual Coding and Connectivity: From Concrete Image to Counterargument from the Archive	141
6.2.1. Coding for Continuity: Imaging of Julius Berger Nigeria in Visual and Material Culture	141
6.2.2. From Conversation to Implementation: Connectivity as an Urban Vision and Interlinked Infrastructures.....	147

6.2.3. A Built and Printed Monument: Narratives and Counter-Narratives	151
6.2.4. A Mobile Organisation: Power, Networking and Keeping Track of Moving Parts 158	
6.3. Concluding Comment: Networks, Narratives, and the Expansion of Influence	163
Chapter Seven: Emergence in the Reading of Urban Infrastructure: Emergent Properties and Levels of Interaction	165
7.1. Identifying the Emergent Factors	166
7.1.1. 'Coherence' as an Emergent Factor During the Colonial Period	168
7.1.2. 'Speed' as an Emergent Factor of Julius Berger Nigeria's Indigenisation and Response to the Port Crisis	169
7.1.3. 'Reputation' as an Emergent Factor which Enabled the Nationwide Expansion of Julius Berger Nigeria's Activities	172
7.2. Answering the Research Questions: Reflection on Territories, Organisations and Media	174
7.2.1. Research Sub-Question One	174
7.2.2. Research Sub-Question Two	177
7.2.3. Research Sub-Question Three	179
7.3. In Conclusion: Two 'Projects' with Consequences for Metropolis and Capital	181
Bibliography	188

List of Figures

Figure 1: Eko Beach, Lekki Peninsula (2002-2006). Photograph by Patricia Theron

Figure 2: Porto Novo Creek (2002-2006). Photograph by Patricia Theron

Figure 3: Lagos waterways (2002-2006). Apapa (top) and the Lagos Yacht Club, Lagos Island (below). Photographs by Patricia Theron

Figure 4: Apapa (2002-2006). Photographs by Patricia Theron

Chapter One

Figure 5: 'Choc des Cultures-Bon Vent' (the arrival on the wind of ships bringing radical cultural change). (Sinzogan, 2013)

Figure 6: Development in Lagos Island and on the mainland over time. (Peil 1991)

Chapter Three

Figure 7: Aerial Photograph of Lagos lagoon network and harbour, c. 1965-1976 (Director of Federal Surveys in Grenzsbach, 1978)

Figure 8: Aerial Photograph of Lagos Island showing the shift in urban pattern from the Yoruba town to development along the Marina, c. 1965-1976 (Director of Federal Surveys in Grenzsbach, 1978)

Figure 9: Port and rail proposal with the dredged Fairway Channel through the Harbour, c. 1912-1919 (Kirk-Greene, 1968)

Figure 10: Book covers of the Bilfinger + Berger and JBN monographs. (Blum and Gaines, 1996; Blum, 1981 and 1990)

Chapter Four

Figure 11: Nigerian railways, c. 1912-1919. Edited. (Kirk-Greene, 1968)

Figure 12: Proposal for a rail line from Apapa and showing the Lagos bar. (TNA: MR 1/1804(5), 1880)

Figure 13: East and West moles, Lagos harbour, c. 1965-1976 (Director of Federal Surveys in Grenzsbach, 1978)

Figure 14: General Plan of the Harbour (Coode, 1957)

Figure 16: Walter Egerton (left) at Government House (top). (TNA: CO 1069/65, 1907). Egerton on a boat, seated on a wicker chair (below). (ibid, c. 1910-1939)

Figure 17: Chart showing development along the Marina. Prepared by William Speeding in 1897. (Godwin and Hopwood, 2012)

Figure 18: Apapa. (TNA: CO 1069/65, c. 1910-1939).

Chapter Five

Figure 19: Plan of Lagos with the Inner and Outer Ring, Apapa and Tin Can Island ports. The JBN office is indicated with a 'b' at Ijora. (*Unsere Bauwelt: b aktuell*, 1979[4])

Figure 20: Plan diagram of Lagos Inner Ring Road (Blum, 1981)

Figure 21: The Lagos Inner Ring Road wrapping around Lagos Island. (Blum, 1981)

Figure 22: General Yakubu Gowon cutting the ribbon at the opening of the Itoikin Bridge in 1972 and JBN Director, Günther Hawranke, holds the ribbon to his right. (Blum, 1981)

Figure 23: JBN Director, Hans Wittmann (left) and Mobolaji Johnson, Military Governor from 1967 to 1975, and later JBN Director. (Blum and Gaines, 1996)

Figure 24: JBN Cessna Aircraft. (Blum and Gaines, 1996)

Figure 25: Ships anchored at sea during the height of the Lagos port congestion in 1975. (Blum, 1981)

Figure 26: Shipments of material from Germany arrive at the Lagos port for use in JBN projects. (Blum, 1981)

Figure 27: Model (top) of Tin Can Island. (*Unsere Bauwelt: b aktuell*, 1977[4]). And layout plan. (Wittmann, 1980)

Figure 28: The Tin Can Island control tower. (Blum, 1981)

Figure 29: German Federal Chancellor Helmut Schmidt visits Tin Can Island in 1978. (Blum, 1981)

Chapter Six

Figure 30: The old and new Carter Bridge before the demolition of the older structure. (Blum, 1981)

Figure 31: The International Division of Bilfinger + Berger in Wiesbaden. (Blum, 1981)

Figure 32: The Berger residential camp at Lagos. (Berger Welt, 1966[13])

Figure 33: Plan of Lagos showing Lagos Island and the airport at Ikeja on the mainland, with JBN offices located at Ijora. (Hemmleb, 1969)

Figure 34: The JBN administration building in Lagos. (Blum and Gaines, 1996)

Figure 35: News article in JBN in the *Engineering News Record*. (*Unsere Bauwelt: b aktuell*, 1978[1])

Figure 36: JBN projects in Lagos. (Blum, 1981)

Figure 37: Construction of the Inner Ring Road on reclaimed land. (Blum, 1981)

Figure 38: Construction of the Lagos-Ibadan Expressway using concrete deck-on-piles. (Blum, 1981)

Figure 39: Map of JBN activity in Nigeria (Blum, 1990)

Chapter Seven

Figure 40: JBN headquartered in their new building in Abuja from 2001. (Julius Berger, 2023)

Figure 41: Construction of a bridge in Abuja. (Blum, 1990)

Figure 42: JBN Chairman and Board Members with Chairman Alhaji Usman (centre) with Günther Hawranke to the right, and Mobolaji Johnson and Hans Wittmann (left-front). (Blum, 1990)

Declaration

I declare that this thesis is my own unaided work. It is submitted to the Degree of Doctor of Philosophy to the University of the Witwatersrand, Johannesburg. It has not been submitted before to any degree or examination to any other university.

Patricia Theron, 28 February 2024

Acknowledgements

I lived in Lagos during the early 2000s, at the start of Nigeria's Fourth Republic following the final period of military dictatorship. The Lagos assembled in this study is part-memory, part-historical, and has been partially rediscovered in archival records.

Research in archives in the United Kingdom and Germany was made possible with the support of the *African Studies Journal* Dr. Lindiwe PhD Fieldwork Research Grant, and through research grants from the Faculty of Engineering and the Built Environment (FEBE), and from the School of Architecture and Planning, at the University of the Witwatersrand.

Thank you to my supervisors, Professor Nnamdi Elleh and Professor Philip Harrison for their consideration and guidance in this process.

I would like to acknowledge the most important assistance of Dr Martin Krauß who enabled access to data in Germany and who also had a personal knowledge of the Bilfinger + Berger company, giving insight into company culture and providing vital clarifications for my handling of data.

And profound thanks to my mother.

Editing Note

Excerpts from archival sources are employed in this work to render, through text, some of the dialogues and conversations that were taking place within the historical periods, and revealing something of the life of the times, and the ideas in circulation. To express the immediacy of verbal communication, quotation marks are consistently used to indicate speech and quoted passages, including of correspondence, which nevertheless would represent what might have been verbalised. Inverted commas are consistently used to indicate emphasis.

Acronyms

CO: Colonial Office

DM: Deutsche Mark

FESTAC 77: Second World Black and African Festival of Arts and Culture

GBCO: Great Britain Colonial Office

JBN: Julius Berger Nigeria

MT: Ministries of Transport

NEPD: Nigerian Enterprises Promotion Decree

NPA: Nigerian Ports Authority

OPEC: Organization of the Petroleum Exporting Countries

TCI: Tin Can Island

TNA: The National Archives

TWB: The World Bank

UOM: University of Manchester



Figure 5: Eko Beach, Lekki Peninsula (2002-2006).
Photograph by Patricia Theron



Figure 6: Porto Novo Creek (2002-2006).
Photograph by Patricia Theron



Figure 7: Lagos waterways (2002-2006).
Apapa (top) and the Lagos Yacht Club, Lagos Island (below).
Photographs by Patricia Theron



Figure 8: Apapa (2002-2006).
Photographs by Patricia Theron

Chapter One: Projects and Projections: Infrastructures of the Colony and Post-Colony

Port cities, with the emergence of maritime networks, have seen complex flows of cargoes and peoples due to shipping, with resultant demographic shifts; local inhabitants were to experience increasing contact with new 'arrivals' and there was also the added presence of 'floating communities'. When Lagos was first settled in the 1660s, global trade routes linking Europe and Africa were already in place. By the 18th century, Lagos had developed into a trading post and a slave depot, with its waterways providing ideal hideaways for Portuguese slave traders (Peil, 1991:6). Oceanic travel opened up new lands which European powers considered as "virgin territories" for colonisation (Merriman and Winter, 2006:504), and as ripe for the "implantation" of European trade (Boahen, 1992:390). In Africa, coastal areas were the entry-points of colonial occupation, to be linked to mines and the hinterlands through infrastructures of extraction. Technologies of rapid travel alter topology (DeLanda, 2015), and voyage by ship transformed global spatial relations through 'speed', with coastal settlements more exposed to outside influence and cultural influx than inland areas, and consequently experiencing greater rates of change.

Following a decade-long Consular Period from 1851-1861, Lagos would be colonised for 99 years from 1861 until the Nigerian independence in 1960 (Bigon, 1974). During the colonial period, the port would grow into a prominent node for extraction and exportation. While the colonial power embedded its operations, with a monopoly on economy, primary industries and urban projects, Lagos would remain an essentially Yoruba city (Peil, 1991:8), with Obas and traditional chiefs and a predominantly Yoruba culture. The historic settlement of Ile-Ife, considered sacred by the Yoruba, formed the model for planning of subsequent Yoruba towns (Bigon, 1974:42). Its radial form may have served as a prototype for the early Lagos, but the spatial pattern that emerged was a distinct response to the waterways and resulted in an urban morphology that differed from other Yoruba towns (ibid:42-43). The perception of Lagos as inherently 'Yoruba' would persist into the 1960s and 1970s, with government elites desiring a new capital in an alternate location in a more tribally 'neutral' territory (Federal Republic of Nigeria, 1975:38-39).

This thesis will examine two conditions in which infrastructure emerged in Lagos: in a period of colonial occupation, with a focus on the accessibility of the port at Apapa in the early 20th century and during the First World War, and following independence, with the oil-wealth projects of the Federal Military Government bringing a heightened activity to Lagos between 1975 and 1979. Nigeria would experience 'extractive' rather than 'settler' colonialism. Although both forms involve expropriation of land and transformation of the environment, Lagos was not intended as a permanent European settlement. Due to the humidity of the tropical climate, the extensive swamplands, and endemic malaria and yellow fever, Lagos was seen by colonial officers as unsuitable for (European) habitation (TNA: CO 879/113, African (West) 1005, 1913, p. 13). Adopting the logic of imperialism, infrastructures were prioritised with resource extraction in mind, and urban services for residents were largely inadequate. A response to the instability and precarity brought about by colonisation of African cities is described by Abdu Maliq Simone (2000:235), where "African cities often appear to act in an incessant state of preparedness", forcing residents to remain in a permanent state of adaptation. The infrastructure deficit inherited by the

independent nation of Nigeria, required technical expertise unavailable in a country not yet industrialised. The 1970s oil wealth would initiate an elaborate infrastructural programme, including extensive networks of bridges, cloverleaves, ringroads and expressways, as well as land reclamation schemes and port expansion projects. German engineering firm Julius Berger was then appointed for the majority of this work, and would entrench themselves in Nigeria as a result of these major contracts.

Two programmes of infrastructure delivery are explored. As a colony, Nigeria would be administered from afar, with a small contingency of officials in Lagos on a temporary basis. In the post-colony, the Federal Government of Nigeria attempted to extend urban benefits and infrastructure to the wider population. Unlike colonial officials, postcolonial rulers were invested in the territory and sought to transform the economy through Nigerianisation laws, and the environment through infrastructural programmes. But there were challenges of terrain: Lagos had always been an expensive environment in which to build. Postcolonial Nigerian elites would come to agree with the colonial assessment that Lagos was unsuited as the capital of Nigeria, and they sought alternative locations, eventually removing the administrative precinct from the city, in order to generate a new city around an administration, through the landscape urbanism of the new capital of Abuja. This research reflects on projects and projections, considering the rulers of the territory and their 'projections' onto environment during colonial and postcolonial eras, and how these projections interacted with projects of infrastructure development in Lagos. Projects are conceptualised as temporary associations, and social networks in a process of transformation, which come to function in a situation, altering activities through interlinkage. The study questions how these processes unfolded within the setting, and what emerged from the interaction of projects and projections at times when networks were tied to place, and at other times when they became more mobile.

In the period of colonial rule, the years 1914 to 1919 are taken as a demarcation, but the study transgresses these temporal boundaries, reaching back into a history of recorded experience of the landscape as having shaped the project of the port. If the colonial period was characterised by the need for 'access' through the port, the postcolonial period was characterised by the factor of 'congestion': of the road networks in Lagos, and of the nation's ports. An infrastructural programme was underway in Lagos during the 1970s, overseen by three different Heads of State and four Lagos State Governors, while the work of Julius Berger would continue, representing a thread of continuity in the infrastructural development of the city. But projects have impacts beyond their boundaries, and they exert a wider effect on relations and dynamics in the urban setting and in the nation. This study seeks to examine these differing scales of interaction of infrastructure projects and the organisations implementing them. For Julius Berger, Lagos' infrastructural requirements led to the indigenisation of the firm within Nigeria, becoming a Nigerian company in 1970, named Julius Berger Nigeria (JBN), and a parastatal from 1975, with 40% ownership by the Nigerian State (Weinert, 1981:52). JBN Directors would personally advise government officials on infrastructure, while the plans for Lagos' system of ring roads and port expansions were drawn up in their German office in Wiesbaden. For Simone (2000:236), "African cities operate as a platform for people to engage in processes and territories elsewhere ... the referent of this elsewhere has commonly been other cities, both within and outside the continent". But Lagos has never conformed easily to projected visions, with intrusion of waterbodies and non-contiguous land parcels hindering attempts to implement global urban models.

This study is archival and employs a method of assemblage informed by the work of Manuel DeLanda. While an assemblage reading of projects that attempted to connect and shape the environment is sought, the assembling of diverse materials of archives becomes a point of study in itself, taking a different form in each era. Record-making is understood as talking back to the landscape, and to the projects, as a conceptual territory in its own right, with the recording of perceptions of Lagos in the form of correspondence, reports, and project data, coming to exert an influence on the environment. The two periods examined, would involve a largely different set of actors, acting within the same geographical setting but in differing phases of transition within a progressive morphology. Elites engaged in the planning of Lagos' infrastructure, mobilised projects as 'connective' or as 'pockets' of planning. While never sufficiently extensive, the projects are worthy of study, especially given the subsequent move by the administration out of Lagos, which was to see reduced investment in the 1980s, with the combined effect of the Structural Adjustment Programmes, and the construction of a new capital at Abuja, freezing development in the port city. The overarching theme in these two very different periods, is an exploration of the interrelationships between organisations and infrastructures, to include at the macro-level, the administrations and state organisations that undertook infrastructural programmes in Lagos, and at the micro-levels, the consultant experts involved in project implementation, as well as the employees of organisations, who became responsible for managing these technocratic spaces.

The first objective of this research is to interpret the upward and downward causal influences at work between organisations and the projects under their remit. Explored in relation to ways in which environmental setting and infrastructures were discerned by representatives of these offices, and the communiqués released at organisational level, the process of record-making and the writing down of experience, is considered as vital evidence in the reconstruction of processes of infrastructural installation, and the transformation of the environment of historic Lagos.

The second objective is to examine the contrast between infrastructures realised by an organisation, the Colonial Office, with the perception of a merely temporary involvement in Lagos, and the JBN organisation, that pursued a project of indigenisation in Lagos from 1965 and throughout the 1970s. The nature of that 'temporary' presence will be interrogated, with colonial officials managing the Apapa port setting for a floating and land-based constituency. The indigenisation of JBN, and their rise in status, is studied with a focus on their consolidation within the territory, confirmed through the Nigerianisation laws that were introduced at the time, and achieved in part due to their role in addressing the port congestion crisis, and through their connection to political elites.

The third objective considers the expansion and networking of the JBN organisation as a mobile social network. Operation over a large territory results in socio-technical arrangements that are more diffuse, and of a lower network density, requiring development of means for keeping the parts of an organisation working together. A parallel project of infrastructure and publication is undertaken by the company, and is surveyed as a system of relations and a form of risk-management, demonstrating their regimen and confirming their position, as a counterpoint to increased mobility.

This study employs the assemblage method in dialogue with historical method, to consider organisations and their implementation of infrastructures, as giving rise to

effects, and 'emergent' properties of an assemblage, greater than or not directly present in its members. The empirical research traces these organisations and infrastructures, with thesis objectives establishing the framework for identification of emergent factors within the periods of analysis. From the first objective, which considers the process of record-making, the ways in which preoccupations come to 'cohere' are explored as a form of emergence in the rhetoric. In the second objective, the embeddedness of JBN in Lagos is examined, and the role of 'speed' is regarded as an essential component of their indigenisation, and as an emergent factor produced through the interaction of setting, circumstance, and organisational arrangements. The third objective is concerned with expansion and mobility of JBN and the management of their corporate image through publication. A significant aspect of their ability to extend operations beyond Lagos was determined by 'reputation', identified in this research as an emergent property. The phenomenon of emergence is clarified in the chapter on methodology and is examined in the concluding chapter, with thesis objectives and emergent factors forming 'bookend' components of this research.

The empirical subject matter can be conceived of as an examination of organisational factors of extraction and embeddedness, with partial embedding of an organisation to oversee an extraction during the colonial period, and an 'indigenous' programme of infrastructure delivery which would involve embedding of a multinational organisation in the postcolonial period. Although the British were in Nigeria nearly a century, they did not actually indigenise and this shaped their approach. In contrast, the infrastructure projects of the 1970s, were commissioned by an invested Federal Military Government awarding contracts to JBN, which would Nigerianise to the extent of becoming a parastatal company, later following the government to Abuja, as investment in large-scale infrastructures was redirected from the metropolis to the new capital city. The methodological approach of assemblage is premised on an understanding of behaviours within complex systems, in terms of which nations, cities, infrastructures, and organisations can be studied as selected levels of activity. As complex systems, these phenomena are forming and holding together as socio-technical territories. In this study, the social aspects of organisations implementing infrastructure projects provide the focus.

The conceptual contribution of employing this method in the analyses of subjects of empirical study lies in an exploration of the uses of 'assemblage', 'territorialisation', and 'coding' in the consideration of the research questions. Territorialisation and coding stabilise or disrupt, consolidate or expand social territories. These social territories undergo constant transformation at varying scales and speeds. Historical 'events' are read as processes, emerging from, but also triggering processes of a longer duration, studied at micro- and macro-levels, with intermediate levels and structures and repetitions at successive scales. While environments and infrastructures are territories that organisations attempt to manipulate, organisations are themselves forming and shaping as groups, with implications for infrastructure. The way in which social territories are held together through language, visual symbolism, codes of conduct and national law, forms the conceptual basis of this study, enabling observation of Nigeria's complex programmes of infrastructure development, in which 'emergent factors' were binding elements at an organisational and territorial level. This reading attempts to speak to the complexity, in a vision of processes and interactions that were evolving and reacting in these historical periods.

This chapter is organised into two sections:

- (1) Section One contains the problem statement, organised into a discussion of the colonial period, setting the scene for further development in the first empirical chapter, and a discussion of the postcolonial period, providing the focus of the second and third empirical chapters. Research questions and delimitations are also presented here.
- (2) Section Two considers debates on Lagos as a paradigmatic metropolis, particularly the theoretical contribution of Rem Koolhaas through the 'Harvard Project on the City', and what this brings to a reading of Lagos, as well as reflecting on the significance of this thesis, as a contribution to a body of work on Lagos. The thesis hypothesis is also presented here, developed through discussion of factors that characterised the Colonial Administration and Postcolonial State, with implication for infrastructure programmes.

1.1. Problem Statement

Water has been the element which has provided a global linkage enabling exploration and trade, as well as exploitation. While connectivity by sea has brought opportunity and allowed Lagos at various points in history to be a port city of global significance, water has also served as a constraint, limiting the developable area and saturating the terrain. Over time competing interests have shaped Lagos, and the spatial limitation of the original Lagos Island, with a predominance of swampland, has set up a tight competitiveness which has played out in different eras. Much of the infrastructure realised in Lagos has involved some engagement with the water bodies of the metropolis. The water has been considered as an infrastructure, when Lagos was a fishing village and trading post, and during the colonial era when there were attempts to re-establish the water network's function in urban transportation, through a ferry service from 1925, and canoe commuting (Olukoju, 2003:85). The Lagos port *is* a water infrastructure, with the harbour extending to include the lagoon and waterways leading to the open sea. The water has also been perceived as a "smooth"¹ and "open-ended" space (Masumi, 1987:xiii), holding the potential of a 'landbank', taking advantage of what was 'unbuilt', for reclamation work, new suburbs and road networks. Due to the density of Lagos Island, the Lagos Inner Ring Road implemented by JBN between 1975 and 1979, was constructed over the water on reclaimed land (Dimel, 1981:83), to encircle but not disrupt the urban fabric of the Island. The water has also been seen as a hindrance, with extensive projects of reclamation of swamplands a key part of colonial disease-management policy. The surface area of Lagos is 22% waterbody (Agbo and Das, 2019) and the low-lying terrain and lack of adequate channels for drainage mean that even the 'land' tracts are often waterlogged. The complex and extensive land-water interface forms a porous border and also a network, challenging planning and making for an awkward connectivity with many potential 'bottlenecks', which are a source of congestion.

Conceptually the second decade of the twentieth century, when the colonial port at Apapa was becoming accessible for larger ships, and the period of the 1970s, when

¹ 'Smooth' space is taken in the Deleuze sense of an un-demarcated and unarticulated area of potential.

Lagos became a centre of exhibition for massive oil-wealth projects for postcolonial leaders, are considered as 'layers' or 'sectional-cuts' in the history. They can be employed in the organisation of the study, to delineate these temporal and spatial interests into chapters, which examine micro- to macro-scales of interaction within periods of transformation in the history of Lagos' infrastructural development. While this approach has an organisational value, it is acknowledged that within themselves these demarcations could be subdivided further, as their beginnings and endings are rarely clear moments in history but are rather trends within their representation through historiography. The particular topographic conditions feature in the readings of these two periods, with successive power structures of colonial and postcolonial rulers attempting to manage the metropolis through infrastructure projects, and documenting their perceptions of Lagos' territory. When world-city-vision narratives and models are adopted, they come into a dynamic interaction with local context. What emerges is a daily grappling with the environment and a daily life of infrastructures and projects, that develop certain patterns and rhythms shaping the city, which become more apparent in retrospect. The thesis problem statement considers the infrastructures in two periods, and the relations they establish within the setting and within organisations, and within projects as temporary social networks, with the emergent and deliberate as co-existing factors.

1.1.1. Colonial Period

The British justified their 1861 annexation of Lagos by claiming that it had been undertaken to ensure the abolition of the slave trade (Lugard, 1919:57; Akinsemoyin and Vaughan-Richards, 1976:30). At first there was little British investment in the town, but the 1884 Berlin Conference would bring about a heightened interest in the overseas colonial territories. European merchants traded along the Marina, leaving the oldest part of Lagos Island, *Isale Eko*, as a densely built-up area of indigenous settlements (Bigon, 1974:53). While new development altered the urban relationships in Lagos, the British settlement did not entirely replace these relationships, but was rather an added layer juxtaposed alongside the pre-existing communities (ibid). The Manchester Doctrine prescribed keeping investment in infrastructure in the colonies at the limit which would sustain resource extraction (Gandy, 2006:375), and funding directed towards urban layout and infrastructure was minimal until late into the nineteenth century (Bigon, 1974:52). In 1906, the unification of the 'Colony of Lagos' and the 'Protectorate of Southern Nigeria' led to increased trade, construction projects, and further development at the port (Mabogunje, 1978). In 1914, the Amalgamation of north and south established Nigeria as a country. While initially chosen as the capital due to its existing infrastructure (Federal Republic of Nigeria, 1975:10), Lord Lugard, the first Governor, disliked Lagos, describing its fetid swamps and the difficulty of segregation in so densely populated an area (TNA: CO 879/113, African (West) 1005, 1913:13). There were endemic diseases as well as pollution and poor drainage, on an island that was little above sea level.

British colonialism altered the economic landscape and a lack of investment in infrastructure enabled growth rather than development (Mabogunje, 1978:28). As



Figure 9: 'Choc des Cultures-Bon Vent'
(the arrival on the wind of ships bringing radical cultural change).
(Sinzogan, 2013 [Ink on paper]. October Gallery)

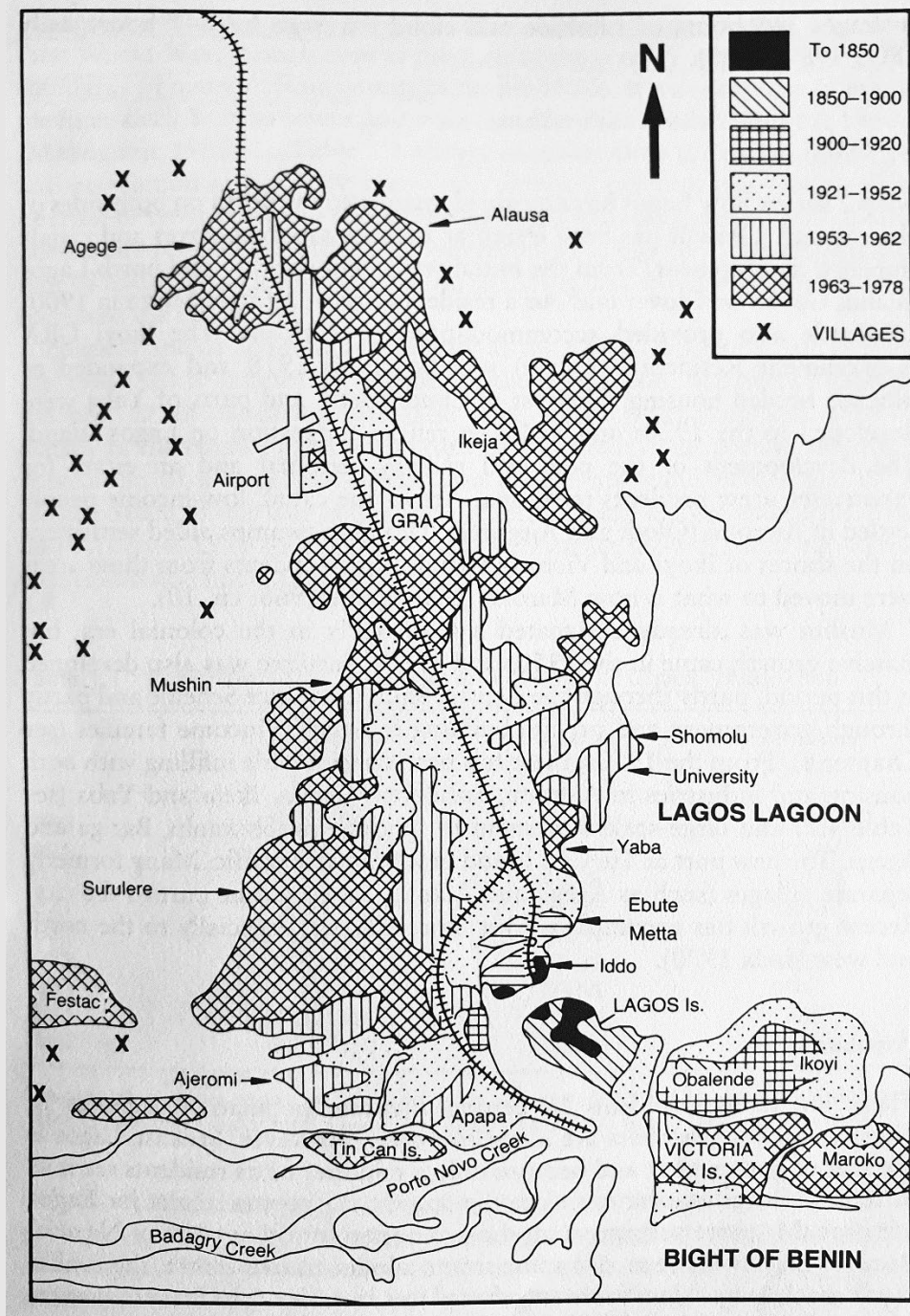


Figure 10: Development in Lagos Island and on the mainland over time.
(Peil 1991)

colonial investment in national infrastructure was focussed on extraction (King, 1990), port and rail were prioritised, with the railway line in Lagos forming a corridor that altered urban morphology. In 1890, Lagos had been limited to the 'Island', with four distinct quarters, but by 1963, there was development on the mainland, with more than two thirds of the population residing there (Olukoju, 2003:10). The growing city began to engulf and incorporate earlier Yoruba villages into its fabric (Peil, 1991:17-18). Planning in Lagos before the twentieth century did not deal with overall spatial organisation, but saw introduction of some urban facilities, as well as reclamation schemes to increase land area (Bigon, 1974:132). Policies were segregationist and successive plagues reinforced a 'bacteriological' approach to urban management (Gandy, 2005), with clearance schemes and demolition of so-called 'insanitary buildings' (Gandy, 2006:375; Bigon, 1974:169-174).

The first empirical chapter, *Chapter Four: Territorial Ambition, Projects and Projections: The Colonial Port at Lagos as a Microcosm*, draws from this context, to examine the planning and management of infrastructure as dictated by an administration 'elsewhere', and implemented by officials who were in Lagos on temporary postings. The archival data reveals aspects of how the environmental setting was managed under the administration, as well as how colonial officials were inculcated in their duties. The port at Apapa provides the major case study as it presented an overriding concern for the Colonial Administration, particularly in the period leading up to and during the First World War. Disease management is examined as it was central to colonial urban policy, and presents some intersections with the development and operation of the port, with dredged sand from the harbour bed used for sandfilling of swamps to eradicate mosquitoes, and with quarantine procedures introduced in the harbour. In this empirical chapter, it will be considered that the Colonial Office at Lagos employed various means of justifying its presence in the territory. Analysis of speeches, correspondence, and works such as Lugard's 1922 book, *The Dual Mandate in British Tropical Africa*, will be drawn upon, to develop an understanding of the terms of this rationalisation. It will also consider, the ways in which narrative projection onto environment, fed into the planning and management of infrastructure by the Colonial Office.

1.1.2. Postcolonial Period

Nigeria achieved its independence in 1960, and by 1963, Lagos already had 655,246 inhabitants (Olukoju, 2003:8). A century of colonial occupation had fundamentally altered the city, bringing a desire for decolonisation, economic transformation and policies of indigenisation. The Biafran Civil War of 1967 to 1970 slowed development, but the 1970s was a time of affluence and post-war rebuilding, with the Organization of the Petroleum Exporting Countries (OPEC) oil embargo of 1973 bringing in substantial funds to Nigeria. The Nigerian government adopted a modernising programme in Lagos, with new infrastructures and public buildings in the style of tropical modernism (Immerwahr, 2007), and the city attained international status as a cultural centre (Gandy, 2006:377), hosting a major cultural festival, the Second World Black and African Festival of Arts and Culture, known as FESTAC 77, with associated investment in housing and cultural venues. Civilian governance from 1960 to 1966 under the first President, Dr. Nnamdi Azikiwe, was followed by discontinuity and political upheaval, with alternating periods of military and civilian

rule. To date, there have been four Republics and three periods of military dictatorship, but even within these, there were coups that would bring regime change. The infrastructure projects of the 1970s were realised under three Heads of State, most notably under General Yakubu Gowon, who ruled from 1966 to 1975, followed by General Murtala Mohammed, who was briefly in power until his assassination in 1976, and finally General Olusegun Obasanjo, who would rule the country until 1979, which saw the return of democracy with the Second Republic.

While Lugard, Azikiwe, and Gowon had all proposed the idea of a new capital city, it was only in 1975 under General Muhammed's rule, that the decision would be taken to move the capital to Abuja. Lagos in the 1970s was seen as overcrowded and congested, and was viewed by political elites as 'the colonial city'. This brought about a dialectic condition in which significant investment was made in the city's port and road infrastructure, while a process of a slow withdrawal of the administrative precinct was underway, with construction of Abuja beginning in the 1980s. The independence urban projects represented an ambition for the performance of the modern state, as exemplified through an infrastructural programme with global political and cultural links. Development plans emphasised indigeneity, however multinational construction companies came to see Lagos as a strategic location. The second empirical chapter, *Chapter Five: Capacity-Dynamics, Congestion and Flows: The Indigenisation of German-Nigerian Firm Julius Berger and the Project of Lagosian Port Expansion in the 1970s*, concentrates on this time of transition. A crisis of congestion at the Lagos port was at its height in 1975, with 455 ships out in the bay, with an average waiting period of 180 days (TWB, 1982:3). This would generate a political crisis that would ultimately lead to Gowon's downfall. The Federal Military Government and the Nigerian Ports Authority (NPA) would adopt a dual strategy, with a 'Plan of Stabilisation' implemented, as well as large-scale port expansion projects, with contracts awarded to JBN for work on the Apapa extension, and the new port at Tin Can Island (TCI). This chapter will examine the resolution of the port crisis, coinciding with a study of JBN's indigenisation in Nigeria.

The growth of the JBN company can be considered in three phases. The first was a period of indigenisation, Nigerianisation and embedding within Lagos, regarded as a form of 'territorialisation'. The second was a phase involving their expansion, networking and increased mobility, in which operations were extended countrywide, understood as a 'deterritorialisation'. The third phase was characterised by JBN's 'reterritorialisation' in Abuja from the 1980s, culminating in the removal of their headquarters from Lagos to Abuja in 2001. Territorialisation and coding are parameters of assemblage, which will be examined in the methodology in *Chapter Two: An Assemblage Reading of Lagos' Historical Infrastructures: Aesthetic Realities and the Nature of Explanations*. Visual codes and language codes contained within the archival records of JBN's activities in Nigeria will form a component of the analysis in the second and third empirical chapters, also examining the company's relationship to political elites. The third empirical chapter, *Chapter Six: Connectivity and Networking: The Expansion of Julius Berger Nigeria through Infrastructural Linkages and Visual Coding*, looks at the role of JBN in enhancing road connectivity in Lagos, and presents a study of the organisation: its company culture, its decision to work outside of Germany, and a series of mergers that would alter the identity of the organisation. The chapter examines the building of a company brand and reputational impact, through the concrete images of its infrastructure projects to its considerable publication programme, with the printing of several monographs featuring the Nigerian projects. This programme is understood as a means of establishing a narrative, and the motivation for creating a permanent record

of infrastructure through publication is examined. When oil prices collapsed in 1981, Nigeria was plunged into debt, with many of its infrastructure programmes abandoned. The International Monetary Fund's Structural Adjustment Programme further weakened the State and saw decreased infrastructure delivery in Lagos (Gandy, 2006:372), while the Federal Government began diverting funds to the new capital. Postcolonial leaders felt that the investment required to transform Lagos would be better spent elsewhere. For President Azikiwe, Lagos did not fit the vision of a 'planned capital' from which to govern the newly independent Nigerian nation (Azikiwe, 1974:5-6). JBN would follow the State, when investment was shifted from Lagos to Abuja. However, their period of indigenisation within Lagos, is key to understanding their expansion and continuing presence in Nigeria. The empirical chapters that focus on their work, consider the systems that JBN developed in Lagos that enabled them to work at speed, and how these were adapted for a more mobile organisation that was to operate over great distances. The empirical chapters consider macro-factors at the level of the Colonial Administration and the Postcolonial State, conceived as influencing the conditions of infrastructure development from above, while a finer-grained examination of environments and organisational structures looks at the micro-level and everyday experience, which shapes infrastructures from below.

1.1.3. Research Questions and Delimitations

Through the empirical chapters, this thesis will question how the multiple layers of Lagos can be understood, with efforts to develop the metropolis by successive administrations, producing infrastructure in different ways. The processes by which visions, spatial interests and actions coalesce, and are presented, recorded, implemented, abandoned, and reimagined over time and in space, will be examined. Assemblage theory requires a precise engagement with its terminology, which cannot be attempted until the terms have been introduced and clarified for the reader. The research question and sub-questions will therefore be elaborated in the methodology chapter, employing the language of assemblage theory. The questions consider the data review; data which reveals perceptions held of environment that can be seen to permeate the dynamics, both localised and systemic, and embedding within different processes of infrastructure delivery, shaping thinking and behaviour in consequence.

Research Question:

How is a 'social territory', formed in environments and organisations, held together as a fabric and how can processes of territorialisation and coding be seen as manipulations of that fabric? By extension, how was planning of colonial and postcolonial infrastructural assemblages in Lagos revealing of larger territorial objectives of elites, involving complex social and technical interrelations in implementation of programmes?

Sub-questions:

- (1) How were these territorial objectives related to readings of landscape in Lagos, and to what extent would this shape infrastructure programmes in the two eras, with ideas functioning both at the level of individual attitude and systemically?

- (2) To what extent were social interactions within the daily life of projects in organisations, as revealed through archival sources, manifested within the context of concrete outcomes, and how were these organisations themselves held together through a networking of ideas, processes and place, or through performance credentials?
- (3) To what extent did control of infrastructural narratives by elite project-actors serve to advance these territorial objectives at macro- and micro-scales of activity?

The research is delimited to a study of infrastructure development during two periods, with archival records taken as primary data. The focus on the colonial-era port at Apapa provided a means of delimiting source material from the Colonial Office records, while material from the *Company Archives of Bilfinger SE* was examined with a focus on documentation of port and road projects constructed by JBN in Lagos. Temporal delineations influenced the selection of material, although data from the preceding years was studied to establish context. All JBN company journal issues were examined, going back to the first issue in 1963, with particular attention given to editions from 1966, when Nigerian projects were first mentioned. Journal issues and Annual Company Reports beyond 1980 were not relevant to this analysis, however monographs and films produced up until 2009 provided essential data and visual record of company and case studies. The records also have some shortcomings. The JBN monographs, for example, were clearly intended as promotional material, and they tend to present projects as 'heroic endeavours'. However, they do provide insight into their significant land reclamation projects, and simultaneous work on the Apapa port extension, the development of TCI, and several bridge and road infrastructure projects in Lagos.

To apply the theory of assemblage consistently, the interrelationships, interconnections and emergent factors arising from mutual influences of key infrastructures, will be explored in empirical chapters. A requirement of the method is that scales of activity be read in terms of micro- to macro-causal relations. For this reason, it was necessary to incorporate a literature review of primary and secondary sources within empirical chapters to reflect these interactions, and additional to the literature overview presented in Chapter Three. Colonial Office and JBN records were written from particular vantage points which cannot capture situations in their entirety but do provide a tracing of data which sheds light on individuals through their correspondence, and organisations through their publications and reports. At governmental and urban scales, decrees, development plans, and other archival materials fulfil this purpose. Where personalities appear, these tend to be elites: colonial officials, Chiefs and Headmen, politicians and JBN Directors. Autochthonous cultural groups are not the focus in this study, as the urban histories and sociology are well described in sources such as Akinsemoyin and Vaughan-Richards (1976), Peil (1991), Bigon (1974), and Godwin and Hopwood (2012), although the method does examine 'coding' and 'overcoding' within the colonial era, looking at cultures in interaction, and ethnic tensions as a factor in the postcolonial setting. Research questions are concerned with what infrastructure projects reveal of the wider territorial strategies of elites, and grounded by study of the organisational level, with bottom-up causality influencing behaviour of infrastructural assemblages. Specifically, the Colonial Office, and JBN with its relation to elites in the Federal Military Government, are the major protagonists considered, and rather than being

inarticulate, the landscape speaks to the action, and is featured in different ways in both periods.

1.2. Lagos: A Paradigmatic Setting for Research

In the following section, the thesis hypothesis is presented and is related to an argument of why investment in place and infrastructure differs when people perceive their role in an environment as 'temporary', as opposed to those who are 'indigenous', or who undergo a process of indigenisation. Primary tools of 'coding' and 'territorialisation' employed throughout this study, will be discussed here as concerning the behaviours and operations of Colonial Office operatives and the German-Nigerian engineering firm, both working from afar, in Whitehall and Wiesbaden, but also with representatives on the ground in Lagos. In the second essay, a reflection is provided on Lagos as a research setting, engaging with views on temporality and self-organisation, with a discussion of the contribution of Rem Koolhaas. Ndlovu-Gatsheni (2023:para 4) describes the 'coloniality of knowledge' on Africa, critiquing the continent's characterisation in the West as 'underdeveloped'. Ndlovu-Gatsheni sees this as a form of temporal colonisation, with the West viewed as 'modern' and by extension 'ahead in time' while Africa and African lives are portrayed as "archaic". This view is a core tenet of biased perceptions of alternate development trajectories between the 'West' and the Global South. As a critique, there is resonance with Lévi-Strauss' (1962) idea of history as the 'mythology' of western societies, where as soon as historical organisation according to events is decoded, its very structure begins to disappear in the sheer enormity of detail. Rather than adopting a teleological view, Braudel's conception of concurrent speeds of time offers an alternative means of viewing development trajectories as 'nonlinear', a notion that is picked up in Koolhaas, for whom chaos theory and complexity theory are primary informants in his reading of urban environments. The genealogy of Koolhaas' work on Lagos begins in Manhattan and this will be presented as a chronology leading to his novel temporal reading of Lagos.

1.2.1. Under the Colonial Administration and the Postcolonial State: Projecting Infrastructural Models in Two Periods

The perception that colonials had that the administration of Lagos was temporary, altered their engagement with the local setting and its inhabitants. What emerges in the literature is that successive colonial Governors considered Lagos to be unhealthy and unsuited to permanent European settlement. While this is not to downplay the duration and impact of a 99-year period of occupation on local environment and society, this attitude would shape their approach to infrastructure projects and management. Added to this, the administration was peopled by small groups of officials on temporary postings, who were to oversee the extraction and export of wealth through the port. Great Britain remained the primary point of reference, for colonials, and culturally they attempted to "replicate the society of home" (Edmonds, 2010:7). Rather than engaging with the local context in Lagos, references were

drawn from elsewhere, both behavioural and territorial. Colonialism in Nigeria took the form of 'extractive' colonialism, otherwise known as 'franchise' or 'exploitation' colonialism, in comparison to the 'settler' colonialism that occurred in countries like South Africa and Kenya. By contrast, the postcolonial state was more permanently invested, if not in Lagos itself, then in the Nigerian Nation, and a functional port and road network in Lagos was a pragmatic requirement to support national trade and logistics in the longer term. JBN, was contracted by the Nigerian Government and Public Administration for large-scale infrastructure projects, with the majority of this work taking place in Lagos between 1975 and 1979. JBN would begin a process of indigenisation, and from 1975 would adopt a new ownership model in accordance with the Nigerianisation laws of the time.

The thesis hypothesis is that perception of the 'temporary' nature of British involvement in the territory, altered the planning, implementation, and nature of infrastructure programmes and urban facilities, while the indigenisation process undertaken by JBN was an essential factor in their ability to conceptualise and implement projects effectively. This is interconnected with JBN's performance on projects, which enabled the indigenisation to take place.

The differences between these two periods of infrastructure development in Lagos, lie in the nature of the organisations commissioning and implementing the works. This section will touch on their significant differences, with a focus on two groups, the colonial officers directed from Britain, and the JBN organisation, with employees based in Lagos and in Germany. The intention is to describe what structures are adopted when groups operate in a setting that is not their own, and to consider how this may have influenced their approach to infrastructure projects. 'Coding' and 'territorialisation', as parameters of an assemblage, will be employed to explain how these organisations will be analysed in empirical chapters, using the method to prove the hypothesis. 'Territorialisation' refers to the demarcation of boundaries and divisions, as well as internal uniformity, while 'coding' refers to expressive components of an assemblage (DeLanda, 2016), interpreted through study of linguistic, visual and written coding, which consolidate the identity. These terms and their functioning will be expanded upon in Chapter Two.

Lagos was a place of transit from a colonial perspective. In French, colonials are referred to as *dépassage*, merely 'passing through'. This made colonial groups particularly dependent on social rituals for reaffirmation of cultural identity, which they had to find ways of maintaining when working in posts across the Empire. Analysis of annual reports, training manuals, correspondence and other documentation, exposes a desire to constitute a narrative through imperial rhetoric. This will be examined as a form of 'coding', which informed explanation and possible uses of language, and enabled continuity of identity, which while serving in the colonies, came to be associated with official position and 'duty'. From the colonial perspective, Lagos was a hostile territory, and records reveal the adoption of a formulaic approach as a response to the disjuncture of being away from home. The analysis will consider how their use of language and reference to literary texts, reflected a need to address the heterogeneity of a foreign setting.

"nomadizing" or "deterritorialized" groups construct their symbolic immunity and ethnic coherence not (or only marginally) from a supporting soil; rather, their communications amongst themselves act directly as an "autogenous vessel" in which the participants contain themselves and stay "in shape," while the group drifts through external landscapes. Thus a landless people cannot fall prey to the

misconception that has imposed itself on virtually all settled groups throughout human history: understanding the land itself as the container of the people, and viewing their native soil as the a priori of their life's meaning or their identity. (Sloterdijk, 2014:954)

Sloterdijk's text is interesting from two perspectives. While he refers to the nomadism of diaspora groups, which the colonials were not, the concept does communicate that when people are away from home, land is no longer the primary reference. Colonials disrupted the association between land and identity in the occupied group, but also adopted formulas themselves, for managing their own mobility in the context of temporary displacement. Sloterdijk's statement reflects the means that people far from home employ, in the case of colonials, this was a rigid coding; their correspondence became their profane liturgy, becoming increasingly formulaic to manage the heterogeneity and the feeling of otherness they ascribed to place. The importance of texts in the colonial archive can be understood as a vehicle for managing 'behaviour' in a foreign location. These texts are, at times, most prescriptive, seen to maintain order and compliance when links with home were tenuous and connection to landscape, for officials, was not with the landscapes of Nigeria, but with their own homeland in the centre of Empire. The presence of the Colonial Office in Lagos saw the introduction of new social and legal codes, which will be studied as an 'overcoding', with land legislation, taxes, alteration of the 'market', policies of disease management, and introduction of building codes, superimposed on the traditional systems. The urban strategy involved "imperial additions to the existing form of the indigenous city" (Edmonds, 2010:7), so that colonial and autochthonous elements were coexistent. But in the redesign of an environment to prioritise extraction, something escapes these superimposed systems of meaning, and "urban lands and water continue to function as components of indigenous worlds" (Simpson and Hugill, 2022:1314).

While both settler and extractive colonialism altered the environmental setting and represented a 'deterritorialisation' from the local perspective, this was more pronounced in urban centres, and in places with climates closely resembling Europe. European colonists attempted to create "ecological replicas of Europe", or "neo-Europes" (DeLanda, 1997:152). Even though 'The Tropics' were more resistant to the transplanting of European models, archival records reveal an aspiration of administrators in Lagos, seeking to transform the landscape. Extractive colonialism in Lagos involved 'territorialisation', which took the dual form of control, through land expropriation, and the attempt to make the landscape conform to a greater homogeneity. This they accomplished partially through a segregated urbanism with pockets of greater 'order' in the colonial enclaves in suburbs such as Ikoyi. Colonised territories and the cities they contain develop differently, with alteration of the environment forming part of the strategy for subjugation of local population. A century of colonisation cannot be undone within a few years, and the urban environments, institutions and administrative structures inherited by the postcolonial government would not be equipped for governance of the independent nation.

The Colonial Office at Lagos was a component of the Empire's administrative architecture for managing the colonies and overseeing an extractive infrastructure. The 'nation-state' had to be formed in the post-colony, during which time postcolonial leaders examined international models from which to select. At independence, Nigeria had three regions, and the postcolonial leaders would "debate how to divide

and administer the country” (Elleh, 2017:69). Nigeria had become a federation under the Macpherson Constitution of 1954 (Olasupo, Oladeji and Ijeoma, 2017:264), in the last decade of colonial rule, during which the processes of decolonisation would be initiated. After independence, the Federation of States was adopted after the model of the United States, as the preferred choice of Nigeria’s first President Nnamdi Azikiwe, over an alternative proposed by Chief Obafemi Awolowo, that would have seen states divided according to ethnicity² (Elleh, 2017:124). There were also differing views of nationalism, with Awolowo stating that “Nigeria is not a nation. It is a mere geographical expression” (1947:48, quoted in *ibid*:123). African nationalist movements attempted “to reclaim African territory – economically, socially, and politically – from imperialism” and their referents were external, drawing from Pan-Africanism, which had originated in the United States and in the Caribbean, as early as 1900, and which were “championed by the trio of Henry Sylvester-Williams, W.E.D. DuBois, and Marcus Garvey” (Olasupo et al., 2017:263).

Just as the models that would inspire the expression of ‘Nigerian Nationalism’ and the ‘Nigerian State’ were selected from elsewhere, a period of benchmarking was undertaken to define the ideal features of a postcolonial capital city, as the engine room from which the nation could be administered. Azikiwe described that Lagos had not been “scientifically planned” and that “population explosion and traffic congestion” made it unsuited for “a modern federal capital” (1974:5). In his view, a capital city should be “geographically equidistant from the farthest parts of the country, and sociologically ideal” (*ibid*:12). The Aguda Committee was commissioned to investigate the suitability of Lagos for its dual role of Federal and State Capital, and to make recommendations on the location of an alternate site for the capital (1975:9). Benchmarking included visits to African capitals, such as Nairobi, Gaborone and Dodoma, and beyond the continent, Islamabad, Canberra, and Brasilia, all of which had achieved capital status after relocation of a former capital from a coastal or outlying area (*ibid*:13-21). This exercise would lead to the withdrawal of the administration from Lagos, with the Committee finding that “a new capital created on a virgin land may be for the vast majority of Nigerians ... a symbol of their unity and of the nation’s greatness” (*ibid*:55). The promulgation of the *Territory Act in 1976* saw the creation of a new Federal Capital Territory (Gaines, 2009:79), with construction of Abuja continuing throughout the 1980s. Abuja would replace Lagos as capital in 1983 (Peil, 1991:2), with the Federal Government relocating in 1991. The new capital was seen as a powerful tool for projecting the Nigerian ‘State’ and ‘Nation’ in the post-colony.

After the First Republic came to an end in 1966, with the discontinuity in Nigerian politics, urban public administrations came to represent a source of institutional memory, with the so-called “top-bureaucrats” advising politicians and shaping public policy (Nwankwo, 1980:279). The empowerment of the bureaucracy led to the emergence of a technocracy in Nigeria, which turned its attention to the questions of infrastructure. The infrastructure deficit inherited by the postcolonial state in the colonial port city of Lagos required technical expertise. The postcolonial government adopted a technocratic model in which the administrations had power, and in which, as records reveal, JBN was directly advising politicians on infrastructure programmes in Lagos. This demonstrates that JBN was not just a parastatal

² Chief Obafemi Awolowo and the Honourable Dr. Nnamdi Azikiwe both ran for election after the Biafran War but were unsuccessful (Elleh, 2017:67). Azikiwe held Presidential Office from 1960 until 1966 when the First period of military dictatorship would begin.

organisation but an element of the Nigerian technocracy during the 1970s in Lagos, and again in the 1980s when constructing the infrastructure of the new capital of Abuja.

1.2.2. *Lagos as a Paradigmatic Metropolis: Between Physical Environments and Texts*

Lagos has been the subject of eschatological visions of explosive population growth combined with inadequate infrastructure, prevalent poverty and state corruption (Kaplan, 1994). Another well-known (and also much critiqued) view is that of Rem Koolhaas and the 'Harvard Project on the City' documented in *Mutations* (2001), which emphasised the continued functioning of the city in the absence of sufficient infrastructural provision by the State. Koolhaas would bring a novel interpretation to the understanding of the city and its infrastructure, a perspective with a lineage which is traced back to his 1978 work, *Delirious New York*, presented as a 'retroactive manifesto' for Manhattan" (Koolhaas, 1994:9). In this work, the skyscraper becomes a major protagonist, reconfiguring the traditional urban structure as a 'vertical street' containing stacked layers, that together function as a building but are also autonomous, in the same way that individual buildings in a block are related to the streets but retain an independent functioning. Through verticalisation, made possible with the technological advancement of the elevator, architecture was to succeed urban planning as the primary organisational framework for the "Culture of Congestion" within Manhattan (ibid:125), concentrating diverse and overlapping programmes on a single footprint, and demonstrating "a paradigm for the exploitation of congestion", (ibid:10). Underlying this structure, is the urban grid, out of which, given the spatial limitation of Manhattan, congestion is an emergent factor. Manhattan thrives on this congestion. The skyscraper accelerates the pace of capitalism through extrapolation and verticalisation, with each urban block, each skyscraper, and each floor, a "City within a City" (ibid:125) constituting a 'set of sets', co-functioning but autonomous, and reproduced in the structure of Koolhaas' texts. In Lagos, the factor of congestion is a product of the topography, which is made up of islands and non-contiguous land tracts separated by swamps. In this setting, colonial occupation was the means for accelerating capitalism, effectively privatising parts of the city. Here congestion brings 'crisis' but also tactical response, with informal networks as the form in which the capital of people who have been invaded manifests. Spatially this manifests as the reinterpretation of every infrastructural typology to maximise the possible surface area for exchange, with optimisation evident in the use of space.

The seventies in New York were a time of urban disorder with social and financial crises (Neto, 2019:1). At the time, the scientific community was investigating 'chaos theory' and 'complexity theory', with these scientific pursuits becoming the dominant metaphors in urban planning discussions. Koolhaas' perspective on New York was of the unintelligible presence of things in that city which he interpreted as being part of an emerging self-organisation, involving processes that catalyse order out of disorder, or 'chaos'. This same questioning would inform Koolhaas' study of Lagos in the early 2000s. For Koolhaas, what had been perceived as the 'failure' of urban planning in Lagos was really a process of continual auto-production of urban infrastructures, with the population attempting to improvise with spontaneity. Rather

than presenting a point of culmination, what was taking place in the urban systems of Lagos could be interpreted as an emerging order and process, resulting in the transformation of the metropolis. This understanding made Lagos a paradigmatic case that contained ingredients of the possible future of the global metropolis; a reading of Lagos which should be understood in the context of cities seen as complex, adaptive systems, where conditions of 'order' or 'chaos', derive both from scientific theories and from Niklas Luhman's (1995) theory from sociology, of autopoietic (self-producing) social systems.

In this reading, Lagos provides an indispensable dimension in thinking about African cities and their emergent processes. Koolhaas (2001:653) reverses the 'normative' teleological reading premised on the idea of linear historical progress, predicting instead that Lagos is the "terminal condition of Chicago, London, or Los Angeles", envisaging many other cities in the future displaying characteristics which exist in contemporary Lagos. Improvisation and reinterpretation of various layers of infrastructure in Lagos, is a form of ingenuity born of necessity. State inability to deliver adequate infrastructure is on the other hand productive, unleashing the creativity of inhabitants so that the same friction which brings mobility to a halt, brings opportunity to the market. Lagos is a city of informal exchange with an immense social cohesion: what is not provided in sufficient supply by the State, is established by people through their labour, their innovation and their community networks, defined by Simone (2004) as the 'everydayness of infrastructure'. In Lecomte's (2011:137) interpretation, Lagos, as a densely populated, mostly informal metropolis, does not have infrastructure relative to its density, and compared with a city like London which is directed through a system of signs and transportation networks, navigation in Lagos becomes reliant on direct dealings with people, and informal networks that shape the large proportion of urban interactions. In this, Lagos does not fit the accepted model of Western modernity, rather it offers something else in its place.

The free-market composition of Lagos allows for the economic participation of citizens through the market, with immense ground-up energy but very little support from the top-down (Adeyemi and Theron, 2017:83-84). Yet, the provision of infrastructure for the broader population calls for a development model that has an equitable outcome that only involvement at a state level could bring, extending beyond the scope of the ad-lib investment driven by demands of the Market alone. The 1970s was unique in that there was intensive investment in the road and port infrastructure in Lagos, providing an infrastructural backbone for years to come. Study of this period, and of the earlier colonial period which saw the development of the war-time port at Apapa, presents two conditions in which a crisis drove response in the form of infrastructure projects, the first being a crisis of accessibility, and the latter, a crisis of congestion. The significance of this work lies in its contribution to an emerging discourse on infrastructure, visions, and investments, and how these are received or hybridised in context. Visions for Lagos have manifested as different layers in the history of its emergence as both a highly complex and paradigmatic global metropolis. This reading of the reality of emergent processes on the ground, may reveal insights into the planning and projects of infrastructure, and how they have shaped the metropolis in ways beyond the obvious 'tweaks' to networks of circulation. This approach arguably avoids the pitfalls of either representing Lagos as dysfunctional chaos or romanticising the ingenuity of people in the city. Instead, it recognises Lagos as a far more complex agglomeration of elements which has emerged over time in response to both organic and deliberate processes in

interaction. The success of Lagos into the future will depend on both, and not an 'either-or'.

Koolhaas' *Delirious New York* functions as a work of creative production, which replicates the conditions of the urban system and processes taking place in a city, through text, and a multiplicity of images combined and conceived through montage. 'City', 'text' and 'image' become sites of production, generating a microcosmic autonomy at differing scales. The text is a *reportage*, reproducing through its energy, the life of the city. Both 'city' and 'text' function as assemblages by virtue of keeping disparate components in interaction, generating emergent factors through their activity. Koolhaas' work is a "theoretical Manhattan" and a blueprint which represents an "ideal state" of which Manhattan "is the compromised and imperfect realization", with the book isolating "only those moments where the blueprint is most visible and most convincing" (1994:11). In this research on Lagos, archival records of the Colonial Office are examined, and the company publication project of JBN, which also serves as a manifesto to their Nigerian work. While the components of research are the material environments and project-social-contexts of infrastructure development during two periods, the texts present an alternate and imagined Lagos, described in this thesis as a form of 'reterritorialisation'. The archival texts in this study, provide components of a 'theoretical Lagos', understood to have exerted some influence on the physical setting, while at the same time, providing a reflection of environment, with causal influences existing between writing, landscape and settlement.

1.3. Concluding Thoughts

This chapter has touched upon the projects and projections of organisations operating during two periods of infrastructure delivery in Lagos. For Koolhaas, Lagos is a paradigmatic city presenting ingredients of the future metropolis. But it is also a future that has been constructed of 'pasts'; a post-modern metropolis, hosting the selected models of western modernity projected by colonial and postcolonial leaders. The infrastructure programmes under discussion were released to differing extents by mobile groups passing through, who sought to stabilise their identity and consolidate their presence through processes of territorialisation and coding. Both the Colonial Administration and the JBN company were developing infrastructure programmes from afar. As organisations working at a distance, their engagement with place produced alternate acceptance of strategy and tactic. The Colonial Administration was able to realise the infrastructures of port and rail in Nigeria, during a time of crisis for the British Empire, but implementation of their policies was generally not successful, with disastrous implications for disease management, as one example. JBN's blueprint for Lagos' road connectivity and port infrastructure was drawn up in the offices in Wiesbaden, Germany, but in Lagos, they were not on 'home ground' and tactical changes in their operations became necessary due to the congestion crisis, with the company reliant on materials coming in through the port to implement projects.

By 1975, JBN was a parastatal, with Nigerian elites in two states as shareholders and board members. This guaranteed company contracts, and their access to elites

brought benefits such as priority movement through the port, with JBN having its own wharf, with allowance made for fast-tracking through Customs. However, they were still an organisation with urgent material requirements, managing complex logistical arrangements in the context of system failure at the port. This necessitated a more tactical response. When the State turned its attention to Abuja, JBN would follow, taking their equipment with them and developing new systems for operating beyond Lagos. As a parastatal, JBN would have power of persuasion, but they remained contracted 'hirelings', only there so long as they met the approval of political elites. Reputation would serve as an important factor in ensuring their longevity, and would provide them with a certain 'say-so' which they did not inherently possess. The legacy of the colony into the post-colony brought about a hybrid modernity, with colonialism fast-tracking capitalism in Lagos, and imposing an infrastructure of exploitation. A second exposure to Western models followed after independence, with leaders looking to cities elsewhere, and particularly other capital cities, setting in place a trajectory that would alter the future role of the port city of Lagos, within Nigeria.

The following chapters on methodology and literature concentrate further on the general framing of the thesis, discussing the archival material and developing the methodology, to enable a restating of research questions, employing the terminology of assemblage. Three empirical chapters follow, beginning with a focus on the colonial port infrastructure at Apapa, and moving to the postcolonial port expansion and indigenisation of JBN in Nigeria. The third empirical chapter is concerned with the increasing mobility of JBN and their expansion, with the initial extension of operations from Germany to Nigeria, and later from Lagos to Abuja. The concluding chapter reflects on the research questions, to consider the empirical analysis in terms of a model of emergent properties, where emergent factors produced in the periods of study had an influence on the dynamics, effecting particular outcomes and further processes.

Chapter Two: An Assemblage Reading of Lagos' Historical Infrastructures: Aesthetic Realities and Explanations

The concepts that make up assemblage will be used to explain the emergence of processes and patterns in the urban geology of Lagos, as revealed through the systems of physical infrastructure. To inform this reading, the vocabulary and conceptual tools of Gilles Deleuze and Félix Guattari are employed. The application of these tools has been derived from the work of Manuel DeLanda, in particular, *Assemblage Theory* (2016) and *A New Philosophy of Society: Assemblage Theory and Social Complexity* (2006). *A Thousand Years of Nonlinear History* (DeLanda, 1997), while not informing the method directly, has provided perspectives on time and nonlinear dynamics that have influenced the handling of periodisation. Assemblage provides a more multi-faceted, comprehensive approach, useful for understanding the complexities of infrastructure in Lagos, as it evolved during the two periods of study. Broadly these are delineated as beginning in 1914, when Lagos became capital of an amalgamated Nigeria, and including the duration of World War One, and the 1970s, with the oil embargo of 1973 increasing Nigeria's budget for infrastructure and the construction of the large-scale port and road projects of Julius Berger Nigeria (JBN) in that decade. If the 1914 year represented the 'birth' of Nigeria as a future Nation³, and of Lagos as the capital of Nigeria, then the year 1975 was a point of culmination, with the founding of a new Federal Capital Territory at Abuja having significant implications for Lagos' future and infrastructure.

The two eras reflect a different ethos, requiring an approach which responds to the preoccupations of a specific historical period. In adopting an historical viewpoint, as examined through the method of assemblage, the infrastructures of previous eras are not inert, rather they reveal memory traces between layers, and they exist as component-parts in a co-functioning, with emergent properties at the different levels of interaction. The urban setting provides a material, archival linking of diverse elements in time, envisioned as a structuring, in which *a priori* informants influence categorisation and the production of order in the present⁴. But there is another more technocratic representation of Lagos as reflected in infrastructural projects managed through adjustments to planning and environmental parameters. Both these perspectives have informed the approach to infrastructure. Although there were very different sets of concerns, some continuities do emerge. During the colonial period, the port is examined as an extractive infrastructure crucial to the war effort, but also as an environment requiring management, and with a sense of place communicated through codes, aesthetic markers and with acknowledgement of its dynamic features in archival material. The postcolonial period looks at infrastructure in relation to both national politics and the activities of engineering firm JBN, with a focus on the phases

³ While the amalgamation of the territory of Nigeria is referred to as the founding of the contemporary Nation of Nigeria, the 'Nation', the State, institutions and national market could not be fully formed under a colonial administration, and during the decolonisation period leading up to independence these had to be benchmarked and 'projected'.

⁴ Pre-order is a concept contained within Foucault's *Order of Things* (1966) and the *Archaeology of Knowledge* (1969). In this archival study, assemblage is aligned to a conceptual process described in Foucault, whereby new knowledge draws on archival knowledge, which has undergone a process of categorisation and draws from *a priori* assumptions in the production of new orders.

of indigenisation, adaptation, and expansion of the company, enabled through their projects and relation to the State.

Assemblage enables a reading of flows and networks at different social scales, capturing something of the “irreducible social complexity” (DeLanda, 2006:6) in an understanding of nested components at multiple levels, from micro- to macro-scales of activity. As applied to Lagos’ infrastructure projects, the scales of activity examined include organisational, urban and national sub-sets, each treated as assemblages containing sub-components, and which are also assemblages, and “concrete historical individuals” in their own right (DeLanda, 2016:14). This method can be adjusted to study a wide variety of conditions. Assemblage is fundamentally about interaction and can be used to study change and to analyse dynamic situations. This thesis seeks to answer questions of ‘emergence’ through identification of emergent factors in infrastructure development. Self-organising processes result from the assembling of diverse human and non-human components, which come to act together in a co-functioning. ‘Emergent wholes’ are formed, in which the parts seem to hold together and yet also retain their autonomy (ibid:10). Emergent properties are a product of interaction of the parts (ibid:9), and they affect action and behaviour of the assemblage. This aspect of ‘emergence’ precludes causal readings in which actions of historical actors have led directly to historical outcomes. It therefore provides a means of studying past or present conditions, revealing trends and patterns in urban activity, and enriching the reading of the dynamics at work within infrastructural assemblages.

The chapter will be organised into two primary sections:

- (1) Section One introduces the theory of assemblage and discusses DeLanda’s works and explication of concepts in Deleuze and Guattari. Assemblage will be considered in relation to aligned methods in aesthetic studies, and as a means of reading the city which engages historical method, archives and periodisation to select moments of activity in the history of Lagos’ infrastructure development.
- (2) In Section Two, drawing from assemblage theory, terms significant to this study are defined, specifically parameters of ‘territorialisation’ and ‘coding’, which are applied to infrastructural case studies. This section will also reframe the research questions, employing the terminology of assemblage, with discussion of implications of this method and how it would aid in answering the questions posed in this study.

2.1. Reading the Metropolis Through Intersections of Assemblage, Historical Method and Archives

In the following section, DeLanda’s theorisation of assemblage and key texts are discussed. Originally an experimental filmmaker, then digital artist and computer programmer, DeLanda’s autodidactic engagement with philosophy (Harman, 2016:vii-viii), and with the thought of Deleuze and Guattari, produces an analytical exposition and reconstruction of assemblage as an ontological realist theory. DeLanda’s contention of realism, inside an account of emergence, is uniquely compelling for architects and urban designers, examining the joining and assembling of the disparate in spatial settings. In the French, Deleuze and Guattari use the term, *agencement*, loosely translated as an arrangement resulting from a combination (Le

Petit Robert, 1977:35). This describes assemblage as both an active process and outcome of this process: it is the active component that brings the 'parts' together. This dimension is lost in the English translation of 'assemblage' as merely an 'arrangement' of diverse components (DeLanda, 2016:1). Assemblage, through its mapping of virtual⁵ and actual components, provides a framework for study of complex problems, and how phenomena 'actualise', which reaches beyond reversion to cognitive abstraction, approaching complexity through systematic examining of intermediate levels of interaction in immense material dynamics. The second essay presents a reading of urban and textual archives, employing assemblage and drawing from aligned methods.

2.1.1. Assemblage Theory, Periodisation and Place

Assemblage theory is concerned with process and formation of a socio-material ordering of diverse components that enables their co-functioning. It considers "why orders emerge" and "how they hold together" (Müller, 2015:27). Emergent wholes and their component-parts are considered on the same ontological plane (DeLanda, 2016:12), with no inherent hierarchies. As assemblages and their components are considered legitimate historical individuals (ibid:14), social entities can be conceived as driving activity forward through their agency. The hierarchies that do emerge are not an innate part of the nature of any substance or structure, but rather result from the "modes of organization of disparate substances" (Grosz, 1994:167 in Müller, 2015:28). This makes the emergent properties exhibited through continuous interaction of component-parts in an assemblage 'immanent' rather than 'transcendent', "since they would cease to exist if the parts stopped interacting with one another" (DeLanda, 2016:21). The concepts of assemblage are used in Deleuze and Guattari to examine the way in which multiplicities of materials associate and produce interrelationships over time, stabilising temporarily, and emphasising the ongoing combinations and synergies involved in material interaction as a process, rather than as a unity of objects, or result that is 'final'.

What is an assemblage? It is a multiplicity which is made up of many heterogeneous terms and which establishes liaisons, relations between them, across ages, sexes and reigns – different natures. Thus, the assemblage's only unity is that of a co-functioning: it is a symbiosis, a 'sympathy'. It is never filiations which are important, but alliances, alloys; these are not successions, lines of descent, but contagions, epidemics, the wind. (Deleuze and Parnet, 1987:69)

Assemblage involves nested sets (sets of sets, and assemblages of assemblages), with each set exhibiting emergent properties, greater than or not directly present in its members. Deleuze and Guattari make constant use of the idea of assemblage in *A Thousand Plateaus: Capitalism and Schizophrenia* (1980), but seldom clarify the notion through provision of an explicit model. DeLanda develops the idea of

⁵ This study examines processes of 'actualisation' in Lagos' infrastructure. The virtual is not examined explicitly but provides a further dimension of assemblage. Assemblages contain a virtual diagram with a set of possible processes all equally likely to occur. The virtual represents a possibility-space, containing singularities or 'attractors', giving rise to particular tendencies and trajectories. This enables use of assemblage theory in urban studies as a predictive tool for considering urban and material possibilities based on identified trends. See DeLanda on *Assemblages and Virtual Diagrams* (2016:108-136).

assemblage as a mechanism for emergence, through an analytical exposition of concepts and presuppositions fully present and at work in the writing of Deleuze, and also discernible in the 'process philosophy' of Alfred North Whitehead, and in Henri Bergson⁶. While Deleuze created the theoretical approach, and references to assemblages are to be found in several of his books and essays, and in his collaboration with Guattari, as a theory it is not documented in any one book. DeLanda has developed the system of concepts present in Deleuze, and formulated it into a theory of assemblage, systematically elucidating the terminology for a clarified interpretation in *Assemblage Theory* (2016). DeLanda explains the problem in these terms: "...part of a definition may be in one book, extended somewhere else, and qualified later in some obscure essay. Even in those cases where conceptual definitions are easy to locate, they are usually not given in a style that allows for a straightforward interpretation" (2006:3).

DeLanda's 2006 work, *A New Philosophy of Society: Assemblage Theory and Social Complexity*, presents an earlier outlining of *Assemblage Theory* (2016) as applied at different social scales (Harman, 2016:viii). Drawing from Fernand Braudel's concept of society as a 'set of sets' in his economic histories of Europe⁷, DeLanda considers nested relations through 'assemblages of assemblages', with interaction at "a large number of intermediate levels between the micro and the macro" (DeLanda 2006:5). With emergent properties at every level, this application avoids reduction to 'totalities' and 'reified generalities'. Social networks are studied in terms of their sub-sets: communities made up of individuals, governments considered as assemblages of organisations; cities as "assemblages of people, networks, organizations" and "infrastructural components", and nations containing "assemblages of cities ...regions, and provinces..." (ibid:5-6). What DeLanda observes, is a "recurrence of the same assembly processes at any one spatial scale, and the recurrence of the same kind of assembly processes (territorialization and coding), at successive scales", giving "assemblage theory a unique way of approaching the problem of linking the micro- and macro-levels of social reality" (ibid:17).

The technique adopted in *A New Philosophy of Society: Assemblage Theory and Social Complexity*, is a structuring of chapters that moves up in scale from the personal to the national, demonstrating complexity of social entities through micro-to macro-processes involved in their formation. At the personal scale, the book looks at language and communication, skills and routines that characterise daily life, belief systems and response to environmental challenges (ibid:51). These patterns and ritual stability may be preserved or disrupted in a variety of ways, forming part of an understanding of the social network as an assemblage, held together through interactions of sub-sets, but also acting downwards, shaping interactions at intermediate levels. Interaction of assemblage sub-components gives rise to emergent wholes in a bottom-up way through 'upward causality', while 'wholes' exert a "top-down influence on them" through 'downward causality' (DeLanda, 2016:21). This reciprocal influence is 'double determination', whereby assemblages constrain or enable interactions of their parts through their downward causal influence, while the assemblage itself is produced through continuous interaction of parts through upward causality (ibid:17-18). At the next scale, DeLanda examines organisations, studying characteristics of collective action, coordination and controls (ibid:69). At this level, regulations, procedures, repetitions and ceremonies function to produce

⁶ See: Bergson, H. (1998) *Creative Evolution*.

⁷ See: Braudel, F. (1967-1979) *Civilization and Capitalism, 15th-18th Century*, Volumes I to III.

consensus and reaffirm collective identity, while the organisation as an emergent whole constrains and enables the daily activities of its members. These social entities can be understood in relation to territories which they inhabit, or over which they have jurisdiction, such as the involvement of state actors in administration of the national territory.

At these larger scales, communication remains a central element, with the conversation as a unit factoring into organisational and state processes. Other forms of expression include written documentation, architectural and urban identity, and even brand management, all of which can be examined as data. Cities and regions are characterised by rhythms and routines in their circulation and systems, operating at different speeds and network densities. Built environments contain collectivities of buildings and other elements, which in their distribution of spatial and social elements can express territorial relations in the form of congregation or segregation. Regions are defined by borders but also exhibit markers of their identity with 'regional character' and specificity of cuisine, fashion, and mannerism. At the national scale, consensus is achieved through documents such as the Constitution. The approach of following relationships, from the personal, organisational, urban, and national, to geopolitical, informs the methodological model adopted in this research, enabling study of infrastructural activity in Lagos that considers these different scales.

With these two concepts – emergence⁸ and exteriority – we can define social wholes, like interpersonal networks or institutional organisations, that cannot be reduced to the persons that compose them, but that do not totalise them either, fusing them into a seamless whole in which their individuality is lost. (Ibid:10)

During the colonial period, the micro-scale of the port setting at Apapa will be examined, studying colonial port arrangements, while at the macro-scale of activity, the Amalgamation of the two Nigerias and outbreak of the First World War are linked to port developments. The Colonial Administration can be studied from the micro-level of the Colonial Office at Lagos, and its personnel, up to the macro-scale of 'Empire'. During the postcolonial period, the micro-level focus will be placed on the company, JBN, and their involvement in the major infrastructure projects of the Lagos port expansions and road networks in the metropolis during the 1970s. The company can also be studied at a macro-scale due to its close links to the Nigerian State, with this association forming a key part of JBN's indigenisation and expansion, with operations extending across the national territory. Other macro-factors involved the changes in regime and frequent military coups, while planning of a new capital city in the shaping of a postcolonial nation, would influence infrastructure delivery in Lagos. The Biafran War (1967-1970) and the OPEC Oil Embargo (1973-1974) were events that brought together local and global concerns, and would feature in the configurations of national territory and its infrastructure in various ways. The Nigerian State in evacuating its administrative precinct from Lagos to Abuja, would set in motion a chain of events, in which JBN would become a significant player.

In *A Thousand Years of Nonlinear History*, geological, biological, and linguistic activities are explored as cyclical processes. These dynamics are understood as contingent environmental and historical conditions which give rise to patterns that can be analysed. DeLanda describes these conditions in terms of nonlinear and non-

⁸ Relations of interiority and exteriority are explained in *Section 2.2.1: Territorialisation, Coding, and Double Articulation*.

equilibrium systems, with nonlinear processes involving feedback between different parts of an assemblage (DeLanda, 1997:14). This characterisation of nonlinear history does not dispense with chronology, rather it recognises feedback loops operating within environmental and social systems at multiple scales. This reading relinquishes linear causality, and in consequence, relationships between processes and their resultants are not seen as cases of simple projection. DeLanda's work on the non-linear derives from the thermodynamics of Ilya Prigogine, where systems pushed far from equilibrium, with flows of energy in and out, produced a great many more outcomes, than closed systems (ibid). But systems can move from more stable to more chaotic states at critical points. When this concept is taken from physics and applied to historical research, critical points can be identified, which represent a speed of change of the non-linear history. The nonlinear in DeLanda builds on the work of Braudel, with the *longue durée* approach of the *Annales* School of historians. 'Time', for Braudel, can be divided into three tiers all moving at different speeds in parallel⁹. Slow geological and environmental processes take place in almost imperceptible deep time. Social and cultural developments occur in medium-duration time, while 'event' has an immediacy. Along these three registers, time may appear to speed-up or slow to a stasis.

The forming of geological features in Lagos takes place in the *longue durée*, although the water network is active in the medium-term and short-duration timeframes, alternately conceived as providing interconnection and linkage, or as a source of conflict and instability. The lagoons, creeks, inlets, sandbars, swamps and reclamations feature in the archival data, which reveals the ambition for structural permanence in a situation of flux. The necessity of a more fluid approach to concepts and boundaries can be accommodated by a methodological approach which conceptualises change through phases and critical points, to indicate these material shifts in Lagos' historical trajectory. For Braudel, cities are understood as accelerators of historical time (DeLanda, 1998). Other forms of acceleration and deceleration include climate, sedimentation, technological advances, media, war, congestion, all of which have caused systems within Lagos to function at different speeds. The two periods have been identified as representing times *far from equilibrium* by virtue of their heightened activity, representing bifurcations in the history of the metropolis. The year 1914 was consequential as the Apapa port was opened up to larger ships, requiring introduction of systems for organising harbour activities. As an allied war port, it would take on a new significance for the Colonial Administration. The year 1975 is another turning point, as congestion of the port and its connected movement networks, would initiate the fall of Gowon's military regime. In this same year, the decision was taken to remove capital-city status from Lagos, bringing about a shift in development focus towards the hinterland. Between 1975 and 1979, JBN would construct large infrastructure projects, altering connectivity in Lagos, and including expansion of the port at Apapa and the entirely new port at TCI, built within 15 months. JBN will form the subject of empirical study in the 1970s, with consideration of their own phases of activity, which included indigenisation, adaptation, and expansion within Nigeria.

Infrastructural transformation is traced in these times of accelerated change, with opposite forces of extraction and development playing out in one way in the colonial era, and vying processes of investment and abandonment playing out in another way in the post-colony, when Nigeria was open to competitive markets and its economy

⁹ See: Braudel, F. (1967-1979) *Civilization and Capitalism, 15th-18th Century*, Volumes I to III.

was highly energised by the oil embargo. The study of history is enriched once considered as a multiplicity of flows (DeLanda, 2016:14). Archival data reveals the attempts of actors to manipulate these relative speeds to impose particular outcomes. The rise and fall of prices, the availability or scarcity of fuel, and vicissitudes associated with the functioning of society, reveal their own rhythms within the cycles, forming trends, while the landscape and water networks feature as protagonists and antagonists in written accounts. Representations of Lagos in the colonial archive, feature non-human elements as characters in the history. The sandbar known simply as the 'Bar', was located at the entrance to the harbour, and would seriously impede access for decades up until it was finally dredged to an adequate draught in 1919. Even the dredging equipment would be personified in the written record, given names such as the 'Sandgrouse' and the 'Barman'. In the JBN monographs, landscape is animated with JBN depicted as a 'conqueror' of the terrain. It is these reflections that provide a source for interpretation and analysis of how these organisations perceived the environment, and their own role in shaping it through infrastructure.

DeLanda critiques historical narratives as disproportionately featuring human protagonists, typically depicted as heroic explorers or innovators, and as rational agents driving human progress. *A Thousand Years of Nonlinear History* presents a different way of characterising material histories, representing a cognitive shift where history can be re-examined in the absence of a totally anthropocentric bias and presentation of elites as the major decision-makers (DeLanda, 1997:12). The archives that inform this study mainly do feature elite protagonists and this research will retain a focus on these elites as decision-makers on infrastructure. However, a more comprehensive view will be attained through examining the project conditions in social and environmental terms, to see how attitudes, territorial ambitions, and cultural coding influenced the planning and delivery of infrastructure. In this way the decision-making process is traced upward through the scales of interaction, from the level of conversation to the project to the organisation, with activity at these levels considered in terms of enabling and constraining influences of macro-scale assemblages. DeLanda's theoretical work takes "...real history as its starting point" (ibid:12). This is also the approach in this thesis, which will study projects in relation to imperial, national and territorial ambitions, and within their historical setting at the beginning of WWI and following the Biafran War, to question how the stated objectives of elites, interacted with the very concrete projects of infrastructure installation. Real events are studied on the basis of records and data, which can illuminate predominant attitudes of the time. Since elites represented only a component-factor in the shaping of actual events, the archival material will provide a starting point in the search for a more thorough and grounded understanding of the dynamics in the evolution during these two periods, with the political narratives decoded and reinterpreted in the light of a more material-based ontology.

2.1.2. Assemblage in Aesthetics and Explanations: Urban and Textual Archives

With use of assemblage as a method, there are three considerations which underlie the examination of each period:

- (1) A questioning of how things have formed;

- (2) How they have held together for a time;
- (3) And as processes in an assemblage are productive, what has emerged from interaction?

An assemblage method can be adopted to read the material traces of the urban setting, following both their pragmatic and aesthetic logics, while reflecting on 'design' and intention in relation to 'emergence' and process as drivers of urban form. It can also be used to examine the ways that ideas have formed, 'held' together and been documented, which the researcher perceives as both existing in *potentia* and as recorded data. A city can be considered as drawing towards it the traditions, talent, skills and raw materials from its region, while coming in time to dominate the region culturally (DeLanda, 1997b). As a reservoir, the city contains the accumulated social memory and traditions, material infrastructures, codes and visual markers for transmitting ingredients for its own continuity. The city taken in this sense, is a 'living archive', and, for Kittler, also a 'medium'¹⁰, intersected by the information networks and knowledge networks that it hosts (1996:718). In a materialist view the urban setting is both a 'mineral' and information store, with institutions representing "transitory hardenings in the flows of money, routines, and prestige" (DeLanda, 1997:259), and an urban layering constituting a 'mineralisation'¹¹ of social arrangements in time. The historic Yoruba settlement, overlain by colonial and postcolonial layers, contains this memory. As a material 'archive', the formerly colonised African cities are also sites of experimentation, as forms of resistance sought ways of being and urban identities that engaged with both tradition and modernity, so that "operational memory" becomes "spatialized" (Simone, 2000:237).

These cities were both 'designed' and emergent, with complex interactions shaping aesthetic realities and experience, and one can reflect on the mechanism of design as a contributing factor to urban form. Design of the colonial port city was conflated with a social engineering model which was spatialised, representing a layer within the historical depth of the city. But design would also be adopted as a pragmatic solution to rescript urban activity, and also as an aspirational solution, to fashion a renewed urban identity from the time of political independence. To 'design' is to engage with "things in the making", a concept central to Ockman's (2000) edited collection, *The Pragmatist Imagination: Thinking About "Things in the Making"*, which can be interpreted as an assemblage theory of design that considers processes above products (Rajchman, 2000:7). But as Shusterman questions, surely a pragmatist aesthetics would be a paradoxical term, since pragmatism is associated with practical necessity and function, whereas ornamentation is decorative (2000:117). By extension, what purpose would there be in examining urban settings, which have served utilitarian purposes and fulfilled material functions of inhabitation, through aesthetic theories? The emergence of patterns in the ways in which diverse materials come together, can be conceptualised in terms of assemblage. Design at an urban level is an attempt to bring greater coherence through visual language and spatial structure, and to instil an urban coding informing future projects. This process in reverse provides an archaeological reading, which an historian would approach

¹⁰ Kittler's (1996) essay *The City is a Medium*, builds on McLuhan's (1964) book chapter, *The Medium is the Message*.

¹¹ DeLanda compares cities to exoskeletons (1997:27).

as a vertical excavation through material and temporal layering, involving categorisation and sorting.

Assemblage can be elaborated along two twentieth century trajectories located at its boundaries, notions of 'collage' and the historical *apriori*, or 'archive', which have both influenced theories of urban history. Trajectories of the nature of aesthetic realities and experience, and the nature of explanations, can be understood as intersecting within assemblage, which is pursued through processes that have generated the historical fabric, forming the subject of this study. Collage and assemblage both have roots in the cubism of Braque and Picasso¹². Collage developed from its definitive aesthetic exploration in cubism, to its heirs in the Bauhaus, Klee and Kandinsky, who brought cubism into pre-WWI painting in Europe. Both were curriculum makers and added a highly systematic slant to the understanding of visual modernity. The Bauhaus curriculum brought together technologies and practices from arts, crafts and materials' studies in the workshop, under the banner of architecture (Karatani, 2003:25), with architecture essentially an 'emergent whole' resulting from the productive capacity of curricular organisation. Beyond this, the art-architecture link ruptured¹³ until the concept of collage was revived in Rowe and Koetter's *Collage City* (1978), building on classic cubism to construct a metaphor for architectural criticism. Their experimental engagement with genres and categories led to an enquiry that was transhistorical, placing objects of material culture side-by-side for comparison, unveiling rules of composition common to both modern and historical architectural precedents. Underpinning this was an intellectual enquiry into the joining and assembling of the disparate in architecture, which when extended to the urban scale, revealed collage as a metaphor for the continuous superimposition, juxtaposition, and fragmentation associated with imposition of diverse intentions onto the city, and as an aesthetic conception of the functioning of society and its urban environments¹⁴.

These methods are considered from the perspective of discerning processes of assembly within the metropolis. In literature, urban morphology can be understood in various ways. Christopher Alexander (1965) made the distinction between 'natural cities' that grow organically, and 'artificial cities' deriving their structure from planning. Lévi-Strauss' work, *La Pensée Sauvage*¹⁵ (1962), describes two characters, the *bricoleur*, who begins with experience of objects and materials and works towards a concept, and the engineer, who develops forms and processes to comply with a conceptual model. Urban theory is populated with opposite starting points for shaping an environment: the planned and the projective versus ad-hoc responses to the given situation, and with places shaped in accordance with cultural models, versus technocratic models prioritising efficiency. Postmodernism is associated with "collage space" as contrasted with modernism's "abstract space" (Rajchman, 2000:13). The cities of the post-colony become postmodern in this sense, as benchmarking exercises of politicians brought in projected ideas from elsewhere, with the systems, processes, concepts and categories of global modernisms revealing some incongruity and some accommodation in the juxtaposition.

¹² See (Krauss, R., 1980) and (Greenberg, 1961:70-83).

¹³ Or it remained fixated on the Bauhaus: see Black Mountain College.

¹⁴ Joan Ockman (1998) provides an account of this in her essay *Form without Utopia: Contextualising Colin Rowe*.

¹⁵ The English title is *The Savage Mind*, but a more accurate translation would be 'thought in its undomesticated state'.

For Ingold, archaeology and architecture are “procedurally equal but temporally opposed” (2013:10). They are also connected processes, as the site is first excavated to make way for foundations, revealing its history only to cover it again. Architecture makes use of the existing but is also projective of new arrangements. As a trajectory considering an archaeological and archival engagement with urban histories, palimpsest is both a processual and material analogy descriptive of this back-and-forth relation of accrual and construction, erasure and demolition. ‘Palimpsest’ derives from the Greek *palin*, meaning ‘again’, and *psen*, ‘to rub smooth’. It is a parchment or a tablet that has been written over several times, but with previously erased texts still partly visible (Porter, 2004:135). Erasure is an ‘unsaying’: to take back, to rub clean, to revoke, and in the metropolis, planning and inhabiting are two concurrent processes involving the constant revision of ideas. Essentially, a palimpsest is a collage manifest over time, an approach considering stratification, accumulation and effacement, while collage looks at a particular moment in that process: a collage is a cross section of a palimpsest. But is collage not also an assemblage, displaying emergent properties of compositions as can be discerned in the projects of Kurt Schwitters (*Merz* and *Merzbau*), Robert Rauschenberg (*Combines*), Karlheinz Stockhausen (*Hymnen*) and Sergei Eisenstein, with montage as a collage theory of film editing? By extension, the built environment can be conceived as containing partial constructions which together form a “patchwork”, but with connections between patches continuously added so that the construction becomes fibrous and networked as a fabric (Lapoujade, 2000:59). By this account, from these partial systems, “the world hangs together from next to next”, with the city becoming “a mosaic of patches” (ibid).

The material data of the urban context and its historical written record are both subject to interpretation through the assemblage method. The ‘archive’ is also an assemblage, bringing together content of disparate levels of reality, or of disparate origins, mappable in Foucault’s study of institutions and systems of classification¹⁶. Urban layering and interconnections are reflected in the structuring and overlap of diverse documentation. The margins of documents are not precise, and there is intertextuality, analogy, and reference to prior texts. In *The Archaeology of Knowledge*, Foucault looks at the documents, writings and books that history has produced. Like the urban patchwork, these historical documents constitute a fabric: a *tissu documentaire* with its own unities to reveal and cross-reference (1969:14). Working through an historical method, involves cutting out, isolating, separating, grouping themes, elements, and ideas; genres are classifications, like ‘cut-outs’, established in institutional learning, they are considered normative but are by no means universal (ibid:15). For Foucault, historians have a duty, to take apart and reassess recorded history, so that historical records are no longer inert, but present opportunities for more pertinent readings (ibid). ‘Collage’ and ‘archive’ are both systems by virtue of keeping heterogeneous things and processes together. Assemblage provides an engagement with the aesthetic, and explanatory and categorical logics of both systems, but its examination of these, in terms of relations of sub-components to emergent wholes and micro- to macro-relations, brings an added dimension to research. Interactions in an assemblage are productive, with

¹⁶ Prisons, systems of classification, medical diagnoses of pathology can be considered in this way, see: *Discipline and Punish: The Birth of the Prison* (1975), *The Order of Things: An Archaeology of the Human Sciences* (1966), and *The Birth of the Clinic: An Archaeology of Medical Perception* (1963). Deleuze’s 1986 book *Foucault* contends that the work of Foucault is about audio-visual assemblages.

emergence taking place within nested sets. As a method, assemblage brings together the aesthetic dimension in the form of expressive markers and visual coding, and presents a critique of 'categories', which are reconsidered through approaching problems at their intermediate levels.

2.2. Definitions and Application

This section will define terminology associated with the material and expressive components, and stabilising processes of assemblages. Functioning within the spatio-social setting are lines of territorialisation, deterritorialisation and reterritorialisation, and processes of coding, decoding, and overcoding, which provide the primary methodological tools for analysing cases studies in the two periods. These tools will be applied for an understanding of interaction at a range of micro- to macro-scales. Deleuze and Guattari provide biological, geological and ecological explanations of coding and territorialisation, which will be referenced and developed into a discussion of analogous processes in Lagos. Clarification of these terms will enable a reframing of the research questions, with contextualisation regarding particular historical and infrastructural case studies.

2.2.1. Territorialisation, Coding, and Double Articulation

DeLanda defines assemblages along two axes. In the first, components play roles that are 'expressive', examples being genetic and linguistic, or 'material', or both. The second relates to processes which "stabilize the identity of an assemblage, by increasing its degree of internal homogeneity or the degree of sharpness of its boundaries, or which destabilize it", representing a 'territorialisation' or 'deterritorialisation' (2006:12). DeLanda includes an additional process of 'coding' and 'decoding', which provides a consolidation of the identity of the assemblage (ibid:18). Territorialisation can refer to delineation of boundaries in the spatial context of sites, cities, regions and nation-states, but it is also a non-spatial process of homogenising components of an assemblage: the greater the delineation and the degree of uniformity amongst components, the more the assemblage is said to be territorialised (DeLanda, 2016:22). Assemblages behave in a manner that is productive of "new territorial organisations" and "new behaviours", giving rise to 'territories' which "emerge and hold together but also constantly mutate, transform and break up" (Müller, 2015:29).

The territories under consideration may comprise actual places and social relations in combination, and transformations within these 'structures' bring about spatial alteration and changes in network density. Conversations provide an example of how the concept of territorialisation is both spatial and social, as they take place within a setting, with boundaries implicit in the social bonds since individuals may be included or excluded (DeLanda, 2006:13). The conversation is considered as increasingly territorialised in the case where participants are limited to those holding similar viewpoints, while exclusion of those holding contrary views could limit deterritorialisation of this interaction. Social habits perform the work of

territorialisation and may even consolidate boundary definition in time (DeLanda, 2016:27). The organisational level, geographic location, office premises, and distribution of the social network of an institution or company all have bearing on the extent to which an organisation can be said to be territorialised or deterritorialised.

In the case of the Colonial Administration, the amalgamations of 1906 and 1914 can be read as territorialising acts, drawing together the territories and increasing their homogeneity for ease of administration, to enhance their co-functioning within an extractive logic of Empire. In the postcolonial setting, creation of new states represented a territorialising measure at national scale, as did the intention behind founding a new capital. The increasing embeddedness of the multinational JBN within Lagos can be read as a form of territorialisation, however their alliance with the Nigerian State, which became a shareholder in the company, would bring about increased deterritorialisation, with company activities dispersing and extending nationwide. The relocation of the capital represents a line of flight, along which deterritorialisation is brought about in both periods, although only 'actualised' from 1975 onward. Technological innovation is also a deterritorialising factor, enabling communication at distance. This will be explored in the analysis of JBN's period of expansion, initially beyond their offices in Germany, and later, beyond Lagos.

A third dimension of territorialisation is what Deleuze and Guattari call 'relative deterritorialisation', which "refers to processes which destabilize the identity of an assemblage, opening it up to transformations which may yield another identity (in a process called 'reterritorialization')" (DeLanda, 2006:123). Once deterritorialisation has taken place, the process of reorganisation is a reterritorialisation. Deterritorialisation and reterritorialisation are connected. In *A Thousand Plateaus: Capitalism and Schizophrenia*, a narrative of orchid and pollinator is told, where the orchid uses mimicry, producing an image of the wasp to attract a 'mate'. The wasp, fooled, pollinates the orchid. The "tracing of a wasp" produced by the orchid represents a deterritorialisation, since the mock-wasp differs from the flower's other components, and territorialisation is a homogenising process. But the orchid is then reterritorialised by the wasp transporting its pollen, while the wasp is deterritorialised in a "becoming-orchid of the wasp", by virtue of its adoption of a role within the reproductive process of the flower (Deleuze and Guattari, 1987:59-50). The flower, initially deterritorialised, is then reterritorialised, in a "becoming wasp of the orchid". The two species are affiliated in this dynamic, and there is material exchange and "capture of code" (ibid) which makes the pollination strategy effective.

The "becoming-orchid of the wasp" (ibid) describes the playing of a part within the symbiotic process of pollination, in which the components retain their autonomy within a system held together by 'relations of exteriority', as parts are not dependent on other components of the assemblage for their identities, being only "contingently obligatory" (DeLanda, 2016:3). Relations of interiority are like that of 'brother' and 'sister', where the descriptor-terms define identity of the sibling relation. But most relations are extrinsic. Intrinsic relations are defined by social codes and conventions, which define the "identity of a social role", the choice of alternative interpretations of the convention will be arbitrary in the case of intrinsic relations, as even familial relations are varied across different societies, so that socially-coded alternatives are fixed by "an arbitrary social code", constituting "its very identity" (ibid:2). This distinction is important for an assemblage reading as when relations are understood as intrinsic, the identities of the components of that relation 'fuse', reducing what is constituted by parts and their relations, to seamless wholes,

representing a micro-reductionist approach in which possibility for emergence is eliminated, since the heterogeneity of components and product of their relations cannot be considered. As the parameter of coding and decoding is variable, relations can be alternately linked by “filiation and alliance” (ibid:3), enabling study of components in which rigid conformity is observed, or of the opposite scenario, dispensing with strict rules of coding.

Campaigns of media and information represent a form of reterritorialisation, as a territorial restructuring may be followed by attempts to persuade a general public of the need for reorganisation, or to emphasise the temporary nature of inconvenience with a larger goal in mind. Infrastructural projects, while causing disruption in the city during construction, give content to the rhetoric of politicians, who seek to assure citizens of the State’s willingness to invest for the benefit of society. To apply the pollination example to the context of information, the wasp, in pinning an idea on the image of the mate, is responding to an interpretation of the situation, and forms a crucial part of the process of reterritorialisation. An illusion is serving to effect a process unbeknown to the wasp. The order emerging from an association of components and functions responds to a combination of components, which adopt material and expressive roles, where the ‘pollen’ is material, and the ‘mock wasp’ is serving both a material and expressive function. Colonisation in Nigeria was not a project of indigenisation, but of access, control and extraction. Documents such as *The Dual Mandate in British Tropical Africa* (Lugard, 1922) contain justifications of colonial presence on the continent. This work and other records are critical for understanding reterritorialisation in the colonial context, where adoption of a consistent narrative was necessary in the subjugation of autochthonous groups. The other purpose of documentation feeding into deterritorialisation, was as an immersion for colonial administrators in the “foundational narratives” of Empire, understood as the “Being-in-the-Empire of its citizens” (Sloterdijk and Engels-Schwarzpaul, 2011:105), and creating an environment in which relation to place was mediated through the ideas of place, interacting within the assemblage.

In the study of JBN’s indigenisation and Nigerianisation, their involvement in infrastructure delivery is certainly material, but the image of the company is also significant for a reading of the indigenisation process, with expressive components analysed in terms of linguistic and visual ‘codes’ contained within the archival data. Company management of reputation and public image was a form of reterritorialisation, perhaps even pre-emptive of critiques of proximity to government elites. The production of an image of the wasp serves a purpose within the assemblage. In their writing, public communications, and signboards, JBN was also producing a ‘tracing’ of their activities in the country, with people formulating images and associations as they read, and in response to visual prompts. The aspect of the ‘media project’, as accessed through company records and publications, enables a study of the reterritorialisation process. Company documents bring a mythological dimension to the image of the company in Nigeria. They describe a company capable of anything, and in one anecdote an association is made between ‘working on the water’ and ‘walking on water’ (Offenbach, 1980b:276-277), in their presentation of heroic narrative. This study sets out to examine the formulation of this image and to what extent it was linked to the process of indigenisation, adaptation and expansion, exploring ways in which parameters of coding and territorialisation functioned to enhance this company aim.

Coding refers to the expressive components of an assemblage, and their role in “fixing the identity of a whole” (DeLanda, 2016:22). Coding can refer to an inherited genetic makeup, but in terms of analysis of social networks, it is mainly behavioural. In this research, the focus will be on codes revealed in written data, language usage, practices and habits, and expressive markers in the form of visual codes associated with colonial administration of Lagos, and with JBN's company image. This is explored through a reading of the harbour landscape in the colonial period, and through use of branding, signage, architectural style, and even of infrastructural projects in the postcolonial period. Infrastructure delivery is managed through ‘codes’, and the coding of projects impacts the urban scale since movement patterns and routes are altered, both during implementation and upon completion of work. Territorial arrangements are held in place through coding processes which create firmer links between components. Visual and verbal coding strengthen the bonds of connected components in an assemblage. This can be in the form of coding work to consolidate demarcation of a physical setting, reinforcing a territorialisation, or work done to maintain social bonds, and holding together a social ‘territory’. Since coding consolidates a process of territorialisation, the two parameters will often be examined together, with discussion of ways in which coding or decoding have been employed in service of territorial aims. Analysis of conversations will be central, as they are linguistically coded rituals which apply rules such as turn-taking, with increasing formality representing an increased coding, and informality representing a decoding (DeLanda, 2006:16).

Within the organisations of the Colonial Administration and JBN, internal hierarchies were reinforced through norms of conversation and written correspondence, while standard procedures were outlined in administration or company manuals. Ordinances, regulations and decrees provide data on projects and events, and give a sense of norms and conventions in a given period. DeLanda refers to textbooks as being “notoriously unreliable” and including “mythologised” historical and disciplinary accounts (2016:89). However, what they do provide, is “a good record of what has become consensual” (ibid:89-90), enabling an understanding of predominant codes and territorial divisions within the knowledge of a particular era. For JBN, annual reports and journals provided an account of affairs to administrators, employees and shareholders, while the company logo, brochures, publications, and documentaries produced by a film company in Hamburg, are the material of public relations concerned with establishing brand identity. These outputs all performed coding operations, helping to stabilise the identity of the organisation, and consolidating the gains made from being established within the setting. At the scale of the State and the Nation, the Constitution performs the work of coding (ibid:91), determining the law of the territory, and establishing the norms and dictates within the national boundary. During the military regimes in Nigeria, suspension of the Constitution brought in the military ‘decree’, which performed coding operations in its place. This system of codes will be analysed in relation to infrastructures such as the Lagos Port, and institutions such as the media, where government decrees were issued as controls.

While an assemblage can be destabilised through processes of deterritorialisation and decoding (ibid:28), there are also times when these mechanisms become necessary to realise larger objectives. As assemblages are nested sets, destabilisation can effect a reorganisation of assemblage components, with ripple-effects through the levels. The indigenisation-adaptation-expansion process of JBN involved deterritorialisation at a more local scale in response to the port congestion,

at its height in 1975, and at a time when the company was working on projects of considerable dimension, including the port expansion and Lagos Inner Ring Road. A deterritorialisation was effected as JBN began to utilise the Lagos water network in various ways, and allowance was made for alternative operations to bypass the constricting influence of the Apapa port. In response to the congestion which represented a political crisis for General Gowon's government, decongestion decrees were promulgated in an attempt to resolve the crisis. These decrees represented the introduction of a strict coding, while at the same time, some port protocols were 'loosened' as decoding measures taken to limit controls and delay factors associated with bureaucratic process. The expansion of JBN's activities beyond Lagos was a deterritorialisation of the company, their close connection to the Federal Military Government extending their working area to coincide with territorial priorities of state.

The colonial and postcolonial periods had different skills' contexts. In the colonial period, the small resident European population in Lagos, 614 Europeans in 1911 (TNA: CO 659/1:110), meant that engineering expertise on port and rail infrastructures was brought in from England, with consultants such as Messrs Coode Son & Matthews employed on Apapa port development. Imported teams brought knowledge and skills but lacked a close association with environmental context, which shaped the planning and implementation of infrastructure projects. The preoccupations of the London-centred Colonial Administration, also shaped priorities and budgets. In contrast, the embedding of the JBN company in Lagos and Nigeria can be read as an indigenisation project, coinciding with introduction of Nigerianisation laws. JBN came to Nigeria in 1965 and has remained until the present day. DeLanda states that "embodied knowledge ... is also flexible knowledge, because skills learned in one context can be adapted to many other contexts" (2016:80). DeLanda uses weapons manufacture as an illustration, where the requirement of conformity in the manufacture led to heightened territorialisation in creation of homogeneous components, while a "threshold in coding" was achieved as the flexible skills of the artisan were increasingly replaced by "rigid optimised routines" (ibid). In the case of JBN, long-term involvement in the country and their success, bringing with it greater capacity, enabled them to adopt more flexible strategies with a looser coding, while also instituting a highly coded and carefully coordinated network-planning of logistics and project controls, enabling speed and quality assurance in their work. This would form a blueprint of how they would operate beyond Lagos.

The concept of 'double articulation' is required for an assemblage reading as it explains the interaction between the processes of territorialisation and coding. Deleuze and Guattari provide a geological example, whereby a process of sedimentation involves an initial sorting of pebbles, smoothed by water and categorised by size, since heavier stones roll to the bottom. Over time layers form, as greater accumulations provide increased force, and plate tectonics fold the material into mountains. In this example a double articulation is taking place, where sorting into homogeneous pebble layers is a territorialisation, and the sedimentation process which leads to the characteristic layers and other material features associated with identity of rock and definitive strata, represents the coding (Deleuze and Guattari, 1987:40–1 in DeLanda, 2016:23-24). The coding work is expressive: the layering in rock formations, or "the geometry of a crystal", are both three-dimensional expressions, while in living creatures, the genetic code provides a form that is a one-dimensional in the "linear form of nucleotides" (ibid:25). The process of

forming limbs is therefore a territorialisation of a possible combination contained within genetic code. Double articulation will become important in the empirical work, as it is used to explain the ways in which territorialisation and coding can work together in the pursuit of aims at the scale of the project, organisation or institution, and Colony or Nation. The JBN blueprint of Lagos' infrastructure, drawn in Wiesbaden and implemented in Lagos, was a coding which led to a territorialisation, as the mapping of potential infrastructures envisaged by JBN was made possible, both through their skill and embeddedness of operations within Lagos, and through their access to elites. From being a diagram of potentiality, projects were developed, which were themselves coded, and which further consolidated JBN's presence, while an aim of the State was to enhance perception of the legitimacy of the military government through its infrastructure programme.

In a further dimension of coding, while "a state apparatus performs coding operations that affect an entire territory and all the communities and organisations that inhabit it", there have also been historical cases where states "have allowed the communities over which they ruled to keep their own social codes", in a process known as 'overcoding' (DeLanda, 2016:22-23). It is the case to varying extents, that colonial rule superimposed the codes of imperial and administrative orders over the autochthonous social coding. While the Northern Protectorate was under 'indirect rule' and the Southern Protectorate under 'direct rule' until the Amalgamation, traditional and imposed codes were coexistent in various ways, impacting land legislation in particular. Overcoding can refer to a labour context, with the production of military armaments requiring a supply of spare parts for which "all sources of variation had been systematically removed" (ibid:81). In this sense, replacement of the artisanal crafts of production before the Industrial Revolution with "routines imposed by commands", represented "an overcoding of labour" (ibid:47). The concept of colonial 'overcoding' will be taken forward as a permutation of the coding parameter in this study. Its corollary process is 'undercoding'. Simone considers that as "engagement with colonials was constant", forms of undercoding included integration of the "outsides of the colonial city", often through a connection to the rural (2000:237), where the overcoding was looser, with lower levels of compliance, further "from the control of normative institutions and discourses" (ibid:236). This extended to rural practices and spatial organisations brought into the urban setting, with undercoded organisational forms providing greater flexibility in colonised cities (ibid:243).

Overcoding sees the introduction of new codes and dictates. The psychological impact can lead to a feeling of alienation and disconnection from environment and traditions. For Sloterdijk, the impact of globalisation is that people "no longer feel at home with themselves" in part due to the weakening of "links between places and selves" (Sloterdijk, 2014:953). As colonials did not have the insights into environment and culture in Nigeria that locals entertained, overcoding of land legislation, building and medical practices, amongst others, interfered with the autochthonous association with place, and disrupted the fabric linking to social histories and to the interweaving of traditions. For Simone, African cities have become locations where Africans have had to contend with the "representations of outside worlds" (2000:236). These outside worlds were projected onto Lagos through its infrastructure and built environment, although intentions would differ in colonial and postcolonial periods.

2.2.2. Research Questions and Methodological Implications

An assemblage method reveals intersections, 'lines of flight', and consolidations within infrastructure and planning processes, that are subject to social codes and dictates. But as transformations are possible in the assemblage, codes are adapted to specific situations and manipulations are possible along the lines of territorialisation and deterritorialisation. This expands the research questions and broadens the study, as no assumptions can be made about what can be related (Müller, 2015:29). Assemblages exist on the same ontological plane and their components may interact directly with one another in a multi-scalar series of relationships, allowing for reconsideration of categories and hierarchies, and opening up new scenarios in the story of Lagos' infrastructure. By decoding socially coded interactions and communications within a hierarchical colonial administration, a highly unstable territory of myth and projection is uncovered, which played into handling of environment, just as they perceived an instability in the land, and on the ground they were occupying. Through a reading of relationships in which multiple aggregates of components co-exist, seemingly external factors are activated. The concept of an alternative site for the capital exerted an influence on Lagos' development, *ab initio*, long before the move was made to Abuja. Abuja was seen as an 'exit' by the Federal Military Government, but it was nevertheless connected to Lagos and Port Harcourt, which formed nodes in the supply lines required for constructing the new capital.

Through the model of emergence, occurrences on a daily basis are included in the tracing of processual 'outcomes', which are caught up in relations of 'double determination'. Transformation and change appear as "collective unintended consequences of intentional action" (DeLanda, 2006:41), where intention accounts for a component, but collectivity produces consequences that may be unintended. Development following the oil boom was to exacerbate congestion, and unchecked authority and lack of transparency of the military government led to a vast cement order that brought the Lagos harbour to a standstill. The limitations in connectivity of Lagos drove the administration away from the metropolis, leading them to turn to the larger issue of nationwide connectivity. And while there were high hopes that a new capital city would unify the nation, it was an oversimplification of the complexity of Nigeria to believe that the founding of Abuja would 'resolve' the problems of the country, although it did have impacts which resonated nationwide, one of which was the dis-investment in Lagos' infrastructure. While the method brings nonlinear connections into view, the recorded histories located in the archive, reveal adherence to narrative structures and rhetoric of a given period. Archival data enables the researcher to fill in the context and sequencing of events, and to perceive links that extend beyond chronology. But the encounter with coherence of diverse narratives to prescriptive dictates, is revealing. For diverse accounts to cohere into narratives, abstraction, simplification, and a logic are involved, which can be examined in the archives as a form of evidence and as a 'reterritorialisation' of the two organisations of the Colonial Administration and JBN in Nigeria.

The research questions are concerned with the interrelationship between elites, infrastructure, and territory in the two periods. A further dimension of questioning considered ways in which perceptions, social interactions, and narrative structures interacted with concrete infrastructural programmes, influencing their planning and

implementation, with implications for policy and governance. The questions as originally stated are listed below:

How is a 'social territory', formed in environments and organisations, held together as a fabric and how can processes of territorialisation and coding be seen as manipulations of that fabric? By extension, how was planning of colonial and postcolonial infrastructural assemblages in Lagos revealing of larger territorial objectives of elites, involving complex social and technical interrelations in implementation of programmes?

- (1) How were these territorial objectives related to readings of landscape in Lagos, and to what extent would this shape infrastructure programmes in the two eras, with ideas functioning both at the level of individual attitude and systemically?
- (2) To what extent were social interactions within the daily life of projects in organisations, as revealed through archival sources, manifested within the context of concrete outcomes, and how were these organisations themselves held together through a networking of ideas, processes and place, or through performance credentials?
- (3) To what extent did control of infrastructural narratives by elite project-actors serve to advance these territorial objectives at macro- and micro-scales of activity?

These can be reconsidered in terms of intermediate levels of interaction, with a focus on the scale of the national territory and organisational levels of the Colonial Administration and Colonial Office at Lagos, and the Federal Military Government, Public Administration and JBN. These social entities are considered as exerting upward and downward causal influences at various scales of intervention in infrastructure. Connection and disconnection from the environment are experienced in different ways in the two periods, with 'projections' from elsewhere feeding into the situations, and influencing the materialisation of programmes. This phenomenon is explored on the basis of an archival study, where correspondence, ordinances, military decrees, and instruction manuals provide insight into how members of organisations perceived infrastructural challenges of their times, and how organisations and members were themselves managed, and projects taken forward. Consultant engineering firm, Bilfinger + Berger provides the primary focus of study in the postcolonial period, with its subsidiary, JBN, extending operations in Lagos, and eventually operating in all parts of Nigeria.

The project scale is contemplated, with the problem of Lagos' port expansion studied in both eras, and JBN's involvement in road network projects, and in the construction of Abuja, examined in relation to the company's process of indigenisation, adaptation and expansion in the country. Urban planning programmes and infrastructure projects are processes that can be broken down further into intermediate social levels, with variable parameters of coding and territorialisation characterising activity. A further point of exploration is the aspect of communication to a wider public, by the administrations, but also as evidenced in the public relations campaign of JBN, involving several forms of media output. The question of why it was necessary to establish a narrative, in parallel with their objective work on ambitious infrastructural programmes, leads to a study of JBN's reterritorialisation in the country. The overarching question is one of 'emergence', and while the empirical chapters study

the contextual conditions and reflect on relations at work within each cameo-component, the emergent factors are presented in the concluding chapter, identifying emergence within each of the empirical chapters. Now employing the terminology of assemblage, the research questions reflect upon:

How are assemblages of assemblages, as sets of sets, with intermediate levels of activity, held together, and reinforced by processes of territorialisation and coding, or made more diffuse along lines of flight operating within them? And in view of this, how can the complexity of colonial and postcolonial infrastructural assemblages be comprehended through the levels of 'territory', 'organisation' and 'project', as envisaged and documented in archives, with a view to identifying emergent factors at different levels of interaction in the formation of Lagos' urban infrastructure.

- (1) How did strategic territorial objectives interact with the perception of, and projections onto, the physical environment, with backward and forward causal relations between them, in the context of 'social organisation' and its sub-components, to influence the approach to programmes, policies, and projects, with certain ideas falling into dysfunction and others coming to predominate, and in the process creating new dominant shaping mechanisms, both in thought and in landscape?
- (2) How were planning and implementation processes subject to social interactions that were coded, decoded or overcoded, functioning within the assemblage, and how did these constrain or enable the realisation of programmes in various ways, with emergent factors serving to stabilise the organisations in both eras of study, leaving behind infrastructures as monuments and markers of these historical moments?
- (3) How was the decision-making on physical infrastructure represented through the media environment functioning in parallel, providing a form of narrative-management by organisations and elites, reinforcing the material programme and representing a reading of events as a process of 'reterritorialisation'?

The study is historical and primarily archival, with archives visited in Manchester, London and Mannheim. For the periods of study, those involved in planning of infrastructure in Nigeria are mostly no longer holding office or in public administration. However, as the primary focus during the 1970s was on the indigenisation of JBN, and on their port and road projects in Lagos, the *Company Archives of Bilfinger SE*, held at MARCHIVUM, City Archives in Mannheim, presented the narrative of JBN from their point of view. While project data in a raw form was not available, there was sufficient project information, copies of contracts, correspondence and photographs contained in their printed monographs, company journals and brochures, to gather sufficient data. Following the prosecution of Bilfinger by the United States Department of Justice for corruption on Nigerian projects, and for other reasons, Bilfinger left construction and now works in industrial services. Since the prosecution, researchers have faced barriers in accessing company documents. This presents a complication for addressing JBN's work as there are 'gaps' and there is missing information which has not been made available from the private archives of the company in Lagos or Abuja. Also, certain projects such as ministries designed for the new capital of Abuja were fully classified and documentation has not been released by the Government. This would hinder future research on these JBN projects in the new capital. The JBN monographs, while written and published by the company as a record for itself and for its clients, were produced at a time when they were willing to publicise their Nigerian work, and as

such they contain sufficient reference material for the 1970s period and into the 1980s.

The archive in Mannheim contains the only known body of material related to the JBN Nigerian projects available in Germany, and as the projects concerned in this research were drawn up, on the whole, in Wiesbaden, this data set was considered relevant. Interviews with Dr Martin Krauß formed part of the process of gathering data and were important in gaining an understanding of company culture, particularly as this was impacted by mergers in Germany, as well as for understanding the significance of the Nigerian projects for the parent company. Dr Krauß is an historian and archivist who was based in the Mannheim branch of Bilfinger + Berger from 1995 until 2021, in order to research the history of the company and to build up a company archive. This research was published in the book *Drei Wurzeln - ein Unternehmen. 125 Jahre Bilfinger Berger AG*¹⁷, co-written with Bernhard Stier and published in 2005.

2.3. Concluding Thoughts and Case Studies: Projects, Infrastructures, Organisations, and Territory

Assemblage theory contains an approach for examining social entities and processes of assembly, as containing nested sets, while recognising the synergistic productivity of assemblages as emergent wholes, with associations between component-parts at intermediate levels. This method will be applied to an archival study of infrastructure projects, as can be traced in the historiography of the Lagos metropolis. The study is grounded in the conception that over time, different rulers of the territory of Lagos have been implementing infrastructure projects to the extent that diverse ideas and physical objects have materialised. As a method, assemblage lends itself to the analysis of documents and urban projects, to understand their role in production of urban form. Infrastructural case studies will be examined to include different social scales of the project, organisation, built environment, and the administration of the wider territory.

The first empirical chapter will explore how the colonial approach to infrastructure was shaped by the imperial system, as well as by colonial officers' perceptions of local environment. The challenge of access to the port at Apapa as a critical node during the First World War, will provide a focus. The chapter will explore how the port and Lagos environs, can be viewed as coded and overcoded, while the port as a deterritorialising feature, created a dynamic in the demography, with incoming and outgoing groups, and altering the local character of Lagos. And yet the port as a setting is also highly coded, attempting to monitor and coordinate the processes of exchange and the passage of peoples and goods.

The second empirical chapter will look at the 1970s Lagos port, where a crisis of congestion brought about an energetic Federal Military Government response, with port decongestion decrees issued and port expansion projects commissioned. German-Nigerian firm, JBN, was appointed for the extension of the Apapa port as

¹⁷ Translated as *Three Roots – One Company: 125 Years of Bilfinger Berger AG*.

well as for a new port at Tin Can Island. Parameters of territorialisation and coding will be used to explore JBN's process of indigenisation and Nigerianisation, which are read as a territorialisation. It is a process beset by constraints (port crisis and limited connectivity), while the tactics for overcoming them involved 'breaking' with patterns of behaviour, effecting a deterritorialisation. Language codes and visual codes will be studied as an essential component of the embedding and consolidation of their presence in Lagos.

The third empirical chapter will look at a second phase of JBN's activity, involving expansion, networking, mobility and deterritorialisation from Lagos, with projects located across the country. Archival material and primary sources include their internal and external publication output, laying out the merits of their activities in Nigeria from the company's perspective. Given their monopoly position and connection to state elites, this body of material is essential for understanding their view on a long-term presence in Nigeria, and the decision to move their headquarters from Lagos to Abuja before many other companies had done so. Through their involvement in the infrastructure of the new capital, the company adhered to the path of the State. These events and archival records are read as a form of reterritorialisation, which followed on from their deterritorialisation from Lagos. The empirical chapters are structured into two primary sections. The first, contains contextual background of the period, and presents macro-factors considered as influencing activity as well as a literature overview to guide the presentation of the case studies and cameos. The second, contains the major analytical exploration, which is informed by a treatment of scales of activity, and readings of how variable parameters of coding and territorialisation were mobilised.

Chapter Three: Conceptual Framing, Archives and Overlaid Networks

Many of the debates on Lagos are centred on the virtues of urban planning and the coping mechanisms generated in a city where planned and unplanned areas coexist. In *Lagos Wide and Close* (2004), Rem Koolhaas remarks that much of the state intervention through infrastructure in the 1970s had been provided through insertion of 'generic' models. With state withdrawal from Lagos in the 1980s, structuring was then insufficient, allowing for freer configurations to emerge through improvisation (ibid). From this combination of processes, insertion of models and appearance of freer structures, the emergence of order could be identified at multiple levels of the conurbation, with Lagos characterised as a "city at the forefront of globalizing modernity" (2001:653) and conceived of as a complex system. Matthew Gandy (2005:37-52) criticises Koolhaas' reading as apolitical and ahistorical, reducing Lagos to a narrative backdrop and ignoring the precarity of residents in favour of principles of perceived self-organisation. For Gandy, Lagos represents an "amorphous urbanism", independent of city planning, with remnants of service provision constituting "...a ghostly palimpsest of structures..." and an "abandoned modernity" (ibid), while Lecomte (2017) argues that Lagos is the site of an ambivalent modernisation, involving selective exportation of principles that drove modern urbanisation in the West. By choosing to relocate the capital to Abuja and redirecting investment away from Lagos, postcolonial rulers of the territory could be seen as having given up on Lagos' modernity. Discussion of the suitability of Lagos as capital began in the colonial era with the desire for an alternative administrative base, but the process of removal would only begin officially in 1975, with the appointment of the Aguda Committee to consider the dual role of Lagos as Capital of Lagos State and Federal Capital.

In this chapter, representations of place in the literary bodies on Lagos will be considered, to establish ways in which documents are revealing of perceptions and attitudes held of environment and infrastructure, and of the intentions of elites. A conceptual framing is elaborated, drawing from literary debates and emerging themes of primary and secondary sources. The theme of the 'generic' in Koolhaas' reading of Lagos is explored through assemblage theory in a discussion of urban layering, and how this may be conceptualised in terms of periods of relative activity or inactivity, with implications for periodisation in urban historical research. The nature of archival research is reflected upon, considering differences in form and content of archives of the colonial and postcolonial periods. Assemblage as a way of thinking is multi-temporal and multi-scalar, requiring analyses of relations between scales of activity, with macro-factors enabling and constraining interaction through 'double articulation', establishing some requirements for integration of contextual literature into the analysis. While this chapter presents an overview of sources consulted, the bodies of literature will be elaborated within the empirical chapters, providing a macro-scale context in terms of which the case studies will be reflected upon.

The literature reveals an altering role of the water in infrastructural networks, with Lagos' waterways representing an initial networking for the early fishing and agricultural settlement, structuring an environment of non-contiguous land parcels navigated primarily by canoe. Over time this network was overlaid, with new routes

implemented and prioritised. During the 1970s, bridge connections, flyovers and the Lagos Inner Ring Road would be built with foundations in the bodies of water surrounding Lagos Island. Superimposition of these connections over a myriad of waterways and creeks, left the original network in place, but also superseded it as the primary means of circulating for urban residents. Accelerations bringing technological change would dictate which networks would become most active and most trafficked, with faster and larger maritime vessels and introduction of motor vehicles altering networking in Lagos. Overlain networks functioning at different speeds operate as an overcoding, with concurrent practices taking place, but at different levels and intensities. The complexity of the terrain, and the desire for 'dry land' would lead to decentralisation of the settlement during the colonial period, with development moving to the mainland, while in the postcolonial era, relocation of the administration would leave behind these successive layers of networking as a legacy.

This chapter is organised into two sections:

- (1) Section One presents literary debates, moving to a conceptual framing of phases in urban history, during which urban dynamics are alternately driven by their historical and genetic, or generic variables.
- (2) Section Two presents primary source material from the colonial period contained in archives in the United Kingdom, and from the *Company Archives of Bilfinger SE* in Germany, followed by an overview of secondary source material on themes of water cities and ports, elites, infrastructure, and contextual literature on Lagos.

3.1. Conceptual Framing, Debates, and Emerging Themes

The first essay employs an historical narrative of Lagos to present its historiography and considers reasons for state abandonment of the metropolis and the 'draw' of Abuja. The second essay, reflects on conceptual approaches to reading the metropolis, understanding urban dynamics in terms of historical phases in which genetics and generic variables alternately produce orders of assembly in the built environment. The method of assemblage implies a different approach to the reading of places and their representation in literature, with implication for periodisation and analysis.

3.1.1. Debates on Lagos, Elites, and the Location of the Capital

The history of Lagos is one of multiple influences, dating from almost its earliest settlements of competing Yoruba tribes, later invasions by the Benins, and the growing influence of the Portuguese, then the British, as well as French and Dutch seafarers, all predating the colonial period *per se*. While "systems of urban centres" in Nigeria predate the colonial incursions (Mabogunje, 1978:12), there is no written record of settlement in Lagos until the 1660s when Chief Aromire swam there from the nearby Iddo Island (Akinsemoyin and Vaughan-Richards, 1976:5), located between Lagos Island and the Mainland. Aromire was of the Awori branch of Yorubas

that were the first to establish themselves here, claiming land rights and chieftaincy (ibid:6). From the early 19th century, with the abolition of slavery, Lagos would see an influx of freed slaves returning from Brazil, Cuba, and Sierra Leone, with the town divided into different ethnic quarters (Bigon, 1974; Peil, 1991). The Yoruba settlement on Lagos Island grew and adapted as economic forces, and the water trade, caused consolidation in areas close to the major canoe lagoon routes and the docks (Bigon, 1974:43). After colonisation, colonials established themselves in the left-over zones of the densely-built Lagos Island, but due to their monopolistic economic policies and resource extraction, European areas, such as the Marina, quickly became the most valuable property (ibid:57-58).

The harbour was an early colonial priority, with Sir John Coode of the British engineering firm, Coode and Partners, making an initial report in 1890 on possible work on the 'Bar' and improvements to the harbour entrance (Coode, 1957:499). The firm would retain an involvement in Lagos port projects well into the 1950s. Merchants had established themselves during the late 1800s along the Lagos Island Marina, setting up independent enterprises around the harbour (Lecomte, 2017:133). The interests of merchants would act as a counterpoint to the attempts of the Colonial Administration to adopt a more centralised port model at Apapa on the mainland (Olukoju, 1992a and 2014). Apapa had ample space for wharfage, with room to accommodate rail and shunting yards, and customs and warehousing facilities (Lugard, 1919:164-165). The scheme was approved in 1913 but work would be slow during the War years (Olukoju, 1992a:67-71). For a time, harbour facilities would exist on both the Island and at Apapa, creating a multi-stop shipping trajectory, but as the Lagos Island wharfage began reaching capacity, the Administration would come to abandon the Lagos side of the Harbour.

Lecomte (2017:127) traces the project of the rail, first envisioned in 1880, to a proposal by Frederick Barry for a line starting at Apapa, and for the removal of the sandbar at the harbour entrance, showing that connection to the hinterland through rail, and accessibility of the harbour were considered parallel projects, necessary for the transformation of Lagos into a major seaport. Lecomte locates another connection between the projects, as importation of prefabricated elements would reduce the number of colonial supervisors needed for construction of the line and stations, enabled by a port and rail link. This may have precipitated "the decision to build entirely new port facilities in Apapa near the rail terminus (ibid:157), and would be the factor that would sway decisionmakers towards consolidating the port at Apapa, moving the focus of activity away from Lagos Island to the mainland, altering the course of development. The rail as a corridor, stretching between Ebute Metta and the hinterland, and the port as a new growth node, attracted settlement and directed expansion onto the mainland, transforming the urban pattern of the town, splitting it between island and mainland, and forming a second urban centre.

Bigon (1974:13) explains the unique infrastructure-led development in West African colonial port cities, taking the cases of Lagos and Dakar, neither of which were regarded as "permanent white settlements" due to the tropical climate and prevalence of diseases such as malaria and yellow fever. For this reason, colonial governors in these settings focussed on the extractive infrastructure of port and rail, and accommodation of the "expatriate agents" rather than provision of urban services to the wider population. This left these postcolonial states with both a scarcity of infrastructure, and the task of transforming the harbour blueprint of the colonial city, with the port as a critical infrastructure for trade, implicated as it was

within an historical extractive project. Nigeria is not unique in developing ambitious post-independence infrastructures, nor was it unique to bring in foreign expertise. A comparable example is Ghana's Tema Port, an example of a legacy infrastructural project championed by Kwame Nkrumah, the first President of Ghana. Although initial planning in the 1950s was undertaken by a Ghanaian architect, later port expansions would be realised with a large multinational team and Chinese financiers to develop a new port adjacent to the original, with the aim of relieving the congestion at the country's major port (Civil Engineering, 2022).

In Nigeria, the significance of port and rail projects is confirmed by primary sources of The Great Britain Colonial Office (GBCO) *Annual Reports on the Colonies*, and the *Report on the Amalgamation of Northern and Southern Nigeria* (Lugard, 1919), which provide a clear image of where investment was being made in Nigeria in the period of the First World War. The territorial strategy of amalgamation of the two Nigerias was aimed at enlarging the economy, with the inclusion of the Southern Protectorate giving access to the coastline, and harbour dues contributing to the national revenue (GBCO, 1915). It would also make for more coherent rail planning at the national level (Kirk-Greene, 1968:28-29). In the Amalgamation Report, Lugard (1919:96) describes Nigeria as affording "an immense field for British trade ... capable of indefinite expansion". The British Administration sought to integrate the country spatially and economically in pursuit of greater homogeneity, in a territorialisation aimed at improving manageability of the terrain, part of a strategy that for Mabogunje (1965:419), represented a "logical outcome" of the 1884 Berlin Conference". While the Amalgamation defined Lagos' role as an extractive node within Nigeria, the desire for an alternate location for the capital would represent a 'line of flight', serving to deterritorialise the metropolis, with long-term implications for its infrastructure.

The collection, *Lugard and the Amalgamation of Nigeria: A Documentary Record*, compiled by Kirk-Greene (1968), contains the official Amalgamation Report prepared by Lugard, together with supplementary unpublished documents. Kirk-Greene's compilation of original documents includes extracts from the Lagos Press that show an initial optimism in 1912 about Amalgamation, turning to anxiety over a lack of information in 1913, and strong resentment in 1914, compounded by the fear that the capital might be moved from Lagos. Lugard considered Lagos unsuited to an expanded role as national capital. Reasons given included its tropical climate, damp winds from the sea, traffic congestion, endemic yellow fever, poor drainage, and ebb tides bringing 'night soil' back from the sea into the lagoon (ibid). These negative perceptions of Lagos recur after independence, with Vice-Chancellor Audu of Ahmadu Bello University, stating that the congestion on the 'Island' had been put forward as a reason to relocate the capital in 1914, but half a century later the narrative remained unchanged (Audu, 1974:i-ii). In former President Nnamdi Azikiwe's tracing of debates on the status of Lagos, he found that arguments against Lagos reiterated shortage of land for expansion (1974:5-6). A final justification presented by Azikiwe was partly ecological, partly structural, describing the ideal national capital as a city with "expansive multi-laned roads" that should be "straight and cross at right angles" (ibid:10). By this definition, as a water city, Lagos in its very makeup could not qualify for the Federal Capital role, and its topography has always precluded it from being the 'modern capital' desired by the first postcolonial rulers.



Figure 7: Aerial Photograph of Lagos lagoon network and harbour, c. 1965-1976
(Director of Federal Surveys in Grenzebach, 1978)



Figure 8: Aerial Photograph of Lagos Island showing the shift in urban pattern from the Yoruba town to development along the Marina, c. 1965-1976 (Director of Federal Surveys in Grenzebach, 1978)

While the withdrawal of the Federal Government from Lagos opened up physical space, easing congestion, the bulk of investment would move elsewhere. *The Report of the Committee on the Location of the Federal Capital of Nigeria*, commonly known as the 'Aguda Report', highlighted the desire for "a completely new start...to reflect national aspirations and desired national image" (Federal Republic of Nigeria, 1975:24). In their view, Lagos was vulnerable due to its position on the coast, and it was both 'the Colonial City' as well as being too predominantly Yoruba (ibid). Abuja would provide a clean slate for planners in the independent nation. The territory of Abuja was a contiguous landmass, with solid foundations to build road and rail. There was a desire for *tabula rasa* but also for *terra firma*. Lagos was too fluid, too unstable, too swampy, and too expensive to fix! The Federal Government would accept the views presented, with the result that the Federal Capital was moved to Abuja, and the Lagos State Capital was moved to Ikeja, on the Lagos mainland.

The planning of a new capital would require international expertise, as Nigeria had very limited planning experience. At independence in 1960, Nigeria had only 30 professional planners for the entire country (Gandy, 2006:378). The master plan for Abuja would be designed by the International Planning Associates (IPA), a consortium involving Wallace, McHarg, Roberts and Todd (WMRT), that had also prepared the United States Capitol Master Plan. Published in 1979, Abuja's master plan came to be attributed, mistakenly, to Kenzo Tange by various publications, although it had been principally designed by Thomas Todd, who had led the project design team. Elleh (2017:134-138) discusses this controversy in his book, *Architecture and Politics in Nigeria: The Study of a Late Twentieth-Century Enlightenment-Inspired Modernism at Abuja, 1900–2016*, clarifying the role of various design practices in the conception and evolution of the planning. Tange had been invited to detail the central area in Abuja's Phase 1 in the early 1980s, following Todd's design (ibid:237), but the firm withdrew from the project after President Shagari was deposed in the 1983 military coup which brought an end to civilian rule (ibid:214). The cost of implementation of Tange's scheme was prohibitive, and Tange's design had been interpreted in ways that were concerning and anti-urban by developers (ibid:240-241). In 1986, Albert Speer & Partner would be brought on board in an advisory role but would develop a plan for the area of the Ministries, and would also review and revise Tange's urban design (ibid:240). With Shagari deposed, those who had appointed Tange and approved the design were no longer in place, and Tange's vision had lost its political champions (ibid:245). JBN began work on the infrastructure of Phase 1 in 1983, and of Phase 2 in 1987 (Julius Berger, 2023), and they would remain to work on various infrastructures and buildings in Abuja, long after the involvement of Todd and Tange had come to an end.

Nigeria would undergo a decolonisation process in the period leading up to, and following, independence from Britain. While established links to the former coloniser would continue shaping trade and development, new links were to form with other Western nations and also with the Soviet Union as Cold War dynamics played out in the greater West African region. Discovery of oil in 1956 made Nigeria a strategic partner, and it is in this context that the secession of the Biafran State, with its oil-rich delta region, led to supply of weapons to the Federal Government of Nigeria under Gowon from both Britain and the Soviet Union, while France armed the Biafrans (Achebe, 2012:115). Commonwealth Office documents reveal that British interest in preventing the secession was primarily informed by the desire to protect its own trade interests (Uche, 2012:757-758). Widespread media coverage of the Biafran War of 1967 to 1970 led to international relief efforts of a significant scale,

prompted by the mass starvation of what is estimated to be between one and three million Biafrans (Heerten and Moses, 2014:169). Following the war, Gowon's announcement of "No Victor, No Vanquished" initiated a programme of 'Reconciliation, Reconstruction, and Rehabilitation', which included reparation of infrastructure, particularly bridges, almost all of which had been destroyed in the area of the attempted secession; a burden that would be borne by the Federal Government (Udo, 1970:11).

These dynamics were made more complex when also considered in a global atmosphere dominated by the Cold War, which saw the emergence of "new geographies of collaboration" that would reshape infrastructural collaborations (Stanek, 2020:2). Socialist and capitalist interests converged on Lagos, while international finance-through-aid for developing countries was an attempt to deter alignment with Soviet power (ibid:6). Nigeria, in seeking to build an independent nation, joined the Non-Aligned Movement (NAM) and looked to form alternative relationships, with the decision to bring in "international urban planning services" enabling "transnational and trans-ideological collaborations to take place" (Fenk, Lee and Motylińska, 2020:38-39). In Lagos, these relationships were established by the elites, with Nigeria's Federal Government setting the agenda for infrastructural projects to be funded through World Bank loans with the security provided by oil wealth as a guarantee. From this context of emerging global relationships managed by financial institutions, the infrastructural projects of the Nigerian elites realised in Lagos, became sites of geopolitical collaboration, bringing together Nigerians and global experts, accompanied by the blueprints and infrastructural models imported from elsewhere. States actively sought to counter the territorial patterns of Empire as shaping path dependencies, with governments inviting professionals from other parts of Western Europe, the Middle East and Asia (Stanek, 2020:6). There was a requirement for technical expertise, and the project experience that multinational engineering companies brought with them was considered advantageous for the development of national infrastructural projects. Nigerians turned to Germany rather than Britain, and German bonds would finance the Eko Bridge, with the strong connection to Germany spearheaded by the JBN company¹⁸. While JBN would become a major employer within Nigeria, and company monographs made claims for JBN's role in skills transfer and development of local manufacturing of construction components, this has been debated by Nigerians, with delegates at a 1982 German-Nigerian dialogue in Hamburg critiquing the relationship, which they saw as being rather more advantageous to the company (Ate, 1984:313).

The '*Nigeria Economic Memorandum*' prepared by the World Bank (1976), describes the political context and economic growth of the 1970s, providing an overview of former plans and their priorities. While initially at independence there had been a focus on attracting foreign expertise, the emphasis would shift towards an indigenisation programme of industry and commerce. Following independence in October of 1960, Nigeria had joined the International Bank for Reconstruction and Development, the lending arm of the World Bank Group, and sought finance for infrastructure projects, including expansion and improvement of the Apapa wharves (TWB, 1962b:1-2). This formed part of the capital development programme of the Nigerian Ports Authority (NPA) over a six-year period (TWB, 1962a:3), coinciding with *The First Nigerian National Development Plan* of 1962-1968 which aimed to

¹⁸ Nigerians were more open to Germans as there was less colonial history, with Germany made to give up its colonies after WWI (Krauß, 2023).

promote economic growth, with investment in transport as a key component (TWB, 1973a:4). *The Second National Development Plan* would also prioritise transport (ibid), including building institutional capacity of the NPA (TWB, 1973b:4). *The Third National Development Plan* coincided with the oil boom and targeted social services provision through means such as free primary education, while investment in infrastructure included further port expansion programmes and development of 16 airports. The Third Plan represented a major increase in government spend, from N2.2 billion in the First Plan and N3 billion in the Second Plan, to N30 billion in capital expenditure to be spent in the five-year period from 1975-1980, and including amongst its objectives, a nation that would be “united” and “self-reliant”, with emphasis on economic diversification and indigenisation (Lewis 1977:60-61).

In the days of pre- and early independence, the Nigerian economy was still dominated by majority foreign-ownership (Ogbuagu, 1983:241-242). The *Nigerian Enterprises Promotion Decree* (NEPD) promulgated under the Military Government of General Gowon, took effect on the 1st of April 1974 (Uche, 2012:754), and was aimed at economic indigenisation (Balabkins, 1980:25) and increased Nigerian participation, both as owners and managers of businesses (Ogbuagu, 1983:241). The 1972 Decree replaced the more conservative *Expatriate Quota Allocation Board*, developed between 1966 and 1967 (Uche, 2012:751). Leading up to the promulgation of the Decree, the government issued a statement to the effect that the policy was aimed at increasing opportunity for Nigerian business, and retaining profits, while at the same time encouraging foreign investment (Ogbuagu, 1983:250). The Decree made provision for expropriation and impacted expatriate business in Nigeria, with schedule one and schedule two companies reserved for Nigerian ownership. As a result, applications for exemption were made by effected companies (Uche, 2012:745-746), in particular to enable a longer time period to Nigerianise (Ibid:759). Promulgation of the Decree prompted high-level engagements with the Nigerian Federal Military Government by the Governments of Britain and West Germany, both looking to protect the interests of foreign companies (ibid:755). British Foreign and Commonwealth documentation reveals that due to its somewhat weak aid programme to Nigeria, there were limited means to influence Nigerian policy, while calls for “joint action” with other European nations were made and rejected (ibid:757-758).

Ndlovu-Gatsheni (2023:para 6) sees more “continuities than discontinuities in the shift from empire to the modern nation state”. Decolonisation projects were often characterised by reliance on the West, if not the former coloniser, with self-reliance difficult to attain in the context of economic dependencies and power relations that were asymmetrical. Importation of expertise was necessary, and indigenisation policies were intended to ensure skills transfer until states would be in a position to meet their own needs. Balabkins (1980) is of the view that the Biafran War of 1967-1970 stimulated the localisation of Nigerian manufacturing and agricultural sectors, as reduced imports necessitated domestically sourced alternatives. While 95% of large-scale industries were still foreign owned during the war, there was increased awareness of the value of building up local industries (ibid:26). However, the evidence is contradictory as the oil boom would reverse much of this progress, with clear disinvestment in sectors such as agriculture from that time onward. Another impact of the civil war, and the overthrowal of the civilian government in the coup of 1966, was an increase in “bureaucratic power” (Akinsanya, 1994:72). This “bureaucratic stratum” (Ibid) of administrators with access to military leaders, became especially influential with “top bureaucrats” in a position to affect

indigenisation policy in the 1970s, and proving to be important connections for businesses, including multinationals seeking forms of exemption from these policies (ibid:72-73). There were also practices such as ‘fronting’ whereby foreign nationals retained management and leadership positions (Uche, 2012:761), while frontmen in positions of political power were offered places on the Board of Directors (Akinsanya, 1994:66). Nigerianisation laws would impact the JBN company, which would become 60% Nigerian-owned by 1979 (Weinert, 1981:52). This process is examined further in *Chapter Five: Capacity-Dynamics, Congestion and Flows: The Indigenisation of German-Nigerian Firm Julius Berger and the Project of Lagosian Port Expansion in the 1970s*.

3.1.2. Phases of the Metropolis: Urban Transformation, Adjustable Parameters (the Generic) and Historic Depth (the Genetic)

Koolhaas describes the Lagos of the 1970s as a ‘generic’ model city, which contemporary Lagos remains reliant upon (*Lagos Wide and Close*, 2004). As the life of the metropolis has grown in and around legacy infrastructures, there has been opportunism and an ongoing improvisation, which has produced its own orders. This production of ‘order’ is the significant emergent factor identified by Koolhaas in his study of Lagos. An interpretation of Koolhaas’ assessment of the infrastructures of the 1970s as ‘generic’, can be approached through a reading of the essay, *Generic City* (Koolhaas and Mau, 1998), in which a city ‘cut off’ from its own history and past is driven forward by its parameters. The ‘generic city’ in this description is the point at which the city is maximally sensitive to its quantitative environment, as distinguished from its historic depth and linkage to its qualitative layers. This raises a question of how to conceptualise the two periods of study in this thesis, and whether it was the history of the metropolis that has been driving Lagos’ urban transformations or whether these were a product of adjustable parameters? History details how particular subsets come together and what makes an urban setting non-generic, drawing from a makeup that may be regarded as ‘genetic’. But when these structural layers of urban history become inactive and are not driving the logic of that city currently, this can be taken as the point at which an urban environment becomes maximally sensitive to city variables. This distinction between activity and stasis lies at the heart of assemblage and explains the differentiation made by Deleuze and Guattari (1987) between assemblages and strata. The stratum is highly coded and territorialised, rigidly structured and internally uniform (DeLanda, 2016), approaching a ‘fixed’ state. Transformations between strata and assemblages can occur, with these two categories able to transform into one another and to operate within one another: assemblages within strata and strata within assemblages (ibid:8). Historical layers can be perceived as more or less active, or periodically dormant. Urban histories may be actively shaping environments during different periods of time, influencing how players within these environments interpret and respond to these histories.

How were people working on infrastructure projects interpreting their task? In both periods of study, the urban processes effected by infrastructure planning were as a result of ideas implemented in a top-down manner, considering what might be ‘tweaked’ for greater efficiency, rather than as an extension of the history. While geometry was both an aspiration and an organisation for early Lagos, with the

Yoruba settlement formed in relation to two poles of influence, the geographic reality of the water network, and the informant structuring of the concentric traditional Yoruba town (Bigon, 1974:42), colonial priority interventions of swamp reclamation, and port and rail, represented a departure from the history of place, to conform to a model of imperial extraction consolidated through a temporary administration. However, the harbour and lagoon network presented a strong genetic structuring, which confounded the attempts to work purely parametrically in the colonial period. With the optimal resources of the 1970s, the JBN outer and inner ring roads were not generated by the historical coding of Lagos, with a densely built-up Lagos Island, which they sought to avoid. Rather the works represented a superimposition of a network over the pre-existent network of the waterways, which had provided the first infrastructure in Lagos. This 'network over a network' revealed a desire for a 'ring-formation' as an optimisation. A historically driven outcome by contrast, would have adhered to a networking of waterways, more akin to the development of Makoko, as the 'Venice of Lagos'.

DeLanda brings the notion of 'phases' in urban history to a materialist reading of society and the built environment, with 'coding' and 'territorialisation' as variable parameters which may be adjusted to explore any assemblage (2016:123). Taken as a method for reading urban histories, the historic fabric can be understood as consisting of both strata and assemblages with more or less 'active' layers functioning during different periods of time, or they may lie inert. This *va-et-vient* of 'phases', involves qualitative changes, where 'critical thresholds' are approached, such as freezing or boiling points in thermodynamics (ibid:6-7). Following this logic, the generic city can be understood as a phase within urban histories, during which time the historical layering is less active. Colonial and postcolonial layering contributed to the layering of material history, and within this, processes of coding, decoding, and overcoding, and lines of territorialisation, deterritorialisation and reterritorialisation are at work in urban geology.

In a book, as in all things, there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness or viscosity, or, on the contrary, of acceleration and rupture. All this, lines and measurable speeds, constitute an assemblage. (Deleuze and Guattari, 1987:4)

The conceptual lineages which run through textual works and collections, are present within material agglomerations, with ideas and their incongruencies and changes, manifest in the city, with its layers and flows. Periods of continuity and relative stability appear to form strata that are immobile, but changes in the pattern of thought, and thinking about urban form will also reflect, creating a mobility in the urban assemblage. The city is stratified as a layering in time, and in so far as a period of urban activity, past or present, may be understood to represent a particular layering, temporal cross-sections reveal composition, spatial relationships, and a diversity of material components as a record of decision making. The analytical 'section-cut', while an abstraction, is useful as a conceptual and representational device in architecture for focussing in on particular structural and formal relationships, which can be projected outward, extending into a three-dimensional complex arrangement of parts. An historical method which involves periodising and selection of bodies of work, places a microscope onto to a situation, revealing details within the context of a frame built into the nature of the apparatus-as-lens. But like

the cross-section, the structuring which emerges from the examination, is itself connected to a larger network of relationships, which can be traced, while dictates internal to research place restrictions in the form of delimitation.

Since continuous activity within an assemblage produces emergent factors at every level of interaction, and urban layers are not uniform but have a topology, intersections between historical periods appear under the lens. In the 'natural language' (Alexander, 1965), the logic is more of overlapping Venn diagrams with direct interaction between nodes, than of the branching structure of the tree where ingredients must pass through all nodes to get to the bottom row. In the city, actual interaction follows Venn-diagram logic, a conception which can be understood through a topological reading of environments, as can be found in Deleuze and Guattari's analysis of Kafka's *The Castle* where "two points at opposite ends of the city turn out to be contiguous and linked ... epitomising the idea of a folded or crumpled space" (1986b:72 in Müller, 2015:29). Potential transformations within an assemblage adopt a structure which is topological, with connectivity between components subject to possibilities of 'folding', changing the nature of their relations. For Alexander (1965) these relationships are intuited by societies inhabiting spatial settings, even if the rules followed are difficult to explicate or to mobilise for urban planning.

The process of archival research also encounters these 'folds'. While an initial body of work is selected for thematic focus and chronology, it is not as the turning of pages in sequence, ordering the narrative, nor like a scroll, involving continuous unfolding and unrolling, with dictates of linearity, rather from a diversity of materials of disparate origins, narrative order is an emergent factor. For Kittler, "the printed book ... forms the material basis for new, hermeneutically programmed reading techniques that enable readers to experience an "inner movie" (Winthrop-Young and Wutz, 1999:xxxv). With the book representing a media change, skipping to the end becomes possible, and constant cross-referencing, greatly increasing the potential connections made by the reader. With access to digital works, the word search is a form of folding in idea space, which seems to speed up connections, making them immediate, and providing entry to a time of expeditious content creation, in which every media change is a fold. The fold complicates the demarcation of periods, since disjuncture and continuity will appear that necessarily requires reflection on prior or subsequent times.

The 'cut' may reveal one of these temporal folds, and an aspect that joins: behaviourally, politically or geographically. While a 'total' reading of the complexities cannot be attempted, DeLanda provides a simple method for tracing interaction at a series of levels. What this means for historical research is that connections between the intentions projected through infrastructural programmes and the social histories appear. The colonial administrative mechanism of 'direct' and 'indirect rule', is a legacy inherited by the rulers after independence. Attempts to resolve cultural and territorial cleavage in Nigeria, with eruption of the violence of the Biafran War, would give rise to strategies at the national scale, including the creation of new states and the founding of a new centrally located Federal Capital Territory in 1975, as a centre of control. In this way, the postcolonial governments attempted to complete the project of unification initiated through the Amalgamation of 1914, with relocation of the government to Abuja in 1991, three-quarters of a century after the British had amalgamated the territory. The military coups present points of rupture, but these can be traced back to instabilities of territory under colonial administration, as a

'folding' in the history. British intention to make the colony economically productive, established weaknesses in the system, contained as potentialities with which the military government would have to grapple. With conceptual demarcations revealing folding, there is encounter with components from a different activity period, with a coincidence that does not appear in the timeline as a schematic conceptual device for examining events as a sequence in history.

3.2. Archives and Contextual Literature

The following sections present an overview of primary sources, with visits to archives in the United Kingdom and Germany, and secondary sources, including contextual literature on Lagos, water cities, infrastructure and ports, as well as on elites during the colonial and postcolonial periods in Nigeria.

3.2.1. The Colonial Archive

Archival research was conducted with primary sources from the colonial era located at 'The University of Manchester Library and Special Collections' (UOM) and at 'The National Archives of the United Kingdom' (TNA) in London. A general selection of primary sources was consulted, particularly those concerning administration of Lagos during World War One, although some sources from the late nineteenth century were also relevant to an understanding of this period in Nigeria. The major collections that proved to be informative include 'The Foreign and Commonwealth Office Pamphlet Collection' at the University of Manchester, and the collections of the 'Ministry of Transport Board of Trade Harbour Department', 'Colonial Office', and 'Lagos Customs and Trade Journals', held at The National Archives. Within these collections, documents examined would include Public Works, Civil Service, and Harbour Authority handbooks and manuals, correspondence and papers, reports and departmental regulations, and record of lectures, interviews, banquets and other official gatherings of colonial officers. Primary sources revealed dialectical oppositions between the attempt to make the Colony profitable and factors which hindered profitability. The Amalgamation of the Northern and Southern Protectorates of Nigeria in 1914 was undertaken by the Governor of Nigeria, Sir Frederick Lugard, primarily to improve the revenue of the territory, but the outbreak of war in that same year would lead to inflation, rising costs and a reduced budget of the Colony. Sir Hugh Clifford, Governor-General of Nigeria from 1919-1925, would remark at an official banquet in 1920, on the "bitterness of Lugard's final years as Governor-General of Nigeria", he imagined Lugard "month after month" watching "in the periodical returns the steady decline of the already inadequate revenue of this vast country" (UOM: Nigeria 10398.31, 1920:7-8).

Access through the port was an overriding concern, as the harbour could only be entered in one location, over a sandbar which presented a danger to shipping because of the reduced draught and rough waves at the entrance to the Commadore Channel. Over several years, correspondence and reports reveal various plans for dredging the 'Bar', protecting the entrance with moles, and improving harbour

infrastructure with deeper channels for larger vessels to enter the lagoon network. Alternative schemes were considered, such as piers that would allow a few ships to dock on the Atlantic side without entering the lagoon, and there was discussion of bypassing Lagos altogether, and instead consolidating port infrastructure at the Forcados Estuary some 240 kilometres to the east (TNA: CO 879/67, African (West) 647, 1902:22). These debates reveal a tension between the will to invest, and the desire to resolve the issue of the Lagos port, and the hesitancy in spending the Colony's budget. The tentative nature of alternative proposals shows the extent to which reduction of expenditure was governing the approach to infrastructure projects. The main railway lines constructed between 1895 and 1912, transformed the economy and increased trade, making ports critical nodes of the transportation system (Mabogunje, 1978:21-22). Even though poor accessibility of the harbour was limiting economic productivity of the Colony, revenue was required for public works and the Colony had to be economically productive to justify further investment (UOM: Nigeria 12782.13:9). With low income from harbour dues, imperial funds were required to subsidise the Colony budget, which therefore had to be revised down (TNA: CO 879/109/2, African (West) 981, 1911-1913). The port at Lagos was an expensive port to develop in a challenging terrain, but harbour dues could not be charged until there was sufficient depth for ships to pass safely (TNA: MT 10/1647, Southern Nigeria 195, H713, 1908:5). With the constantly changing conditions at the 'Bar', detailed instructions were issued on a regular basis for smaller branch boats to make the crossing, navigating by landmarks in the harbour (TNA: CO 659/1, 1911:24).

Control over local population and control of environment are interlinked in the records. Concessions were granted to Chiefs as a means to alienate the land for colonial use (TNA: CO 879/109/2, African (West) 977, 1909-1911), and there was confusion due to co-existent colonial legislation and traditional interpretations (UOM: West Africa 10940.19, 1897:4). The administration was concerned mainly with the economic productivity of the colonised territory, with political structure a secondary concern. The Amalgamation was a means to unite the territory in economic terms (Cole, 1975:5-6), and indirect rule came to be seen as a more likely means of controlling a territory with a complex network of authority, requiring fewer colonial staff to implement (UOM: West Africa 10940.314, 1939:2). It was advocated by Lugard, who was familiar with the system of indirect administration from his time in India. Lugard had been born in India (Bigon, 1974:202) and the experience of the Indian Colony informed his thinking on administration, as it did many other Colonial Officers, including Chief Medical officer, Henry Strachan, whose strategies of disease management in Lagos were shaped by study of Malaria in India. Disease management strategies were invasive, and building legislation dictated that no building could be constructed without approval of the Lagos Municipal Board of Health (UOM: West Africa 10940.51, 1910). Colonial officers considered Lagos a hardship posting, and many held a negative view of the environmental setting. Records describe a colonial outpost beset by difficulty, with inadequate budgets, lack of staffing, altercations with autochthonous groups, as well as heat and a high deathrate due to endemic diseases (UOM: Nigeria 12782.13:10 and UOM: Medical 11203.34).



Figure 9: Port and rail proposal with the dredged Fairway Channel through the Harbour, c. 1912-1919 (Kirk-Greene, 1968)

Working through archival records differs from reading secondary sources. With a book, the narrative is more prescriptive, and the reading is directed by the voice of the author, which affects how the message will be received. While narrative is rendered, much of the correspondence involves data exchange for practical purposes. With data selection from numerous, diverse sources, paradoxical situations appear. The colonial administration appears alternately inept or competent. This is enhanced by the time factor, as the records primarily comprise correspondence and reporting, with the slowness of mail delivery via ship between colonial outposts and Britain, complicating decision-making. The data is more immersed in the setting, with the landscape of Lagos seeming to feature as an antagonist, and countering colonial programmes. Linkages and threads become apparent as one reads across multiple documents, so that the reader is experiencing them, rather than being guided on how to read them. As a collection, there is no unified narrative voice, and reading examines times, dates, and information in the raw. This moves from a retrospective narrational slant to a kind of actuality inherent in data transmission, and a sense of immediacy. When the annual budget for the 1912 year had to be reduced by £80,000, one suggestion was to reduce medical staff, but the nurses were already on the ship at the time of writing (TNA: CO 879/109/2, African (West) 981, 1911:77-81). Decisions are changed and individual authors disagree, but there is also a surprising concurrence, due in part to the prominence of particular figures, whose viewpoints come to be accepted. As the environment in Lagos is so directive for colonial officers, their experience becomes guided by authority and hierarchy, and this reflects in the written records. There is an element of persuasion and following of orders, and the Governors feature prominently in the records.

3.2.2. The Bilfinger + Berger Archive

JBN was founded and registered as a Nigerian company in 1970 by the German parent company, Julius Berger (Weinert, 1981:48). It would then become a subsidiary of the German company Bilfinger + Berger, following the merger of Grün & Bilfinger and Julius Berger in 1975; the merged organisation had offices in Mannheim (Bilfinger) and Wiesbaden (Berger) in Germany, with the Nigerian headquarters opening in Lagos in that same year. The early Nigerian projects were undertaken by Julius Berger, beginning with the construction of the replacement of the colonial-era Eko Bridge in Lagos in 1965, with plans produced in Wiesbaden. Following the merger, the Wiesbaden office specialised in the international projects, and mainly in the work in Nigeria, with plans flown weekly from Germany to Lagos (Krauß, 2023). Wiesbaden would continue to provide technical support to the Lagos office, even with the planning of the infrastructure of Abuja, with construction drawings flown to Nigeria on the company-owned Cessna aircraft well into the 1980s (Gaines, 1996:59-60). After Bilfinger dissociated from Nigeria between 2015 and 2018, and left construction, the historical archive of Bilfinger + Berger would be placed in the municipal archive, MARCHIVUM, in Mannheim, Germany. The collection, named *Company Archives of Bilfinger SE*, while located at MARCHIVUM, remains the property of Bilfinger.

The archive does not contain raw project or technical documentation but does have a collection of company journals and annual reports of Bilfinger + Berger. These

records give insight into the organisation and they also feature the Nigerian projects, and the people who worked on them, as most senior staff and engineers at JBN were German. Directors at JBN undertook an elaborate publication project, employing professional writers and photographers to record the Nigerian work in printed monographs, with copies both in German and in English. These books, as well as brochures, that have been preserved in Mannheim, are notable for the record they present of this period of infrastructure development in Nigeria, and major projects of the ring roads, ports, and infrastructure of Abuja feature prominently. The monographs contain copies of contracts, technical drawings, photographs of the projects, and a detailed record of project data, fees, material quantities, equipment, and environmental and logistical challenges. They also contain formal notes of acknowledgement and some more personal messages from high profile Nigerian elites. While the monographs do not mention politics, these dynamics are a clear subtext, legible to anyone with a knowledge of the political changes in Nigeria, with the alternating civilian governments and military regimes. What comes through in all accounts, is the high regard with which elite administrators and political figures in Nigeria held JBN, while the company would come to outlast many of these figures, who would have shorter terms in office. A full list of company monographs is included in the third empirical chapter, in Section 6.2.3. *A Built and Printed Monument: Narratives and Counter-Narratives*, which analyses the JBN publication project and possible motivations for its production.

The *Berger Welt* journal, with the title translating to “the Berger World”, was a Berger-Bauboag journal produced quarterly from 1963 to 1975 up until the merger. It was written in German, with its first edition, the 40-year jubilee edition of Julius Berger, published in April of 1963, opening with an entry on the Maracaibo Bridge in Venezuela. Julius Berger had worked on the construction of the Maracaibo Bridge between 1959 and 1962, to a design of Italian civil engineer Riccardo Morandi. The project was significant as it would position the company to work in Lagos on the Eko Bridge, in similar conditions, requiring specialised floating equipment which the company would bring with them from Venezuela (Offenbach, 1980b:265). Julius Berger had been undergoing a crisis in the 1960s and was seeking international work to stabilise its finances (Krauß, 2023). Despite political turmoil in Nigeria, circumstances were ideal for JBN to embed themselves, with the infrastructure deficit of the colonial period, and Gowon’s post-Biafran War rebuilding programme requiring engineering expertise, and the oil boom, which made ample funds available to the Government. For the first contract with Julius Berger, a German Federal Ministry bond had funded the Eko Bridge (Krauß, 2023), and World Bank Documents (1962a, 1962b, 1973a, 1973, b, 1973c, and 1982) detail the loans for the Apapa port extensions which were to follow, with JBN’s appointment from the 1970s, and their performance documented in the records. After the oil embargo of 1973, the Nigerian government and NPA would assume the financing of future port and road infrastructure projects.

The first entry on Lagos appears in the *Berger Welt*, *Heft* 13, in March of 1966, with an account written by Rita Hawranke, the wife of Director, Günther Hawranke, describing daily life in Lagos, and the Berger camp. The last issue of the journal, *Heft* 52, published in December 1975, also contains an entry on Nigeria, from Hans Wittmann, a Managing Director and later Board member, reflecting on a decade of

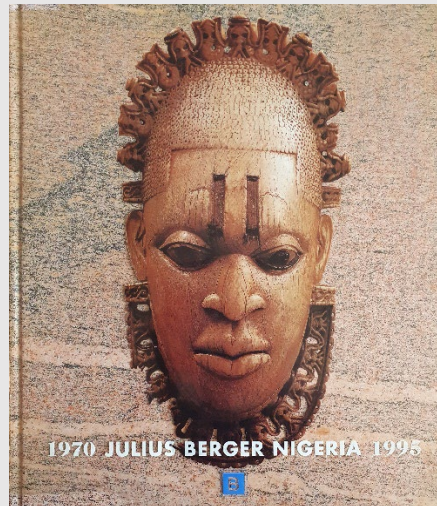


Figure 10: Book covers of the Bilfinger + Berger and JBN monographs.
 (Blum and Gaines, 1996; Blum, 1981 and 1990)

Berger building activity in the country. From 1976 the journal was renamed the *Unsere Bauwelt: b aktuell*, printed in English from then on for a wider readership. Still a quarterly, and simply referred to as *b aktuell*, meaning 'recent news', it was published up until the year 2000, although only the years (1976-1979) are referenced in this research. The journals depict the lifestyle of 'expats' living in Nigeria, including accounts of the Berger soccer team, known as the 'Bridge Boys'. While the journals depict company life, the *Annual Company Reports (Geschäftsbericht)* of the 1970s discuss the recession in Germany, and report on the increasing proportion of international work taken on by the company. Germany and Nigeria in the 1970s had inverse fortunes, and falling employee figures in Germany can be compared to the company's growing international staff. These records allow for an understanding of the organisation, and the ways in which the merger of 1975 in Germany impacted company culture. The merger and the process of Nigerianisation unfolded concurrently, involving reorganisation at company level. There were difficulties associated with the merger and with the integration of two company cultures, discussed in Section 6.1.2., *The Merger of Bilfinger and Berger: A Company's International Expansion and the Inverse Fortunes of Germany and Nigeria in the 1970s*, with Julius Berger and Grün & Bilfinger, as two parts of the same company, but competing for the Nigerian work (Stier and Krauß, 2005:493-494).

There is also a film archive held in the repository at MARCHIVUM, of JBN projects filmed and produced by the Bergmann Film Studio in Hamburg, and collected by Bauforum24.biz, which published films from German construction companies. *JBN – 25 Years of Success* (1995) shows something of the process of operational Nigerianisation, with production of their own bricks, furniture, and the indigenisation of processes in construction projects awarded in Nigeria, although trucks and machinery shown in the footage were clearly imported, mostly from Germany. *JBN – 40 Years* (2010) shows the logistical challenges, and the company's expansion enabled by radio technology, allowing for long-distance communication in a context where road connectivity nationally was fragmentary. *Eko Bridge Lagos* (c. 1970) is an earlier collection of film footage, and project drawings produced as an analog stop-frame compilation. This collection shows the first years of Julius Berger in Nigeria, with the signing ceremony of the Eko Bridge contract, Gowon's presence at the opening ceremony, and also the operations and logistics, with aluminium suitcases of drawings flown from Frankfurt to Lagos, a lack of safety equipment evident on sites, and the company ship, the Minden, named after the town in Germany, which brought equipment and material to Lagos.

Potential for emergence of tensions between the critical voice of the researcher and the 'voice' of the author within JBN publications should be acknowledged. The perspective adopted in this research was a non-normative approach of letting the texts speak for themselves, while positioning of company narratives in combination with other records enables analysis, revealing systemic forms of power of the multinational corporations operating in Nigeria at the time, and enabled by successive Nigerian governments. The JBN company would have a hegemonic influence, while asymmetrical geopolitical relations existed between the states of Germany and Nigeria. The researcher was cognisant that power for Foucault is capillary, and is a "complex, shifting field of relations" (Fraser, 1989:29). There is no 'outside' of power relations from where the researcher has a neutral vantage point, and engaging these archives, in a similar vein to examining colonial records, gives

rise to questions of who writes history, how texts were produced, and for what purpose. In keeping with the assemblage method, documents examined are viewed as components which served to reterritorialise the social territories of companies and infrastructure projects. They therefore give rise to forms of criticism which are 'imminent', with 'voices' of the times clearly out of keeping with contemporary normative frameworks. This has been presented as part of the evidence examined, with particular focus on language codes which are revealed in the documents. In this way, it is the historical 'norms' themselves which come into sharper view and are afforded a temporality according to which they appear unacceptable, calling for a deeper inspection and revision in present-day society.

In comparison with the archives of the colonial period, the material on JBN and its parent company are organised into a narrative structure. To read these documents, involves looking behind the narrative to the events and interactions. From a managed narrative, there are still revelations, glitches, things that leak through or that are surprising; inadvertently things are said that do not form part of the 'current' register for the time. Agreements made between senior members of the firm and Nigerian elites produced a way of co-existing, a way of working together, and the relationship between figures such as Wittmann and Heads of State, Governors, and Administrators was a diplomatic exercise, that reinforced company position and the territorialisation of JBN in Lagos. The social network established between these actors and the institutions they represented, functioned through recognition of performance, and by virtue of reputation. The network access enabled the company to assess risk, and to make calls of judgement. The records reveal that there were delayed payments by the government clients, but this did not halt the work. They also reveal that the company's contact with Germany, facilitated by a fleet of ships and aircraft for bringing equipment, could be utilised in other ways beyond the core function of delivering the project, but as a supportive infrastructure which could be drawn on by Nigerian officials. In particular, this was the case post the programme of Nigerianisation, where the boundaries between company and state become less defined, enabling Nigerian elites to access this extended project infrastructure of JBN. The analysis of records reveals that access to elites enabled the company to stabilise its relations in Lagos and later in other parts of Nigeria. The communication, publication and media output of JBN was not just a form of image management, it contains content that is revealing of other motivations and concerns, which appear under the microscope of analysis.

3.2.3. Secondary Sources and Themes

A group of continents were connected along their coastlines as Christopher Columbus set sail for America, Bartholomew Dias travelled to India, and a succession of Portuguese, Dutch, British and other expeditions were to have significance for Cape Town, Lagos, Senegal, Accra Gold Coast, Mombasa, Maputo, Madras, Hong Kong, and Bombay, amongst others (Davidson, 1959). The Atlantic became a theatre of power in the global exchange of goods and slaves, which left coastal settlements vulnerable to the erasure and re-erasure of aspects of traditional ways of life (Acey, 2007; Bigon, 1974; Peil, 1991). This emergence of global trade resulted in the formation of the modern world and the nation-state (Berger,

2001:893), and for African countries, the formal dissolution of tribes¹⁹, as new urban centres attracted people away from kingdoms, and colonial incursions altered traditional ethnic hierarchies (Asiwaju, 1995). From 1884, many of the ethnic territories were dissolved and regrouped into blocs of colonial states, or colonial capitalist enterprises (Bigon and Katz, 2014). Coquery-Vidrovitch (2005 and 2009) covers this period of expansion of the coastal colonies to their hinterlands in West Africa, with an Atlantic economy transforming from slavery to trade. Britain established itself with a monopoly in a worldwide network of trade through its navy, becoming a dominant force in a global system in which there were circulations of capital and goods (Hobsbawm, 1969; King, 1990).

In *A Thousand Years of Nonlinear History*, DeLanda (1997b) distinguishes between landlocked capitals and maritime metropolises as two types of urban assemblage with differing ecologies of institutions and topologies. While the capital comes to dominate culturally, as was envisaged for Abuja to be unifying influence for the nation, the maritime city by virtue of its connection to a network of port cities, becomes more culturally diverse, with less 'codification' and lower 'territorialisation', with the port city's topological structure historically more closely linked through maritime networks than to inland cities within its own region²⁰. Lagos' position as a 'gateway city' allowed for access to the wider world market but also served as a threshold for access to the hinterland and extraction of resources. The topological setting of the port city, which offers access to networking through shipping, alters relative distance and accessibility, at times speeding up cultural and environmental transformation. And yet at other times, this same connective networking is characterised by delays, blockages and congestion. The intention of postcolonial leaders was to achieve a more homogenous culture, a more crystalized political-urban relationship, and a more inwardly oriented nation, through the relocation of the capital to Abuja, taking this conception of topological structuring as a model and general principle. At the local level, water has been a medium for negotiation and exchange, and the organisation of activities like trade, with water commerce in the Bight of Benin during the nineteenth century following an east-west canoe route connecting coastal nodes of Lagos and Accra through lagoon networks, rivers and, in places, the open sea (Manning, 1985:62). Manning estimates that 10,000 canoemen would have been needed to cover the territory of the lagoon networks of the Bight of Benin, and that the scale at which water-borne trade took place has been underestimated (ibid).

The water histories of the port and harbour at Lagos have been most extensively covered by Nigerian scholars, Ayodeji Olukoju and Edmund Chilaka. Olukoju has written on almost every aspect of the port city, and the Lagos Port, from development of the natural lagoon to a colonial-era infrastructure (1992a; 1993; 1994), on the colonial era Elder Dempster Shipping line (1992b), and more generally on Lagos' infrastructural development (2003) and that of other African seaports (2020). Chilaka (2017) has written on maritime trade in Nigeria since independence, as well as Apapa's contemporary challenges (2019). Chilaka examines the Port Authority as an organisation, that had been managed by three separate agencies up until its consolidation as the NPA in 1955, leading up to independence, with training and upskilling of port employees forming part of the Nigerianisation programmes (Chilaka

¹⁹ The collapse of the Oyo Empire in Yorubaland and the Benin Kingdom in the eastern Yoruba states c. 1800 are notable examples (Asiwaju, 1995:699-723).

²⁰ See Braudel, F. (1967-1979) *Civilization and Capitalism, 15th-18th Century*, Volumes I to III.

2017:115). Since these authors have presented a comprehensive overview of port history in colonial and postcolonial eras, this research does not attempt to revisit their work, but to offer an alternative reading, concentrating on the port as a project, and as an environment that has been coded and managed by differing social groups, and has come to represent differing attitudes to infrastructure and territory in colonial and postcolonial times. Primary sources also provide insight into the more ad-hoc management of the port before and during WWI, and the tactics employed by JBN, to continue their work and access equipment and materials during the port congestion of the mid-1970s, both aspects which have not been covered by either of these authors.

The major actors considered in this research are elites, as the planners and implementors of infrastructural programmes, with colonials occupying particular roles by virtue of their position as governors, administrators, and medical staff, amongst others, but all “sharing a common status” as representatives of a white “power group in an indigenous town” (Cole, 1975:3). The documents examined are mainly primary sources, as the intention for presenting this period in Lagos’ historical development was not to provide an overview, but rather to seek connections between ways in which the landscapes and environments were described and managed. The period of focus for postcolonial infrastructure development is the Lagos of the 1970s, with some discussion of an initial indigenisation of JBN taking place during the second half of the 1960s. This was a period of military rule, making literature on military elites necessary to provide contextual background. The First Republic (1960-1966) was characterised by a crisis of legitimacy and weak institutions (Misawa, 1992:46). Afinotan (2014:172) looks at the genealogy of public administration, including “Praetorian rule” in terms of which agencies given to the postcolonial state derived their structure from the colonial bureaucratic forms, representing an imposition, and aimed at power through domination rather than legitimacy. These agencies were often not adequately transformed during the process of decolonisation.

With military takeover in 1966, followed by a succession of *coups d'états*, the bureaucracy represented a thread of continuity, functioning to implement policies and decisions made by politicians. But the military would become reliant on these civil administrators, who advised on policy (Dibie, 1997:137-138), with military generals including Gowon, Muhammed, and Obasanjo making use of administrative commissions to investigate issues and to make recommendations (ibid:152-153), with the Aguda Committee as an illustrative case. In this way the military regime adopted a technocratic form. The politicisation of the bureaucracy gave it power to influence policy but the close relationship between military elites and the civil service also made it more vulnerable during ‘cleanup’ periods (Nwankwo, 1980:304). Following the ‘cement crisis’, the enquiry conducted under Muhammed’s government revealed that ministry officials connected to the cement contract were guilty of corruption (Emenyeonu, 1997:55-56), in response, there followed a purge of 11,000 civil servants. This political context will be explored further in chapters five and six, to consider the intersection with infrastructure programmes. The JBN monographs do not mention the links between politics and infrastructure, but this will be reflected upon in empirical chapters, enriching the account of infrastructure development in Lagos under this period of military rule from 1966-1979.

The topography has presented an underlayer to planning, interacting with attempts to impose successive visions. The work of Bigon (1974) looks across precolonial and

colonial planning eras, tracing the history of a changing planning context in relation to cultural life and society. Mabogunje's (1978) detailed study of regional growth patterns, from the precolonial to postcolonial, provides an historical overview of shifting tribal patterns and urban centres, with organisation of production into guilds, with master craftsmen, journeymen and apprentices, and an exchange economy, centred on town markets. This work is fundamental in understanding the ways in which colonial influence reoriented the traditional economies. Sociologist, Margaret Peil, has written on the evolution of customs, economies and planning in her work *Lagos, the City is the People* (1991), which begins with the precolonial, examining how experiences of the city changed through differing eras and leadership. As the colonial administration became more entrenched, sandfilling and reclamation projects became the predominant mode of managing terrain. There is record of these schemes presented in the work of Akinsemoyin and Vaughan-Richards (1977), and others (Olukoju, 2003; Bigon, 1974; Peil, 1991; Bigon and Katz, 2014).

A work that presents a wealth of official reports, maps, plans and photographic documentation from the colonial to the early postcolonial period, is Godwin and Hopwood's *Sandbank City: Lagos at 150* (2012). The authors allege that while segregated planning policies have negatively impacted Lagos, compared to other colonised urban centres in Africa, racial segregation was minimal. This is consistent with Lugard's comment in 1902, that "residences of Europeans and natives are already so hopelessly intermixed" (Bigon, 1974:145). However, plague during the colonial era would lead to increasing segregation between European and African settlements (Bigon, 1974; Peil, 1991; Gandy, 2006). The literature reveals certain continuities in approach beyond the end of colonialism in Nigeria. The Lagos Executive Development Board, established in response to the 1924 plague, implemented slum clearance schemes, as well as focussing on swamp reclamation and drainage (Bigon, 1974:168). Slum clearance schemes would continue in the 1950s decolonisation period and after independence, displacing tens of thousands of residents (Peil, 1991:167-170).

3.3. Concluding Thoughts and Contribution

This chapter has presented archival sources relevant to the two periods of study and an overview of secondary literature, some of which will be explored in more detail in empirical chapters. Study of the bodies of literature reveals a Colonial Office at Lagos that was invested in an infrastructure of extraction, but disconnected from setting, and that this would shape its approach. Both eras have involved the importation of projected ideas, notably in the colonial period, with experience of British colonisation in India, which would influence the approach to both administration and disease management. While literature has evolved beyond the more classic understandings of infrastructure to include their functioning as political sites (Crain and Oakley, 1995; Nolte, 2016; Weizman, 2017), and for contesting citizenship and asserting the right to the city (von Schnitzler, 2008), fewer readings on infrastructure as sites of political accountability, have examined the role of design, and the transformation of political work into a design language of infrastructure which is being scripted within the city. This presents a gap in the literature which a study of changing political dynamics in relation to physical infrastructure delivery in Lagos might address.

The 'generic city', which is the embodiment of policy driving design, and design driving policy, places JBN at the heart of the discussion of infrastructure development in a technocracy in Lagos during the postcolonial period. Urban design employs policy to shape form, working generically and preceding formal articulation. Public administrations that use global indexes as measures of city performance are also employing generic measures as a means to steer urban futures. Design-by-parameter is at the heart of Patrik Schumacher's parametricism and his work on autopoiesis in architecture (2011). This body of work has a bearing on infrastructure, which is often conceived of as superimposed onto context. The paradigmatic megalopolis or conurbation, Lagos, can be viewed as a setting that brings together different stakeholders. Modernity is what leaders plan: how they envisage the future but always never fully achieved. The tradition is how people inhabit the city according to their cultures and customs. It is these networks that constitute the infrastructure of Lagos, while other networks are overlaid.

Beyond the company publications, and outside of the *Company Archives of Bilfinger SE*, little information exists on the role that JBN played in Nigeria. The internal and external communications describe how the company Bilfinger + Berger was presenting the Nigerian projects to its staff, and later to clients. The considerable publication output of JBN in the form of monographs featuring the Nigerian projects, fulfilled a public relations directive. But they are revealing for what they present in terms of data and recognition of the company by political and administrative elites in Nigeria. The contribution of this thesis in a close study of this literature, is a 'decoding' of the tropes associated with format, to present analyses of the JBN built and written output, with a focus on the use of language codes and visual codes. Through literature review, three phases of JBN activity have been identified as indigenisation and embedding, adaptation involving optimisation of operations and servicing of equipment, and expansion, which involved the moving of personnel, equipment and supplies across Nigeria. These processes will be studied in relation to macro-dynamics as factors which constrained and enabled JBN's trajectory in various ways.

Chapter Four: Territorial Ambition, Projects and Projections: The Colonial Port at Lagos as a Microcosm

By 1914, the British had been a presence in Lagos for nearly three-quarters of a century²¹. Despite the intention to make the colony profitable, the entrance to the Lagos harbour had only recently become even intermittently accessible for larger vessels. This was due to a sandbar, referred to in Colonial Office documents as the 'Bar', and which was located at the mouth of the harbour. Passage over the 'Bar' was made dangerous by the altering, and for the most part, insufficient depth for vessels, and at times of rough seas it pushed the currents upward, increasing the size of the rollers. The lack of a working port in proximity to the growing town of Lagos was a limiting factor for the colony. It constrained the ability of the Colonial Administration to earn revenue from customs duties, or to manage the logistics of importing materials required for infrastructure projects. Although funding was limited, the harbour became a priority; in particular, leading up to and during World War One, when it became an Allied port. The profitability of the colony was also to be increased through the Amalgamation of the Northern and Southern Protectorates of Nigeria which took place on the 1st of January 1914, in the same year as the outbreak of war. The development of the port, and the activities that took place in and around it, will be explored in this chapter, in which the port is envisaged as functioning as a microcosm within a wider historical setting.

Given the extractive nature of imperialism, and that the colonial project in Nigeria did not involve colonial *indigenisation* in the territory, the objectives for this chapter are:

- (1) To understand something of the perceptions and resultant approach of Colonial Office personnel in Lagos, as individuals who were there on a temporary basis, and the extent to which this might have shaped their conception and implementation of large-scale infrastructure projects such as the port, with a legacy extending far beyond the colonisation period in Nigeria.
- (2) To examine perceptions of, and projections onto, local environment, as reflected at the scales of the colonial operative, social group, and wider network of the port and harbour, and the extent to which the 'port project' and operations began to take on the codes, norms and practices imposed by the Administration.
- (3) To reflect on the intersections between colonial infrastructure, urban planning and urban services in Lagos, and the domain of disease management, understood as a 'deterritorialisation' of these subject areas that is exposed in the colonial archive; and to conceptualise how these medical narratives and projections of the 'explorer trope' onto landscape, would form part of the justification by colonial administrators for their presence in the colonised territories, leading to major reorganisation in societal and material culture.

These objectives feed into a reading, which is traced through differing scales of interaction in the port-assemblage. The method is applied to organisations and macro-contextual factors exploring interrelations between texts and the case study.

²¹ Lagos had been a consulate since 1851 and the territory was annexed by the British in 1861 (Akinsemoyin and Vaughan-Richards, 1977).

As an approach to method, the port-assemblage brings together the attitudes and intentions reflected in archival records, actors and organisations, and the environmental setting into a socio-technical territory which is subject to the work of coding and territorialisation. The scales of the individual, the organisational social network, and the colony-as-administered from the imperial centre, are examined. Statements, attitudes and beliefs expressed in Colonial Office documents provide a sense of the daily life of the official and are incorporated in discussions of decision-making in the Administration and of the unfolding of projects, themselves temporary associations between actors. Documentation in the form of telegrams, and letters sent by ship on the bi-weekly mail service²², would have fed into the perceptions that those 'back home' had of Lagos as a colonial outpost. The larger imperial project can be understood as exerting downward causality on the component-parts, with constraining factors of slow communications, understaffing and tight budgets, becoming heightened during the World War, while the port project would become even more urgent.

Administrators formed part of a mainly temporary British population in Lagos for a posting of a defined period, while Great Britain remained 'home'. In the 1911 year, Europeans were a relatively small part of the population, 614 in Lagos out of a total population of 73, 766 for the Lagos Municipal Area (TNA: CO 659/1:110). This figure includes those who were there to work on shorter-term project contracts and those on maritime vessels present in Lagos at that time (ibid). Officials responsible for overseeing projects at the port, were all temporary residents. Archival documents reveal a number of project options that had been tentatively proposed: possible investments that represented putative and ad hoc solutions but that were wholly unsuitable in the medium-to-longer term. It was a trader's Empire and within that logic, the port was an essential extractive node. Over the years, while the more considerable investment required was still being discussed, interim measures were introduced, with procedures becoming increasingly formalised over time.

Urban infrastructure implies a level of pragmatism: something that is concrete, material, and usually connective in function. In so far as the multitude of Colonial Office annual reports, training manuals, correspondence and other documentation, can be read as factual reporting on project progress, they also make evident the fixed perceptions, the set ideas, the element of neurosis and fear, as well as exoticism and 'othering' that fed into the interpretation of local environment, and that influenced any attempt to 'stabilise' the territory. Dialogues between colonial administrators and figures in the Yoruba hierarchy reveal differing concepts of ownership and urban management, and infrastructures that had been imposed were not always well received. Although present in small numbers, and not a 'settler colony', colonialism in Nigeria represented a major reorganisation of the customs, the economy, and the development of the urban areas, in particular in the south,

²² Mail from Europe arrived by ship on the 12th or 13th, and 28th or 29th of each month. German mail steamers would generally depart from Lagos one day earlier, on the 11th and 26th of each month. In late 1912, a French mail service would link Lagos to other coastal cities in West Africa (TNA: CO 659/1, 1912:556). There was also a weekly mail service between the hinterland and the port (TNA: CO 659/1, 1911:111).

which experienced 'direct' colonial rule²³. This reorganisation is defended heartily in administration documents. It will be argued that through their attempts at justification of the expansion of empire, as it transpired within the Nigerian context, they endeavoured to bring about a reterritorialisation, now contained within colonial archives.

The chapter is structured into two main sections. Section One will provide contextual and historical background on the port, discussing factors that exert a downward causality on local administration of Lagos and on port development programmes. These factors include the Amalgamation programme, wartime needs of the Empire, and justificatory narratives of colonisation put forward by senior administrators. Analytical sub-sections presented in Section Two look at the colonial administrator and experience of life in Lagos. The ordering of environment is looked at through rules and regulations governing the port and navigation of the harbour, which reconstituted it as a setting. The third subsection analyses deterritorialisation of specialisations which come to intersect in the colonial project in Lagos. This is reinforced through appraisal of colonial archives as bringing disparate materials together, so that in piecing together the narrative, there is evidence of disjuncture between intentions and what has been achieved. But there is also coherence that emerges in the general attitudes of colonial officers, which taken together, come to represent a continuity and a binding factor.

4.1. The Colonial Administration and Attitudes to Infrastructure

The following sections provide background on the larger territory and Amalgamation of the Northern and Southern Protectorates of Nigeria in 1914, coinciding with the beginning of the Great War. Limited personnel and a restricted budget impeded the development of the Colony's port and rail infrastructure during this time, however under Lugard's governorship, the port at Lagos would become a priority project.

4.1.1. The Dual Mandate: Amalgamation and Territory, Direct and Indirect Rule, and Justification of British Presence in Nigeria

In 1906, an Amalgamation of the Colony of Lagos and the Southern Protectorate of Nigeria took place. On the 1st of January 1914, there was a second Amalgamation which brought the Southern and Northern Protectorates of Nigeria under a unified colonial administration. At the time, Nigeria's population was estimated at 16 million and in a statement made in the British House of Commons, the extensive territory was comparable in size to the whole of "France, Italy, and Switzerland combined" (TNA: CO 659/1, 1912:468). Sir Frederick Lugard, who had been High Commissioner of the Northern Nigerian Protectorate until 1906, was brought out from

²³ Unlike Northern Nigeria, Lagos was ruled directly. Lugard would attempt to extend Indirect Rule to the entirety of Nigeria following amalgamation.

Hong Kong, where he had been Governor, to bring about amalgamation of the 'two Nigerias'. Lewis Harcourt²⁴, Secretary of State for the Colonies (1910-1915), described Lugard as having proven capacity to implement the unified administration, with Northern Nigeria being "...the product of his foresight and genius. He reclaimed it from the unknown; he gave it a legal code, differing only in its civilization from the essential lines of native custom; he established a land system which, combining altruism with revenue, may well be a model and an inspiration to other protectorates" (ibid).

Harcourt was referring to the administrative instrument of 'indirect rule' which had been introduced by Lugard in the Northern Protectorate, with superimposed colonial 'supervision' over and above the traditional hierarchy of emirs or chiefs. After the Amalgamation, Lugard would attempt to extend this system to the whole of Nigeria with varying success. Lugard's justifications for implementation of this policy, included a depleted staff quota during the war with many colonial officers sent to fight, and perceived success of a similar system that had been put into effect in some Indian states (UOM: West Africa 10940.314, 1939:2). It was also strategic, as the traditional administrations best understood the local sociocultural and environmental context. For some, 'indirect rule' presented a path towards eventual self-governance, with Perham (1937, quoted in ibid:4) referring to the "the kindergarten of indirect rule". Bourdillon, a later Governor of Nigeria in the 1930s, describes the indirect system as offering "far greater elasticity" (ibid).

Amalgamation was a territorial strategy intended to make the vast Nigerian colony easier to govern. Territorialisation is defined through the sharpening of boundaries and the "degree of internal homogeneity" (DeLanda, 2006:12). Initially, the two styles of administration, direct and indirect, were left in place, with each territory having its own laws and regulations. Lugard's view was that it would require time to bring them together (TNA: CO 879/113, African (West) 1005, 1913:5), with a system that would function for the territory as a whole. Lugard also proposed a centrally located new capital at Kaduna, to enable faster communication between North and South (ibid:10). The major motivation for the amalgamation was economic. The North generated minimal revenue. In contrast, the south had revenue from Customs, particularly from duties on alcohol. The clearing of the swamps and the construction of roads began to open up Lagos to the hinterland, while in the north the rail was completed to Kano. The Amalgamation had the potential to connect port to hinterland via rail, while enlarging the budget for implementing the infrastructural development this would entail (ibid:3).

Amalgamation happened along multiple dimensions. In 1912, the amalgamation of the rail saw two competing railways, the rail from Iddo to Minna and the Baro-Kano Railway, brought under the name of the Nigerian Railway (GBCO, 1914a). The rail was also crucial in bringing down 159,982 tonnes of stone for the harbour works in that year (ibid:30). The year 1913 saw the amalgamation of the Railway, Marine, and Customs Departments of the two Nigerias in anticipation of the general amalgamation, each amalgamated with the corresponding institution in preparation, then constituted as Combined Departments (GBCO, 1915). Lugard saw the work of colonial administration as involving both an economic and developmental mission. *The Dual Mandate in British Tropical Africa* (1922), at 643 pages, is his magnum opus. It is a work about the mechanics of imperial rule, with the system of indirect

²⁴ Port Harcourt in southeast Nigeria was named after him in 1913.

rule as an instrument, and in it he puts forward his vision of both imperial benefit and development with the harnessing of Africa's resources. It is also a justification of British presence in the territories. The cultural interface between the colonial and the Nigerian was viewed as transformative. As one administrator later wrote, indirect rule "has the great value of retaining a familiar framework within which the native African may re-mould himself and grow, it is essential to realise that the content within the framework will be very different from the original substance. There will be a new man" (UOM: West Africa 10940.328, 1934:1).

4.1.2. War-time Priorities and the Problem of the Port at Lagos

One of the major challenges for the Colony of Lagos had been the budget required for dredging work at the harbour. With the Amalgamation of 1906, the colony budget had increased sufficiently for work to begin on breakwaters at the harbour entrance, and on dredging operations to make the entry channel navigable, and in the same year, it was decided to make Lagos the terminus of the rail (Olukoju, 1992a:69). The Great Britain Colonial Office (GBCO) *Annual Reports on the Colonies* for the years of 1912 to 1919²⁵, reveal an intensive focus on the operation of linking hinterland and port, with sections dedicated every year to 'Rail', 'Harbour Works' and to 'Marine'. Also known as the "Annual Blue Books", they reveal a programme of emergency spending undertaken on the Harbour Works and the Rail under the Governorship of Lugard. During 1913 and 1914, with continued dredging of the bar, larger vessels began accessing the port (GBCO, 1915; GBCO, 1916). The problem of the sandbar at the harbour entrance, and the need for channels deep enough for larger vessels to navigate the channel, made the Lagos port a very expensive undertaking. There had been strong objections to the project of port and rail infrastructure development at Lagos, from, for example, Consul-General Moor to the Foreign Office, who saw little benefit in the schemes and called them "unnecessary" (TNA: CO 879/67, African (West) 647, 1902:2).

In Moor's opinion, Lagos should only be a depot for local trade, and he proposed taking the rail instead to Forcados River, roughly 240 kilometres to the east of Lagos, and bypassing Lagos altogether (ibid:22). In a procedure known as transshipment, smaller vessels which could navigate the 'Bar', would collect passengers and cargo from the larger steamers that called at Forcados and return to Lagos. In 1900, the High Commissioner Lugard wrote to Mr Chamberlain, making the following point: "Were the construction of the railway from the coast under discussion *ab initio*, there would, doubtless, be strong arguments for the selection of a port on which little expenditure would be needed ... where there is no bar..." (ibid:17). However, as the rail to Ibadan was almost complete, Lugard considered the two infrastructures, and their costs, as related, as a decision on the rail route would impact the port, and vice versa (ibid). Moor had suggested that the wharfage established on Lagos Island by the mercantile community, represented "vested interests" in property, which was no reason to make the investment in harbour infrastructure, due to the limited room for

²⁵ The reports from 1913 to 1918 were written by Governor Lugard, with the 1912 report prepared under the authority of his predecessor and the 1919 report prepared by his successor.

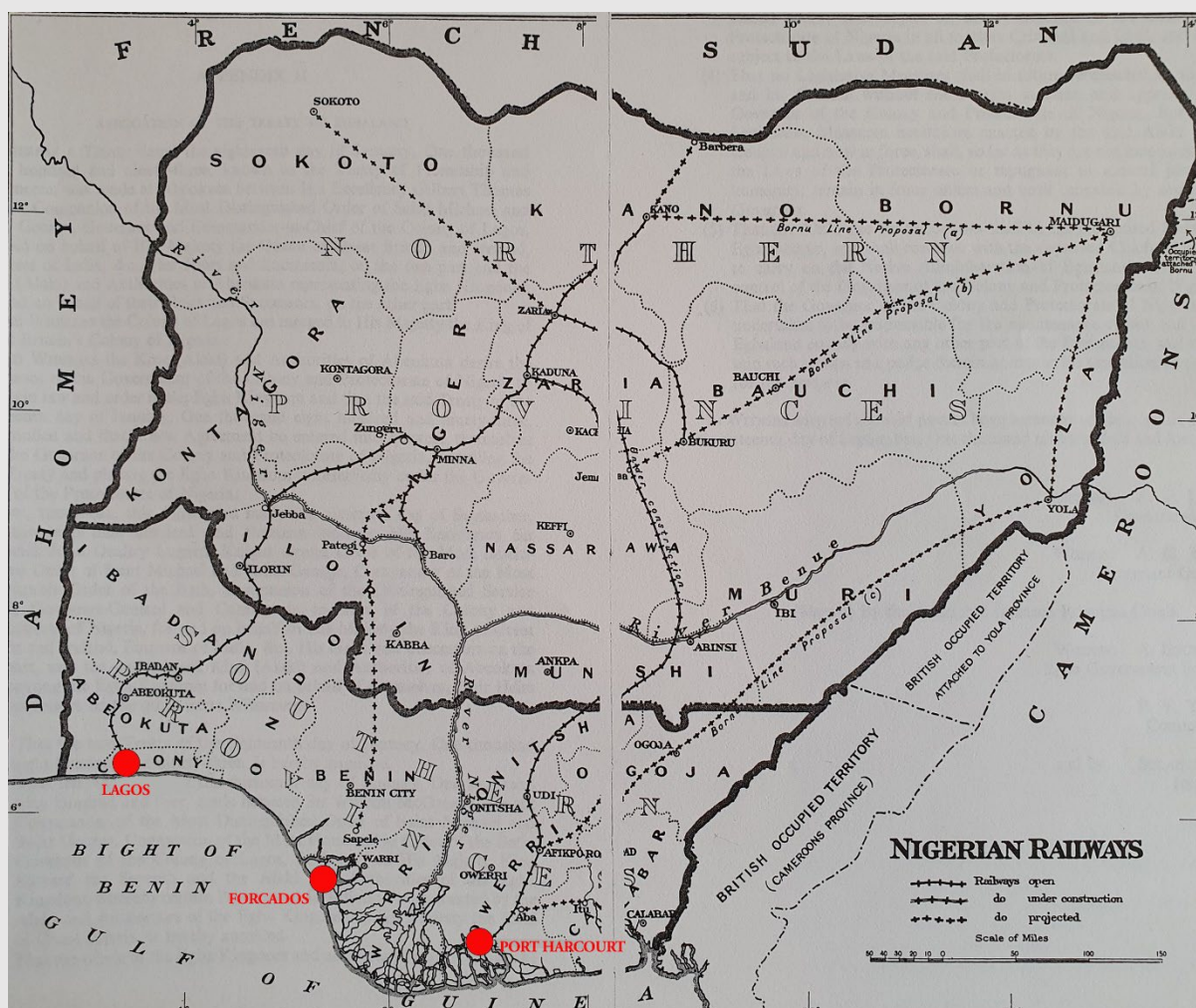


Figure 11: Nigerian railways, c. 1912-1919. Edited.
(Kirk-Greene, 1968)



Figure 12: Proposal for a rail line from Apapa and showing the Lagos bar.
(TNA: MR 1/1804(5), 1880)

expansion on the Island (ibid:46). In spite of the objections, Lagos would remain a focus of port and rail development, but this argument would reassert itself when, in 1913, Lugard proposed consolidating the bulk of the wharfage at Apapa on the mainland, where there was sufficient room for expansion of wharfage, rail and shunting yards, and for Customs facilities. This scheme was adopted but the linking of the various wharves would require extensive harbour works to make the lagoon passable for larger ships, including a new channel to be dredged to link Five Cowrie Creek and Apapa (GBCO, 1916).

The firm Messrs Coode Son & Matthews began work on the port project with construction of two moles to protect the harbour entrance. Work began on the Eastern Mole in 1908, on the Western Mole in 1912, and on the West Training Bank in 1915 (Olukoju, 1992a), with work continuing until 1922 (Coode, 1957:500). Dredging of channels for steamers and extension of the Customs Wharf and Apapa Wharf were approved in 1914 but with the outbreak of war progress was slow, as officers, men and craft were sent to active service (GBCO, 1916). The exports enabled by the Nigerian port and rail infrastructure were critical to the war effort in Great Britain. In 1911, two-thirds of Britain's palm oil imports had come from the colony (TNA: CO 659/1, 1911:200). This was increased up to 100 467 tonnes by the 1919 year, as it was required for the manufacturing of ammunition (West Africa 10940.134a, 1925:810).

1915 marked a period of relative infrastructural stasis with little progress made on the Lagos Harbour Works. This was mainly due to shortage of coal, which prevented dredgers from working on the bar, with the result that the port was closed to large ships from April until the end of the year (GBCO, 1917). The goal of reaching the coalfields at Udi by rail became an overriding preoccupation. With the coal shortages, reclamation was also suspended in 1916 until June, however, during the year, the rail reached Udi²⁶, and some progress on the bar opened shipping access, with increased revenue from harbour dues (GBCO, 1918). From 1917, harbour access was much improved with a depth of 19 ft (UOM: Nigeria 12782.13, 1924:1), and in 1918, dredging of the bar and outer harbour continued, while plans for wharves at the new railway terminal at Apapa were approved, and construction of 800 feet of wharfage (GBCO, 1920). From 1919, there was increased shipping and the bar draught improved to between 20 and 21 feet over the course of the year (GBCO, 1921). But the problem of accessibility and capacity of the port would continue, restricting customs revenue and limiting imports of materials required for expansion of rail and other infrastructure, with Lagos Governor, Sir Hugh Clifford, stating that:

We are suffering in Nigeria at the present moment from a constriction which is caused by the existence of two narrow bottle-necks through which the trade, which

²⁶ Previously Nigeria had been reliant on Welsh coal but the 'Bar' presented a problem for cargo delivery. A public notice of coal contracts, states that a draught of 16ft had been attained for several months in 1911, but that conditions might change. The notice advises ships to discharge up to half their cargoes at the other West African ports before attempting to enter Lagos. (TNA: CO 659/1, 1911:240).

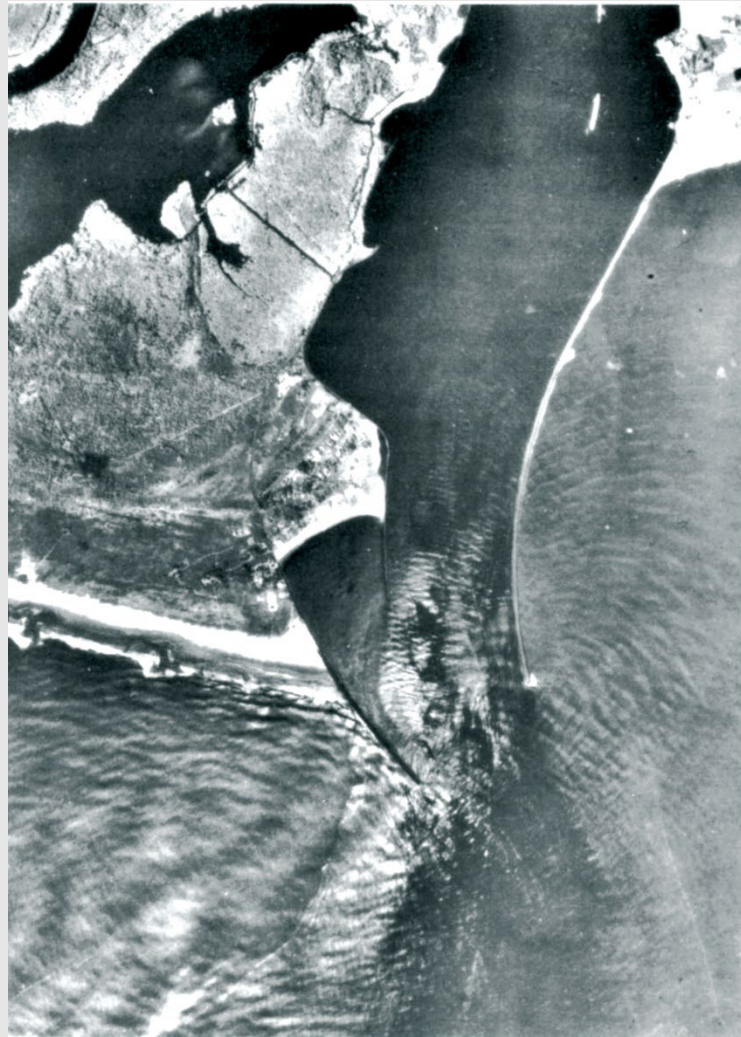


Figure 13: East and West moles, Lagos harbour, c. 1965-1976
(Director of Federal Surveys in Grenzebach, 1978)

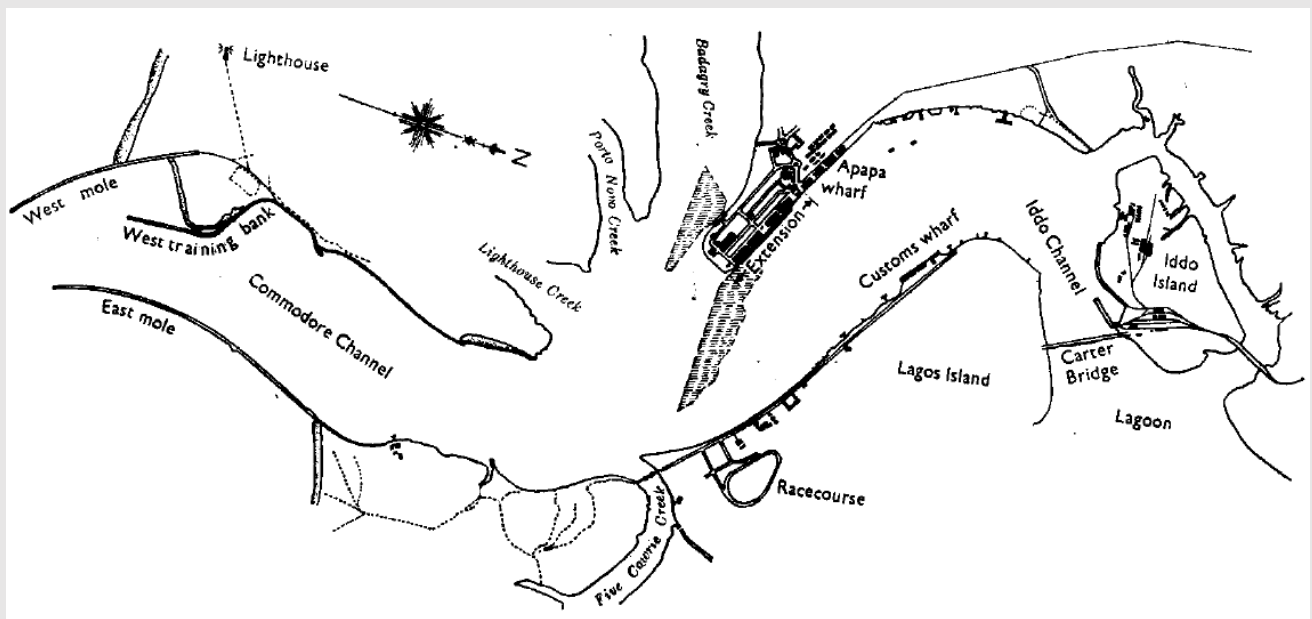


Figure 14: General Plan of the Harbour
(Coode, 1957)

is the life-blood of the country, has to pass. They are Lagos and Port Harcourt; and during the next few years, and until the harbour facilities of those two Ports have been enormously extended, it will tax our powers of organisation and calculation to the utmost to enable us to import into the country the permanent-way material, and the ironwork for our bridges, the steel and cement for our wharves. (UOM: Nigeria 10398.31, 1920:8-9)

4.2. The Nature of Colonial Investment in Lagos: Codes, Territories and Perception of the Environment

The following section presents three areas of analysis: perceptions of environment; the port as a navigational setting; and intersections between infrastructure and disease management in colonial Lagos. Attitudes revealed in the archival material are reflected upon as being a source of policy, and defining and shaping its implementation. Differing scales of interaction are traced, with a view to comprehending something of the complexity of the colonial system, as it was imposed in various settings in Lagos. The period of colonisation in Nigeria had a considerable impact on the society, including on land laws. The Colonial Administration required land for its extractive infrastructure projects, as well as for its administrative facilities, and residential enclaves. While the autochthonous communities in Lagos had a deeply rooted belief that land was inalienable, and therefore could not be bought or sold, by 1910, more than half the land that had been previously owned by Chiefs had been “alienated” (Cole, 1975:90), representing a major break with the traditional ways of being. The colonial and autochthonous communities had a very different ‘sense of place’; something that emerges clearly in presentation of perceptions of landscape in archival texts.

4.2.1. A Posting to Lagos: Impressions Revealing Perspectives and a Narrative of Topography

In the following section, a selection of scenarios, anecdotes, and Colonial Office instructions identified in the archival records are presented. They describe something of the ‘arrival limitations’ and experience of entering the port at Lagos, the ideas about Lagos that reached Great Britain, the hinted-at humdrum existence of an administrator working in Lagos during the War, and fear of disease so heightened as to appear more of a neurosis. Descriptions of landscape reveal a tendency both to exoticize and portray the service of a colonial administrator as a ‘trial’, with all the implicit heroic endeavour. Derived from personal accounts, speeches, regulations and manuals, these accounts speak to experience at a more individual scale, its routines, repetitions, impressions and memories, serving as a step from which analysis can move upward to subsequent social scales. The records make evident the extraordinary overreach of the Colonial Office, which moves into the domestic

life and idea-space of both its administrators and the autochthonous peoples of Lagos.

In 1869, John George Cox of the Royal Navy makes this entry in his diary:

... the passages over the bar are very difficult and intricate... It was the first time that I have been through heavy surf. The sight was grand. At one time you appeared to be going directly for the middle of the immense rollers; then suddenly her head was turned and you were going in the opposite direction, when surf appeared to break heavier... It took twenty minutes to be fairly over the bar... (Godwin and Hopwood, 2012)

This was the experience of entering the mouth of the estuary over the 'Bar'. Any employee of the colonial administration, or visitor arriving at the town by sea, would endure this crossing. Even with transshipment via Forcados, which added 16 hours to the journey, where large ships would offload cargoes onto the smaller branch steamers, and passengers could change vessels, the final part of the journey would involve navigation of the bar. With a maximum draught of 13ft, the branch boats could make the crossing into Lagos, although it was only during 1907 that this depth was officially achieved at the harbour entrance (Olukoju, 1992a:63). These smaller steamers were still occasionally wrecked on the bar (UOM: Nigeria 12782.13, 1924:8), and even when draught was sufficiently increased in 1918 for larger vessels, strong tides at the entrance would present a risk (Olukoju, 1992a:69). This account from 1900, outlines another scenario, where passengers were transferred from one vessel to another out in the open bay:

Owing to the heavy sea which constantly runs along this part of the Coast, the branch steamer cannot go alongside the ocean steamer, and consequently passengers and cargo have to be transferred from one to the other by means of surf-boats, an operation which is always attended with inconvenience, and often with danger. (UOM: West Africa 10940.24:3)

These anecdotes sent back from the colony to the imperial centre increased fears of this voyage. The port features as a threshold for arrivals, but also as an element of the environment that was threatening. While there had been many shipwrecks over the years, the sinking of two ships on the bar in 1908, the 'Egga' and 'Kittiwake' vessels from the Elder and Dempster Line, led to rumours about the dangers of the Lagos Port. By Governor Walter Egerton's account, up until improvement of the draught at the end of August 1908, there had been 26 groundings on the bar that year, and two wrecks (TNA: MT 10/1647, Southern Nigeria 195, H713, 1914:5). As larger steamers would begin crossing the bar from the latter part of 1913 (Olukoju, 1992a:65), the wrecked ships were both smaller vessels that should have been able to navigate shallower waterways. There were contrasting claims, some saying that the smooth bar flag had been flying at times of heavy seas, others claimed that the conditions at the bar were constantly changing (TNA: MT 10/1374, Southern Nigeria 440, 1911). While the assessors' report indicated that the Kittiwake had been struck by a large swell, a 1909 report from Egerton claims that investigations had revealed poor condition of both ships, and that this had been a major factor, more so than the conditions at the bar (ibid, H10135:1-2). But the 'Bar' was still notorious in many people's minds.

There were also rumours about health risks: in ‘the Tropics’ generally, but specifically in West Africa. Sir Hugh Clifford, who became Governor of Nigeria after Lugard²⁷, recounted in his speech of 1925 to the Lagos business community, that when offered the Governorship of the Gold Coast, a position he had held for six years before taking up the role in Nigeria, rumours about West Africa had made it seem an unfavourable position, and that he had fully intended to refuse the posting (UOM: West Africa 10940.134a:745). West Africa, and the Nigerian protectorates were known amongst the British as “the white man’s grave”, and when he had left his position in Ceylon for the Gold Coast, his life insurance premium had been doubled (ibid). The fear of illness was not unfounded, Lagos had seen climbing death rates of 71 per 1000 in the decade 1881-1890, which had increased to 137.9 per 1000 by the year 1896 (UOM: Nigeria 12782.13, 1924:10). The theory that the mosquito was the vector for the paludism was proven by Ronald Ross in 1897, when he showed that the female *Anopheles* mosquito could transmit the disease (Kant, Satyanarayana, Sharma and Katoch, 2012). The discovery was made during his time in Secunderabad in India. Ross would travel to West Africa in 1899 to research both malaria and yellow fever (Adetiba, 2019:62).

Sir Ronald Ross²⁸ was on the Advisory Medical and Sanitary Committee for Tropical Africa (TNA: CO 879/109/2, African (West) 984, 1912:25) and would be instrumental to the disease management programme in Lagos. He studied the *Anopheles* mosquito in the swamps of Lagos, alongside Dr Henry Strachan, Chief Medical Officer of the Colony of Lagos²⁹. It was on the recommendation of Ross and Strachan that large swamplands were to be reclaimed and any areas where water would pool, would be covered in oil to prevent mosquitoes from breeding (Adetiba, 2019:62-63). With improved knowledge of the problem, a reduction in the death rate in Lagos was achieved, which fell to 31 per 1000 between 1901 and 1910, and to only 13 per 1000 between 1911 and 1921 (UOM: Nigeria 12782.13:10). But the fear that was pervasive, and that took on an association with mire, swampland and waterbodies, would come to characterise the landscape in the colonial conception as ‘unhealthy’, as containing sickness, and as an environment in which one would become ‘bogged down’. The word ‘paludism’ in fact comes from the Latin *palus*, meaning marsh. ‘The Tropics’ were generally perceived as hostile environments, while the physical setting of Lagos was viewed with pessimism, for its innate unsuitability. Lugard in a report written in 1913, describes the conditions as follows:

It is surrounded on every side by fetid swamps, full of mosquitoes and badly smelling, the reclamation of which is an impossibility. Segregation is practically not feasible, and though the bulk of the bungalows of European officials are grouped round the racecourse towards the south of the island, they are interspersed with squalid native quarters. (TNA: CO 879/113:13)

These words reveal the intention of the disease management strategy: to keep Europeans away from ‘unsuitable’ land, to alter the landscape by draining the

²⁷ Clifford held the position of Governor-General of Nigeria from 1919 until 1925.

²⁸ He was knighted in 1911 and was awarded the Noble Prize for Medicine in 1902 for his demonstration of the way in which malaria was transmitted.

²⁹ Lagos was a Colony until 1906 when it would be amalgamated with the Southern Protectorate of Nigeria.

swamps³⁰, and to keep European habitats away from the Nigerian homes. More formally, this was expressed as a three-tiered policy for dealing with the endemic malaria, involving 'preventative' measures such as use of mosquito nets; 'eradication' in the form of drainage, swamp reclamation and elimination of pools of standing water; and segregation of European homes from the Lagosian 'native' communities, often with 'buffer zones' (UOM: Nigeria 12782.13:10). Buffer zones were used when it had been believed that the fevers may be airborne, but continuance of this policy reveals an association made between behavioural patterns of locals and prevalence of disease. While swamp drainage and segregation were policies for the Colonial Administration at an organisational level, the training of individual patterns of behaviour could be found in regulations issued to colonial departments. *Part XIII Rules and Information for the Guidance of Occupants of Official Quarters* is one such manual issued to Public Works Department employees in 1911, and it spares no detail regarding use of the allocated mosquito net:

It is advised that Mosquito-curtains should always be hung inside the bedposts. They may be suspended from rings made to slide on the upper frame of the bedstead, and should be moved from off the bed in the morning and drawn into the correct position every afternoon, and tucked in under the Mattress, all round, not later than 5pm. The lower portion of the net, for a width of from 6 inches above the mattress to the bottom hem, should be replaced by stout calico or linen to avoid being torn when tucked in under the mattress, and to prevent Mosquitos biting the sleeper through the net. (UOM: West Africa 10940.41:25)

The bureaucratic detailing of these daily practices, amongst other 'survival guidance' offered to colonial administrators, could easily have fed into the fears of the more susceptible new recruits beginning their career in the Colony. The rulebooks are also an example of 'coding', which functions to stabilise the identity of the assemblage once territorialisation has occurred (DeLanda, 2006:15). The issuing of regulations represents a bringing of a ritual stability, with procedures that shape behavioural patterns of the colonial officer, while also playing a formal role of 'keeping up appearances' through management of risk presented by the disease factor. The manuals of regulations apply to the domestic setting, which becomes increasingly coded, blurring the distinction between official and personal realms. The Administration meets the perceived hostility of the environment with categories and codes intended to consolidate "the effects of territorialisation on interpersonal networks" (ibid:59), and through repetition, to manage the fear factor and to fashion reliable employees through routine. But the element of neurosis remains, as can be seen in the following account:

A newly-arrived official was missing from office and club, and after a couple of days his friends went to look him up in his bungalow at luncheon time. He was found in a mosquito-proof house, all apertures closed, lying on his bed with mosquito curtains down, fully clothed with gloves on and a mosquito veil over his face; he had no fever, but he was slowly dying of starvation, heat and funk. He was unpacked and set to work. (UOM: Nigeria 12782.13, 1924:10)

³⁰ Lugard argued for a move of the colonial administration to Yaba. In his vision, a European 'merchant class' in Lagos would then take up the areas vacated by administrators (UOM: West Africa 10940.41:13).

And while all precautions could be taken on land, colonial officers were catching malaria on leave-trips home. The administration began to introduce mosquito-screens for ships, and even wrote to the German Woermann line to suggest that they too screen their ships (TNA: CO 879/109/2, African (West) 984, 1912:4). Conversely, and despite the apparent hostility of the environment, life in the Administration is represented as a somewhat monotonous existence, with few staff and a budget for the territory that was badly constrained. Sir Clifford, makes a distinction between those who took an active fighting position during the War, and who were admired for it, and those who had laboured as administrators in the colonial outposts, “doing the work of many for the trifling pay of one, and who toiled faithfully and in obscurity and in bitterness of spirit that the dull routine of administration in these distant regions might not be suffered utterly to break down” (UOM: West Africa 10940.134a:746). In these terms, the colonial officer is portrayed as dutiful, there for the good of the ‘administration, the work seen as an ‘act of service’, or even a ‘trial’.

Colonial officers in the Southern Nigerian Civil Service were expected to study either the Yoruba or Ibo language, for which they had to sit an exam. The Lower Standard Exam³¹ would be taken at the end of the first period of service for their employment to be confirmed, and the Higher Standard Exam was taken at the end of the second period of service (UOM: West Africa 10940.47, 1909:1-3). The exams tested the ability to read, write and converse in the language. The Higher Standard Examination asked of the colonial officer to “read and translate a passage from a book in Yoruba or Ibo (Pilgrim’s Progress)” (ibid:2-3). The choice of this missionary text is interesting. Hofmeyr (2002) refers to the work as a ‘shadow Bible’ and writes of its influence on Christian traditions in Africa, having been translated into eighty African languages. In John Bunyan’s *The Pilgrim’s Progress from This World, to That Which Is to Come*, a journey is undertaken, involving many trials. The sinner, dragged down by vices, descends into a swamp: the ‘Slough of Despond’. The swamp is portrayed as being the product of sin, and there is some resonance between the narrative and the descriptions of Lagos that appear within colonial records. Lugard sees Lagos as a swampland to be cleared. Clifford attributes the conditions in West Africa to “indifferent standards” of the people, and he sees it as the administrator’s duty “to raise those standards” (UOM: Nigeria 10398.31, 1920:19). In Bunyan’s Christian allegory it is the sinner who sinks, and in this way seals their own fate.

The officers would have had to familiarise themselves with the text to be able to read from it and translate it from a Nigerian language back into English. An association between the physical topography of Lagos and the narrative topography of *The Pilgrim’s Progress* is implied, making an affective connection between an environment as a place of testing and the administrators who were seeing themselves in epic terms, with their role in the Colony taking on heroic dimensions in their minds. In the text, travel is associated with spiritual testing. In a projection of the symbolic landscape of Bunyan, the colonial administrators wanted to drain the swamps, and to clear the ‘Slough of Despond’. Here water is the protagonist, yet antagonist: it is a paradoxical actor. Mythopoesis is a mental construction. In this scenario, it entails the fashioning of a story, that justifies their presence in Lagos.

³¹ From October 1909, this was compulsory for all new recruits and those still on probation. The exams were held twice a year.

There is a brutality to the colonial project that comes through in the accounts, but there is also tendency to mythopoesis and reading of some aspects of the experience in terms of their own literary upbringing, which is projected onto the environment. While the texts are coded, they also represent a territorial reorganisation, infused with an inherited symbolic landscape from a classical education.

4.2.2. Port Systems, Communications and Harbour Rules: The Port as a Navigational Setting

The port and harbour community consists of those on shore and those at sea. To impose and enforce regulations on this highly mobile group before the time of instant communications, required a system of codes, documents, and signals familiar to those who visited the port on a regular basis. As the situation at the 'Bar' was unpredictable, impassable at low tide and dangerous in rough seas, procedures were introduced, involving a system of visual (flags) and sound signalling (gunshots), and strict rules of pilotage. To communicate the daily changes, the Signal Station at Bar Beach would hoist a flag half-mast to indicate that the tide was coming in, and full mast at high tide (UOM: West Africa 10940.55, 1911). As the network of creeks, channels, and the lagoon were not visible from the ocean-side, communications of this nature were managed at the Beach Station (to communicate to ships at sea), and at the Town Signal Station and Telegraph House, for those already within the harbour (ibid). The ships also had to raise their masts accordingly to indicate what conditions were like. Vessels deeper in the harbour network were informed either by the Customs House or at the Office of the Harbour Master as to when crossing would be possible upon exiting Lagos (ibid).

A list of registered 'Bar Pilots' was retained. For the 1911 year, these included a handful of Government, British mercantile, and German pilots who were qualified to make the crossing, and who also had the responsibility of informing the Harbour Master in writing of any changes in bar conditions, in the channel, and in the current (ibid:1-2). This reporting had to be done within 48 hours and was additional to the reports that all pilots submitted every month (ibid:2). An accident out at the bar would be communicated by a 'Black Time Ball' at Signal Station at the beach, and in the Town with a gunshot fired from the Apapa side on the mainland (ibid). The port in linking together distant places and markets, is particularly at-risk of becoming a node in the spread of contagious diseases. Vessels from destinations where sickness had been identified were classified as either 'infected ships', 'suspected ships' or 'healthy ships' (ibid:4-5), and isolation and disinfection protocols would then be observed. A buoy located along the Fairway Channel was placed to indicate a quarantine station and vessels had to wait for a signal giving permission to enter the harbour. At times of plague, ships would remain in the quarantine grounds if found to be carrying sickness. Ships had to signal using a specific flag or by using lights at night to communicate that they were traveling from a location where infection was present (ibid:6).

Documents from 1909-1911 (TNA: MT 10/1374), reflect a back-and-forth debate on harbour protocols due to the risk posed by the bar. There was general concurrence that the 'Bar' required constant monitoring, and that leading marks should be placed to indicate the safest channel through. However, there was some disagreement

about the awarding of pilot licenses for Lagos. Only a handful of Woermann Line and Elder Dempster pilots, so-called “masters of the branch boats”, had licenses for Lagos; pilots who all made the journey at least twice a month, involving crossing the bar at least four times in that month (ibid). In the case where a new vessel arrived without a license for Lagos, the port had an ad hoc system in place, whereby any one of the masters of the branch boats who happened to be at port, would be called upon to take the vessel through the crossing. In the absence of this, the Harbour Master himself would ‘do the job’. Given the recent losses of ships wrecked on the bar, particularly the “SS Ilorin” in 1910 (Olukoju, 1992a:65) and the ‘Egga’ and ‘Kittiwake’ vessels in 1908 (TNA: MT 10/1374, Southern Nigeria 440, H10135), the port authorities felt the need for caution.

In 1911, Governor Walter Egerton made a proposal to limit these licenses, as he felt that four times a month may not be regular enough for a pilot to retain their skill at navigating the bar (TNA: MT 10/1374). The 1911 *Harbour regulations and tide tables, No 3 of the Orders and Rules under Ordinance No. 3 of 1878* states that: “All Pilots shall make passage over the Bar at least three times within the month, or their licenses will be suspended, and they will be compelled to pass a fresh examination before their licenses are renewed” (UOM: West Africa 10940.55, 1910:8). The changing conditions at the bar required constant practice. The pilots’ licenses were renewed on an annual basis, but any pilot who was away from Lagos for over a month would have their license suspended (ibid:14). Egerton proposed that the *Lagos Pilotage and Harbour Ordinance* be amended, and that the Government would instead employ a team of pilots who would handle all crossings. The suggestion went all the way up to Whitehall and Downing Street, and resulted in correspondence being received from the major shipping lines, Adolph Woermann and representatives of Elder, Dempster and Company, as well as the Chamber of Commerce, the West African Trade Association, Lloyds Bank, and others. Many pointed to the cost to the Colonial Administration, while Elder, Dempster and Company wrote that the proposal had come too late, since they had already incurred considerable costs due to the loss of their ships on the ‘Bar’, and that now that the continued dredging had improved conditions, the risk had been much reduced (TNA: MT 10/1374).

During the Great War the dynamic changed, German ships were not allowed to make use of an Allied port. In fact, documents reveal that the Colonial Office Harbour authorities retained custody of a number of Woermann boats in Lagos in 1916, and other records from that time indicate the risk of enemy agents setting fire to ships in Allied harbours (TNA: CO 323/701). During the War, Germans and British came into contact with one another at sea in West Africa due to their West African colonies: Togo and Cameroon (German), and Gambia, Sierra Leone, the Gold Coast, and Nigeria (British). The Woermann and the Elder Dempster shipping lines had been dominant in the region, but West African war correspondence reveals that ‘enemy ships’ and cargoes would be seized across the region during this period (TNA: CO 323/647, 1914). There was a Ships’ Black List, which included German-controlled vessels, and even “neutral ships’ suspected of unneutral service” (TNA: CO 323/665, 1915:172). There was also a White List of ‘neutral ships’. Consequently, licenses for the Lagos harbour were not to be granted to ‘enemy’ pilots. *Regulation No. 12 of the Colony of Nigeria Regulations, of the Pilot Ordinance of 1915*, states that the issuing of licenses by the Director of Marine is dependent upon the applicant being a “British subject”, between the age of 24 and 55, and holding a certificate of “good conduct



Figure 16: Walter Egerton (left) at Government House (top).
(TNA: CO 1069/65, 1907). Egerton on a boat, seated on a wicker chair (below).
(ibid, c. 1910-1939)

and sobriety" (MT 10/1962, 1918:6-7). The candidate's physical fitness had to be confirmed, and the piloting exam passed (ibid:4). The harbour regulations of 1918 stipulate that the retaining of the pilot's license was dependent upon entering the port at Lagos on a monthly basis or the license would be suspended (ibid:6). Ships with more than ten tonnes of cargo could only be piloted by those with a special license, with exemption for "any ship belonging to His Majesty or to the Government of Nigeria. In the absence of a special license, the ship would be piloted by a Government pilot (ibid:6-7).

With the 'Bar' as a major antagonist in the activities of the port, the Harbour equipment became indispensable to the Colony's income, as an insufficient depth at the bar had the immediate consequence of lower harbour dues. The dredgers and tugs feature in the records, almost as personalities in their own right. The initial attempts to dredge the bar were made in 1907 by the dredger, the 'Egerton'. These were unsuccessful, as while the draught was improved, it was insufficient to enable the dredger to exit the channel and deposit the sandy material out at sea. Instead, it was taken to a deep section of the Lagos lagoon estuary, from which a considerable portion "washed back towards the mouth of the harbour" (TNA: MT 10/1374, Southern Nigeria 90, H3595, 1911:para. 4). The 'Sandgrouse' was a suction dredger which arrived in August of 1909 (ibid:para. 11). In fair weather the dredgers could work at the bar, but at times of rough seas, when there was a swell over the bar, they would work to deepen the more protected Commodore Channel (ibid:para. 13).

In 1910, a crab dredger known as the 'Mole' dredged the Elegbata channel (ibid, para 19). This linked to Iddo as the terminus of the rail, saving vessels from having to traverse over a "long flat carrying only 11 feet at high water" from Apapa to Iddo (ibid:para. 14). Later, in 1912, in spite of a conservative budget, a new steam tug named the 'Barman' was purchased. It had various functions: salvage, buoyage, transport, but mainly to tow any ship with a draught of more than 14 feet over the Bar (TNA: CO 659/1:65). The reports are animated by the personification of the machinery, and the condition and location of these vessels is often provided as a factor for an increased or decreased draught (TNA: CO 879/109/2, African (West) 981, 1911). The tugs were necessary for guiding ships: a 1916 harbour notice states that the tugs 'Barman' and 'Remus' would accompany "[a]ll Steamers other than recognised Branch Boats" over the bar (TNA: MT 10/1647, H5992, 1916:n.pag.). Later, once the bar had been dredged and the draught improved, pilots steered by landmarks, although leading marks were still used at times.

The changing nature of the conditions at the bar gave rise to a 'remapping' of the port to communicate the navigation of temporary changes. In the *Lagos Customs and Trade Journal* of May 2, 1911, instructions are provided for crossing the 'Bar' issued by the Marine Headquarters:

Pilots are hereby notified that from soundings taken today, the best water when crossing the Bar will be found by keeping the mast of the "Kittiwake" on the Catholic Towers. As soon as the Parrot Tree opens to the Northward of the Light House, pilots should steer so as to keep the Spit Buoy opposite the "Egga" and the Beacon on the Western Spit, in line, as hitherto; due allowance should be made for sea and tide. When passing the "Egga" the best water will be obtained

in keeping in mid Channel, or slightly toward the “Egga” side of the same. (TNA: CO 659/1:24)

The journals contain a few sets of instructions like these, indicating a highly changeable environment and the attempt to code wayfinding, with reference to non-linguistic expressive elements, on or visible from the water, into the language of navigation. Coding brings a conformity to the messaging, and once printed and communicated as harbour protocols at ports around the world, it serves to structure the arrangement of bodies, both human and machinic, in space. Landmarks such as buildings and even a tree, as well as floating buoys, become important indicators. In the Lagos colonial harbour setting, the wrecks of the ‘Kittiwake’ and ‘Egga’ take on a new function as ‘markers’ within the setting that has been assembled. The water collects ‘relics’, which take on an expressive role within the assemblage. Expressive signs can also be linked to the parameter of territorialisation in that “bounded geographical areas” can be recognised by their characteristic architectural and urban features (DeLanda, 2016:30). In the case of Lagos, ship masts form a feature in the urban skyline, contributing towards its identity as it is perceived from the vantage points of the water channels. The port is by nature a deterritorialising entity in that it brings a steady flow of traffic and peoples into the urban context, and these ‘arrivals’ introduce new styles and customs from distant parts. The work of introducing rituals and localising communication, at least for the ‘floating community’ in the harbour network, through adoption of commonly accepted points of reference, functions as a form of territorialisation, intended to bring greater stability to an environment in flux.

Signalling points were also used, so that the markers which collected in and around the harbour formed part of an array of communication devices, before inventions of real-time satellite maps and methods of instant communication between vessel and port. Visible elements were employed to communicate what was not visible to the eye: the depth of the bar and the sandbanks located beneath the surface of the water. Expressive markers function within the visual and written coding, and they form a layering within the descriptions: the catholic church, the parrot tree (likely an Iroko tree), the wrecks which float but cannot sail, together form a translation of the three-dimensional experience in the form of a projective geometry, which describes the relationships between elements from a nautical perspective. A later instruction reads as follows: “[p]ilots crossing the Bar will no doubt have noticed that the Western line of breakers, has come in considerably, the Parrot Tree now being some distance inside the Sanatorium, when the breakers are abeam” (TNA: CO 659/1, 1911-1912:242).

In a mobile environment, adjustments are made to the expressive markers, now the Sanatorium functions within this system. The buildings, ships, trees and buoys function as both expressive and material components within the assemblage. Just as within the context of a conversation, facial gestures form ‘expressive components’ that serve to communicate the personality and provide clues as to the interpretation of the words (DeLanda, 2016:26), these visual markers serve to consolidate colonial presence in Lagos. They do this through their rearrangement of a physical setting into a system of accepted harbour protocols. As they function within this system, they communicate not only in directional terms as a projection of possible pathways through the water, but as a form of repetition which serves to reinforce the authority of the Colonial Administration in the harbour. But the skyline as a phenomenon speaks of the urban identity as a whole, so that the network of creeks and channels

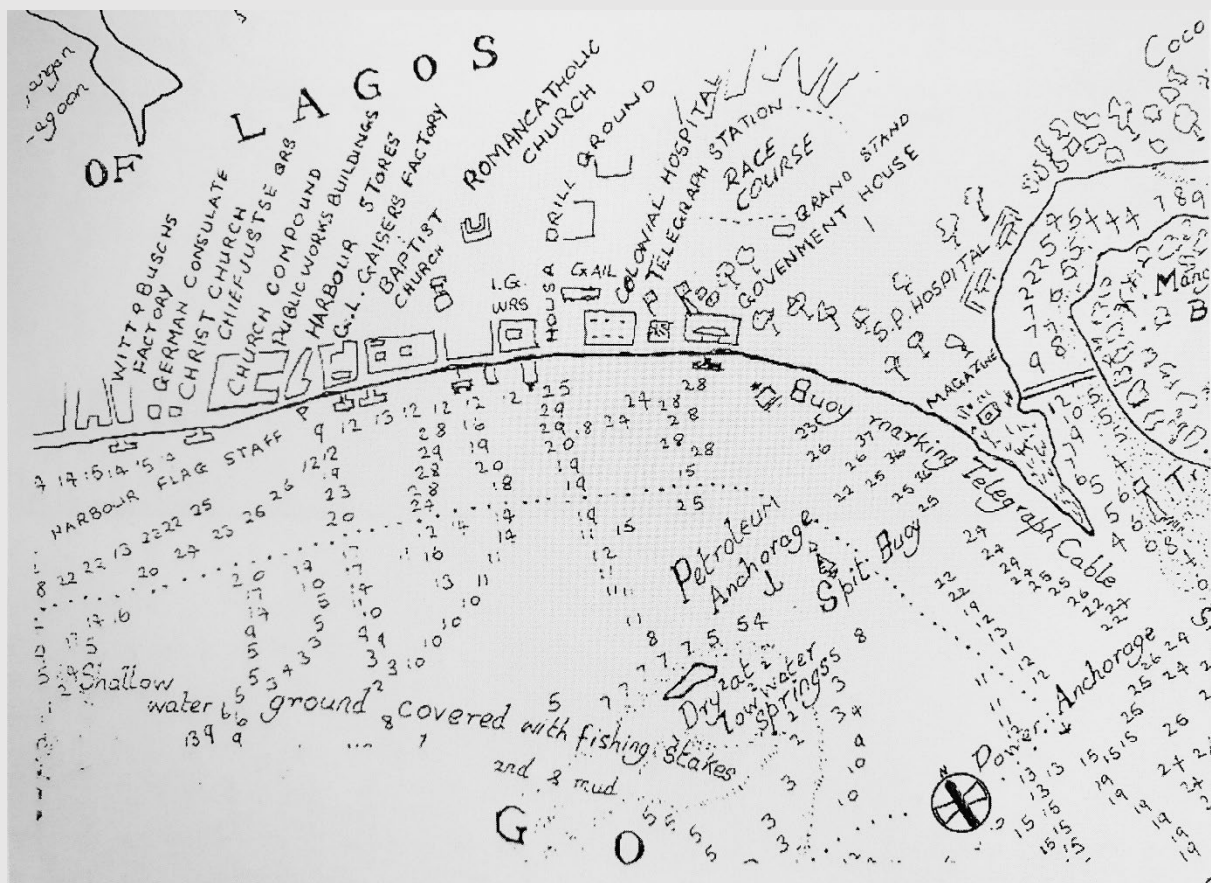


Figure 17: Chart showing development along the Marina.
Prepared by William Speeding in 1897. (Godwin and Hopwood, 2012)



Figure 18: Apapa.
(TNA: CO 1069/65, c. 1910-1939).

makes prominent aspects of the Lagosian skyline visible, with major administrative headquarters such as Government House, clustered in proximity to the waterways.

Port and harbour correspondence also reveals an identification with the 'explorer trope' with the intention to memorialise British 'discovery' of the river Niger. In this case, the suggestion was to insert the rather more direct symbolism of an obelisk, which would provide a landmark at the alternate port of Forcados, from where much of the cargo destined for Lagos was transhipped. A memorial had been built in 1899 at the place where David Livingstone had died in Zambia, and the desire was to acknowledge the explorers, Richard Lander and Mungo Park, who had tracked the course of the Niger from a position near the source to the Niger delta on the Atlantic (TNA: CO 659/1, 1911:422). The letter which had generated this discussion, was written by the President of the Geographical Society, a former President of the African Society, and the Chairman of the Niger Company. It was published in the newspaper, *The Standard*, and republished in the *Lagos Customs and Trade Journal*. The writers note the public interest in the "numerous administrators, soldiers, travellers, scientists, and others who have taken prominent parts in the partition and development of Africa", but caution that there is "danger of earlier pioneer explorers being allowed to pass into oblivion" (ibid). The proposal was for a monument with the same dimensions and design as Cleopatra's Needles. These two obelisks from ancient Heliopolis were installed in London³² and in New York in the 1870s. They are over 20 metres in height and weigh over 220 tonnes (Wade, 2017). Were it to have been realised in the small town of Forcados³³, a monument of this scale would have been a clear assertion of imperial power and the 'claiming' of the river Niger for the British Empire.

4.2.3. Cross-Cultural Interactions: Colonial Intersections of Infrastructure, Disease Management and the Location of a Capital

Colonial Administrators almost invariably perceived the environment of Lagos as being rife with diseases, and as a problem to be managed. And yet, despite the intensive focus on disease management, which began to intersect in a myriad of ways with the delivery of infrastructure, and public services, their management of the town with regard to 'sanitation' was disastrous. From 1899 to 1904, when Governor William MacGregor had administered the Colony of Lagos, he had instituted programmes for combatting malaria, involving education, reclamation schemes, as well as the founding of a Board of Health and the distribution of quinine (Peil, 1991:8). Ronald Ross and Macgregor kept a regular correspondence, and an earnest attempt was made by the Governor to implement sanitary reforms beneficial to all inhabitants (Bigon, 1974:146). However, subsequent Governors turned increasingly towards policies of segregation as a primary means of disease management (Peil, 1991:8). The partial implementation of water supply, and unavailability of sewerage and

³² The obelisk given to the British by the Ottoman ruler of Egypt, was packed into an iron cylinder and towed by the *Olga*. The *Olga* was wrecked in the Bay of Biscay and the 'needle' was later retrieved by Spanish trawlers who towed it to port (Wade, 2017).

³³ The monument was eventually constructed in 1929 at Jebba, a town on the banks of the Niger in central Nigeria. It was made from local stone and had an inscription dedicated to the explorers on a bronze plate (Anon., 1930).

drainage infrastructure, would have dire health consequences (Gandy, 2006:375), and from 1924 to 1931, Lagos would experience successive waves of bubonic plague (Faleye, 2017). Administrators found that the policy of residential segregation was much more cost effective, as infrastructure and amenities could be concentrated within the colonial enclaves such as Ikoyi, rather than widely distributed to the population as a whole (Bigon, 1974:145).

With the Amalgamation of the Protectorates, Lagos became the capital city of Nigeria in 1914. This could have been occasion for an increased investment in infrastructure had this not coincided with the beginning of the War. As the conflict wore on, the primarily extractive focus on colonial infrastructure became intensified, as the port and rail were essential for Nigeria's role in Britain's war economy. But there was another reason, aside from a limited budget, for the lack of investment in Lagos. Lugard, Governor of the Protectorates from 1912, and Governor-General of the amalgamated Nigeria from 1914 until August of 1919, wished to abandon Lagos as the capital altogether. In Lugard's vision, the Northern and Southern territories would have their own capitals, but the North and Central Administration would be located at Kaduna³⁴. In his lengthy correspondence on this matter in 1913, Lugard writes that Kaduna had both a water supply and good soil for gardens, whereas Zungeru, which had formerly been capital of the north, was hot and rocky, precluding "the laying-out of gardens and avenues" (TNA: CO 879/113, 1913-1914:13). For the southern capital, he considered Lagos unsuited due to its climate, congestion and the "fetid swamps" (ibid:145). Subject to the approval of a Senior Sanitary Officer, his proposal was for a location near Yaba, about 11 kilometres inland from Lagos, and which was connected to Lagos by rail. For the Kaduna site, approval had already been sought, and accepted in principle, so long as there was a distance of at least 400 metres between 'European' and 'Native' developments (ibid:179). The medical officer also advised that "the prevailing north-east winds should sweep over the European quarters before coming into contact with either the railway works or the native quarters" (ibid).

For the Southern capital, the soil at Yaba was rich, while at Lagos there was "merely sea sand, in part dredged from the lagoon, and in part pre-existing and saturated with sewage" (ibid:13). Lugard intended to lay out a new town, with consideration for sanitary principles and implementation of segregation between 'European' and 'Native' communities. In Lagos, the residences vacated by government officers would be sold to the European merchants, who would wish to remain in proximity to the port (ibid). Aside from the "hygienist discourse"³⁵ governing decision making, Lugard felt that Lagos' position as the seat of government meant that its 'needs' dominated, requiring revenue for reclamation and water schemes. In his view, it would be much cheaper to abandon it (ibid:17). However, due to the considerable investment already undertaken in dredging the harbour, he notes reluctantly, that it was too late to consider another more suitable location (ibid:18), showing that even in the colonial period, the Lagos port helped to secure its future as the mother-city.

³⁴ Lugard wished to relocate the capital of the North from Zungeru, which had been capital since 1902, and Jebba before that (TNA: CO 879/113, 1913-1914:13).

³⁵ See: (Gandy, 2006:375)

After correspondence that went back-and-forth between Lugard, the Secretary of State, and other officials in England, also with the input of medical experts advising on the possible location of new capitals, Lugard regretfully concludes that “Lagos, the port and termination of the railway, must always form a capital. The central capital would, I think, never be an enormous city. It may be the alternative residence of the Governor-General, and the heads of some of the Combined Departments, but no more” (ibid:89). His hope was still for a central capital at Kaduna, where he would have a residence as Governor, with all its qualities of place described fondly in Lugard’s correspondence. At the 54th meeting of the Advisory Medical and Sanitary Committee for Tropical Africa in July of 1913, Lugard stated that “too much public money had been spent” in Lagos; he also did not want the expense of providing piped water to Lagos, that had been promised by his predecessor, Walter Egerton (TNA: CO 879/113:3). Regarding the sewerage scheme, he felt that there was no justification in spending any more on Lagos as it had no more claim to public funds than any other town in Nigeria, while it would be best that Europeans be relocated, with those few remaining, residing in segregated areas: “Lagos, being surrounded on all sides by swamps, could *never* be made a healthy place” (ibid).

Prior to Lugard, the perception of Lagos as an ‘unstable’ territory, was met with attempts to manage this complexity through a combination of bureaucratic, legal, medical and social reorganisations of life at a variety of scales. Chief Medical Officer Dr Strachan delivered a course of lectures during the first decade of the twentieth century entitled ‘Diseases, and how to prevent them’. These were open to the public, and represented part of the strategy to mitigate malaria through education. In the lectures, while dismissing the local medicines as being mostly “worthless” (UOM: Medical 11203.34:1), Strachan discusses sanitation measures, presenting introductory ideas on disease and providing advice on daily domestic practices. Examples of the guidance included not allowing water to gather in vessels around the home, and the need for the boiling and filtering of water to make it drinkable. In later lectures he addresses breastfeeding, saying that “[t]he infant should be weaned from the mother’s milk, at the 9th month, for after that, the mother’s milk is only a watery fluid with a little fatty matter...and the child only fills its stomach with a useless fluid...while the mother’s strength is exhausted in making this useless fluid” (ibid:36). Given that contemporary U.S. Dietary Guidelines for Americans recommend breastfeeding for at least a year, and state that the longer a child is breastfed the better, for the combined health of mother and child (CDC, 2023), Strachan’s advice seems not only invasive but scientifically unsound.

By the fifth lecture, he is commenting on customs and the organisation of the home, and moves swiftly on to issues of urban organisation. In its content, this series of lectures appears aimed at the total reorganisation of the society: from customs, to diet, to domestic arrangements, to architecture, and even to the town itself. Strachan’s attitude to the urban structure, reveals an association made between the straight line and disease prevention: “These streets you see, will all be quite straight – none of the irregular, narrow, zigzag paths that exist and are called streets in so many parts of Lagos Town...” (ibid:40). The lectures derive from a ‘coding’ for an envisaged colonial reworking of Lagos that had an impact on the daily life and interactions of components within the assemblage. The reorganisation is far-reaching, with implied alteration of habits, rituals, norms, and the *mores*: the ways-of-being-in-the-world in a social context. An association was established between

colonial perception of the environment, and its relationship to disease. Along this line of thought, societal customs thus became a means of managing the disease factor. This is reiterated by Lagos Governor, Sir Hugh Clifford, who, like Lugard, felt that there was something “seriously wrong with the living-conditions that prevailed in the country”, which he put down to lack of ambition and “the picnic fashion in which too many men are content to live...” (UOM: Nigeria 10398.31, 1920:16-17).

Interconnection between medical and infrastructural domains asserts itself within the attempts to resolve the problems of the port and the swamps. The removal of water from the land is the removal of an element with a deterritorialising function. While Governor MacGregor had not favoured segregation and had been much more sympathetic to the local inhabitants than any of his successors were to be (Bigon, 1974:146), under his tenure, infrastructure and disease management would achieve an early intersection and ‘efficiency’. MacGregor’s preferred policy of eradication of the mosquito larvae involved major reclamation projects including reclamation of the Kokomaiko swamp. The problem of the ‘Bar’ and the depth within the harbour network also required continuous dredging, and sand that had been dredged from the bar and from the lagoon bed was then used for the filling in of the swamps. In public areas, stagnant water was drained, and communities were policed, with prosecution for individuals found to have provided conditions in their domestic setting that would enable breeding of mosquitoes to occur (UOM: Nigeria 12782.13, 1924:9). The problem of the bar and the draught becomes part of the solution for prevention of malaria. These efficiencies may have come about pragmatically, ‘how to do more with less’, but they are also testament to the way in which disease management was informing thinking across several dimensions. But the intersections between subject matters effects a deterritorialisation which breaks the boundaries between differing knowledge domains.

Conflictual approaches of the autochthonous and colonial communities brought about a territorialisation. As DeLanda explains: “...the presence of conflict increases the activities dedicated to policing a community’s borders, not only the physical boundaries of a neighbourhood or small town, but the degree to which a community controls its members’ behaviour and promotes internal homogeneity” (2006:58). Policing of the community became an important means of implementing the sanitary policies. These policies effected many areas of life in Lagos, which became susceptible to the ‘coding’ work of colonial regulations. For example, building regulations stated that all sites should be drained and then elevated, and that no new building could be erected until the Lagos Municipal Board of Health had issued a certificate. This would only be issued following an inspection by both a Medical Officer and an Engineer (UOM: West Africa 10940.51, 1910:1). With the *Anti Mosquito Ordinance of 1910*, men were employed for ‘mosquito brigades’ which policed the local communities (TNA: CO 879/109/2, African (West) 984, 1912). These invasive practices involved inspection of the houses and compounds in Lagos once a week. Infringements were punished either with legal action or a fine (ibid:59). Lagos was divided into five districts for ‘Sanitary and Anti-Mosquito work’, and the staff allocated to the Health Office included one Clerk, Sanitary Inspectors and Assistants, Meat Inspectors, Slaughter House Keepers, Labourers, and a messenger. Compounds, wells, and even boats and canoes were inspected (TNA: CO 659/1, *May 2, 1912*:267). The port and harbour at Apapa were inspected twice a week (ibid:272). In the Lagos Municipal Area in the 1911 year, a total of 466,070 houses were inspected. Of these, 61,037 houses had receptacles with mosquito

larvae, and the inspection team also identified 77,874 receptacles containing mosquito larvae, and these were tipped over and emptied (ibid:272).

Communities battled to adjust to the superimposition and replacement of infrastructures by the colonial administration in Lagos. For example, the introduction of a water rate taxation had created financial difficulties for residents. Previously, wells had been introduced and residents had not been charged (UOM: Nigeria 10398.26, 1916:5-6). The War economy had led to inflation, and in a meeting between Lagosian Chiefs and colonial authorities, the Chiefs complained of the high cost of imported goods and consequent slowing of trade, and the imposition of customs duties. With cost of living so high, many had had to mortgage their homes, with Chief Oluwa stating: "We cannot sell our houses to drink water" (ibid:6-10). The water rate was taxed on the basis of estimated house valuation, with those with a higher-value property paying a higher rate, and with residents of houses below a certain value exempted (ibid:12). Chief Ojora stated that they did not need the water as they had wells already (ibid:9). Colonel Moorhouse presented his argument that the water in the wells had been tested by doctors and had been found to be impure. He tells the following parable:

The Government is the father and the people, the children. The father has seen that the water his children drink is not good, and has therefore taken it from them...The child frequently objects but the father must have his child to do as he or she is told; and when the child reaches the age of discretion then he will realise the good his father has done him. (ibid:10)

The argumentation of empire emerges through these exchanges. The meeting had been held at the Secretariat Compound on a Saturday in May of 1916. There were Chiefs, members of prominent families, traders, and Headmen, who were received by the Acting Administrator, and the Station Magistrate. Of the British party, also present were an officer commanding a detachment of the West African Frontier Force and the Inspector General of Police, who had with them 200 soldiers and 300 police in a ring surrounding the perimeter. There were also 15,000 'native' men and women, who had come to hear the discussion. Taba Thomas remarks upon the encirclement by soldiers and police, speaking of the fear of the Europeans, but that no-one there had any weapon so large as "the ordinary needle" (ibid:3). The element of encirclement reinforces the water-rate discussion as being a territorialised dialogue. It was expressed that the community presence was necessary so that all could be informed. The Colonial Administrators had attempted to invite only the Chiefs as 'representatives' to a private discussion upstairs, but at the Nigerian party's request, the meeting was held in the garden instead so that all could be present. The Colonial Administrators offer two main arguments, that the system they had introduced was for their own good, and that the water they had drunk before had been unhealthy. Colonel Moorhouse continued, saying that "...as the civilization of a country increases, the question of direct taxation becomes a necessity..." (ibid:11).

The question of the water rate was spoken of at an official banquet in honour of King George V's 55th birthday, held at Government House in Lagos by the Governor-General, Sir Hugh Clifford. Speeches and toasts were self-laudatory, praising colonial role in Nigeria, while also being generally dismissive of autochthonous communities, although Nigerians were present at this occasion. Acting Lieutenant-Governor of the Southern Provinces, Mr Waring, ridiculed the complaints made by

the local inhabitants: “[a]nd, as a final blow, the inhabitants of Lagos were compelled to drink the dull but innocuous waters of the Iju (*Laughter*). Instead of the tasty but tainted product of their own wells, and, what was perhaps the unkindest cut of all, they were at the same called upon to pay for it” (UOM: Nigeria 10398.31, 1920:12). Another commented that there was “nothing wrong with West Africa except that men have remained too long content with mean or indifferent standards... it is up to us all to raise those standards... And when that has been achieved, United Nigeria will stand forth as not only the greatest and the most populous, but as the most valuable... of all His Majesty’s possessions in the Tropics. (*Loud and Prolonged Applause*)” (ibid:19). These accounts are revealing of prevalent attitudes, and the tone of ridicule used to describe the concerns of the autochthonous community implies an emotional distance and ‘othering’ in the attitude. The reference to Nigeria as a ‘possession’ would have run counter to the traditional notion of land as ‘inalienable’, yet according to a colonial logic, the King of England could lay claim to an entire national territory.

Imposition of regulatory, procedural and disciplinary structures by the Colonial Administration represented an ‘overcoding’ whereby imperial codes were superimposed as a ‘dominant code’, functioning over and above the pre-existent social and cultural coding³⁶. In the speeches of Clifford and Waring, this superimposition is presented as both an intention to ‘civilise’, and an attempt to render more ‘valuable’ and to make the colony profitable. This is akin to the views of Clifford’s predecessor, Lord Lugard, whose ‘Dual Mandate’ may be couched in benevolent terms but contains the violence of hegemony underlying. As to the land matter, it became a “confused mass of English and native law...” (UOM: West Africa 10940.19, 1897:4). To the Nigerian, land was inalienable and therefore could not be sold. Permission to use the land may be granted by a ruler, the *Oba*, in the Yoruba setting, with different residents living on it or farming, but the land would remain the property of the ruler (ibid:1). There was also some adaptation to the local traditions because of the coexistence of the different ways of thinking, where, for example, in Lagos, the Gold Coast custom of giving precedence to the eldest son of the of the eldest sister, was replaced with the English law, coming to follow the male line (ibid:3). One administrator remarked upon the connection that people felt to their land and to the land of the forebears, stating that “[e]ven in Lagos, where the notion of selling land is now quite familiar, people often show an almost pathetic reluctance to part with their land...” (ibid:2). While the incompatibility of the traditional views with the colonial view of Nigeria as Crown territory led to complications, a system of Crown Grants and English Conveyances were introduced, these were essentially a manipulation of the idea of the traditional ‘occupancy rights’ (UOM: West Africa 10940.134a, 1925). One such Crown Grant gave permission to occupy land in exchange for the reclamation of swampy ground (Healy, 1897 in UOM: Nigeria 10398.31:3), forming part of the disease management agenda.

During the colonial era in Lagos, in the period leading up to and during WWI, administrators were able to implement port and rail projects that became a crucial extractive infrastructure for the Empire, providing resources for war. They also reached the coal fields, giving themselves some relative independent capacity and functioning internal to the Colony. Transmission of malaria was much reduced although in general, the lack of infrastructure and public services such as water and

³⁶ See: (DeLanda, 2016:22-23).

sewerage was to lead to sanitation crises in Lagos. Their inability to realise these projects was due in part to constraining factors such as lack of public funding, leading to the prioritisation of the port as an extractive node, and the enclaves inhabited by the coloniser. Following the amalgamation, the available budget increased, however, world events intervened, which limited progress. In this way, the imperial global project exerted a downward causal influence on the infrastructural projects of the Colony, “serving as a source of limitations and opportunities for its components” (DeLanda, 2016:21). The limited investment in services, tentative decision-making on infrastructure projects, fear of disease, moralising, and lack of long-term commitment beyond making the colony profitable, ultimately led to a desire to establish themselves elsewhere. For Lugard, this was in Kaduna and Yaba, while most administrators were eventually to move onward, either to another colonial territory or back to Britain. In Lugard’s mind, the central location of Kaduna would have made administration by the Governor-General of the vast territory easier, but Lugard really intended “to spend part of the year administering Nigeria from England” (Perham, 1968:415-416, quoted in Elleh, 2017:66).

Colonial Office archives bring disparate materials together. What emerges is not a coherent narrative but disjuncture. The colonial infrastructure projects cannot be looked at without studying the explanations, justifications, and representations in text. It is also difficult to isolate infrastructure from disease management because it influenced every aspect of Colonial Office activity in Lagos. Through *overcoding*, the administration superimposed colonial customs and ways of being, which were not passively received by the autochthonous peoples. Dissent and conflict sharpen the distinction between peoples. By interfering with established norms, the coloniser first effected a deterritorialisation from the perspective of local Lagosians. A colonially-driven reterritorialisation was then realised through the writings, documents, forms and rules which served to restructure the environment on a daily basis. These documents attempt to justify their invasion and annexation of the territory, and their continued presence within Nigeria. Colonials had justified the initial period of colonisation as having brought an end to slavery in the region (UOM: West Africa 10940.74, 1912). Later the rhetoric changed, with claims of bringing ‘civilisation’, ‘sanitation’, ‘aspiration’, and developmental ‘progress’.

4.3. Concluding Comment: Reterritorialisation and Superimposition of a Narrative Structure

An alternate and imagined Lagos, created through the representations of landscape, can be located within the colonial archive. There is a contrast between the precision with which the project of malaria eradication was undertaken, down to the exact number of homes inspected and the number of containers of water that were tipped over, and the almost mythopoetic descriptions of the colonial officers, locating themselves as agents within a hostile environment. There is of course always a difference between ‘places’ and their representations, but in the Colonial Office records the setting takes on a *dramatis personae* and the agents appear to face

almost overwhelming odds. These themes can be identified in speeches at ceremonial occasions, where individuals reveal their 'public persona', and in the books and pamphlets containing rules and regulations, and in which instructions are codified and intended to promote specific habits and ideas in their readership. Within the archive is assembled the functionary coded *vade mecum*, which dictated behavioural norms and conventions of the officials serving in the colonial outposts. This chapter has examined feeds into the assemblage from both the macro and imperial scale, and the scale of local environment in Lagos and interactions of small groups, which influenced colonial infrastructural projects through 'double determination', with the port-as-microcosm reflective of larger territorial aims.

The 'justifications' of colonial occupation, the depictions of landscape, the myths, together form a language for expressing the situation. It is a 'dialect of belonging' for the coloniser and at the same time a 'language of othering' for the colonised. There are resonances between the expressions used by the different writers, and some degree of conformity in the use of 'tropes', the tendency towards the heroic, the 'personification' of elements within the environment, the identification with a 'trial', and the 'othering' of the autochthonous inhabitants. All this becomes a means of conveying information, in which prevalent attitudes come to express the position of the speaker. In social groups, both "...stories and boundaries play a boundary-defining role" (DeLanda, 2006:66). The careful documenting of the Colonial Office activities forms a mediatic component of the colonial project, becoming a reterritorialisation of Lagos. Reterritorialisation attempts reorganisation along colonial lines, following a deterritorialisation of the autochthonous physical and land-based systems, and the conceptual borders, divisions and demarcations of knowledge.

Colonial narratives form part of a process of *group boundary construction*" (DeLanda, 2006:59). This is communicated through the relative conformity of disparate sets of documents. Repetition reinforces the appearance of consistency and reliability in an organisation's position, just as receiving different answers from different members of the same organisation would serve to undermine this position. There is disjuncture but also 'sameness'. This brings the appearance of coherence to the colonial administration and its representations, and a stability to the disparate archival fragments 'as a body', even as there is incoherence inherent in the nature of archives as collectors of the 'cut-outs' of histories. Coherence is an 'emergent' property in so far as individual writers may have different motivations for adhering to the language of imperialism, amongst these: fear, mimicry, conformity, assumption of the reader's own biases, or dogma. Within the archives of Colonial Office documents, areas of prioritisation emerge, although information is not always coherently ordered but is rather an assemblage of speeches, Acts, minutes, opinions, and letters sent back-and-forth. Emergent factors at each level of interaction create the complexity, but in tracing them upwards, some coherence between levels becomes apparent.

Colonial occupation of Lagos involved territorialisation. The clearing of swamps and extensive reclamation work speak of a desire for uniformity in the territory. But this work would have represented a deterritorialisation for the autochthonous peoples, as there was no respect for what was there: the emotional commitment to place, the pre-existent ecosystems or the local fauna and flora. The colonial intention was to

override and make the landscape conform to a homogeneity. Territorialisation functions in both material and conceptual terms. Colonial reterritorialisation took the mediatic-form of print and publication, which superimposed a narrative structure in which there were heroic actors within a hostile environment. The health focus, infrastructure and disease management focus required narrative management, which was reinforced through the introduction of new codes and regulations in an *overcoding* and restructuring of the environment and the order of the daily life. The media aspect represented an attempt to make sense of a larger landscape as a territory of social relations, but bringing a reorganisation and attribution of different significance to the situation. The physical Lagos was seen and portrayed differently through construction of an overlaying mediatic territory represented within the 'Dual Mandate', of an extractive infrastructure and the justification in moral terms of colonial presence in Nigeria. The story of the colonial port forms an underlay for the study of the postcolonial port and the 'crisis of congestion' of the 1970s. In this chapter, the port has been examined not only as an infrastructure, but in relation to the parallel system of 'justification'. The physical and media components form the two parts of the colonial project. While colonisation in Nigeria did not bring about an indigenisation of the coloniser within the colony, it nevertheless represented a major reorganisation in the physical territory and society. In the next chapters, the era of infrastructure development in the 1970s will be examined, in which the German engineering firm, Julius Berger, began a process of indigenisation in Nigeria.

Chapter Five: Capacity-Dynamics, Congestion and Flows: The Indigenisation of German-Nigerian Firm Julius Berger and the Project of Lagosian Port Expansion in the 1970s

The year 1975 was pivotal, with the overthrowal of the Head of State, General Yakubu Gowon, and 'the cement crisis', while the Port of Lagos experienced unprecedented congestion. Already high import levels, due to a post-Biafran War recovery programme and the effects of the oil boom in Nigeria, were further increased by the Ministry of Defence's cement order for the construction of military barracks (Chilaka, 2017:114). The resultant crisis had both political and economic ramifications, weakening the position of the Gowon regime and of the subsequent military government under General Murtala Mohammed, which was to inherit a situation of near stasis at the Lagos Port (Kilborn, 1975:6). The response of the Federal Government and the Nigerian Ports Authority (NPA) was to introduce a series of decongestion decrees and a 'Plan of Stabilisation' to curb imports (TWB, 1982:16). The oil boom brought financial liquidity to the country, which could finance an ambitious infrastructural programme. The Lagos Port expansion projects were awarded to multinational German-Nigerian engineering firm, Julius Berger Plc, with extensions to the Apapa Quays as well as the construction of an entirely new port at Tin Can Island (TCI), completed within the tight timeframe of 15 months.

There are three objectives for this chapter treating the resolution of both infrastructural and political crises:

- (1) To discuss the ways in which the Nigerian State was able to decongest the Lagos port through NPA decrees and commissioning of port expansion projects.
- (2) To understand the process of Nigerianisation of Julius Berger in Lagos, and the extent to which was linked to their work on the port projects.
- (3) To examine the relationship between Julius Berger and Nigerian political elites as revealed through language coding contained in records of their communication, and the bearing this may have had on company indigenisation.

While the company had been working in Nigeria since 1965, the founding of Julius Berger Nigeria (JBN) as a subsidiary company of the West German construction firm, Bilfinger + Berger, took place in 1970 (Weinert, 1981:48). A process of formal indigenisation in Nigeria saw the subsidiary becoming 40% Nigerian-owned by 1975, with Lagos State and Benue-Plateau State each owning 20% shares. By 1979, the company was 60% Nigerian-owned (Weinert, 1981:52). The Federal Government policies of the 1970s, prioritised 'Nigerianisation', reshaping the economy, with intended decolonisation of sectors ultimately leading to integration of a number of multinational companies in Nigeria (Joseph, 1978:230). The process of indigenisation of JBN was concurrent with the Lagosian port expansion: a priority project for the postcolonial Nigerian nation. By virtue of the ownership model and the importance of the major infrastructural work undertaken by JBN in between 1975 and 1979³⁷ in Lagos, the company gained access to political elites which would prove to be an enabling factor. JBN was able to secure engineering contracts across the country, and with work on the Lagos Inner Ring Road and the TCI port, becoming at one point the largest employer after the State (Gaines, 1996:66).

³⁷ During which JBN worked on the Apapa port expansion, TCI port and the Lagos Inner Ring Road.

An interconnection between the problem of congestion and the solution of port expansion can be conceptualised, with the fundamental requirement for port capacity impacted by procedural factors of material delivery, storage, checkpoints, and delays. This chapter reflects upon these port projects in relation to the wider project infrastructure of JBN; the scale of the port infrastructure projects required an expansion of JBN's facilities, with adaptation of their operations to improve efficiency. While the majority of material and equipment used by the company was imported, the factor of congestion incentivised efforts towards localisation, and a further embedding of the company within Lagos. The port environment was to be manipulated in line with project constraints, while the 'project-form' was reshaping Lagos through associated activities and logistics, at a local level. At a national level, Federal Government regulations, in the form of indigenisation laws and decongestion decrees, effected the local environment and port projects through downward causality. Locally, daily rhythms of the port projects, and accelerations and decelerations of the harbour, impacted the wider trade and logistics networks through upward causality. The effects of upward and downward causality on the port-assemblage, both produced and constrained the sets of interactions related to port projects and their interface with capacity dynamics.

In employing the assemblage method, the port-as-project is considered as a temporary bringing together of actors, organisations and institutions, forming a project network involving premises for interaction, and requiring proximities as well as distance communication enabled by technology. Through these environments and media, social ties were formed in the process of cooperation, and which became essential to the indigenisation of JBN. The port also provided a series of physical environments, relating the constellation of interactions that brought about the 1970s port projects to a spatial setting of the harbour and lagoon network. As an essential node, the port functions both within its local and national context. These dynamics can be mapped from the personal scale, involving the conversational unit, to the immediate social network of the project and the organisational scale, involving the specialist consultant, client and future occupant. Beyond shaping the port environment, these projects had wider implications, with the new port at TCI becoming a symbol of modern postcolonial Nigeria, and of the cooperation between the countries of Nigeria and Germany³⁸. This chapter explores these dynamics, studying the relations which bring about stability of the assemblage-identity through territorialising and coding processes.

The port-projects are discussed in relation to the indigenisation of JBN with the intention to demonstrate that relationships with elite figures in the Federal Government of Nigeria, would prove not only beneficial, but essential to the realisation of the projects. Expansion of Julius Berger's physical footprint in Lagos, as they increased their 'establishedness' in local space in Lagos, represents a 'territorialisation'. The port projects, understood as a partial factor in the company's indigenisation, are examined in conjunction with implementation of the government policy of Nigerianisation, read here as a form of 'coding'. The coding work of the national indigenisation policies gave the company direct access to elites in the political structures of the military government, as well as in the bureaucratic layer of the State. The port crisis was a crisis of immobility, that catalysed an organisational

³⁸ State tours of TCI were given to the German Chancellor, US President, and other dignitaries visiting Lagos in the late 1970s. German-Nigerian collaboration on infrastructure dated back to the Eko Bridge, for which the German government had provided a loan.

and institutional response, with consequent social relations that will be examined. The State strategy to alleviate congestion involved Federal policies and regulations on port decongestion (TWB, 1982:16), and also performing 'coding' work ordering the space and operation of the port. The locating and demarcating of boundaries established within the project of port expansion extended from the water-space to the physical port premises, to the project infrastructure, and the functioning and cooperation of institutions. Lines of territorialisation and deterritorialisation run through all these sets of relations and can be examined as either physical or conceptual terrains and jurisdictions.

The chapter is organised into the following sections: Section One presents factors that contributed to congestion at the Lagos Port and discusses the ambiguous role of the State, in both creating and responding to the crisis. The arrival of Julius Berger in Nigeria and their consequent indigenisation is explained with reference to Nigerianisation laws. Section Two presents a reading of territorialisation and coding, from the personal to the institutional level, in an examination of JBN's interactions with state organisations and political elites. The work on port infrastructure also necessitated some flexibility and fluidity in the operations of JBN, in order to liberate the project from situational constraints. The chapter concludes with discussion of the port as a nationally significant infrastructural showpiece.

5.1. The Causes of a Crisis: Port Congestion and Cement Orders

The period study reveals a turbulent local political context in Nigeria. The late 1960s was dominated by civil war and an increased militarisation which reshaped Nigerian politics. In the early 1970s, the Federal Military Government would oversee a post-war rebuilding programme. The Biafran War had altered the established logic of a system of national ports, with reduced functioning and closure placing the additional burden of incoming cargo on the Apapa Port at Lagos (TWB, 1973b:7). Declining rail and interruption of logistics during the war led to accumulation of tonnage in the Apapa area, exacerbating road congestion (TWB, 1973a:3). The military attempted to clear the quays, as well as commissioning new infrastructure projects (TWB, 1973a:6). The first postcolonial port projects had been funded through World Bank loans but the injection of oil revenue into the economy as a result of the 1973 OPEC oil embargo, made Nigeria so affluent that there was an intensification of direct Federal Government investment in infrastructure.

5.1.1. Port Congestion, Cement Orders and the Arrival of Julius Berger in Nigeria

There were several contributing factors to the port crisis. Due to its unique geography, the sheltered position of the harbour represents the only break in that stretch of coastline (Hill and Webb, 1958). The harbour layout consists of a system of creeks, and the various historical components of the port along Lagos Island and the Mainland are all deeply embedded in this topographic setting. To the west, Apapa on the mainland, lies over five kilometres from the harbour mouth. These genetic

factors can be read alongside human interventions that contributed to the crisis of congestion. *The Second National Development Plan* (1970-1974) budgeted for rehabilitation of the ports (Chilaka, 2017:112), but before port capacity could be enlarged, two crises of congestion occurred. The 1970-1971 port congestion crisis was a cargo crisis, with accumulated cargo on Lagos' quays not yet cleared, due in part to damaged road and rail systems, while new building projects for the *Second World Black and African Festival of Arts and Culture* (FESTAC) required the importing of materials (ibid:113). The use of standardised shipping containers internationally was resulting in larger ships, and swifter offloading, but as Nigerian roads and bridges were not wide enough for these containers, goods had to be offloaded and repacked at the port (ibid:112).

In 1975, Nigeria experienced a crisis of shipping congestion in the Lagos Harbour. The Federal Government had ordered 20 million tonnes of cement, of which 16 million tonnes had been reserved for the Ministry of Defence to house its army (ibid:114). Nationally, total capacity of NPA ports was only 6.5 million tonnes (ibid). The crisis had wider impacts on the national economy. Freight surcharges caused inflation to rise and the considerable costs of demurrage became the responsibility of the Federal Government. Cement could not be taken off the ships quickly enough, and with shelf life reduced further by the humidity of the environment, a good deal of it expired (Darnton, 1976:6). The cement crisis was a significant factor in the downfall of General Gowon. Nigeria had been intended to return to civilian rule by 1976, but in October 1974 Gowon announced that the country was not yet ready. Three months before, in an attempt to buy support, the Gowon regime had approved immediate salary increases and regrading of 750,000 public-servant positions (Joseph, 1978:237). This extension of military power further weakened Gowon's position. With Gowon deposed in the *coup d'état* of 29 July 1975, General Murtala Muhammed would conduct "a sweeping purge on the public service (Afinotan, 2014:131), including investigation of the cement orders.

JBN had been appointed on the Second Lagos Port Expansion, with the port crisis now a political crisis, the scope of this contract would be revised and their appointment extended. The firm had come to Nigeria in 1965, when the German construction company, Julius Berger, was awarded the contract for the Eko Bridge in Lagos (Weinert, 1981:44). At the time, Nigeria had been independent for five years. Carter Bridge, a steel frame bridge built in 1928, was no longer considered sufficient to link Lagos Island to the Mainland, and so the "Second Mainland Bridge", or Eko Bridge, was commissioned (ibid). Between 1959 and 1962, Julius Berger had worked on the construction of Maracaibo Bridge in Venezuela. Site conditions for this pre-stressed concrete bridge had similarities to those of the Eko Bridge. Both projects dealt with similar soil conditions, with construction taking place over the water, requiring use of floating equipment (Dimel, 1981:76). The first equipment was brought from the Venezuela project to Lagos (Offenbach, 1980b:265). While the contract was for a single bridge, the firm stayed in the country (Krauß, 2023).

The ground conditions in Lagos and extent of low-lying areas prone to flooding made it an expensive place to build, requiring deep pile foundations and innovative engineering techniques. Concrete deck-on-piles would become the solution that JBN would employ (Dimel, 1981:82). Scarcity of land due to the structure of mainland, islands and the system of creeks, made bridge connections vital for linking non-contiguous tracts. Prevalence of water in this topography, while a challenge for urban development, brought an advantage to Julius Berger, which brought expertise,

personnel and equipment from Venezuela, and adapted to working conditions involving reclamation, and construction sites over bodies of water. From 1965 to 1980, the firm operated predominantly in Lagos. With the war over, JBN would take on a number of new projects between 1970 and 1975, involving work in Lagos State as well as post-war reconstruction, such as reparation of the Onitsha Bridge in 1970 (Schaffner, 1981:210). From 1975, contract values of Julius Berger's largest projects increased substantially. Notably, the Outer Ring Road West on the Lagos Mainland, linking Apapa and Ikeja, was DM 260, 144 500 in value (ibid:214), while considerable port contracts began to come JBN's way. The Outer Ring was significant in that it would present the essential linking, along which additional nodes of the new port at TCI and the FESTAC Village would be developed. The Third Apapa Wharf Extension contract for the NPA was undertaken between 1975 and 1978, with a value of DM 335, 000 000 (ibid:215). The Lagos Inner Ring Road, constructed between 1975 and 1979, was another large contract for the Lagos Federal Ministry of Works, to link Lagos Island to the Mainland as well as to Victoria Island, and with a contract value of DM 1, 200 000 000 (ibid:216).

This project overview provides a picture of the early years of the firm's activity in Nigeria, which were from 1965-1969 focussed on the Eko Bridge as the single major project. While other smaller contracts in this period indicate some availability of work, it is not until the early to mid-1970s that projects on a really significant scale would be awarded to JBN, and raising the question of why the company chose to remain in the country during the war, when other foreign construction firms had left (Krauß, 2023). Entries from these early years in company journals indicate concern about security and the development of the war, with conflict escalating from 1966 (Stier and Krauß, 2005:469). There was considerable press coverage and worldwide criticism of the Biafran War and of the role of Western countries in supporting both sides of the conflict. The German Federal Ministry argued that the work of Julius Berger represented an opportunity for economic cooperation between Germany and Nigeria, with a DM 70, 000 000 bond for the Eko Bridge provided by Germany (ibid:469-472). Despite these public debates and the uncertainties associated with operation in a country during wartime, the Berger project continued, with increasing investment by the company in their Nigerian activities.

By the mid-1970s, the company was sufficiently embedded and logistically networked to outcompete other multinational and international firms tendering for work in Lagos. JBN was handling infrastructural projects of significant scale in Lagos, and turned attention to the major potential inhibitor of their internationally sourced logistics operations: the port. Major General Nasko, wrote that at first he had thought that "...perhaps we needed other companies to compete with them. It did not take long to discover that Julius Berger was the best. They finish the job on time, sometimes even before the agreed time – but never late" (Blum and Hassenkamp, 2002:108). With the Apapa Port crisis, the Federal Government had invited ideas from groups internationally. A Dutch Group proposed a temporary floating port which would take two years to construct, and which could be towed to Lagos (Gaines, 1996:63). JBN proposed instead a turnkey port project, calculating that they could have it ready within 15 months. May 1976 represents the beginning of this discussion at JBN, but by June the design for TCI had been commissioned and the contract for TCI was signed on 1 July 1976. The NPA had selected International Competitive Bidding for design and realisation of port projects, with the view that foreign-contractor involvement would enable transfer of skills and technology "to local contractors in execution of national port projects" (TWB, 1982:12).

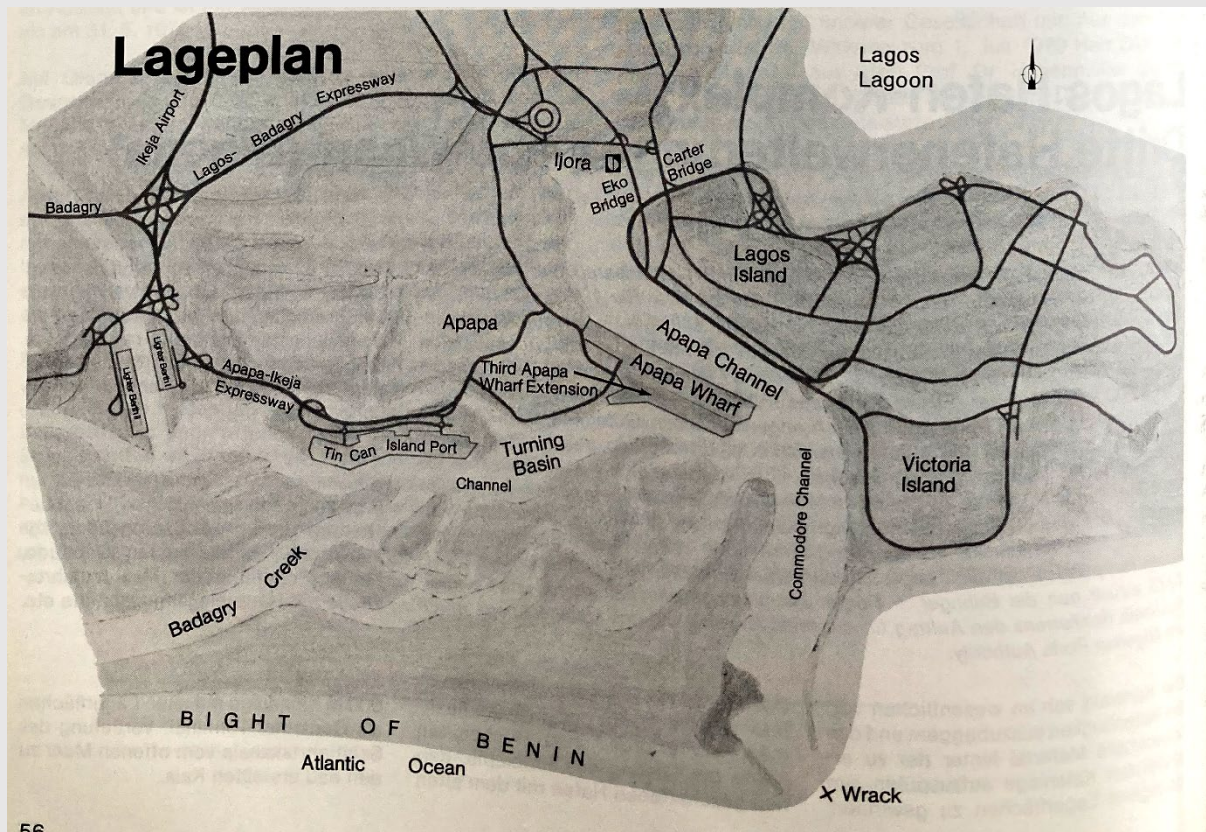


Figure 19: Plan of Lagos with the Inner and Outer Ring, Apapa and Tin Can Island ports.
The JBN office is indicated with a 'b' at Ijora. (*Unsere Bauwelt: b aktuell*, 1979[4])



Figure 20: Plan diagram of Lagos Inner Ring Road
(Blum, 1981)



Figure 21: The Lagos Inner Ring Road wrapping around Lagos Island.
(Blum, 1981)

The indigenisation programmes had begun in the leadup to independence, with the British slowly moving out and Nigerians taking over key positions. A 1956 'Committee on the Nigerianisation of Business Enterprises' was established (Uche, 2012:751), and in 1968 the Companies Decree was promulgated, requiring foreign companies to register a separate Nigerian business in order to operate (Ogbuagu, 1983:248); JBN would register as a Nigerian company in 1970. There was also emphasis on skills development with the 'Industrial Training Fund Decree' of 1971 (ibid:249). Nigeria would be described as having adopted "aggressive" indigenisation policies" in comparison with other West African countries with less abundant natural resources such as Ghana, Senegal, Sierra Leone and Togo (Uche, 2012:750). The *Nigerian Enterprises Promotion Decree* (NEPD) took effect in April of 1974 (Uche, 2012:754), and aimed at economic indigenisation (Balabkins, 1980:25), and prior to this, the Federal Government had indicated its intention in *The Second National Development Plan*, to increase Nigerian ownership and participation in key industries (ibid:23-25). There was considerable uncertainty amongst international investors and multinational companies with the promulgation of the 1974 decree, with *The New York Times* reporting on withdrawal of some foreign banks (Darton, 1976). But there were also Nigerians who welcomed the involvement of expatriates in the post-colony. Odusanwo (1975:7), an engineer, wrote in *The Daily Times* on 'Efficient Infrastructures as Catalysts of Economic Development', stating that "there is no shame" in the fact that the flyovers and expressways were constructed by foreign engineers, and that "we should not hesitate to invite expertise".

Before and after the war, there were many multinationals in the country. With the economy still dominated by majority foreign-ownership (Ogbuagu, 1983:241-242), JBN's acceptance of the Nigerianisation policies was a prerequisite for embedding their considerable engineering and construction expertise in headquarters in Lagos, and later Abuja. In Nigeria's struggle to indigenise (Johnson, 1978:224), foreign expertise was required but existed in tension with the desire for Nigerianisation. The Indigenisation programme meant that access to political elites was sought after, with military officials having "privileged access to information" and "personal interests in the economic sector" (Ogbuagu, 1983:258). By April 1974, the Indigenisation programme had seen limited success and an 'Industrial Promotion Panel' was formed (Uche, 2012:765) whose recommendations led to the promulgation of the *Indigenisation Decree of 1977* (Akinsanya, 1994:65). The 1977 amendment to the NEPD, modified the percentage Nigerian ownership so that schedule two companies, such as JBN, were now required to be at least 60% Nigerian-owned (Ogbuagu, 1983:253). JBN sold a further 20 percent of the company to "interested Nigerians", meeting the 60 percent requirement by October 1979 (Weinert, 1981:52). From its status as a Public Limited Company in 1970, it became a Public Liability Company by 1979 (Gaines, 2009:64). However, the opening of the post-colony to German civil engineers and financiers brought some unintended consequences, with the public-private partnership and parastatal identity garnering criticism in the Nigerian press and in debates in diplomatic circles, which questioned the unequal relationship between Germany and Nigeria (Ate, 1984), and finally culminating in corruption charges against JBN in 2015 when it was discovered that the company had given bribes in order to secure contracts (Krauß, 2023).

5.1.2. The Ambiguous Role of the State

The identity of any assemblage at any level of scale is always the product of a process (territorialisation and, in some cases, coding) and it is always precarious, since other processes (deterritorialisation and decoding) can destabilize it. (DeLanda, 2006:26)

The term territorialisation is related to territory, and by implication, land. The word also evokes 'the State' as the primary administrator of territory. But 'territorial' boundaries can be imposed upon bodies of water and organisations, with port congestion necessitating organisation of territories and departments at various levels of state. The projects formed one part of the strategy for decongestion, while concurrently the State began what can be described as the work of coding, through introduction of NPA decongestion decrees in 1975 (TWB, 1982:16). There were conflicting factors within the State as the civil war had seen the growth of the army from 10,500 troops in 1965 under the civilian government (Dibie, 1997:119), to about 270,000 troops (Misawa, 1992:102). Following the war, demobilisation was not favoured (Ayu, 1984:244-245), with the result that large numbers of new troops needed to be accommodated.

A Barrack Development Programme had been initiated in 1971, and while no new barracks had been constructed by 1976 (Abdurrahman, 1985:96), 20 million tonnes of cement were ordered. At the *Justice Belgore Tribunal on Cement Importation* held in 1975, the officer in charge of Army Development Projects admitted that while the Ministry of Defence had requested 16 million tonnes of the total order, only 2.9 million tonnes had actually been required (Emenyeonu, 1997:55-56). With Gowon deposed, 1975 saw strict measures brought about to relieve port congestion, and regulations were implemented to limit cement imports. These were partially effective, but efforts were still required to reduce shipping until the port projects could be completed. In 1978, imports were restricted by the Government's 'Plan of Stabilization', which improved the situation, in conjunction with the completion of the major port extension works (TWB, 1982:16).

DeLanda writes that the "state apparatus performs coding operations that affect an entire territory". The more tyrannical the state apparatus, the more coding is employed, with a higher degree of control over social and customary norms, as well as dictates imposed over rules of property and the market (DeLanda, 2026:22-23).

...the legitimacy of an authority structure is in most cases related to linguistically coded rituals and regulations: in organisations in which authority is based on tradition, these will tend to be legitimising narratives as part of a sacred text, while in those governed by a rational-legal form of authority they will be written rules, standard procedures, and most importantly, a constitution defining the organisation's rights and obligations. (DeLanda, 2016:22)

The coding operations of authoritarian governments may represent a form of legitimisation as well as a means to exert control. Military rule has been characterised as lacking in accountability (Afinotan, 2014:174). There is also the perception that a military regime, due to the nature of political elites being a small group, is more flexible and able to take decisions more quickly (ibid:172). This, as contrasted to a participatory governmental form which achieves consensus, and thereby legitimacy, through wider discussion, and is answerable to parliament. One of the first actions

of the military regime is to suspend the Constitution, adopting instead the practice of rule-by-decree (ibid:171-173). State response to the port crisis was to employ coding, both through the use of *Decree No. 40*, according to which all imports had to be registered two months in advance, and through the 'Plan of Stabilisation'. During the period from 1975-1977, a port decongestion strategy involved round-the-clock delivery service for no extra charge to get cargo out of the port, increased storage fees, and ways were found to move commodities directly from ships to vehicles and rail (TWB, 1982:18-19). Perishable goods had to be flown to shore by helicopter (Gaines, 1996:63). In addition to curbing imports, other measures included: "customs clearance of 90% of semi/bulk cargo without inspection...", the purchasing "...of new shore handling equipment as well as barges, pontoons, tugs" to be able to remove cargo via use of lighters, and the "appropriation of several berths to the conference lines operating in Nigeria" (TWB, 1982:18-19).

While these measures had some impact, the political changes also played a role in government response to the port congestion. The cement crisis had damaged the reputations of both the regime and the NPA. Where Gowon had been perceived to move too slowly in curbing corruption and addressing the cement crisis, following the military coup of 1975 Murtala Muhammed would move quickly, removing all state governors from office, and dismissing "150 military officers and 10,000 civil servants" found guilty of corruption (Dibie, 1997:132). Also removed, were the permanent secretaries associated with Gowon's regime, and 600 staff in the NPA (Dibie, 1997:115). The perception that the military government could respond rapidly to a crisis of congestion should be weighed against the consideration that the lack of accountability, particularly regarding cement orders, was partially to blame for the congestion, although the literature has shown that the impacts of the civil war and the oil boom were contributing factors.

The need for speed in resolving the crisis, impacted the work of JBN, and the tight time constraints on their projects were partially as a result of the need for urgency in addressing congestion at the port, and partially a result of the Federal Military Government's need to demonstrate efficiency, and by implication, legitimacy. The Government employed both rule-by decree to resolve the crisis, a form of coding, while its agency, the NPA, employed technical solutions in the form of port projects. Oil income had elevated the power of the State, making it the "key distributor of national resources", with petroleum representing about 80% of state revenue³⁹ (Daodu, 2000:64). This factor makes the role of elites and the relationship between JBN and state actors, important to an understanding of the company's indigenisation within Nigeria.

5.2. Julius Berger Nigeria and the Role of Elites: Conversations, Organisations, and Environments

Despite the political changes which saw three Heads of State within one year, with the changeover from a civilian government to a military regime, General Yakubu

³⁹ This in comparison to an economy that was over 50 percent agricultural at independence (Dibie, 1997:12).

Gowon would come to power in August of 1966 and would remain as Head of State from 1966 to 1975. At just short of nine years, this was the longest period of rule of any Nigerian Military Head of State. When the final phase of the Eko Bridge was completed, it was General Gowon who cut the ribbon (*Berger Welt*, 1969(25):8). In later years, in a message to Hans Wittman⁴⁰ upon his retirement, Gowon recalled that the continuing work of Julius Berger in the country, even after the start of the civil war, had given the Government hope: “They gave us the impression that all was well in Nigeria because what was the point of building a bridge if it wasn’t?” (Blum and Hassenkamp, 2002:67). Gowon portrayed the decision of JBN to remain in the country as a mark of confidence in the future, describing Wittmann as having “entered Nigerian history” (ibid). These statements contain more than just the usual hackneyed phrases of retirement notes. The document which collates written contributions of Nigerian political elites, as well as employees of JBN, contains language codes which offer insight into the JBN-Government relation.

Muhammadu Buhari, also a former Head of State, remarked as follows: “While some companies were leaving Nigeria because of the crisis...Julius Berger was borrowing money, building and maintaining the infrastructure according to the general agreement between it and the Federal Military Government.” Buhari commented on the exodus of companies, which could have resulted in “the balkanization of the Country” (ibid:107). Dr Shonekan, who was briefly Head of State in 1993, wrote of the difficulty of developing Nigeria, relaying Wittmann’s advice to him: “Don’t worry. Just go on doing everything in accordance with your conscience” (ibid:124). Apart from Gowon, another longer-term appointment which provided a thread of continuity in the lead-up to the awarding of the TCI port and the Lagos Inner Ring Road contracts, was the presence of the Military Governor of Lagos, Mobolaji Johnson, who occupied this position from 1967 to mid-1975. Johnson would become Director of JBN from 1979, and later its Chairman, from the mid-1990s. Johnson recounted the time of his own appointment as Governor of Lagos State, upon its creation in 1967⁴¹: “I was convinced that although Julius Berger had come to Nigeria to build the Eko Bridge in response to an international tender, the company would be very useful to the country – it could help develop the next major road works I envisioned...” (Blum and Gaines, 1996:30). There is an implication here, that the performance of JBN, and the quality of work that they produced, was to become linked to the perception of the performance of the military government, which would be judged on its ability to deliver infrastructure and to industrialise the country.

While JBN had altered its legal structure in 1970 to become a Nigerian company, its ownership model would only change from mid-1975, becoming 40% Nigerian-owned by April (Weinert, 1981:52). Lagos State and Benue-Plateau State owned 20% shares each, and Mr S.A. Laguda, Commissioner of Special Duties, joined the Board of Directors as a representative of Lagos State, while Mr Alhadji Yakubu Muhammed, Permanent Secretary in the Ministry of Local Government, joined as a representative of Benue-Plateau State (*Unsere Bauwelt: b aktuell*, 1976(2):60). This brings the company closer to the State, as relations to the Federal Government were both that of ‘funder’ and ‘client’, while ownership was based in the two states where the company was involved in major projects. While the intention was to ‘Nigerianise’ the

⁴⁰ Wittman had risen from a position of project manager in 1969, at JBN, to become the company’s Vice Chairman (Stier and Krauß, 2005:550).

⁴¹ 12 States were created in 1967.

construction sector, indigenisation of JBN made the company into a construction giant with full state backing. In a description in a JBN company monograph, the signing of the Eko Bridge contract was “tantamount to a marriage” between the company and the State (Blum and Gaines, 1996:48), and JBN acquired the “status of a parastatal in the eyes of many of the population” (Gaines, 1996:57). Major General Muhammadu Buhari described the relationship between the Nigerian State and JBN, “across the Governments from the First to the Fourth Republics” as being “that of Siamese Twins” (Blum and Hassenkamp, 2002:107). Siamese twins are born physically connected. They may share organs, thereby supporting the life of the other twin. This conception of a mutual interdependence would prove to be an apt analogy. But just as the connection between JBN and the Federal Government became vital for both parties, their activities were connected to the environments in which they functioned, and as one writer describes it, “creating the basis for continued growth in Lagos: it is true to say that Lagos grew with JBN” (Gaines, 1996:57).

5.2.1 Conversations, Language codes and Territorial Boundaries

At the outset, “the main territorialising process providing the assemblage with a stable identity is habitual repetition” (DeLanda, 2006:50). Habit and maintenance of routine are considered as territorialising processes, conversely, deterritorialising processes disrupt routine, as acquisition of new skills and innovation veer away from established practices. Expansion of a company internationally is a form of deterritorialisation, while the process of embedding into an environment, represents a territorialisation. Both processes were active within JBN activities, and were exploited by the company for their differing effects. The second parameter is the work done by coding. This stabilises the assemblage and consolidates the impact of the work of territorialisation (ibid:15). The operations of Julius Berger in Nigeria were consolidated by their coding at several levels, from language codes employed in communication, to systematic development of practices and protocols necessary to deliver on project commitments, and through contractual agreements establishing rights and obligations.

The conversation can be understood as territorialised, displaying defined boundaries with “legitimate interactors” included through co-presence, or as deterritorialised, in the case where spatial proximity is not required, with technology providing a link (ibid:52). An “assembly of subpersonal components (impressions, ideas, propositional attitudes, habits, skills)” enables an individual “to act pragmatically” and socially “for habitual reasons”, with “[s]ocial encounters” themselves assemblages, with conversation as a component which informs identity, through for example “public image” (ibid). The encounters documented in archival material are notable for their informality and ease, with signs that these interactions were of both a personal and business nature. Within the records and correspondence in the form of forewords, comments, and notes from Nigerian administrators and politicians in company publications, language codes are revealing of attitudes and affinities. Communication in one sense was aided by the fact that English was not the first language of any party. A government minister recalled that German engineers “didn’t speak such super English”, which “was a blessing” as they “listened more carefully to what we



Figure 22: General Yakubu Gowon cutting the ribbon at the opening of the Itoikin Bridge in 1972. JBN Director, Günther Hawranke, holds the ribbon to his right. (Blum, 1981)



Figure 23: JBN Director, Hans Wittmann (left) and Mobolaji Johnson, Military Governor from 1967 to 1975, and later JBN Director. (Blum and Gaines, 1996)

said” (Gaines, 1996:57). This removed a barrier that may have served to prohibit forthright dialogue.

The Old Jebba Bridge crosses the Niger River. Built in 1915, it could only accommodate a single lane of either vehicular or rail-based traffic. When visiting Italian colleagues, Wittmann took this bridge, which was the only crossing in that part of the river. Traffic congestion was the norm, and on that day, the hooves of the cattle had become stuck between the railway sleepers (Krauß, 2023). Later, when visiting the President, Wittmann made the proposal for a new bridge, saying: “Mr President, you need a bridge” (ibid). The following year, in 1976, JBN would build a new road bridge alongside the old bridge, as well as integrating a gas and oil pipeline (Dimel, 1981:76). Usually there is a gap between the initial conception of an idea and its implementation in project form. In this case it was narrowed, in part, because of the access that JBN had to political elites.

A social example of the result of a process of decoding would be informal conversations between friends...The more formal and rigid the rules, the more these social encounters may be said to be coded. But in some circumstances these rules may be weakened giving rise to assemblages in which the participants have more room to express their convictions and their own personal styles. (DeLanda, 2006:16)

One interpretation of this would be that when rules of communication (language codes) are relaxed and made more flexible, ‘faster action’ and ‘shortcuts’ are enabled. This same interaction can be understood in territorial terms, where “[a] variety of practices of exclusion and inclusion perform the main territorialising work” (ibid:66-67). The conversation has a boundary which is made explicit in the acts of inclusion and exclusion. Alhaji MD Yusuf, Inspector of Police from 1975 to 1979, referred to Hans Wittman as “Mr Julius Berger” (Blum and Hassenkamp, 2002:38). “Mr President” and “Mr Julius Berger” are both forms of familiarity expressed through an identity tag. This is similar to the epithet in Homer of ‘fleet-footed Achilles’, which is employed as a mnemonic aid. In the context of this scenario, the epithet serves as a spoken accentuation of both the Head of State and of Wittmann’s role. The title of “Mr Julius Berger” is used in jest, but also as confirmation of importance: that he was a key actor in Nigeria. This is affirmed by Alhaji Shehu Shagari’s statement that Wittmann’s name was “synonymous with all development activities in Nigeria” (ibid:92). The epiclesis was an Ancient Greek epithet used to honour a deity by name. Descriptions of the perceptions of Julius Berger’s abilities verge on the mythological.

There was speculation about the origin of the man “Julius Berger”, some of which can still be found on the *Nairaland Forum*, a popular website in Nigeria. A Lagos newspaper published the story of a religious studies class, where the schoolteacher had enquired of students whether they knew the name of the man who had walked on water. The paper recounts a young boy’s response of “Julius Berger” (Offenbach, 1980b:276-277). The real Julius Berger, who had founded the company in 1890 in Bromberg, West Prussia, moving to Berlin in 1910⁴², was actually Jewish and had died in 1943 in the concentration camp, Theresienstadt, in Czechoslovakia during the Holocaust (Stier and Krauß, 2005:169-209). But legend serves to inflate a personality, who becomes known for their acts, such as ‘walking on water’, or for

⁴² Julius Berger AG was only in Wiesbaden from 1945 (Stier and Krauß, 2005).

their title⁴³, and who is perceived as somebody who could do things that others could not. This reputation was aided by the port congestion crisis, which produced an 'heroic ability'. Julius Berger had become the name of a person and not of a firm, but of a legendary figure. The epithet was 'Julius Berger' who could get things done: an accentuation and form of identification that happens spontaneously when people attribute epithets. Documents in the *Company Archives of Bilfinger SE* contain expressions such as "We Bergers" (Offenbach, 1980b:276), and there was also the verb "to Berger", which came into use in Nigeria, and that company publications explain as having meant that "anything can be done" (ibid:278).

5.2.2. Organisations and the Social Network of a Project

The presence of the same actors who are involved in many conversations on a variety of ongoing and potential projects, results in the formation of "interpersonal networks" (DeLanda, 2006:56). The process of Nigerianisation impacted JBN's organisational structure and ownership model. In the temporary social network of the port 'project', boundaries between institutional actors of client, financiers and future occupant, and the project team of consultants, began to become less defined. This represented a form of deterritorialisation institutionally, as State actors were given formal roles on the JBN Board of Directors, while State activity became increasingly technocratic, with the military more reliant on civil administrators who advised on policy (Dibie, 1997:137-138). At the same time, during the first years of the 1970s, engineers in Julius Berger's Wiesbaden planning office were drawing up blueprints for Lagos' future road networks (Blum and Hassenkamp, 2002:25), before even having been requested to do so. These would form a main component of the National Five-Year Development Plan that the government would adopt. While Nigerianisation performed the work of coding on JBN's organisational model, the technocratic alliance of state and engineers, politicians and bureaucrats, was redefining the boundaries between company and state, placing JBN in a position to influence the structuring of the rapidly developing Lagos of the 1970s, directly.

Analysis of language codes at the more personal level revealed some evidence that political elites thought highly of JBN and regarded the quality of their work as excellent. The company journal recounts that "our respected work" on the Eko Bridge had been noticed (*Berger Welt*, 1970(32):15-16). But the community-network has the ability to store reputations (DeLanda, 2006:55), and therefore the perception of JBN's reliability would persist. JBN's reputation was raised even higher by the crisis of congestion at the port, which had reached a critical point by 1975. Their response to the crisis became an enabling factor, further entrenching their position, as events offer the opportunity to display character, and "...participants can enhance their reputations in a long-lasting manner, since claims to strong character can only be challenged by the occurrence of another problematic event" (ibid:55-56).

Larger firms become more deterritorialised as the need for proximity is negated by communication technologies (ibid:54). This was already the case with the connection between the parent company, Bilfinger + Berger, and the subsidiary company, JBN,

⁴³ Wittmann was given the Northern tribal title of 'King of the Roads' (Blum and Hassenkamp, 2002:43).

with the international office in Wiesbaden as a 'communication node' accommodating this relationship. In a project, consensus is usually established by the contract, but close alliance between JBN and the Government extended the territory in which it was operating to coincide with national priorities, with projects beyond Lagos. It also increased the number of interactions taking place, due to the large number of federal and state-level parties working together on major infrastructure projects. "Components performing a material role in these assemblages include in addition to the physical bodies of the people involved, the time and energy they must spend in maintaining relationships" (ibid:57). To maintain these many relationships over greater distances, work is involved, and just as JBN expanded its project infrastructure and equipment to take on larger contracts, it also began to diversify its services and to develop its relationship with elites.

The more deterritorialised the firm, the more work must be done to maintain relationships, as "maintenance of relations involves more than just having frequent conversations. It also includes the exchange of physical aid..." and can involve, for example, "...giving advice in difficult situations" (ibid). The Federal Military Government of Nigeria was reliant on JBN for its engineering expertise, which in combination with their knowledge of the terrain, enabled them to make suggestions on infrastructure development. But other forms of support were to follow. The former Head of State, Chief Ernest Shonekan, put it this way:

There are so many things Hans and Julius Berger Nigeria do apart from construction. They are there to help when Nigeria is shaken by disasters. They arrange for medical attention in Germany for so many of our countrymen...without looking for any reward. (Blum and Hassenkamp, 2002:124)

When the former Minister of Finance, Adamu Ciroma, had a car accident⁴⁴, he regained consciousness six weeks later to find that he was at a hospital in Wiesbaden, having been flown by air ambulance direct to Germany, an arrangement made by JBN (ibid:38). He also said that even if "...the customer is unable to pay, Julius Berger Nigeria will arrange the financing – at a cost of course" (ibid). Rear Admiral Porbeni, former Minister of Transport, described two plane crashes that had occurred, and where Julius Berger had led the rescue efforts. "They were there on the spot with divers, cranes, dredgers and even cared for the graves of over a hundred soldiers. I was terribly touched..." (ibid:163).

The port crisis of 1975 represented a turning point which had impacts for both JBN and the Nigerian Government. The factor of 'crisis' in combination with oil money led to the appointment of JBN for the Lagos Inner Ring Road to address the congestion on land, while the TCI contract would help to alleviate the congestion on the water. The considerable scale of these two contracts altered the fortunes of JBN, and required expansion of company infrastructure to support the intensive work involved, and which had to be completed under significant time pressure (Schaffner, 1981:217). The logistics of importing materials to complete these projects involved an international operation (Weinert, 1981:50) supported by the Wiesbaden office, working closely with JBN (Dimel, 1981:173). In building up supportive-infrastructure and facilities in Lagos, JBN would use their own planes and connections when making these arrangements. Their logistics system also involved JBN's sizeable shipping company travelling between German ports and West Africa, in addition to

⁴⁴ This event was some time later, at the beginning of 2002, by which time JBN was already established in the New Federal Capital.

the supplies sourced from other parts of Europe, Brazil, Japan and the United States. In 1976, over 70,750 tonnes of material was brought to Lagos in just ten days (Weinert, 1981:52). According to a company publication, JBN built up the largest shipping company in West Africa operating at that time, mainly to supply the Lagos-Badagry Expressway and TCI projects (*Unsere Bauwelt: b aktuell*, 1977(2):80-84). There were reputational gains to the company, afforded by the successful undertaking of these large-scale projects. An additional aspect was that by building up supportive-infrastructure and facilities within Lagos, the link to Germany was equally strengthened and became an extended network for Nigerian elites which could be drawn upon when needed, and which served to strengthen the position of the company in Nigeria.

While the impacts of the crisis were positive for JBN, they were catastrophic for Gowon's government, with Gowon deposed as Head of State on the 29th of July 1975. The civil war of 1967-1970 had strengthened the army (Abdurrahman, 1985) and earned Gowon the personal legitimacy of having won the war (Onyejekwe, 1978). His comparatively longer period in power may have been due to his unique credibility as a leader who was both a Northerner and a Christian, coming from the middle-belt Plateau State (Onyejekwe, 1978:270). This was an unusual and unlikely combination, which can be read as a form of coding functioning at state level. The policy of alternating the position of Head of State between a northerner and southerner, Muslim and Christian, still impacts voting patterns in the country (Eze and Fasquelle, 2023). While activities of JBN were dependent on the company's proximity to political elites, changes in political hierarchy have not appeared to impact their work unduly, rather the opposite, JBN was able to expand operations nationwide following their successful work in Lagos. It is notable, however, that the period of relative stability brought about by the continuity in leadership at Lagos State-level and Federal Government-level from 1967-1975, may have allowed the company a period in which to embed their operations.

As maintenance of routine serves to territorialise the assemblage, so routine can be understood to reinforce legitimacy (DeLanda, 2006:50). The military seized power in 1967, and military leadership is often associated with the alternate employment of force and consensus (Ayu, 1984:8). While the loss of legitimacy often catalyses a military takeover (Onyejekwe, 1978:15 and Richards, 2001:45), the military in suspending the Constitution, and adopting a practice of rule-by-decree (Afinotan, 2014:171-173), may seek to legitimise itself in a variety of ways. In Nigeria this took the form of an alliance with the public administration (Dibie, 1997:151), the centralising of authority through the creation of additional states⁴⁵ (Ayu, 1984:346), and adoption of ambitious infrastructure programmes. With this in mind, the congestion of the port and roads represented a disruption to the stabilising function of routine, and consequently, was threatening to the position of Gowon's government. Legitimacy was also largely dependent on the performance goals set by the Five-Year National Development Plans, and the ability of the State to deliver on these.

⁴⁵ During the period of this research, there was an increase from four to 12 states in 1967, and again from 12 to 19 in 1976 (Ayu, 1984:346). Today there are 36 states.



Figure 24: JBN Cessna Aircraft.
(Blum and Gaines, 1996)

When Murtala Muhammed took power in July of 1975, he initiated an investigation of the cement orders and corruption associated with Gowon's regime. General Muhammed would govern for just over six months. Although the attempted coup of February 1976 was unsuccessful, General Muhammed would be assassinated, to be replaced by General Olusegun Obasanjo (Dibie, 1997:132). Obasanjo, who had been Muhammed's Chief of Staff, would continue with the former-General's policies until the beginning of the Second Republic in October 1979. The infrastructure programmes of the mid-1970s, were in some respects confirmation of the military's efficacy and ability to run things, although Onyejekwe (1978) argues that there were external factors such as resource availability that played a role. Consequently, JBN's part in addressing the port congestion crisis, had an impact on the perception of government legitimacy. In this respect, the close relationship between the Nigerian Federal Government and JBN during this period, enabled both parties to benefit: the one securing contracts, and the other as being seen to deliver on its promises.

5.2.3. Flexibility, Fluidity, and the Overcoming of Environmental Constraints

Assemblages emerge from the interactions between their parts, but once an assemblage is in place it immediately starts acting as a source of limitations and opportunities for its components. (DeLanda, 2016:21)

'Downward causality' recognises that parts may follow the existence of the whole, with "descending and ascending causal relations between the two", while "properties of a whole are produced by the ongoing interactions between its parts" (ibid:83). The port as an environment pre-existed the port projects, its daily functioning both constraining and enabling the work of expansion. In a context of constraint, the available options become narrower. Even with adoption of indigenisation policies in the 1970s, and introduction of government incentive schemes, it was difficult to stimulate local manufacturing and industry in Nigeria, meaning that large multinationals tended to import most things (Johnson, 1978:226). The reliance on imports placed a further strain on the port and presented a challenge for JBN, which had to navigate the constraints and possibilities of the port environment. In December of 1975, *Decree, No. 40* was issued, barring entry to Nigerian ports for any ship that did not have the two-months' prior approval (Chilaka, 2017:114-115). While the State decrees were a means of resolving the crisis through introduction of additional 'codes' and regulations, JBN was having to adopt more flexible strategies on land and water.

In assemblage theory, fluidity is characterised as a state in which lower values of coding and territorialisation occur. Read in this way, the concept of fluidity can imply the loosening of norms and blurring of boundaries. Ports are generally taken to be deterritorialising features of a city as they enable the coming and going of diverse groups of seafarers, so that the society becomes more open to foreign customs (DeLanda, 2006:111). The port congestion temporarily altered this dynamic, with slowing of movement acting as a constraining factor on the port project. The lagoon and harbour, usually the scene of a networked mobility, solidified and became almost stationary. Ships waited up to 180 days for a berth (TWB, 1982:16). At the height of the congestion, there were so many lights shining out on the lagoon at night that it appeared to the observer as though it were a suburb of Lagos (Gaines, 1996:63). In analogical terms, the projects in combination with the actions of the State, were

aimed at taking “a frozen body of water” to a “critical point” and an “intensive threshold” at which solid would become liquid again (DeLanda, 2016:116), and more loosely connected and mobile. For JBN, adoption of interim measures enabled them to ensure a flow of materials and equipment, involving actions taken within the ‘daily life’ of port projects, which could act in a “bottom-up way”, exerting upward causality on the port assemblage (ibid:21).

The port project was a Federal Government priority programme, and the tight construction deadline required a 24-hour multi-shift operation (*Annual Company Report*, 1976:17), consisting of about 360 Germans and 5000 Nigerian workers (Offenbach, 1980c:281). Locally, one of the means of ensuring a supply of construction materials and equipment was to reenvision independent project sites across Lagos as part of an extended project infrastructure connected through logistics, with supplies moved wherever they were most needed. Material stores were of sufficient size to ensure the continuation of the work even if shipments had not arrived (Gaines, 1996:67). The TCI Port and the Third Apapa Port Expansion projects were running concurrently with the Lagos Inner Ring Road, a project around which several auxiliary facilities had been developed. These projects began to support and enable one another at an urban scale, as more large contracts brought with them ‘economies of scale’. Although located within the Badagry Creek, TCI is a deep-sea port and upon completion it provided 2000 metres of wharves. The urgency required saw the first six docks operating after 12 months (Offenbach, 1980a:183). Vast quantities of material had to be shifted to clear the TCI site of mangrove and of the layer of mud upon which this had grown. Mud eight metres deep was removed and replaced with coarse sand dredged from the lagoon. Four million cubic metres of sand was dredged from the harbour bed to be used as landfill (Gaines, 1996:62-63). With the ground prepared, port buildings, including the control tower and administration buildings, as well as storage and roadworks, could be constructed (*Unsere Bauwelt: b aktuell*, 1976(4):197). A residential camp was erected on the island within three months, with 60 prefabricated houses imported from Germany (Offenbach, 1980c:280). Most of the construction material was imported from Germany by chartered ships, and in the later stages of the project by chartered planes (Weinert, 1981:54).

Within the harbour tactics, a fluidity in the JBN organisation emerged. While other ships had to apply two months in advance and loading at the port of departure needed prior authorisation from the NPA (TWB, 1982:16), JBN had dedicated berthage for offloading of deliveries with capacity for four to six shiploads to be unladen at a time onto JBN’s own lighters (Dimel, 1981:130). A new channel was created at Apapa, where company barges were able to dock on both sides, enabling 24-hour offloading by teams. A component of the Third Apapa Extension was opened early so that cement could be taken off waiting ships to relieve the congestion (*Unsere Bauwelt: b aktuell*, 1976(2):95). JBN employees did their own offloading onto barges which were then steered to the Julius Berger wharf at their builders’ yard, from where materials could be taken by company trucks to sites across Lagos (*Unsere Bauwelt: b aktuell*, 1977(2):80-84). The NPA was at the same time allowing 90% of bulk cargoes to go through unchecked (TWB, 1982:18-19). Supplies meant for Julius Berger were certainly fast-tracked through the port, involving efforts of the company’s dedicated ‘transportation department’ “whose job it was to handle the extensive customs formalities” (*Unsere Bauwelt: b aktuell*, 1977(2):80-84). Shiploads of equipment arrived, with 41,000 tonnes of steel, 38,000 tonnes of sheet piles, and 50,000 m³ of ready-mix concrete required per month “in peak periods”,

and 360,000 tonnes of cement per year, all ordered by the “Purchasing Department” at Wiesbaden, and all brought to shore by company lighters (Gaines, 1996:63).

Indigenisation efforts helped to make JBN more self-sufficient within their working context, this included the ability to supply sites across Lagos, as well as to service imported German trucks, with access to a stock of spare parts for the repair work that was frequently required (Weinert, 1981:50). The Dredging Business Unit was set up for the port projects and began to operate for main contracts including the Inner Ring Road. Through dredging, the company was able to source sand from the lagoon as an aggregate for concrete (Gaines, 1996:160). The scale of the output from the Julius Berger Euro 65 cement warehouse in 1976 was comparable to that of “a large precasting factory in the Federal Republic of Germany” (Weinert, 1981:52). The JBN granite quarry at Imosan, 120 kilometres outside Lagos, would enable daily delivery of crumbled granite to Lagos (ibid:50); with a 900,000-tonne annual capacity, the quarry was a major source of aggregate. By the mid-1970s, the firm had up to DM 150, 000 000 of equipment in Lagos, ranging from German-made trucks to American-made Caterpillar construction equipment, vehicles, cranes and bulldozers, and even marine vessels such as tugboats and pontoons (ibid:52). Repairs were done at the Central Workshop which contained a store of 6-8 million Deutschmarks’ worth of spare parts. JBN also had an asphalt plant, a central cutting and bending shop, a concrete parts shop which by itself involved up to 1500 workers at peak times, and a carpentry shop for producing furniture.

In 1975, the company headquarters opened in Lagos, ten years after the company’s arrival in Nigeria. Described as a “nerve centre”, it signalled an investment in Lagos, while collaboration with the “Wiesbaden Overseas Division” would continue (ibid:58). The Wiesbaden office was concerned with expediting delivery times of orders, identifying the best means of transport to Nigeria. A steamer from Bremen would take between ten to fifteen days to reach Lagos, while a chartered flight from the Rhine-Main Airport could reach the airport at Ikeja in six hours (Gaines, 1996:57). Wiesbaden provided the drawings and calculations from afar, while managing the logistics, with documents sent from Wiesbaden to Lagos flown a few times a week from Frankfurt airport, packed in aluminium suitcases (Krauß, 2023). The sheer bulk of orders arriving in Lagos would have made it impossible to control every item. Access was cleared to enable JBN to operate in the port, receiving shiploads at a time, without interference from local customs (ibid). The work at TCI predated the computerised era, and “required a careful network plan of all the diverse simultaneous activities” (Gaines, 1996:63). Precise coordination was vital, and JBN relied on the International Division for “expertise, logistics and resources” (ibid). Drawing from their experience of the TCI project, a catalogue of specifications was devised to enable their international division to perform quality control functions on behalf of JBN (ibid:66). In this way, TCI provided a blueprint for future operations at scale in Nigeria, and a consolidation of the company’s footprint in territorial terms; a further articulation of the process that had already been established in coding, with introduction of the laws of Nigerianisation.



Figure 25: Ships anchored at sea during the height of the Lagos port congestion in 1975. (Blum, 1981)



Figure 26: Shipments of material from Germany arrive at the Lagos port for use in JBN projects. (Blum, 1981)

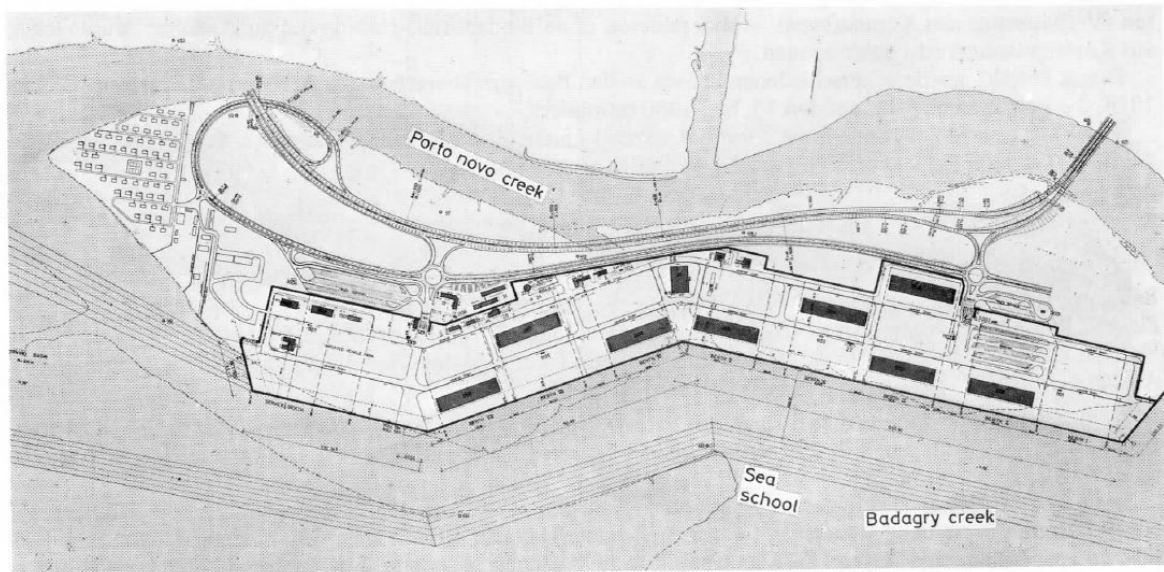
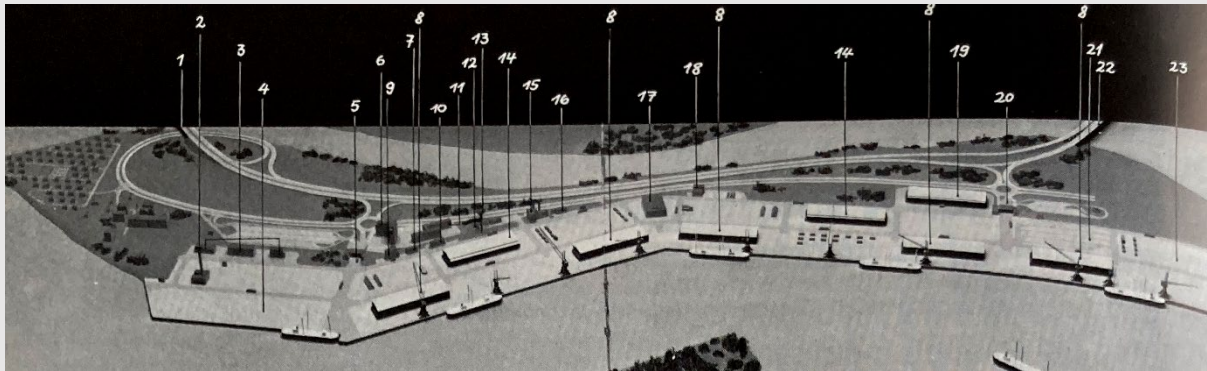


Abb. 12. Tin Can Island: Übersichtsplan

Figure 27: Model (top) of Tin Can Island (*Unsere Bauwelt: b aktuell*, 1977[4]), and layout plan. (Wittmann, 1980)

Nevertheless, the project would encounter some unforeseen delays. The TCI port represented a new node in the overall port system in Lagos. The 12 buildings planned for TCI had been constructed first, to enable it to begin functioning more quickly, with facilities for the port engineer, the port administration, as well as police, fire brigade and clinic. The intention was that port officials and other staff would move from their former premises at Apapa, which would finally be demolished. But the staff were unwilling to move, leading to a situation which had to be negotiated through diplomacy (Weinert, 1981:52). Employees become connected to their environment, the office routine is shaped in part by the office building, in which there are activities designated as work, and hierarchies indicated in spatial terms (DeLanda, 2006:99). TCI lies even further west than Apapa and was therefore further from the city centre at Lagos Island. Its location was selected as it was well linked to the road system developed by JBN, with the Outer Ring West actually passing through the island (Offenbach, 1980a:181), connecting it to the hinterland and to the existing port facilities at Apapa. The choice of site was thus sequential, dictated by the layering put in place for infrastructure as an interlinked network. But for port employees its location represented a shift in their habitual routines, altering transport patterns, daily rituals, and the dictates of organisational structure as established through spatial hierarchies. The encountering of resistance to the move, speaks to the institutional ties and aspect of memory embedded within an organisation and its staff. The emotional connection to a workplace becomes a factor which may be at odds with the planning of a project, with its major drivers of efficiency and speed in mind. The coding of an organisation is in relation to an association with locale, even while the territorial jurisdiction of the NPA extends well beyond the delimitation of the daily workings of the office building.

The actions of physical construction would also encounter buried matter. While dredging the shipping canal that would enable access to the new port, a 100-metre-long wreck was uncovered near the mouth of the harbour, a remnant of a time when the bar had represented a difficult crossing. Removal would require waiting for the dry-season months, when the water level would be lower and the sea calmer (Weinert, 1981:54). A wreck becomes rather like a time capsule that suddenly emerges and brings the more immediate work of a 15-month project into relation with the older sea floor histories, or the featured fragmentation of Titlestad's *Shipwreck Narratives* (2021). Also unforeseen, was that the objects on the lagoon floor would damage the piles driven into its bed, requiring 'frogmen' to be called in to remove deformed components (Weinert, 1981:54). Emerging at the different levels of the assemblage, material layers are disturbed and brought into interaction, but representing differing temporal trajectories that cannot be foreseen in initial stages of project planning, but that are negotiated as the project unfolds. In this way, the transformation of the environment of the port is taking place at multiple levels of activity, as new processes are introduced to the terrain, with unseen elements and prior material layers brought into association with new layers. The material mixing into vertical arrangements has a transformative impact on the process and brings about a conceptual temporal confluence between the *longue durée* (Braudel and Wallerstein, 2009) and a time of accelerated change in the Lagos of the 1970s.

5.3. Concluding Comment: Resonance at Different Scales and the Port as a Symbol

Tafidan Adamawa, the then General Manager of the NPA referred to work on the new port in the following terms:

...in 1976 my head was on the block!!! Four hundred ships were waiting in Lagos bay to berth, and I being the Head of Nigerian Ports was wrongly held responsible for it. But then you and your Julius Berger Nigeria armada floated into my life and performed miracles. They built this huge Tin Can Island Port in the record time of fifteen months! Jimmy Carter saw it and said, 'Did you say fifty or fifteen months?' He just could not believe his ears and eyes. (Blum and Hassenkamp, 2002:88)

Development of a postcolonial infrastructure programme in Lagos was a powerful symbol of the modernising project of the independent Nigerian nation. The 1970s was a period of intensive investment in infrastructure, and out of all the projects, TCI, was the most significant, becoming their *pièce de résistance*. It was used as a destination for state visits. The German Federal Chancellor Helmut Schmidt was taken to TCI on his 1978 state visit, and US President Jimmy Carter visited TCI during his four-day official visit to Nigeria in that same year (Offenbach, 1980c:286). The control tower provided a view over Lagos, but the project also provided a legitimising narrative for military rule, which following the overthrow of Gowon, had been able to respond to the port crisis rather effectively. Decrease in port congestion between 1977 and 1979 would see stabilisation of cargo traffic at 7.1 million tonnes, and increased berthing facilities from 2,500 to 6,500 metres over that same period (TWB, 1982:27). In 1978, the 'Plan of Stabilization' restricted imports, and most of the major port projects in Lagos were completed (TWB, 1982:16). With additional berthing facilities, average waiting time of ships decreased from 25 to only 3 days (ibid:27), significantly lower than the 180-day waiting period at the height of the crisis.

This chapter has looked at resolution of a combined port congestion and political crisis, arguing that 'crisis' served as an incentive for JBN's indigenisation strategies as well as elevating JBN's reputation in Nigeria. JBN as an organisation transcended the micro- to macro-scale through its activity in Nigeria, as a multinational company that initially localised in Lagos, albeit while retaining German links, finally becoming a parastatal entity with increased influence on infrastructure development in Nigeria. The demands of the port projects required optimisation and streamlining of their activities in order to deliver the TCI port within the timeframe. 'Speed' is an emergent factor in this context, achieved at a local level, with the potential for resolution of the political crisis at the level of the National State. Access to Nigerian military elites, politicians and bureaucrats high up in the power structure, facilitated JBN's ability to respond quickly to the port crisis.

The alliance with the Government was beneficial to the company, enabling operational expansion beyond Lagos State boundaries, and bringing projects that would fall within the State's nation-wide jurisdiction over geographical territory. It has been argued that JBN acquired, a willingness to go 'above and beyond' that was necessary for its growing influence and eventual expansion. The role of communication technologies and networking in this nationwide expansion of JBN, as it took the decision to follow the Government from Lagos to Abuja, will be examined in the next chapter. In 2002, by which time JBN would be headquartered in the north, Wittmann was given recognition by the Northern tribal elites, and awarded the

century-old title of “Sarkin Hanya”, or “King of the Roads” by the Emir of Katsina (Blum and Hassenkamp, 2002:43). Tafidan Adamawa, who had been General Manager of the NPA during the congestion crisis, jokingly referred to Wittmann as “King of the Ports” (ibid:88). While JBN in their written material deny any political note to their projects, they were simply there to build and to help Nigeria develop, questions of their indigenisation and expansion, their access to resources, proximity to elites, and their technical knowledge and its influence on national development plans, makes any discussion of their work in Nigeria, by nature, political.

It is certain that without JBN’s access to political elites, projects would not have been awarded to them or completed within the timeframes. JBN’s port projects represent a unique moment in Nigeria’s history when sufficient funds were available for the government to ‘build themselves’ out of a crisis that had brought about intense political criticism. Considerable income from contracts enabled both speed and quality to be prioritised by the company, with consequent expansion of JBN’s ‘project infrastructures’, which could be extended for use by Nigerian elites. These efforts and ‘favours’ further enabled JBN’s indigenisation and ‘territorialisation’ in Nigeria. Yet in some respects, the work done was still insufficient. As the postcolonial government has reflected upon when debating the relocation of the capital, the factor of congestion is in the nature of the Lagos metropolis, in its very urban genetics. Despite the scale of investment in port, road and bridge infrastructure in the 1970s, the work that was begun could not endure as a solution, in the face of growing complexity, increasing urbanisation, and spatial limitations implicit within the urban morphology of Lagos.

The next chapter will move from study of language coding to visual coding. Film footage shows the Blue B of the company logo appearing on JBN’s aircraft, ships and equipment (*JBN – 25 Years of Success*, 1995). It appeared on their Lagos headquarters and across their many project sites, as recognisable as a symbol (Offenbach, 1980b:260). The “Big-B” was so ubiquitous in the Lagos of the 1970s, and later in Abuja, that it was described as having entered the “visual culture of the Nation” (Gaines, 2009:48). The logo was powerful and was even pasted onto the passports of Bilfinger + Berger employees travelling from Germany to Nigeria, as a signal of priority passage for the bearer (Krauß, 2023). It appeared on all Berger cargoes that came in through the port. This visual code relates to the non-linguistic component which plays an expressive role in the assemblage (DeLanda, 2006:16), and which is related to the aspect of visual culture and media.



Figure 28: The Tin Can Island control tower.
(Blum, 1981)



Figure 29: German Federal Chancellor Helmut Schmidt visits
Tin Can Island in 1978. (Blum, 1981)

Chapter Six: Connectivity and Networking: The Expansion of Julius Berger Nigeria through Infrastructural Linkages and Visual Coding

Its works all over the country are visible monuments of its involvement in the country's development, its rise and its progress. The circumstances were not always easy. (Hawranke, 1981:29)

In *Construction in Nigeria* (1981), one of a series of monographs produced and published by Bilfinger + Berger on the work of its subsidiary, Julius Berger Nigeria (JBN), former Director Günther Hawranke (1981:29) describes the story of their company and the history of Nigeria, as being “closely interwoven”. In the previous chapter, an interpretation of the relationship between JBN and the Nigerian Government was presented, represented in the form of language codes contained within communications between political elites and key figures in the company. This chapter expands on this theme, moving to an analysis of visual codes associated with JBN, while examining the dynamics of ‘connectivity’ as it played out at various levels of interaction, from the internal organisation of Bilfinger + Berger and JBN, to the urban and national levels in Nigeria.

The objectives for this chapter are:

- (1) To understand the importance of access and connectivity as essential to effective operation of both ‘Company’ and ‘State’.
- (2) To read the JBN visual signature including their logo, headquarters, company documents, published materials, and infrastructure projects as a form of media output and visual coding, which is established first in Lagos and later in Abuja.
- (3) To reflect on the means of communication and legitimising narratives of JBN as a form of risk management for the organisation, as they confront territorial and environmental challenges, and consider the future interpretation of their work.

The contract for the Second Mainland Bridge in Lagos, which came to be known as the Eko⁴⁶ Bridge, was signed in August 1965, signalling the beginning of JBN’s activities within the country. Initially JBN’s work was concentrated in Lagos, which accounted for most contracts until 1979; these were also of the largest value in monetary terms⁴⁷. Initially JBN had been bridge builders, but diversification of their Nigerian portfolio saw large-scale road construction projects taken on from 1969 (Weinert, 1981:48 and Dimel, 1981:81), and later, ports and hydraulic engineering, dams and water supply, and industrial plants (Schaffner, 1981:208-221). As they began to expand operations across Nigeria, methods developed in Lagos, as well as project resources, personnel and equipment, were to be deployed on cross-country journeys before the development of nationwide communication technologies and widespread mobile phone usage. In the absence of personal computers and World

⁴⁶ The word *Eko* (temporary camp) derives from the Yoruba word *Oko* (farm), which was the original name of *Lagos* (lagoon) before it was renamed by the Portuguese (Peil, 1991:6).

⁴⁷ See Schaffner, 1981:208-221 for a detailed list of JBN projects and contract values.

Wide Web accessibility, JBN would develop its own networking and communication methods.

In connectivity terms the work of JBN in Lagos was fundamental, providing a linking of the islands as component-parts of Lagos through the inner and outer ring road projects and associated bridge connections (Weinert, 1981:50). The move to the hinterland presented other communication challenges, both in terms of physical infrastructural networking and internal communication channels. The need for connectivity was of national territorial concern in a country, which at 923,768 square kilometres (CIA, 2023), is almost three times the size of Germany, placing it in the top 15 percent of the world's countries according to land area, and 14th largest in Africa (Afinotan, 2014:174). Connectivity and communication are essential to territorial control, and the State's concern with connective infrastructures can be read alongside their attempts to centralise power through division of territory to create additional states, from 12 in 1967, to 19 in 1976⁴⁸ (Akinsanya, 1978:393), as well as promulgating *Decree No. 6*, known as the Territory Act in 1976, which saw the creation of a new Federal Capital Territory (Gaines, 2009:79). From 1980, the focus of the Nigerian government shifted away from Lagos and turned to the building of the new capital city: Abuja. As the Federal Nigerian Government was JBN's major client, the concentration of projects awarded to JBN shifted northwards.

While assemblage implies a process of combination, the diversity of combined elements is retained (Nail, 2017:22), and component-parts retain an independent functioning. The application of assemblage in this chapter, considers the organisations of 'company' and 'government', and their growing interconnection, which takes the company nation-wide but also brings challenges of maintaining organisational relationships over a greater territory. Initially it considers JBN with roots in the Bilfinger + Berger company, as the product of a merger in Germany. It then looks at its Nigerian expansion, with the need for communication between different parts of the company heightened during the process of moving from the Lagos-base to the Nigerian hinterland, in the absence of rapid communication forms and established travel routes. The aspect of publication and media becomes an important communication-form and a unifying force that was initially internalised, forming part of the strategy for managing antagonisms associated with a difficult merger. Company communications are examined as a form of coding, which became increasingly extroverted, aiming to explain and justify the dominance of their presence within Nigeria. The media landscape is also examined at state level, with military government restrictions on press freedom (Akinsanya, 1978:394 and Ayu, 1984:357) read as an attempt to take charge of the narrative.

The chapter organisation takes the following form: Section One provides contextual background on the organisations, discussing the territorialising intention of the Nigerian State and the relationship of the military government to the media, as well as telling the story of the Bilfinger + Berger merger, and the subsequent founding of the Nigerian subsidiary. Section Two looks at JBN's dominant visual coding as a means of stabilising organisational culture, while also examining their growing

⁴⁸ The number of states increased successively until the current number of 36 states was reached in 1996.

influence. The internationalisation of the company will be examined with publication playing a role in transmittance of public image and risk management.

6.1. The Need for Connectivity and Communication Controls

Connectivity is influenced through addition and editing of routes, a form of territorialisation which demarcates urban layout, while 'coded' regulations reinforce 'territorialisation' through 'double articulation'. Temporary attempts to tackle connectivity challenges were made by the Lagos State Government, including through alteration of daily routines of urban residents. An "odd-and-even number policy introduced in 1977" meant that on weekdays, cars with license plates that started with an odd number were able to use the roads leading to Lagos Island on Mondays, Wednesdays and Fridays, while vehicles with license plates beginning with an even number could use the roads on Tuesdays and Thursdays (Olukoju, 2003:115). At the time, the Carter and Eko bridges were the only connections between the Mainland and the Island. More fundamental and longer-term interventions would involve additional connection of the Mainland to Lagos Island, through road and bridge links to improve traffic flow. There is, however, a critical threshold at which the increased number of vehicles, once again overwhelms road capacity, and the spatial limitation would also quickly be compounded where there was any inefficiency at the Lagos port. In addressing connectivity challenges at urban and national scales, infrastructure projects brought together 'Company' and 'Government' in the assemblage. While very different entities, both were involved in processes of 'territorialisation' at differing scales, requiring controls internally, read here as a form of 'coding'.

6.1.1. Military and Media: The Role of Communication and Infrastructure in State Territorial Control

Territorialization ... also refers to non-spatial processes which increase the internal homogeneity of an assemblage, such as the sorting processes which exclude a certain category of people from membership of an organization, or the segregation processes which increase the ethnic or racial homogeneity of a neighbourhood. Any process which either destabilizes spatial boundaries or increases internal heterogeneity is considered deterritorialising. (DeLanda, 2006:13)

The territorialising ambition of the State is an attempt to organise and control. In Nigeria in the late 1960s and 1970s this was achieved through four primary means including (1) introduction of territorial and jurisdictional demarcation in the form of boundaries with the creation of additional states; (2) through essential linkages in the form of road and bridge infrastructure projects; (3) through a sizeable military force with over 270,000 troops (Misawa, 1992:102), and (4) through control of the narrative

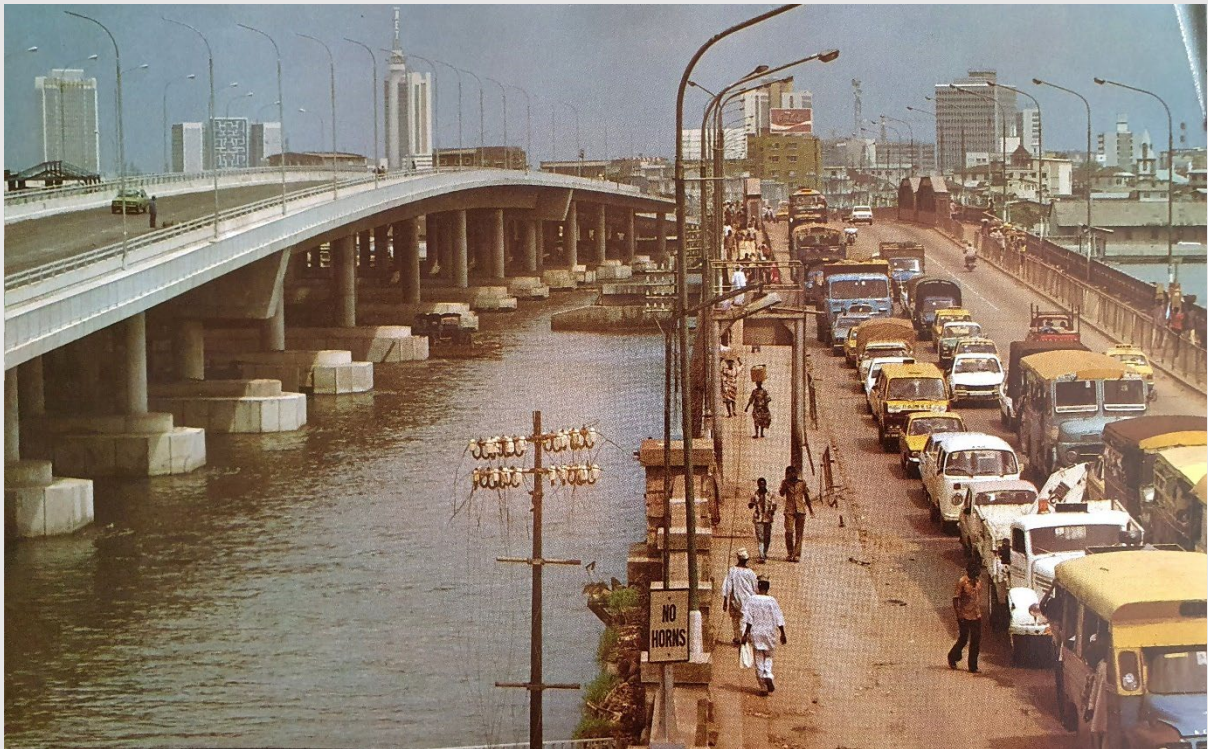


Figure 30: The old and new Carter Bridge before the demolition of the older structure.
(Blum, 1981)

involving clampdowns on press freedom. In a vast national territory, compartmentalisation into jurisdictions was aimed at making the country easier to govern. Attempts to unify the Nigerian nation in territorial terms arose in response to regional and historical cleavage that threatened to divide the newly independent nation. Until the amalgamation in 1914, northern and southern Nigeria had been administered separately (Akinsanya, 1978:392), with the Northern Protectorate governed through indirect rule and the Southern Protectorate through direct rule. The northern and southern parts of the country are very different: culturally, linguistically, and in legal terms, as governance traditions in the north, even under colonial rule, were established under the traditional leadership of the emirates, while the south maintained a Christian and tribal layering, with a colonial overcoding, which superimposed new patterns onto inherited customs.

If territorialisation is a seeking of internal homogeneity (DeLanda, 2006:13), then Nigeria presents a simmering “cauldron of challenges” with its 371 ethnicities and over 500 languages (Anonymous, 2023:20). Any assessment of the military regimes of 1966 to 1979⁴⁹, and their ability to control the national territory, should take into account the complexity of a nation characterised by a diversity of religious groups, tribal backgrounds, and a layering of autochthonous and precolonial, colonial, and postcolonial social, cultural and economic patterns. A predominantly Muslim northern Nigeria and a predominantly Christian southern Nigeria are divided by the so-called ‘middle-belt’ states, a zone in which conflicts arise between nomadic Fulani herders and sedentary farming communities (Olumba, 2023:1). Of the current 36 states, the area known as northern Nigeria contains 19 of them, and in these states over 70% of the population is Muslim and only 10% are Christian, with Sharia Law practiced throughout the region (Adepeju-Fashina, 2023:6). Historically, another seam of tension lay to the East. In the anti-Igbo pogroms in the north, up to 30,000 Igbos were killed during 1966, leading to the return of Igbo people to their tribal heartland, with the eventual secession of the eastern region, which broke away to form the Republic of Biafra.

Following these events, the Biafran War broke out as the military government under Gowon attempted to conquer and reintegrate the breakaway State into Nigeria. The death of between one and three million Biafrans in the three years of war drew international condemnation but was to be followed by a “politics of oblivion” which would see the Nigerian State repressing the memory of the war (Ugorji, 2022:xi-1). Chinua Achebe is perhaps the best known Biafran internationally. In his 2012 work *There Was a Country: A Personal History of Biafra*, he describes the intellectual foundations of the breakaway state, which would enable the persecuted Igbo ethnic group to fashion a state that would be self-determined and would represent unity and social justice of citizens (ibid:167-168). In this way, Biafra represented a critique of the failures of the military state in Nigeria. The Biafra War became a ‘media war’, with the plight of Biafrans during the blockade in full view of the international community (ibid:231). Events would be sanitised in school history books which contained unifying narratives and “national heroes” (Ilo, 2020). Later, the teaching of

⁴⁹ There were further military regimes from 1983 to 1999, but the research is mainly delimited to 1966-1979.

history would be banned from the curriculum altogether, only to be brought back after democracy (Ugorji, 2022:xi-1).

Apart from fractures in national territory, there were also inherited structural weaknesses in the State (Afinotan (2014:172). Colonial institutions underwent Nigerianisation, initially under a weak civilian government which operated in coalitions (Onyejekwe, 1978:8), and later under the military, which became reliant on so-called “top bureaucrats” to legitimise its authority (Nwankwo, 1980:299) and to provide access to embedded institutional knowledge, as administrators outlasted politicians. This had the effect of creating a technocratic governmental form, in which the bureaucracy was shaping public policy (ibid:296). The federation of states after independence also played into ethnic divisions within the country (Akinsanya, 1978:388), with the north having more seats which gave it the power of veto in the Federal Parliament (ibid:389). There are contradictory views on the impact of military rule on national cohesion, in comparison to a civilian government. Organisational structure of the military has been characterised as exhibiting attributes of ‘cohesion’, ‘hierarchy’ ‘discipline’, a ‘centralised command structure’ and ‘internalised communication’, as well as ‘nationalistic views’ and “*esprit de corps*”, all of which may influence capability and performance in developing nations (Onyejekwe, 1978:5-16). However, it can be argued that these characteristics are not direct causal factors, and that external to the military structure are “intervening variables” of resource availability, and ethnic, religious, and economic divides (ibid:5-8), some dating back to the time of amalgamation (ibid:3). These variables play a part in government performance, while qualities of military organisational structure may aid in mitigating the impact of divisions to some extent (ibid:8).

The military attempted to unify the country by centralising authority, with regions made more politically and financially dependent on the Federal Military Government (Akinsanya, 1978:390). At independence there had been three regions: the Northern, Western and Eastern, dominated by the main ethnic groups with the Hausa in the north, the Yoruba in the southwest, and the Igbo in the east. In 1963, the territory of the Western Region was reduced to create a Mid-Western Region. By creating more states, the power of the regions could be reduced, with the four regions divided into 12 new states upon promulgation of the *Creation and Transitional Provisions Decree of 1967* (ibid:392). In the words of Gowon, no one state would be in “a position to hold the others to ransom” (ibid:393). On February of 1976, General Murtala Muhammed announced the creation of seven new states, making 19 in total, and inclusive of the new Federal Capital territory. Political leaders viewed Lagos as ‘the colonial city’, with Nigeria as a new nation but with an old capital (Audu, 1974:i-ii). Congestion and inadequacy of infrastructure in Lagos were major factors in the desire to relocate the capital (Federal Republic of Nigeria, 1975), while the Yoruba-base in southwestern Nigeria were perceived as fanning the embers of tribalism (Ado-Kurawa, 2008:401). With the Biafran Civil War fresh in memory, the new capital project would become a symbol of an integrated nation and of modernity on their own terms. Lagos was not perceived as ‘neutral ground’ and postcolonial leaders felt that the investment required to transform Lagos would be better spent elsewhere.

With upkeep of the military, new infrastructure projects, and the planned capital competing for budget, all were seen as essential for maintaining control over national

territory. Provision of an efficient port, road and logistics system was required for economic growth, and the ability to access the different parts of the country was necessary for territorial integration, with some common motivation that bound together defence and infrastructural programmes. In addition to economic development, the *Second National Development Plan* (1970-74) and the *Third National Development Plan* (1975-80) both prioritised defence, with a strong military considered essential to the safeguarding of the State (Misawa, 1992:76). While defence spending rose, the military government also spent on infrastructure (ibid:3), a situation that was made possible by the oil wealth following the 1973 embargo. Misawa argues that due to the weakness of the institutions in the early postcolonial period, “authority and control” became necessary forces in implementation of development programmes (ibid:46), while the military governmental form also had an influence on foreign policy, with the Adedeji Committee report of 1975 emphasising the objective to defend Nigeria’s “territorial integrity”, and that of African countries (ibid:51). Through the reading of territorialisation at state level, both military action and infrastructural investment are understood as territorial practices.

“While territorialisation provides a first articulation of the components, the *coding* performed by genes or words supplies a second articulation, consolidating the effects of the first and further stabilizing the identity of assemblages” (DeLanda, 2006:15). The further measure for consolidation by the military government was the clampdown on press freedom. The coding work which had been performed previously by the Constitution under a civilian government, was replaced by coding in the form of military decree, and by taking control of the popular narrative put out in society through the media. Dissenting views were not tolerated. In 1974, when Gowon announced a delay in returning to civilian rule, there was public outcry. Educator Tai Solarin wrote that “[u]nless the Military Government has the courage to call it quits on the 14th of January 1976, a chain of events might be set in motion...”. Solarin self-published as the newspapers would not publish these views, leading to his arrest (Ayu, 1984:221).

The oil boom had increased government control over media in Nigeria, with 15 daily newspapers by 1975, of which 13 were government owned (ibid:346). Space for editorials was minimal, with 85% of the papers dedicated to advertising, which brought in revenue but also minimised the platform for dissent. Overall, the stories that were featured adopted the state narrative, focussing on government policy and projects, the lives of officials, and events and ceremonies (ibid:350-356). Both civilian and military governments attempted to manage the narrative, countering what had been a lively press in the lead-up to independence⁵⁰. The First Republic saw the introduction of the *Defamation Act of 1961* and the *Newspaper Amendment Act of 1964*, which made “publication or reproduction or circulation of any false statement punishable by a fine or imprisonment” (Emenyeonu, 1997:97). The military regimes which governed Nigeria in the 1960s and 1970s brought an end to the tradition of active discourse, as additional decrees limiting press freedom were promulgated (ibid:81). As new states were created, newspapers were established to communicate the daily and weekly news of each state (ibid). *Decree Number 44 of 1966* prohibited coverage likely to stir discontent following the coup (ibid:100). The *Newspapers Prohibition of Circulation Decree of 1967* enabled the Government to prevent

⁵⁰ During the 19th and 20th century, the Nigerian press had been highly critical of the colonial government, with papers such as the *Lagos Weekly Record* (1891-1930), the *Lagos Times* (1880), and the *West African Pilot* (1937) founded by Nnamdi Azikiwe (Emenyeonu, 1997:78-79).

circulation of newspapers “detrimental to the interest of the nation” (Ayu, 1984: 350-356), with a fine and six-month imprisonment for offenders (Emenyeonu, 1997:100). In 1976, the Federal Military Government nationalised the television service, and all state-run channels were merged under the Nigeria Television Authority, with a similar thing happening to radio in 1978 (ibid:86). Creation of more and weaker states, taken in parallel with the increased number of government-owned or controlled news outlets, can be understood as both territorialised and coded attempts to manage the complexity of the postcolonial national territory and society.

In the context of media clampdowns, countermedia would emerge: another well-known critique of independence governments was set out in the ‘opposition politics’ of Fela Kuti (Sithole, 2012) in which he exposed state violence in his lyrics. Deeply critical of the military government in Nigeria, Kuti established his own compound, Kalakuta Republic, which was declared as an aspirational breakaway Nigerian Republic with himself as president from 1970, and representing his distancing from the State. The compound was burnt down in 1977 when it came under attack by 1000 soldiers, with Kuti’s mother thrown from an upstairs window, causing injuries which would lead to her death (Segun and Ojakorotu, 2019). Kuti’s wives and other women living in the compound were also attacked. Kuti’s music can be read as a political project and a media project, employing pidgin as a lingua franca so as to reach ordinary Nigerians with his message (Onyebadi, 2019:3). While *The Second World Black and African Festival of Arts and Culture* (FESTAC) held in Lagos in 1977 had offered an opportunity for the regime and cultural representatives to come together, Fela Kuti stayed away, arguing instead for the “demilitarisation of the festival” (ibid:223-227).

With provision of state-level context, some parallels can be established between the military government and JBN, as two organisations working on infrastructure delivery, and involving the aspect of narrative control in their published media output. Military government policies established a superstructure in terms of which JBN would function in the late-1960s and the 1970s. JBN would operate at a time of political instability, under governments with a tenuous yet authoritative hold on power, with ambitious infrastructural programmes presenting a continuity in spite of political changes.

6.1.2. The Merger of Bilfinger and Berger: A Company’s International Expansion and the Inverse Fortunes of Germany and Nigeria in the 1970s

In a 1971 company report, Bilfinger + Berger note the slowing development pace and their two strategies, namely ‘the merger’ and relocation of activities to take on a larger share of foreign work (*Annual Company Report*, 1971:2). The establishing of the JBN subsidiary is an extension of the second strategy, through which the company sought to establish long-term and stable connections in other countries (Krauß, 2023). In 1969, Julius Berger AG in Wiesbaden merged with Bauboag, to become Julius Berger-Bauboag AG. A second merger would take place in 1975 between Grün & Bilfinger AG based in Mannheim, and Julius Berger AG based in Wiesbaden (Stier and Krauß, 2005:483). The two major West German construction companies at the time were Philipp Holzmann AG, based in Frankfurt, Germany’s largest construction company, and Hochtief AG, based in Essen. The merger made

Bilfinger + Berger Bauaktiengesellschaft the third largest (Krauß, 2023). From 1967, Germany went into recession, with insolvency in the domestic construction sector (*Annual Company Report*, 1974:4). This provides a partial explanation for why JBN would have taken the risk of remaining in Nigeria during the Biafran War that would start in that same year.

During the mid-1970s, the German economic situation was the inverse of Nigeria, with its oil-boom wealth. The 1970s globally were characterised by ‘stagflation’: a combination of low economic growth, the highest inflation since World War Two, and rising unemployment (Boughton, 2000). Nigeria’s economic position, on the other hand, would strengthen considerably. In 1973, West Germany went into another recession which would stimulate further company efforts to “maintain capacity” and to become “active in new construction sectors” (*Annual Company Report*, 1973:4). A Federal Government emergency investment programme failed to make a significant impact, with insolvency in the sector twice as high as in the previous recession of 1967 (*Annual Company Report*, 1974:4). In noting these recession years, the relevance of the Nigerian work becomes increasingly apparent, with the 1974 *Ausland* (foreign) report stating that Nigeria remained the focus of the company’s international activity (ibid:7). In 1975, there was a 10.5% reduction in employment in construction trades nationally in West Germany (*Annual Company Report*, 1975:7). Bilfinger + Berger staffing at home decreased from 3211 employees in 1972 to 2459 in 1975, while the employees in overseas divisions increased over the same period from 3673 to 4037, (*Annual Company Report*, 1974:9). This represented an increase from 53% of staff working overseas in 1972, to 62% working abroad by 1975: a dynamic which enabled Bilfinger + Berger to maintain liquidity at levels above industry average (ibid). The Bilfinger + Berger group earned 1,265 million DM in 1975, up by 21% from the year before, due for the most part to the foreign construction contracts (*Annual Company Report*, 1975:8).

Before the merger, 80% of Grün & Bilfinger’s work had been done domestically, taking 1971 figures, with 15% abroad and 5% as part of consortia (*Annual Company Report*, 1971:3). Immediately following the merger in 1975, foreign business accounted for 38% of Bilfinger + Berger’s contracts, with 43 construction sites outside Germany, the bulk of which were located in Nigeria, Libya and Indonesia (*Annual Company Report*, 1975:9). This required investment in property and equipment, with 75.2% of investment made in international projects as compared with 24.8% domestically (ibid:11). JBN was the largest of the international components of the group, with the most extensive related investment. By 1978 the five-year recession in Germany came to an end, but Nigeria remained the main locus of Bilfinger + Berger’s work internationally (*Annual Company Report*, 1978:14), along with Libya and Turkey (*Annual Company Report*, 1979:12). The international work had seen the company through the recession years. The year 1979 would see the return to a civilian government in Nigeria, with handover of a number of significant Nigerian projects and the awarding of major new contracts, which would signal that the company’s position in the country was secure (ibid:15). JBN was significant for the relationship between Germany and Nigeria; at a time of economic recession in Europe, the Nigerian work gave an upswing to the German economy, with German personnel, German machinery and equipment needed for the projects (Krauß, 2023).

The term 'merger' carries associations with ideas of amalgamation, integration, and assimilation, and the softening of attitudes. But the merger of 1975 involved a difficult period of rationalisation for the two parts of the company, which had different corporate cultures (ibid). The work in Nigeria was also a source of conflict, with the two parts of the company, Grün & Bilfinger (Mannheim) and Julius Berger (Wiesbaden), competing and not communicating. Bilfinger was even beginning to encroach on the relationship between Nigeria and Wiesbaden, while "Berger's expansion was disproportionate, and Wiesbaden considered overseas work as its own territory" (Stier and Krauß, 2005:493-494). The monographs describe the relationship between Wiesbaden and JBN in Lagos as being that between a "home organization and those in the field" (Dimel, 1981:173). But initially it was not as harmonious, and it would take a generation for a more collegial working relationship between the two parts of the parent company to emerge (Krauß, 2023).

"The Nigerian business was always "Berger-business", even after the merger with Grün & Bilfinger" (ibid). The overseas division of Bilfinger + Berger was located in the former Berger headquarters in Wiesbaden. "People from Mannheim had to move to Wiesbaden, which was sometimes a hostile territory" (ibid). In the Wiesbaden office, employees of Julius Berger worked on the Nigerian project, while the business in Libya and Indonesia was the domain of company employees from Mannheim. Employees in the Wiesbaden office even had an inside joke: "what is worse than an Alzheimer?" Answer: "a Mannheimer" (ibid). This history is described in more positive terms within the Bilfinger + Berger monographs, saying that the "mergers resulted in a concentration of personnel and equipment" and referring to the differing areas of specialisation of the companies, which together provided expertise in most construction sectors (Offenbach, 1980a:101). The merger provided an effective means of expanding, with increased scale bringing greater resilience. But the documentation reveals tensions between the various offices, with Jürgen Sarrazin, former Chairman of Bilfinger + Berger's Supervisory Board, referring to the merger as having been "...by no means an easy process" (Blum and Hassenkamp, 2002:37).

At the Wiesbaden office, there was a degree of envy of colleagues who were working in Nigeria. People who had been abroad had much more experience when they returned. Those in Nigeria earned better than those who remained, and they did not pay tax in West Germany for the period worked overseas. International experience was highly prized (Krauß, 2023). Five years spent in Nigeria provided Bilfinger + Berger employees with an opportunity, and the perception was that those who did not go to Nigeria would never progress as rapidly in their professional careers (ibid). Among those who established themselves in Nigeria and rose rapidly, were Günther Hawranke and Hans Wittman, who had been among the first to go to the country. Before Nigeria, Wittmann had worked in Libya and Ghana for Bilfinger + Berger. While working in Nigeria, he rose from a position as a junior engineer to become the Managing Director of JBN (Blum and Hassenkamp, 2002:25). His final positions were on the Executive Board of Bilfinger + Berger, and upon his retirement at 66, he was kept on the Supervisory Board in the role of Vice Chairman at JBN (ibid). Hans Wittman was a key figure in generating a media and publication focus on JBN's activities in Nigeria (Krauß, 2023), with 32 years of his career spent in the country (Blum and Hassenkamp, 2002:25).

The culture of expatriate life emerges through the domestic tales of daily life in the *Berger Welt*, with their camp 200 metres from the ocean described as “a small “bridgebuilders’ town” (*Berger Welt*, 1968(22):10-12). Sundays were spent on the beach. While the men worked every day except Sunday, women had a quieter time. “Life is much freer and less complicated than in Europe”, wrote Rita Hawranke. “A local would clean, wash, cook, and also mind the children” (ibid). Bachelors were looked after by “cook-stewards”. It only wanted for “more variety”, as the wives did not go out very often, only once a week to shop together at the three department stores: one English, one Greek, and one Swiss (*Berger Welt*, 1966(13):8-10). The children went to a German language school run by the Berlin Student Council (ibid). The Biafran War features in the *Berger Welt* but does not impede the narrative of general progress. One account tells that “[t]he Schleyers in Lagos don’t notice much of the misery that prevails in Biafra as a result of the civil war.” The war had doubled prices and imports had been restricted: “[b]efore this one could shop just as well as in a shop in Wiesbaden, but since the import restrictions, I have had to use my imagination to put good German food on the table” (*Berger Welt*, 1968(22):12). Stories of domestic life are rendered with a tendency to be flippant, almost as light conversation to maintain a peace of mind, while the Berger camp surrounded by barbed wire, was also guarded for their security. *Berger Welt* journals were intended as reading material for company staff, with *Ausland* reports no doubt contributing to perceptions that those in Germany had of conditions for expatriate Germans working on ‘Berger projects’ in Nigeria. The description of the setting combines the exotic with the familiar: “It makes you all the happier when you smell the scent of sauerkraut and ribs at lunch under the palm trees” (ibid:10-12). Anecdotes tell of tropical heat, intermittent power supply, and the pouring of cold German beer. But really the messaging is an indicator of the standard of living that might reasonably be anticipated for a foreign posting. That life in Lagos, within the bounds of the company compound, could in some ways, recreate a sense of home.

At the end of the Biafran War, aid was sent to Nigeria from all over the world to assist with the humanitarian effort, but it could not reach the areas it was destined for due to the destruction of infrastructure. JBN became involved in reconstruction, and was awarded the contract for rebuilding the Onitsha Bridge connection across the Niger. With the worldwide media attention on the war, there was great interest in the construction, with reporters regularly gathering at the site (*Berger Welt*, 1970(30):3-4). Access and connectivity in Nigeria were essential for effective operation of both company and state. The company became involved in extending physical infrastructure across the country, enabling state actors to access and control a larger territory. While the State was taking measures to limit the *vox populi* through control of the media, JBN would be inaugurating its own internal communication channels. Its ongoing work during the war, and close connection to the Nigerian State, opened the company up for criticism. To counteract this, JBN published themselves to assume greater control of the narrative, but the output is still revealing of the attitudes held. With recession in Germany the Nigerian business was essential, even given the war. In spite of this, the JBN subsidiary was founded and work continued: the Nigerian business saved the company (Krauß, 2023).



Figure 31: The International Division of Bilfinger + Berger in Wiesbaden.
(Blum, 1981)



Figure 32: The Berger residential camp at Lagos.
(Berger Welt, 1966[13])

6.2. Visual Coding and Connectivity: From Concrete Image to Counterargument from the Archive

JBN's legacy in Nigeria includes a body of built infrastructural works in the country's major metropolitan areas. In Lagos, key bridge linkages connect the islands and mainland, and the inner and outer ring roads are an attempt at provision of a coherent structuring of the non-contiguous land tracts that make up the megalopolis. These projects stand as a concrete image of JBN's involvement, but they are not the sole representation of company activities. In the previous chapter it was argued that the extended project infrastructure served to effect transformations at various scales, beyond the impact of the project as an urban component. Across these many sites in transition, the JBN logo represented a 'visual signature' that came to be well known in Nigeria. Set against the transformation of the urban landscape, a visual signature is consistent and can be replicated across locations, serving as a form of visual coding that consolidates and stabilises the network of activities within the assemblage. JBN's output in Nigeria can be assessed in terms of material and expressive roles, with both concrete components and components that play communicative roles (DeLanda, 2016:12), extending from fixed elements, such as their own premises, to mobile elements, such as convoys of JBN vehicles taking material cross-country. Unusually for a construction company operating in this period and setting, JBN makes considerable investment in publication (Krauß, 2023), producing a series of documents which present the company story and major Nigerian projects, through glowing texts and hi-resolution full-spread images. The following sub-sections explore the aspect of visual imagery within connectivity and networking, and as a communication-form, with reflection on the motivations behind the production of JBN media image, as it has been preserved and stabilised in archival form.

6.2.1. Coding for Continuity: Imaging of Julius Berger Nigeria in Visual and Material Culture

In 1975, a decade after the activities of JBN began in Lagos, a company headquarters was constructed in Lagos to complement the Overseas Division in Wiesbaden (Weinert, 1981:58). It was located in the Ijora area of Iddo Island⁵¹, just 200 metres to the west of the Eko Bridge. Hans Wittmann's *Berger Welt* entry for the December issue of 1975, provides a reflection on the ten-year period. Wittmann describes the view from the new building, looking towards Lagos Island, with the Eko Bridge system visible as a marker of their beginnings in the country (1975(53):20-21). The Iddo area, at the very eastern edge of the Lagos Mainland, provided quick access to mainland sites and to the traditional business centre of Lagos Island via the Eko Bridge. This also placed Headquarters within 20 kilometres of the International Airport at Ikeja, while the Apapa Quays were a short stretch across the lagoon, and less than 5 kilometres by road. The location forms a node within easy

⁵¹ Iddo Island was the first part of Lagos to be settled, see: Akinsemoyin and Vaughan-Richards (1977). It now forms part of the Lagos Mainland.

access of the series of ring roads which JBN had been envisaging as a blueprint for the transportation network (Offenbach, 1980a:182), with both inner and outer rings breaking ground in that same year, in 1975. If their centre of operations had to be strategically located, with access to port and air connections, and at the midpoint between the inner and outer ring, their residential camp was located right on the southernmost section of the largely reclaimed Victoria Island⁵², in the location of Bar Beach, and facing onto the Atlantic Ocean. The Palm Court Julius Berger Estate provided the domestic realm, with beach access and proximity to European-owned stores (*Berger Welt*, 1968(22):10-12).

With expansion of JBN's activity, the blue and white company logo would attain prominence. With the number of construction contracts awarded to the company, the logo was everywhere: on information boards at sites across Lagos, as a label on containers and crates with the influx of imported materials required, and it appeared on JBN's considerable fleet of trucks, cranes and other construction vehicles (Weinert, 1981:52). The corporate logo is a representational form that plays an expressive role, serving to reinforce legitimacy of the organisation (DeLanda, 2016:87). The 'Big B', as it is referred to in company monographs, stood for 'Berger'. But it was nevertheless a common denominator between Bilfinger and Berger; both sides of the company had been operating in Nigeria (Stier and Krauß, 2005:493-494), with the logo assuming a symbolic role of a 'unifying' device. This was necessary, as at the time of the merger the two international divisions had been consolidated in Wiesbaden (Krauß, 2023), but it was the Julius Berger Wiesbaden office that had established the Nigerian business, and Hawranke and Wittman complained about the actions of the Mannheim division in Nigeria; their competitive activities exacerbating a situation that was already strained (Stier and Krauß, 2005:494).

With the merger and completion of the Lagos headquarters, there was near-constant communication between the Wiesbaden and Lagos offices from that time forward. The importance of communication between the different parts of the company is expressed as a "truly amicable cooperation between the home organisation and those in the field" (Dimel, 1981:173). The reality that could not be published in a document having any public relations' purpose, was that there was a potentially conflictual situation in Germany and in Nigeria, and the internal and external communications, and visual messaging were unifying factors aimed at consolidation of company identity, and of the image of the Bilfinger + Berger subsidiary. The new headquarters and the ubiquitous 'Big B' function as expressive elements that support company image building. The visual elements of the company function as expressive markers that become tied up with office routines, identification of communications from letterheads, and that signal the various mobile assets deployed to many active sites, thereby exerting territorialising capabilities. An increase in the "degree of internal homogeneity" would "stabilise the identity of an assemblage" (DeLanda, 2016:12). The healing of internal divisions, the forming of harmonious working

⁵² Victoria Island is an elite area, just to the south of the British Colonial residential enclave at Ikoyi, connected by the Falomo Bridge. It has been mixed-use, then more residential, and over time has become a new business district (Peil, 1991; Godwin and Hopwood, 2012).

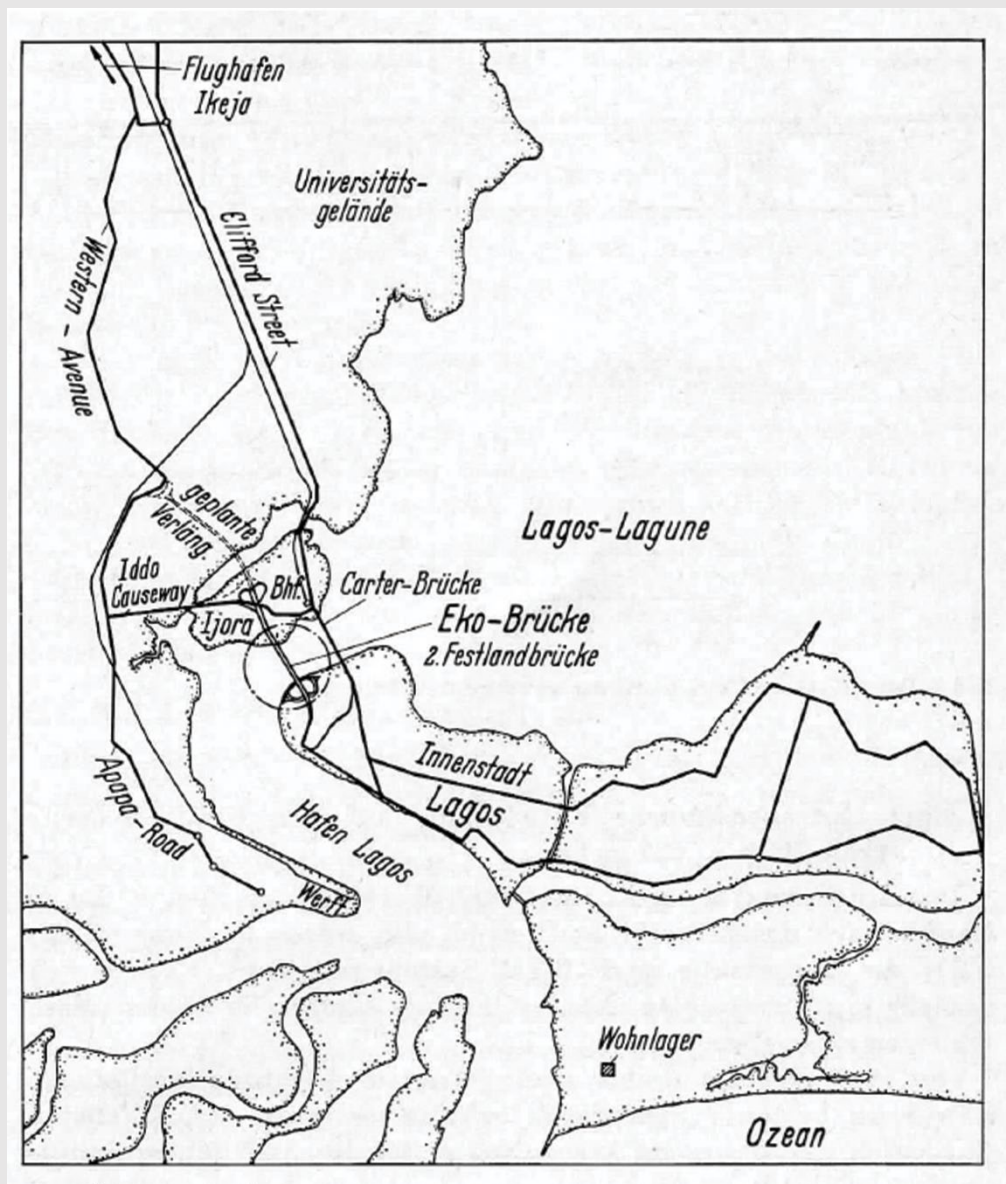


Figure 33: Plan of Lagos showing Lagos Island and the airport at Ikeja on the mainland, with JBN offices located at Ijora. (Hemmler, 1969)



Figure 34: The JBN administration building in Lagos.
(Blum and Gaines, 1996)

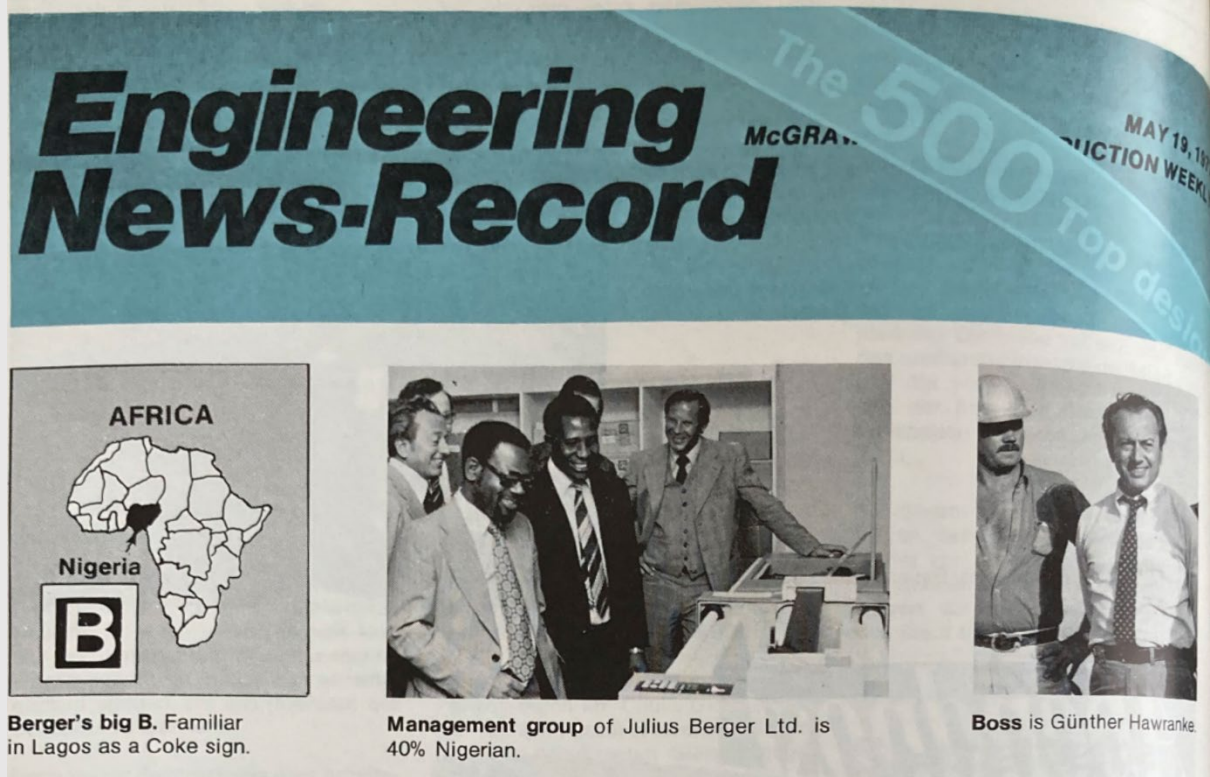


Figure 35: News article in JBN in the *Engineering News Record*.
(*Unsere Bauwelt: b aktuell*, 1978[1])

relationships, and the projection of an image of capability, efficiency and expertise, were all essential to the effective indigenisation of JBN in Nigeria. In the previous chapter, it was argued that indigenisation was enabled through access to elites, and was due in part to their involvement in expansion of port capacity, but it was also a process that was achieved in visual terms.

The character of Lagos has been described as “a landscape defined by topography and infrastructure” more than its architecture (Stanek, 2020:97). The massive concrete edifices of the JBN bridge and ringroad networks built out over the waters of the lagoon, linking the islands and mainland, become a defining feature of Lagos’ visual coding. Lagos after independence saw the adoption of tropical modernism by the Nigerian state, as a means of representing a new image distinctive from the architecture of the colonial city (Immerwahr, 2007). Limited as it was to government and other prestige building developments (ibid:166), it would form part of the distinctive image of elite areas and new business districts such as Victoria Island. The pure geometries of the international style, concrete buildings with brise soleil, and projecting fins as a measure against heat gain in the tropical climate of Lagos became predominant in these areas, while many banks and company headquarters would adopt minimalist rectilinear offices of glass and steel. In the 1970s, several modern architectural projects were built for FESTAC 77, including the iconic National theatre, designed by a Bulgarian team after the Palace of Culture and Sports in Varna, and said to reflect the presence of the military with the design resembling a ‘military cap’ (Reade, 2013). These styles came to define the independence public and corporate architecture of Lagos, while at the same time, much of informal Lagos would proliferate in the absence of state intervention. JBN’s own office headquarters, their architectural work at the TCI port, with its control tower, industrial plants and housing projects also adopt architectural modernism according to the detailing, and in keeping with projects of a similar aesthetic in Germany, reflecting their corporate image as a multinational with European links.

Company monographs describe the ‘Big B’ logo as being “an integral part of the visual culture of the Nation” (Gaines, 1996:48). In another anecdote, a journalist from America wrote of JBN’s significance, stating that: “Berger’s five-storey office building in Lagos has come to be a landmark. The Berger symbol, the white and blue “B”, is as familiar to everyone in this African country as Coca-Cola” (Offenbach, 1980b:260). In this setting, the logo has taken on a mediatic value, while the building, and architectural language, speak of the international brand identity. Three-and-a-half decades later, JBN would establish its new headquarter building in Abuja from 2001. JBN was an actor in the transformation of Lagos’ urban and water scape through its major infrastructure projects: in particular, the Lagos Port expansion projects, the Outer Road West and the Lagos Inner Ring Road, and essential bridge links to connect between components of urban structure fragmented by the waterways. These projects serve as both material and expressive components, and represent a recoding of the logic of movement patterns that impact everyday life in the megalopolis. The JBN brand was communicated at different levels, with the logo as a symbol and feature within the environment, to the expression of the architectural image, to the projects themselves, with the ‘Bridge’ as a concrete image. The visual signature of JBN in Lagos consisted of both fixed elements, and a mobile project

infrastructure, functioning together in a networking, that is both symbolic and material.

6.2.2. From Conversation to Implementation: Connectivity as an Urban Vision and Interlinked Infrastructures

A strategy that JBN employed was to allow for a period of co-functioning between old and new. So, for example, in 1976 when the firm was awarded the contract for the Carter Bridge⁵³ to replace the colonial steel structure, the new bridge would be opened before the old was to be demolished (Dimel, 1981:83). But it was their expertise in construction of water-based infrastructure projects that would inform the primary approach, and given the nature of the terrain, many of the road links that JBN would construct, would involve a combination of land reclamation and use of pile foundations. The challenges in their assessment included the “poor topography” with land that was “broken up into several sections by waterways” (Offenbach, 1980a:182), and increasing congestion and economic growth outpacing the ability to plan for expansion of the transportation network (ibid).

Mobolaji Johnson, Military Governor of Lagos State from 1967 to 1975, recalls his visit to Berger’s Overseas Division in Wiesbaden in 1972, where he was presented with plans for Lagos which contained a “Blue Print for Lagos’ inner and outer Ring Roads” (Blum and Hassenkamp, 2002:25). The account in *One Hundred Years of Construction: 1880-1980* describes the awarding of the DM 1.2 million outer ring project, following a bid that was submitted by JBN. A four-week time limitation excluded other competing foreign companies which would withdraw (Offenbach, 1980a:182). But Johnson recounts that Hawranke and Wittman and the planning office in Wiesbaden had prepared the blueprint without ever having been “formally commissioned” (Blum and Hassenkamp, 2002:25). The Outer Ring West and Inner Ring Road represented a key component of JBN’s long-term vision for a connected Lagos, with territorial parcels linked by greater and smaller rings to encircle the densest sections of the mainland and Lagos Island (Offenbach, 1980a:182). As Governor, Johnson had the influence to take the plan to members of the Lagos State Government, JBN’s blueprint was to go on to form a component of the State’s submission to the *Second National Five-Year Development Programme* (Blum and Hassenkamp, 2002:25).

As only two-thirds of the planned funding for the Second Plan had been spent, in 1973 it was extended for the 1974/75 year to enable completion of programmes (TWB, 1976:8). The Outer Ring West had been revised on drawing boards in Wiesbaden in 1973 and 1974 (Offenbach, 1980a:182), and construction of both inner and outer rings would begin in 1975. It is unusual for a blueprint to be fully implemented even once it has been adopted. It is even more remarkable that a vision of a concrete armature for Lagos, conceived in Wiesbaden, would transition from being the subject of a conversation in Germany, to being realised in West Africa. The

⁵³ The Carter Bridge built between 1896 and 1901, predated motorised vehicles and was consequently reconstructed in 1931 (Olukoju, 2003:82).

ambition that JBN had to consolidate operations in Lagos, enabled a long-term view for the metropolis, but access to elites, with Governor Johnson as a close ally, provided a competitive advantage in relation to other international and multinational actors. Johnson described his relationship to Wittmann as being that of “personal family friends” (Blum and Hassenkamp, 2002:25), and from 1979, the former State Governor would serve as Director at JBN, and later as Chairman.

JBN’s vision for connectivity in Lagos, was the linking of significant nodes via the Outer Ring, which became known as the Ikeja-Apapa Expressway, and which provided a connection between the Apapa Port and harbour, the Airport at Ikeja on the mainland (Weinert, 1981:50), and the main route to the hinterland. Notably, Ikeja was also capital of Lagos State (Peil, 1991:52). The Outer Ring presented a basic structuring along which additional nodes would come to be developed, such as the new port at Tin Can Island (TCI) in 1976. It also opened up the western area of the mainland, with FESTAC Town, built for the 1977 festival, located less than two kilometres west of the Outer Ring. In line with this structuring, the assembly of projects of JBN began to interact. While choosing a site for the new port, a number of sites along the Badagry Creek were considered but rejected as being too far from the major traffic networks. A mangrove-covered island west of Apapa was selected, as the Apapa-Ikeja Expressway actually ran through it (Dimel, 1981:130), so that the road network established the precondition for choice of port location. The TCI site was thus sequential, dictated by the layering that had been put in place, and forming an interlinkage. Governor Johnson stated the Lagos State Government’s aim, with “roads urgently needed to link up the outer divisions of Lagos State, such as Badagry and Epe, with Lagos the capital” (Blum and Gaines, 1996:30). From 1975, the JBN headquarters and fitters’ workshop were located at Ijora, half a kilometre away from the Lagos-Badagry Expressway, running along the eastern edge of the ring route. With the opening up of ‘the West’, the JBN Central Workshop was located even beyond FESTAC at Okokomaiko.

The Inner Ring Road encircled Lagos Island. JBN saw this as forming part of a “comprehensive solution to the traffic problems” of Lagos, and it is referred to in company publications as the “liberating ring” (Dimel, 1981:83). Constructed between 1975 and 1979, the Annual Report comments that improvements to traffic flow were noticeable as the project progressed (*Annual Company Report*, 1977:16), with most sections open by 1978 (*Annual Company Report*, 1978:14). Due to the density of the Island, with its tightly woven Yoruba settlement as traditional urban centre, the Inner Ring would be built mostly on reclaimed land in the lagoon (Dimel, 1981:83). The logic of these rings presents a reinterpretation of the terrain, prioritising certain connections and making them navigable at faster speeds. By bringing certain points closer together, and quickening temporal flows, the connectivity blueprint was not only an infrastructural but temporal reinterpretation of Lagos’ territory. The Outer Ring Road West increased accessibility between Ikeja and Apapa by providing 25km of road, up to ten lanes wide, linking the docks to the highways leading to the hinterland, and providing a critical channel for import and export logistics. The blueprint-representation and concrete-manifestation interact, shaping urban relationships and enabling interdependencies to emerge, between State and Contractor, and between differing infrastructural systems in Lagos, and setting up new resonances in the environment.



Figure 36: JBN projects in Lagos.
(Blum, 1981)



Figure 37: Construction of the Inner Ring Road on reclaimed land.
(Blum, 1981)

6.2.3. A Built and Printed Monument: Narratives and Counter-Narratives

Following the merger, Bilfinger + Berger became the third largest construction company in West Germany. The subsidiary JBN was 40% Nigerian-owned by mid-1975, and 60% Nigerian-owned by October 1979, while Bilfinger + Berger retained a 40% share (*Unsere Bauwelt: b aktuell*, 1979(3):147). The sheer scale of the organisation was a benefit to JBN in terms of its ability to invest in project infrastructure, and to manage complex logistics with the support of the Wiesbaden Overseas Division, and it represented a lowering of financial risk for the company. But the size, and challenges associated with the merger, also meant that communication became an essential part of managing the various divisions of the company, as well as for managing a company dispersed over a large geographical area, with an increasing number of Nigerian projects located inland, in a country with limited road links and fragmentary communication-technology infrastructure. The focus on internal communication was aimed at fostering company spirit, as well as at keeping track of the many moving parts of their operations within Nigeria. The merger had been difficult and the move of personnel from Mannheim to Wiesbaden had resulted in “a clash of cultures” (Krauß, 2023).

The *Berger Welt* quarterly company journal was produced from 1963, two years before the Eko Bridge project began, and was published until 1975. Following the merger, the Mannheimers who were working on international projects moved into the Wiesbaden office. A new company journal, the *b aktuell*⁵⁴, was a publication to reflect the identity of Bilfinger + Berger as a merged entity, with the ‘b’ as a common element. In this transitional phase, the failure to communicate between the two offices threatened to undermine the stability of the company (Stier and Krauß, 2005:494). This may have contributed to the focus on the rebranding of internal communications and enhanced ‘transparency’ (ibid), with the need to foster a more unified company spirit. The *Berger Welt* and *b aktuell* journals are written in the style of a captain’s log, reporting on projects as they took place, with mention of delays, adverse weather conditions, and regular *Ausland* reports featuring the news from Nigeria and other international projects (*Berger Welt* editions, 1963-1975; *b aktuell*, 1976-). Work on the Eko Bridge in Lagos is the first Nigerian entry in the *Berger Welt* (1966(13):8-10).

De Landa (2016) describes the use of space in the military camp in regulating behaviour, but the office building can be similarly understood as an essential part of establishing working routines and of managing performance of employees, with “spatial and temporal portioning” potentially leading to an increased efficiency (ibid:72-73). For management of employees in a multinational organisation, who are spread over a larger territory, communication efforts, the reinforcing of company ethos, and establishing of team norms may be consolidated through a series of spatial hierarchies in an architecture of centralised and satellite administrative centres. The more dispersed, the more emphasis on networking with internal communication as a higher priority, and use of visual and textual coding becoming

⁵⁴ The German title is translated as “recent news”.

even more exaggerated, providing a powerful messaging and strategy for communication to employees on several continents.

The mergers of 1969 and 1975 in Germany, and the Nigerianisation process unfolded concurrently, with Julius Berger listed in the registry of Nigerian Companies in 1970 (Hausmann, 1996:125), and becoming 40% and 60 % Nigerian-owned by 1975 and 1979 respectively (Weinert, 1981:52). As the number of international business contracts increased, there was a shift towards increased external communications and public relations, with internal and external communications separated. The *b aktuell*, which had originally been aimed at employees, later became an externalised format, and the journal, *b intern*, was launched for internal communications for employees (Krauß, 2023). There is clearly a significant media focus in the presentation and documentation of Bilfinger + Berger and JBN's work in Nigeria. In the *Company Archives of Bilfinger SE* in Mannheim, apart from the usual documentation (annual reports, company journals, and pamphlets), there are also documentary films produced by a Hamburg Production Company, and a number of high-quality, full-colour company-monographs, mainly featuring the work in Nigeria. The first of these, *One Hundred Years of Construction: 1880-1980* (1980), covers all of Bilfinger + Berger's working history, with German projects as well as international projects on several continents. Projects are listed by country, with countries typically given one or two double spreads. By contrast, Nigeria is given an entire chapter. The first company monograph to feature only Nigeria, would be published the following year in 1981. By then, JBN was majority Nigerian-owned and work had started on laying the infrastructure for the new capital city of Abuja.

The move to Abuja was not without risk. From 1980, JBN moved much of its machinery and equipment to Abuja as they began to work on the infrastructure, with work on Phase 1 of the Central Area beginning in 1983, and Phase 2 beginning in 1987 (Julius Berger Nigeria, 2023). Most of the equipment had to be transported there from Lagos, and the supporting project infrastructure built up over decades in Lagos had to be recreated in Abuja. Road connectivity across the country was largely inadequate, so logistics became a challenge. Initially there was no guarantee of funding for implementation of the master plan but JBN believed that Abuja would become the new growth node (Gaines, 2009:119). The year 1979 saw the handover from military to civilian government in the first election since 1963 (*Annual Company Report*, 1979:15). But the period of calm was short lived as President Shagari would only rule for four years, until another *coup d'état* saw him deposed in 1983. Having indigenised in Lagos, and then expanded operations to the rest of the country, the focus on the new capital city required a subsequent period of adaptation and indigenisation for JBN. Publication and media became a core aspect of their second indigenisation, with book projects, featuring the work and relationships established in Nigeria, published over the course of the next three decades. The main titles are listed below:

- *One Hundred Years of Construction: 1880-1980* (1980);
- *Construction in Nigeria* (1981);
- *Julius Berger in Nigeria* (1990);
- *Julius Berger Nigeria: 1970-1995 25th Anniversary Publication* (1996);
- *Hans Wittmann: 40 Years of Success* (2002)

- *Abuja 30 Years* (2006);
- *Julius Berger Nigeria 2009* (2009)

While there are German copies of some of these publications, there was a shift in the communication strategy. “As the company grew in the 1970s and 1980s, communication in English became more and more important, not only with regard to Nigeria but also to the United States, where the company had a subsidiary: Fru-Con” (Krauß, 2023). The shift towards externalising communications represents a deterritorialisation of the discourse, with the mediatic element and wider outreach aimed at extending beyond West German borders to a wider readership in the English-speaking world. Even company journals which had once contained exoticized anecdotes of life in the tropics, were now aimed at customers and potential clientele. “As Nigeria was the most important overseas market for the company, the Nigerian projects played an important role in the Public Relations. The goal was, as always in Public Relations, to transport a positive image of the activities in Nigeria, especially with regard to contribution of the company to the development of the country” (ibid).

In the essay “Construction Abroad”, Offenbach describes completion of the inner and outer ring roads and the TCI port as a “decisive turning point”, which for Lagos represents “the end of chaos” (1980:182). The monograph texts are layered with concrete metaphors of ‘bridge building’, that can be taken to refer to resolution of differences, and use of headings such as ‘the Road to Abuja’, which can be interpreted figuratively, taking the implication of a ‘destined’ route for the company. Also frequently employed is the terminology of the explorer, with the landscape of Nigeria described as ‘uncharted territory’. Tone and narration remain consistent throughout the ‘Nigerian monographs’, while inserts of politicians’ statements, included by virtue of their writers’ position and status, serve as endorsements of the firm’s activities. The list of Nigerian elites whose words appear in this documentation is impressive. It includes former and future presidents and state governors from both civilian and military governments, as well as ‘top bureaucrats’ in key administrative positions at ports and public works, to name a few. It is often the case that these elites had served in both civilian and military governments, although there were some who were not able to make this transition and some who were assassinated.

Of the elites who did not survive the transitions, there are figures who would have had working relationships with Directors at JBN, including Former Head of State, General Murtala Mohammed, assassinated in February of 1976, and Joseph Gomwalk, Governor of Benue-Plateau State from 1967 to 1975, assassinated in May of 1976. These traumatic events would not be allowed to diminish the narrative of progress the monographs present. Benue-Plateau State had acquired 20% shares in JBN by 1975 (Weinert, 1981:52) as it was the state, aside from Lagos, where JBN was doing the most work. Although Mohammed had been assassinated, the coup had failed and Muhammed’s Chief of Staff, Obasanjo, took over the government (Dibie, 1997:132). Governor Gomwalk had been amongst the plotters and consequently, Benue-Plateau State was broken up in February 1976, with Plateau State taking 12% of the JBN shares and Benue State taking the remaining 8% (*Unsere Bauwelt: b aktuell*, 1979(3):147). These stories do not appear in the

company narrative, and it would appear that JBN was untouched by the politics, with the list of government contracts growing with each new year.

And yet for all that they omit, these works are primary sources, providing the only really detailed account of JBN's involvement in the oil-boom infrastructural development, and in the 1980s, in Nigeria. While new projects and essays are added, the same kinds of written descriptions and images appear in each additional monograph, raising the question of why it was necessary to invest in such a lavish project of publication. Peters (2016:1) describes organisations as being "caught in clichés". A cliché is lacking in originality and is something often repeated. It increases the degree of 'sameness' of the adopted rhetoric, which homogenises the component-descriptions, thereby exerting a highly territorialising influence which serves to stabilise an assemblage (DeLanda, 2016:12). In an organisational context, the cliché appears within internal and external communications, consolidating the sense of company identity as expressed through the power of narrative. The role of Berger + Bilfinger documents was initially to provide information to employees, but its secondary purpose was to stabilise and unify the various departments, and ease the tensions between Wiesbaden and Mannheim. When considering the part-ownership of JBN by Military State actors, the JBN Lagos headquarter building becomes an equally complex setting. It is at this point that one may understand the internal communication externalising, as shareholders were also clients, requiring a careful management of the narrative, both internally and externally.

Readership of company publications would have been largely made up of employees, clients, and future clients. The monographs contain references to the close partnership between company and state (Blum and Gaines, 1996:48), while other statements devoid of substantive content, refer to the work in Nigeria as having been made possible through the support and "essential contribution" of the Wiesbaden office (Dimel, 1981:173). Given the readership, and the obvious interest that employees in the German offices would have had in the Nigerian projects, these descriptions were clearly intended to fulfil a role of ameliorating interactions between company offices, and as the complexity of the ownership model increased internationally, they were also intended to set in place a positive account of developmental progress. While Annual Company Reports of the early to mid-1970s speak of 'risk' and a fluid environment with the unknowns of the indigenisation process, company monographs tend to be more prescriptive in telling an heroic narrative, and likening construction in Nigeria to the 'conquering' of difficult terrain with "challenging ground conditions" (Dimel, 1981:82), but which could be 'tamed' through quality engineering. These optimistic accounts served a public relations function but also monumentalised Nigerian projects in printed form.

The clichéd reduction of the lived reality of the major infrastructure projects of 1970s Lagos, and the building of Abuja during the 1980s, provides a one-dimensional account of this period in Nigeria's history, as seen through the eyes of a handful of 'top managers' at JBN, who commissioned and established the tone of these publications. They also reveal many factual details: exact quantities of concrete, number of shiploads of materials, and frequency of arrivals. The intention to obscure and to reveal little of the internal or external politics, may have been in part a downplaying of any disunity that might undermine the company narrative. The built

projects exist physically within the fabric of Lagos as concrete evidence. But the texts provide an equivalent function, intended to stabilise the built with the explanation of the construction process, which they seek to justify through the terminology of the pioneer. Investment in publication became a means of overriding the questions that might foreseeably emerge, of multinational corporations, monopolies, access to powerful elites, and replacing this with a simplified and carefully curated account.

Where the reality is intangible, the myth gives us the illusion of tangibility...The myth for Barthes consists of not only words, but also of photography, film, reports, theatre or advertising. Everything can become a carrier of myths. It concerns material that is already pre-fixed in order to make communication suitable. The myth is based on appearance. It is thus not about reality, but about a certain perception of this reality. (Peters, 2016:10)

The publications reduce complexity of the built works with presentation of heroic narrative. Simplification may have been deemed necessary so as not to deter potential investors. At the same time, they would have wanted to emphasise their own competence, assuming a confident tone and making their project of infrastructure development sound easier than it was. Simplification masks the complexity of political changes that JBN directors were navigating. The proximity to elites was an advantage but also potentially a liability. General Aliyu Mohammed, National Security Adviser, said of Wittmann's connections: "There has never been an event other than the National Council of States, where two Presidents of Nigeria and three Heads of State attended, except a private party arranged by Hans after he was awarded the OON⁵⁵. I will never forget this, because it showed how close he is to leadership" (Blum and Hassenkamp, 2002:39). JBN was awarded contracts as a consequence of their political connections, but this close connection to elites had potential to make JBN vulnerable in a context of political change. The greater the complexity, the more the return to the reassuringly formulaic. "Everything that is institutionalised clings to the formal whenever complexity increases. This is rooted in our society. The less readable the world is, the more we escape into rules and procedures when complexity increases" (Peters, 2016:13). Even statements about the Biafran War make light of the politics: during the war, JBN had "distinguished itself by choosing to remain in the country" (Gaines, 1996:47).

Now some might say it is not a major accomplishment to drive thousands of steel piles into swamps...in partially uncharted waters. And they may believe that often achieving this in just over two thirds of the budgeted time is not a true feat of engineering. Be that as it may. Julius Berger can nevertheless justly feel proud of the fact that it performed such Herculean tasks often in the middle of nowhere ... in the middle of dense jungle or in countryside predominantly inhabited until then only by crocodiles and mosquitoes... (ibid:51)

⁵⁵Wittmann was given various honours for his service to Nigeria: the National Award of the Officer of the Order of the Niger (OON), and *Sarkin Hany* or "King of the Road", an over one-hundred-year-old title conferred upon Wittmann by the Emirate of Katsina, a title not previously given to "a foreigner" (Blum and Hassenkamp, 2002:25 and 43).

The descriptions contain an association of ideas with heroism, with the colonial-explorer trope of the 'uninhabited landscape', and the bringing of 'civilisation' to 'the jungle'. The accounts present JBN contractors as conquerors of the environment. Yet their bridge and road projects serve as concrete manifestations of the territorialising ambition of the State, where the State moves to create territorial jurisdictional boundaries, as well as commissioning the infrastructures of connectivity, and JBN realised these intentions in material terms, as "...processes of territorialisation are processes that define or sharpen the spatial boundaries of actual territories" (DeLanda, 2016:13). The 'Berger story' of the monographs is written by a combination of JBN employees and professional writers. Responsible for many of the essays, was Jeremy Gaines, who as a literary writer brings a narrative talent to the rendering of events. Heroism inflates a character, and in the JBN monographs, the language elevates the actors, downplaying the monopolistic nature of their activity and emphasizing the pioneering aspect of working within a country that was not yet industrialised.

The publications provide a means of communication but also establish a narrative. Written accounts of the Nigerian projects are a form of coding, documenting project procedures, providing scanned versions of contracts, and with detailed listings of material quantities and equipment that the company had amassed in the country. All this provides an analogous textual version of the concrete works of infrastructure. In the previous chapter it was argued that the port project was instrumental to the indigenisation of JBN. In this chapter, means of communication over distance are examined, partially through media, and through attempts at stabilising organisational identity when operating over large distances. Nigerianisation is understood as a form of territorialisation of JBN in Nigeria, while the mediatic project undertaken by the firm acts as a consolidation of their position. "While territorialisation provides a first articulation...the coding performed by genes or words supplies a second articulation, consolidating the effects of the first and further stabilising the identity of assemblages" (ibid:15). As a genetic composition contains instructions for the cells of the body, the texts produced by organisations are coded, with writing as a form of instruction to the various component-parts. For example, the phrase "on-time, every time" is used to describe JBN's work, becoming a *modus operandi* and a "code of honour" (Gaines, 1996:48).

This coding is so prevalent in organisations that it may extend beyond individual companies, becoming a kind of 'organisational speak': Peters describes an "urge for sameness" where even annual reports of different organisations begin to rely on many of the same ideas as reassurances (2016:1). JBN publications were produced to establish an acceptable company coding. Procedures and quantities are factual, appearing alongside narrative content and high-quality photographs of Nigeria, so that monographs both explain and exoticize. Words and images repeat across publications, so that each subsequent document provides 'more of the same'. This company coding-form provides a consolidation of territory gained, which is made explicit in these printed works, and which carries a stabilising function for a company of many parts, operating in a country of great environmental complexity. The publication focus was uncommon for a construction company at the time, and while monographs serve to reduce the difficulties experienced, their very presence and

prevalence serves to underline the enormity of the challenge faced by JBN during this unique period of infrastructure development in Nigeria's history.

So, what then were the motivations behind production of these publications as a permanent record? The built works are a monument to what JBN was able to achieve in difficult circumstances at a time of political instability, and on challenging ground conditions. This should have been enough. Why then did they feel the need to cover their actions with published narrative, through formulaic narration in text? Aside from the communication and promotional aspects, these documents formed part of an attempt to manage public opinion. There were risks associated with the work in Nigeria: the business environment might change, or the political elites might not always regard JBN with the same fondness. Having embedded in Lagos, there was further risk involved in the move to Abuja. JBN needed to ensure that its position within Nigeria was secure and that the ground it had gained would not be lost. There is always the potential for contradiction and counterargument becoming offensive. The written account is there as a form of evidence: to fix the record. The written project represents an attempt to stabilise meaning decisively: a form of territorialisation⁵⁶. The archive provides a permanent record to pre-empt criticism. Writing is for the future as the "reader is not present" (Atkinson, 2016:99).

Just as "...writing consists of a representation of language using marks on a paper or screen" (ibid), so the archive provides another representation of the built projects of JBN through text and through image. The visual record provides legitimising evidence: contracts, handshakes with government elites, and the inevitable photographs of workers smiling. The publications serve to 'confirm' the image and position of JBN in Nigeria by employing cliché. They seem to see criticism as an eventuality, putting down meticulous records of how much cement was required for every project, almost in reaction to the catastrophic 20-million-tonne cement order which had exacerbated the port congestion crisis of 1975. The archival record can be read as a form of risk management as well as having a public relations intention, forming part of the assemblage with the emergent factor of perception. The monographs establish a clearly-positive narrative of the work in Nigeria which JBN wished to establish within the spread of information, with recording of projects done in high-quality format, using professional writers and photographers engaged in production and promotion of company image.

Indeed, JBN and the overseas division of Bilfinger + Berger in Wiesbaden spent a lot of money for the production of books...it was completely unusual in the construction industry to publish a new book every five years. The goal was to paint a bright picture of the activities in Nigeria. There were personal motives of the top managers (especially Hans Wittmann) that also played an important role. They wanted to raise a kind of 'printed monument' for themselves. (Krauß, 2023)

⁵⁶ Where attempts are made to open up possible interpretations, the work of deterritorialisation is performed.

6.2.4. A Mobile Organisation: Power, Networking and Keeping Track of Moving Parts

This chapter has looked at the difficulty of governing, networking and communicating over a vast territory, while the work of JBN would continue despite the role of differential sovereignty, with military coups, assassinations and changing governments. German directors at Julius Berger outlasted these political figures and infrastructure programmes continued despite altering regimes. And yet while the JBN company had hegemonic influence, with direct access to political elites and public administrators, the social territories of company, state and infrastructure projects were subject to changing power relations, with power shifts also leading to the absence of power. The void in power concerns the nature of a state-owned enterprise in a public partnership versus a parastatal (a non-state-owned enterprise doing a proxy as a state-owned enterprise), in short, a direct partnership with the government but not with the State. While Lagos and Benue-Plateau States together owned 40% of JBN by 1975, the state would have had to own 51% to exert a controlling interest.

While project contracts awarded under the military regimes were open tenders, JBN was consistently able to outmanoeuvre its competitors. And while these contracts were, on the whole, honoured, with some flexibility on either side, the multi-decade partnership between the parastatal and the Nigerian Government meant that contracts existed within the context of differing legal frameworks at the national level. The constitution was suspended under the Military Government regimes of 1966 to 1979. The second constitution of 1979 would then be suspended in 1983 until 1993. The Third Republic lasted only 83 days, and military rule would return until 1999. Contracts under an elected government in a Republic would exist within a 'void' with no constitution under a military autocrat. Return to an elected government in a republic and the bringing back of the constitution would mean these agreements existed within a power vacuum. JBN contracts existed between constitutions and rule-by-decree. The Third Mainland Bridge connecting Lagos Island to the Mainland is one example: begun in 1977 under Obasanjo, and continued in the Second Republic under Shagari, the project would be abandoned during the Military dictatorship under Buhari. Later, General Babangida would 'rescue' the project, reemploying JBN, but with work only completed in 1990, a decade later than planned (Ibrahim, Loch and Sengupta, 2022: 137).

An elected government in a Republic cannot make a concession but a military autocrat who suspends the constitution can; a subsequent return to republic management of constitution would revoke all concessions. If an autocratic government like a military coup makes a concession, and it is followed by a government that restores the constitution, then that concession is existing in a power vacuum. This was the case with the Third Mainland Bridge, with Babangida appointing JBN, but with "no contract bid for a mega project of this nature, as is normally the case, no stakeholder engagement and no proper government monitoring department." (ibid:146). Even within a Republic, these issues would persist, with the contract for the Second Niger Bridge under President Jonathan started in 2013, cancelled in 2015 under Buhari (ibid:138-139), and with JBN leaving

the site due to lack of payment (ibid:140). With projects stalling under changing governments, infrastructural projects in Nigeria would see alternating speeds in the installation process, with political and financial impacts for both the Government and the parastatal company.

The entrenchment of the JBN company took place at the organisational level, between parastatal and government, but also at the level of connectivity and territory. Increased influence and expansion of operations would bring logistical constraints that had to be overcome. Assemblages are maintained through continuous interaction of component-parts with “reciprocal forms of determination between parts” (DeLanda, 2006:21). Assemblage theory considers a more complex “multiscaled social reality” in which “a whole emerges from the interactions among its parts” and can “affect those parts” (ibid:34). Before the use of satellite phones, JBN required a means of keeping track of all the various moving parts of its operations, as personnel, equipment and materials were relocated from Lagos to hinterland sites. Lagos became a “base of operations” and the “Berger helicopter” was “... always shuttling between Lagos and Warri⁵⁷”, while overland routes were established by clearing “jungle” (Dimel, 1981:178). Radio technology was employed to connect headquarters in Lagos to construction sites across the country (Weinert, 1981:58). The strategy for working deep into the country evolved from the large-scale projects in Lagos, with logistics adapted, extended, and exported to the wider territory: “scheduling and rescheduling became a permanent feature of life at Julius Berger, especially once large projects started to overlap in different parts of the country” (Gaines, 1996:62).

TCI had required “a careful network plan of all the diverse simultaneous activities at a time when wide-spread use of personal computers was still a dream in computer technology” (ibid:63). The complexity of this port project not only served to indigenise the company in Nigeria, but enabled the International Division in Wiesbaden to tailor-make processes that would deliver on quality and speed. Following the work at TCI, Wiesbaden developed “its own catalog of specifications, enabling it to perform key quality control functions on behalf of Julius Berger Nigeria PLC” (ibid:66). Just as the Maracaibo Bridge in Venezuela had equipped the company for working in Lagos, the scale and scope of the TCI project provided JBN with the know-how to shift focus to the hinterland. They describe the move not as a “deliberate change in business policy” but rather as “a process of evolution as the country’s economy as a whole was diversifying” (ibid:70).

Networks of small firms are married to the geographical region where the organizations and the skilled workforce agglomerate. A single firm can make the decision to move elsewhere but only by giving up access to the reservoir of talent that has formed in that region over many years. In this sense, networks of interdependent firms can be said to be highly territorialised. Large, autonomous firms, on the other hand, having internalised a large number of economic functions, have for that reason acquired a certain freedom from geographical location. This mobility makes these firms highly deterritorialised even when they exist as national corporations, a deterritorialization that is greatly intensified when

⁵⁷ The Warri Steel Plant was constructed between 1977 and 1981.

globalisation liberates them from the constraints of a national territory. (DeLanda, 2006:81)

As JBN began to take on contracts beyond Lagos, “the necessary transportation and communication links had to be established” (Gaines, 1996:75). The Lagos office needed to know the whereabouts of company vehicles and the status of material supplies in order to coordinate the vast logistics of simultaneous infrastructure projects located around the country (ibid). New communication technologies were used, with “radio shacks” set up a day’s journey apart, establishing a radio and telex network, and involving “operators trained in using short-wave and VHF bands” (ibid:78). These operators “forged the links in a chain that spans the many thousands of kilometers of roads” (ibid), with the links essentially ‘checkpoints’, allowing the communications centre in Lagos to keep track of all trucks, containing fuel and cement, moving by road. In Gaines’ description, JBN’s cross-country communications resemble the movement system of traditional trade routes, supported by ‘roadside inns’ or the Persian *caravanserai*, with checkpoints secured to enable the driver to park safely and to rest overnight (ibid). For a new dam in Jos, the journey by road took three days from Lagos when weather conditions were fine. While smaller-scale supplies of mail, medicine and provisions would be flown weekly from Lagos (*Berger Welt*, 1972(38):4-5), use of short-wave radio was essential for communication. Emergence of “swift communications” of telex and fax, is described as “a main nerve in the backbone of the company” (Gaines, 1996:78). From the 1980s, the company used its own fleet of Cessna aircraft to move staff and large drawings to sites across Nigeria (ibid).

The logistics experts in Lagos and at the other main sites had to know at all times the whereabouts of 370 cars, 640 pickups, 580 trucks, 76 mobile cranes, 60 turntable cranes, 100 bulldozers, 200 wheel-loaders and fork-lifts, 20 rail waggons with locomotives, and 85 pontoons and boats, not to mention the mass of mobile building equipment such as compressors and generator sets...However, the roads were at some point unable to absorb the requisite capacity as the goods were simply too bulky... (ibid)

Logistics were again adapted for the work on Abuja. From Lagos, trucks took two days to make the 600-kilometre journey carrying equipment (Gaines, 2009:119). To overcome limitations of the long-distance road infrastructure, JBN looked to the original network of the water channels used in precolonial times. Barges were taken on inland waterways of the Niger River, enabling materials from Warri in the east, to reach Ajaokuta within five days (Gaines, 1996:79). Ajaokuta is a town located at the confluence of the Niger and Benue rivers in the Middlebelt state of Kogi. From there, it was approximately 240 kilometres by road to Abuja. With ten ships arriving at Warri each month (ibid), the river route provided a crucial means of bringing materials to the capital city under construction. Abuja became a nation-wide logistical challenge to be extended globally, with material orders taking four months, from the time of placement to delivery in Nigeria, on ships from Europe (Biedermann, 1990:60.) Cessna planes travelled regularly between Germany and Nigeria, having flown by the time of publication of *Julius Berger in Nigeria* in 1990, up to 700,000 kilometres, a distance corresponding to “17.5 times around the earth” (ibid:59-60). Plans were flown from Wiesbaden weekly (Krauß, 2023). The scale of activity saw “30,000



Figure 38: Construction of the Lagos-Ibadan Expressway using concrete deck-on-piles.
(Blum, 1981)

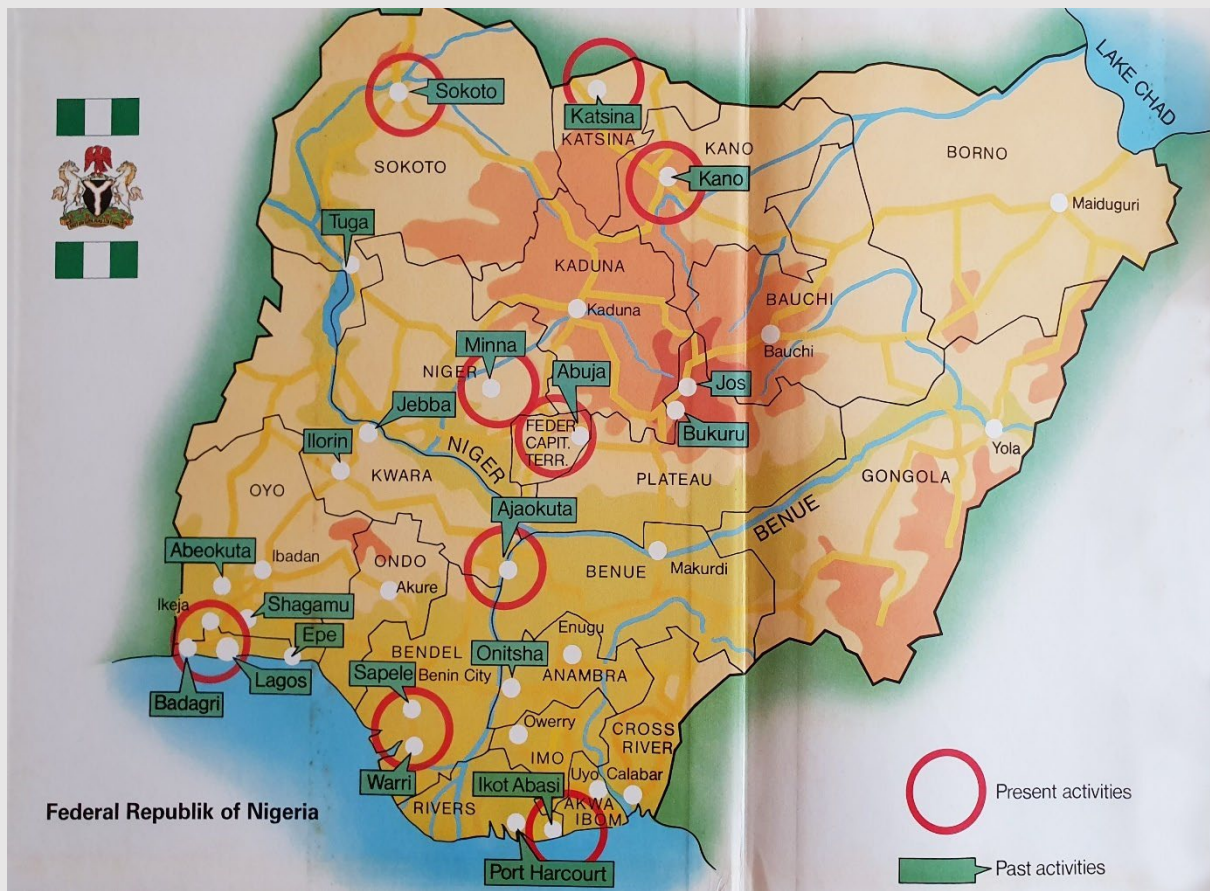


Figure 39: Map of JBN activity in Nigeria
(Blum, 1990)

tonnes of equipment and materials ...transported to Abuja every month", with reserve stock of "three million litres of diesel" and "cement for eight weeks" to negate any delays to orders (Biedermann, 1990:57.) JBN had evolved a complex system of navigation, communication and networking that enabled large-scale infrastructural projects to run simultaneously.

6.3. Concluding Comment: Networks, Narratives, and the Expansion of Influence

This chapter has explored the networks and narratives functioning at company and state level, with a bearing on political context and infrastructure programmes of the mid-to-late-1970s, and into the 1980s. Unlike war which boosts technological development and local industrial and information systems, civil war breaks down infrastructures, generating rebuilding during the peace that follows, but also ultimately weakening indigenous technical capacity and industrial capability. Post-war rebuilding and the lack of local expertise perfectly position JBN as a monopoly once they take the decision to remain in Nigeria during the Biafran War. At state level, measures taken to aid territorial administration present two perspectives on networks: as an infrastructural linking and expansion of the network, and as a mediatic form requiring domination of the network and clamping down on press freedom. While accessibility of territory is crucial for governance, control of media networks provides possibility for influencing public opinion and controlling of the territory of the thought-world. In the previous chapter it was argued that the military government was able to reinforce its territorial control through coding, by suspending the Constitution and ruling by decree; a strategy which influenced the infrastructure delivery programme, and port decongestion in particular. Expansion of the road network was also an exercise in coding and territorialisation, following the agenda as set out in the Five-Year National Development Plans. This chapter has explored mediatic networks in terms of their resonances across scales, from the social and organisational network at company level, to means of communication across territory, and at the upper tier, to state control of national territory, managed through military force and prohibiting freedom of speech. At a network level, JBN was able to manoeuvre and extend its position from Lagos to the national territory, ultimately concentrating activity in Abuja. The organisation was able to achieve this through its relationship to elites, but its parallel media programme provided a consolidation of their territorial expansion through an authoritative narrative and visual coding.

Overseas work presented an experience for the employee: "work in the field often required judgement and knowledge well beyond the scope of a university degree in Europe" (Gaines, 1996:57). While this statement was made in reference to the work in Venezuela, it expresses a sentiment that on-site learning was desirable. The monographs provide a narrative for posterity, but they also reveal the thinking of employees who were attracted by the opportunity to work abroad. They reveal the attraction of the company for young Nigerians, with Kano liaison officer describing why he had joined JBN: "A sound training, a safe job, housing and medical care are the most important basic requirements in a Third World country" (Biedermann, 1990:56). This chapter has set out to establish the JBN company and Federal Military Government as major actors to have influenced accessibility and connectivity within

Nigeria in the latter part of the twentieth century. Connectivity is understood as a means for networking, with implications for retaining of territorial control of land by the State.

As JBN was a newcomer in the environment, their brand and reputation were everything, and their alliance with the State brought them large-scale infrastructure projects over the decades. What one can see as an emergent factor in this context is 'reputation', which enabled JBN to extend operations beyond Lagos. By developing their own communications and logistics, JBN had more control over maintenance of their 'reputation', while connection to elites and a dominant visual coding were also factors useful to the management of reputation as an asset. This chapter has demonstrated the role of publication as a second territorialisation for the company, brought about by the need to secure their position and 'reterritorialise' their activities in Abuja; a process that was not without risk or precarity. The proximity of the company to the State brought many benefits, but it should be noted that JBN retained the ability to outlive political figures with whom they had direct contact, where regimes and governments had fallen in the period of postcolonial governance, particularly in the years from 1960 up until the start of the Fourth Republic in 1999.

JBN Directors foresaw the risks, establishing the publication project as a means of fixing the narrative. From infrastructure to publication, JBN territorialised first in one way, and then in another. While the physical infrastructure is still there, over time it would become as the content of the habitual, receding in the mind of the urban resident. JBN sought to consolidate their position within the country in the longer term by telling the tale of their contribution. The link between company and state produced the opportunities. But this connection also had the potential to become a liability without careful management of public perception. The political changes were a risk. The move to Abuja was also a risk. There was the additional risk that the JBN project would be interpreted differently by future generations of politicians and Nigerians. This chapter has reflected on the legitimising narratives of JBN and has provided an analysis of their visual signature. It has argued that their expansion over a larger territory required a more extroverted system of visual communication, and an exaggeration of the heroic nature of the project, as it would come to be represented in text and in image.

Chapter Seven: Emergence in the Reading of Urban Infrastructure: Emergent Properties and Levels of Interaction

Reading the urban and organisational setting, and project context, using assemblage theory, enables consideration of ways in which disparate components are co-functioning. Agencies are conceived of in relational terms, precluding mechanistic and linear interpretations of historical urban transformation. Production of order and patterns of formation are read through processes of coding and decoding, and territorialisation and deterritorialisation, where “complex interactions between component parts”, give rise to ‘emergent wholes’, whose properties represent more than “a mere aggregation of the properties of its components” (DeLanda, 2006:10). The urban setting is viewed as a socio-material layering, in which material, organisational, and structural traces of the history may be located. These layers have been studied as ‘levels of interaction’, beyond their role as temporal demarcations and project-contexts. Urban transformation may be driven by “human and non-human, organic and inorganic, technical and natural” factors (Durose, van Ostaijen, van Hulst, Escobar and Agger, 2022:2130), but delineation of the interaction of component-parts in an assemblage recognises “mechanisms of emergence” (DeLanda, 2006:10) which feed into the situation, altering future trajectories. As continuous interaction of components produces the larger assemblage, so “the identity of the parts may acquire new layers as the emergent whole reacts back and effects them” (ibid:33).

Historical urban layers are more or less active during different phases, dependent on parameters of coding and territorialisation. Layers contain sub-components, which follow the logic of part-to-whole, and micro-to-macro causal relations. This study has considered colonial and postcolonial historical layers which have influenced urban morphology in Lagos, yet which have provided both localised and nation-wide restructuring through adjustment of coding and territorialising parameters. While patterns in the history have revealed structures that were more or less coded, or territorialised at times, these sociomaterial layers are not inert, rather there are resonances between levels of interaction, working through an urban assemblage. The socio-material heterogeneity of components has involved colonial and postcolonial human actors and organisations, ships, dredgers, machines, ‘the port’, building materials, mosquitoes and parasites, ‘the swamps’, thoughts, myths and fictions, ‘facts’, books, letters, instruction manuals, medical ‘advice’, and religious beliefs. Given this complexity, physical infrastructure cannot be understood as occupying a single ‘domain’ as it is not a territory or system of its own that can be demarcated and isolated from the components continuously interacting to produce its active relations.

In places, this study has traced ways in which infrastructure projects have been related to seemingly or entirely misaligned subject areas and processes, adopting a Venn-diagram logic of overlapping functions, with infrastructure programmes revealing alliances between seemingly disparate spheres of activity. In a topological spatial reading, individual points are regarded in terms of their network proximity, rather than their distance apart (Müller, 2015:32). In a city, networks are overlapping with infrastructures and information networks interlinked since “every modern energy flow requires a parallel control network” (Kittler, 1996:718). The colonial-era intersection between port development and disease management presents this logic,

with dredged material from the harbour used to fill swamps. Intersections appear in the postcolonial setting, where the connectivity vision of a small group in Wiesbaden and the delay of an engineer at the Jebba Bridge, rapidly reach the politicians who will translate ideas into policy, with 'design' adopted as a medium over politics. With Government and Company co-functioning, a reterritorialisation is brought about through linkages between state power, development narrative, media and infrastructure. Visualised in topological terms, conversations create channels that expedite implementation, with infrastructural programmes coming to dominate political processes of the postcolonial state.

Lines of territorialisation and deterritorialisation, at work within historical layers of colonial and postcolonial infrastructural assemblages have been examined, with reterritorialisation conceived as bringing about social and territorial reorganisation. Coding, decoding and overcoding are exemplars that have been at play, structuring organisations and relationships between the different groups of actors. In this concluding chapter, each of the empirical case studies is regarded, with the significant emergent factor identified at each level.

The chapter is organised into two main sections and a conclusion:

- (1) Section One traces emergent factors at each 'level of interaction' and is structured as a response to the primary research question.
- (2) Section Two reflects on the research sub-questions, considering:
 - lines of territorialisation and deterritorialisation in relation to the 'environment' and 'perceptions of landscape';
 - the work of coding, decoding and overcoding contained within social interactions;
 - the process of reterritorialisation as it was unfolded within the production of forms of 'media', which functioned in parallel with implementation of interventions that were concrete.
- (3) In the concluding section, continuities and consequences are considered, with elites in both colonial and postcolonial periods having desired alternative locations for the Capital, with the eventual move to Abuja representing the closing of a chapter in Lagos.

7.1. Identifying the Emergent Factors

The primary research question asked:

How is a 'social territory', formed in environments and organisations, held together as a fabric and how can processes of territorialisation and coding be seen as manipulations of that fabric? By extension, how was planning of colonial and postcolonial infrastructural assemblages in Lagos revealing of larger territorial objectives of elites, involving complex social and technical interrelations in implementation of programmes?

Expansion of this question in the methodology brought in the scales of project, organisation and territory, to examine ways in which coding and territorialisation have functioned at micro- to macro-levels, with processes recurring at these successive scales so that the project scale has spoken to the organisational and national setting.

Assemblages are active and their components interact continuously, with units of activity studied in the form of dialogues, projects, programmes, and policies, as revealing something of historical time and place. The work has examined ways in which territorialisation and coding have stabilised or disrupted, consolidated or expanded social territories, with resultant transformations in structure which can be explained using a model of emergence. Response to the research question is therefore structured here in terms of the 'emergent factors' identified within empirical chapters, as representing 'levels of interaction'. Objectives of 'elite actors' were reflected within infrastructure projects involving access and extraction, connectivity and control, and through which actors sought to justify, legitimise and consolidate their position in various ways.

In *Chapter Four: Territorial Ambition, Projects and Projections: The Colonial Port at Lagos as a Microcosm*, 'coherence' was identified as an emergent factor. In this regard, colonial functionaries can be seen as 'products' of an overarching imperial system, even as the daily interactions gave rise to emergent wholes. DeLanda refers to the simultaneous moulding of assemblages and their components as "double determination" where "wholes emerge in a bottom-up way, depending causally on their components" but exert "a top-down influence on them" (DeLanda, 2016:21). It follows then, that in the written production of colonial functionaries, thinking would cohere, revealing conformity. What reemerges in the archive is a 'coming together' in the confrontation with disparate pieces of evidence. The archive reveals things that have been active, but that are now active in a different way, and that when read, provide the reader with a sense of immediacy.

In *Chapter Five: Capacity-Dynamics, Congestion and Flows: The Indigenisation of German-Nigerian Firm Julius Berger and the Project of Lagosian Port Expansion in the 1970s*, an emergent factor was 'speed'. JBN achieved efficiencies as a result of optimisation and indigenisation in Nigeria. With increased state support bringing contracts for large infrastructures, expansion of the company would achieve economies of scale. Speed can be understood as an enabling factor and a performance-based response, as it confirmed their hegemony and relationship to political elites. In *Chapter Six: Connectivity and Networking: The Expansion of Julius Berger Nigeria through Infrastructural Linkages and Visual Coding*, the emergent factor of 'reputation' was identified. This was largely earned by JBN's performance on port projects, and on Tin Can Island (TCI) in particular. Since the "network itself has the capacity to store local reputations" (DeLanda, 2006:56), the community's view of JBN's performance, and especially the views of elites, enabled their expansion, from indigenisation in Lagos to operation on a nation-wide scale.

This study has examined ways in which, at each level of emergence, visions held of Lagos by the Colonial Authority, the Postcolonial Federal Military Government, and the JBN organisation, would influence policies and planning, as well as functioning of these organisations through the system of double determination. The research question is concerned with the way in which functioning of an organisation on an ongoing and regular basis, produces group identity, at the level of the Colonial Administration and the corporate identity of JBN, as contractor, but also parastatal entity. In turn, these organisations acted to constrain or enable their functions in particular ways through downward causality, reinforcing prevalent attitudes and shaping interactions. For these layers of interacting components, parallel media forms were generated, now contained within Colonial Office and JBN company

archives. Records reveal emergence at the level of the organisation, as well as within projects and associated media outputs.

7.1.1. 'Coherence' as an Emergent Factor During the Colonial Period

The level of coherence in the Colonial Office and Ministry of Trade records can be understood as an emergent factor. Through 'double determination' of upward and downward causal relations, the emergence of coherence can be identified at the level of the individual, as well as at organisational and imperial scales. Through bottom-up and top-down establishment of 'norms', archival data reveals ways in which a new type of colonial officer is 'produced', and following this line of argument, a new kind of 'colonial subject'. Also encountered in records is the multiple messaging that comes to cohere in certain respects, while this is not taken to mean that each individual became a generalised type, or that colonial projects went forward without a hitch. In fact, the aspect of delay, and other conflictual factors, is apparent. With letters taken by ship, many weeks would pass before a reply could even be written, introducing a disconnect in momentum between thought and action. Following the advent of wireless telegraphy, communication became more immediate, connecting those on land to those at sea. But telegrams had a character limit: an entire report could not be sent. Customs and Trade journals from the 1911 year also reveal that telegrams took 24 hours to be cabled from Lagos to Britain (TNA: CO 659/1:110-111).

The problem of the 'Bar' seriously constrained Colony earnings. Governor Walter Egerton had the 1912 budget returned several times by the Secretary of State, with instructions to reduce it. By the January 1912 resubmission, it had been lowered by £80,000 (TNA: CO 879/109/2, African (West) 981, 1911-1913: 77). In spite of the preoccupation with disease management that informed building codes, town planning, and infrastructure projects, only modest increases in medical staffing were proposed. The Southern Protectorate had only 23 medical officers in 1911 on the higher pay scale of £500, with the intention to increase staffing to 27 in 1912, and with an addition of four nurses (ibid). Medical staff were typically placed in urban centres such as Lagos, Ibadan and Calabar, and at smaller outfits along the railway between Lagos and Ibadan (ibid:35). As part of the effort to reduce the budget, two of the 'European' nurses' contracts were to be cancelled. Unfortunately, they had already sailed for Lagos by the time this decision was taken, with slow means of correspondence hampering austerity measures. Response to the revised lower budget was itemised, with queries and haggling on almost all points (ibid:77-81), demonstrating why an annual budget could take a considerable time to be accepted.

In one sense, delays in communication served to reduce the volume of correspondence, but they also achieved something else. While the work of an archivist is to group related documents into categories, typically according to organisation, year, and sequence, this is not always achieved at a fine-grained level, so that discontinuity is a factor of piecing together historical evidence. And yet, while a period spent searching in the archive uncovers many fragmentary parts of an historical narrative, with considerable timelapses between replies, delays actually serve to emphasise the level of coherence. Evidence of continuity and a persistence in attitude, threads through the documentation, and demonstrates an effective downward causal influence exerted upon individual colonial agents. The element of

coherence can be seen across the diverse written output pertaining to administration of the Lagos Colony. Archival coherence survives the altering territorial identity, first within the Colony of Lagos, later the Colony and Southern Protectorate of Nigeria, and in the amalgamated territory of Nigeria, with a common Colonial Office written identity maintained.

Upward causality works “to make emergent properties immanent” (DeLanda, 2016:21), through continuous interaction between component-parts of the assemblage. Interactions of colonial officers, the Harbour Authority, consultant project teams, Whitehall, and other physical factors such as tides, sand drifts, and levels of rainfall, could during their daily influences, give rise to emergent factors at various levels. In this context, the work of coding and decoding, territorialisation and deterritorialisation, served alternately to stabilise or destabilise the assemblage. The emergent factor of ‘coherence’ can be established through evidence of the general alignment of attitudes. While disagreements and incompetence are reflected at times, concurrence between views presented is notable. Recurrent views were shaped, and can be seen to have themselves shaped, colonial engagements: with land, peoples, and tasks, and influencing implementation of projects in turn. In this way, the power of Empire acts as a codifying device, producing a conformity in the ideas in circulation, which were to be expressed through adoption of rhetoric appropriate for the period and for the position of an officer of the British Empire.

Daily interactions of colonial agents also produced effects in a bottom-up way. There is a ‘sameness’ about formal statements issued, and replies to community queries received from concerned members of the autochthonous communities in Lagos. As “the main effect of language at the personal scale is the shaping of *beliefs*” (DeLanda, 2006:51), language choices can reinforce ideas and consolidate statements of many actors into the appearance of a unified front. With staffing at the outposts of Empire, ‘consistency’ became a strategic device, enabling ‘control’ of the many by the few. Coherence as an emergent property served to structure the occupation, acting as a steady counterpoint to the traumatic reorganisation effected through colonial ‘overcoding’. Written records also present as a form of ‘reterritorialisation’, providing justifications of occupation, and displaying a clear resonance with Lugard’s vision of a ‘Dual Mandate’. State-controlled media and propaganda intended to influence public opinion are a well-understood component of contemporary war campaigns. But this relationship predates mass media and instant messaging. The Colonial Administration was operating over great distances, with limitations in means of communication. This made ‘coding’ even more important. The emergence of ‘coherence’ appears in documentation of events and conversations. The emergence occurs within the lived experience of the history and is encountered again within the ‘archive’, where in piecing together the materials, consistency and rhetorical control is evident.

7.1.2. ‘Speed’ as an Emergent Factor of Julius Berger Nigeria’s Indigenisation and Response to the Port Crisis

Speed, quality and cost are elements that characterise projects in a variety of combinations. The oil boom in the 1970s increased the Nigerian State’s budget, enabling it to pursue an ambitious infrastructural programme, with intensification of construction in Lagos as the capital city. It was a time of political changes, and

successive military regimes, but the infrastructure programme continued more-or-less uninterrupted. With the strong fiscal position, cost was no issue, and both speed and quality could be prioritised by the consultant engineering team. Completion of the TCI Port within a period of 15 months was a consequence of need, and pressure from the Client, the Nigerian Ports Authority (NPA) as a provision of National Government, facing a political crisis due to the unprecedented congestion at Apapa. In the attempt to build themselves out of the deadlock at the harbour, speed was a prerequisite for performance by JBN: a performance made possible through support of elites, and enabled by processes of indigenisation and Nigerianisation, which were “swiftly seen as a natural part of operations” (Gaines, 1996:57). At state level, the ‘Plan of Stabilisation’ aided decongestion, as did allowance for 90% of bulk cargoes to enter the country’s port unchecked (TWB, 1982). Conditions at the port necessitated the building up of JBN’s own logistics. In the harbour, supplies were fast-tracked and offloaded by JBN personnel onto barges (*Unsere Bauwelt: b aktuell*, 1977(2):80-82). This would not have been possible without special agreements made with the State, for which Lagos port expansion was a priority project. With increased embeddedness of the company in Lagos, meeting tight timeframes became part of the nature of the job.

‘Speed’, developed through internal efficiencies, can also be as a form of risk management for the company. At a time of political uncertainty, performance and optimisation were essential, as the close relationship to state actors, themselves precarious, was necessary for continuing work and future contracts. Speed was an emergent factor of the port projects, and with an effective system in place, future working methods would be shaped along similar lines. In military assemblages, ‘speed’ is a consequential property which is ‘intensive’, in other words characterised through qualitative rather than quantitative changes (DeLanda, 2016:75). Qualitative changes take place at critical thresholds, as when water reaches boiling point becoming gaseous, whereas at freezing point it solidifies (ibid:76). These conditions are characterised by very different levels of territorialisation. With ice, arrangement of water molecules is highly structured and rigidly territorialised, while with gas, molecules are more dispersed and deterritorialised (ibid:116). With the Lagos port congestion constraining Nigeria’s economic development, and becoming a political crisis, the element of speed in delivering a solution was essential, and this period in Lagos’ history can be read as a phase, in which internal relations of the assemblage, and its component-parts, were highly active.

Production speed in a workshop setting, or of an infrastructural project, requires optimal routines and efficiency, implying a working process that is coded and territorialised. But as the port expansion project was to be impacted itself by the chokehold at Apapa, flexibility and fluidity in adaptation were employed by JBN, and with this an acceptance of decoding and deterritorialisation as being necessary for resolving the port crisis. In contrast, the response of the Federal Military Government was to introduce even stricter coding in the form of decongestion decrees, so that project strategies and state strategies were unfolding during the same period of time, and coalescing in a multitude of ways, mainly serving as a resource for the ongoing activities of JBN. While indigenisation and Nigerianisation of JBN can be read as a form of territorialisation, stabilising the assemblage, it is no contradiction to state that they also employed deterritorialising strategies so as to overcome environmental constraints. Territorial ambitions can be attained through deterritorialised social networks. For example, Napoleon’s army was highly mobile and more nomadic than sedentary. Their military effectiveness was attained through having a decentralised

and “flexible chain of command” which enabled speed (ibid:77). For the JBN projects to continue, and not to be hampered by the constraining factor of port facilities that far exceeded capacity, absence of ‘red tape’ was necessary for fluid responsiveness that could give rise to ‘speed’. Actions went ahead unchecked. The free hand was fundamental as was fast-tracking; Had JBN’s material and equipment deliveries been checked by NPA officials, examining every crate, item by item on arrival, the port projects could not have been realised as they were.

High level agreements could be put in place due to the close relationship with Nigerian elites. But there is always a line between a free hand enabling efficiencies, and a lack of checks and balances tantamount to corruption. Manufacture of a slow consensus builds in transparency and accountability, but is also a delaying factor. A project is always a map of risks and opportunities, strengths and weaknesses. It is also an agreement of terms established by a contract, setting out procedures, payments, deliverables, and establishing rights and liabilities. To work quickly, there needs to be a full acceptance and knowledge of the particularities of a setting, and the alliance made with the State gave JBN the inside knowledge to be able to function effectively. “The effect of time-lags produced by the need to negotiate and secure compliance with central decisions becomes more prominent at larger spatial scales, as in the case of changes at urban levels brought about by the policies of a national government.” (DeLanda, 2006:43). Bureaucratic processes can delay implementation, as agencies at different levels of government exert their influence over the various aspects of the programme that come under their jurisdiction.

Implementation then becomes a process of continuous adjustment of the original objectives to a changing political reality, with each adjustment involving delays in the negotiation and securing of agreements. Historically, failures to meet the original objectives of a policy have often reflected the inability of the implementation machinery to move fast enough to capture the agreements while they lasted. (ibid)

Delays were not an option, politically or operationally. Speed as an emergent factor came about through the interactions of political power, optimised routines, an efficient and transnational logistics, and an enhanced project infrastructure which saw JBN sites across Lagos used as equipment and material stores, to enable whatever would be needed, to be taken to wherever it would be needed. But there were constraining factors all the same. The *Auslandsabteilung* (Foreign Department) reports of the early 1970s, describe the work on Nigerian construction sites as being interrupted by persistent rainfall (*Berger Welt*, 1972(39):12), with workers forced to proceed as best they could. Post-Biafran War reconstruction also involved JBN, under pressure at that time to repair or rebuild bridges quickly. Donations of aid from around the world came into the country but could not be transported to the east. A temporary Bailey Bridge at Onitsha was erected, and funded by the Federal German Government. World reporters were present for the whole of the construction period, as urgent requirement for aid was making international headlines (*Berger Welt*, 1970(30):3-4).

War, politics and forms of governance are all factors that lead alternately to increased speed or to delay. JBN achieved speed within the context of their projects, but their activities also resulted in alteration of urban speeds. The logic of the Inner and Outer Ring Road projects, brought with it reinterpretation of urban relationships, as connections prioritised made parts of Lagos navigable at heightened speeds.

Urbanist and architect, Paul Virilio, who was initially engaged with the topological aspect of urban environments, became increasingly involved in a reading of cities through 'dromology'. Virilio (2006:31) saw transportation routes and waterways as communication channels within the city, with roads, governed by speed limits, controlling rate of movement. In this reading, speed is an advantage both in military and urban terms, while determination of placement of road connections in a setting, is a form of territorialisation. By tracing the projects of JBN in Lagos and beyond, a pattern of Federal Government investment is established. After a process of indigenisation in Lagos, the city became a base from which the company would adapt their focus and methods to suit infrastructure projects in less developed regions of the country. For some Lagos-based projects, and upon following the government to Abuja, JBN even organised financing for components of the infrastructural programme, in this way providing "indirect developmental assistance" to the Nigerian State, an expansion of service that would form part of their business strategy for a number of years (Gaines, 1996:56).

7.1.3. 'Reputation' as an Emergent Factor which Enabled the Nationwide Expansion of Julius Berger Nigeria's Activities

The local reputation of JBN in Nigeria was built on speed, reliability and flexibility: a willingness to do whatever would be needed. JBN acquired a reputation for excellence, without which they would not have been able to embed themselves to such an extent. The emergence of 'reputation' was an enabling factor, as it enabled their proximity to elites and the monopoly they held over the construction sector in Nigeria, to continue without the levels of criticism that could have brought an end to the relationship, and consequently to the projects. This reputation was brought about to a considerable degree by their performance on the port project, as can be linked directly to the factor of 'speed'. While the British had been involved in the decolonisation process leading up to independence in 1960, and British engineers had been involved on port and road projects during the colonial period, Nigerian elites were more open to the Germans (Krauß, 2023), as there was not quite the same entanglement as with the former coloniser. The German government supported the activities of the Julius Berger company in Nigeria, as part of their development aid programme known as *Entwicklungshilfe*⁵⁸ or 'foreign aid', and German bonds had financed the Eko Bridge (ibid).

The relationship between the two nations was largely positive during the early postcolonial period, although West Germany was criticised for its support of Apartheid South Africa as well as support of Portuguese colonisation. In 1977, The Federal Republic of Germany imported raw materials from Nigeria to the amount of DM 2.5 billion, while spending the same amount on imports from South Africa (Merkl, 1982:154). The West German government also wished to limit the influence of the Soviet Union in Africa (ibid:151). In June of 1978, Helmut Schmidt, West German Chancellor from 1974 until 1982, made an official visit to Nigeria, which included a tour of the newly-built TCI, and where he described Europe and Africa as "ideal economic partners" (1982:83). Perceptions of the relationship between the two

⁵⁸ Germany's contribution to developing countries in the 1978 year represented 25.9 percent of foreign aid given by the European Community. See Hanrieder (1982).

countries were conflictual. At a 1982 German-Nigerian dialogue in Hamburg, Nigerian delegates decried the failure of the Lomé Agreement and the “colonial and neocolonial presence” which they saw as undermining the Nation’s security (Ate, 1984:311), and entrenching unequal trade relationships. On the involvement of JBN in the country, West Germany was accused of taking a “minimal interest in Nigeria’s technological growth”, and with no indication that profitable activities of JBN had led to any proportionate “infusement of technology” in Nigeria (ibid:313).

In spite of these criticisms, JBN’s operations were safeguarded by the State, and with Nigerianisation, the relationship between Company and State appears to have become even closer. ‘Reputation’ was certainly JBN’s most important asset, and it became essential that they protect this to consolidate company operations in the country. The publication project of JBN can be understood as a means of confirming reputation. The works aimed to record details of the Nigerian projects, but can also be seen as pre-empting critique, which might have given rise to queries of their monopolistic domination of the construction market and close ties to political elites. Project documentation including photography and film footage, reveals the absence of safety protocols in what was a largely unregulated construction industry, with workers not provided with protective gear, and who were often barefoot. While safety measures on sites were not yet the norm globally, this does demonstrate that JBN was operating at a time when practices were much freer. The same projects could not happen in the same way in the present era. On the basis of the reputation that JBN had gained in the early years of working on the Eko Bridge, they were able to expand in ten years to a business area ten times the size, still using some of the equipment from the founding period. They were willing to be flexible in establishing their own logistics, systems of communication, and control networks, and developed these for land and water. They even returned to the precolonial network of the waterways, enabling cargo to be brought upriver on barges, and then to be transported by road to Abuja.

Obstacles were to be overcome, and if speed was a requirement for preserving reputation, then any measures that could be taken to ameliorate project implementation would be introduced. JBN employees knew to bring ‘gifts’ with them to Nigeria, to ease their path through customs control at the airport. At a higher level, arrangements were made with senior officials to secure the passage of the vast imports required for projects.

Until a few years ago, the payment of bribes was accepted as a necessary evil and German companies could claim bribes as business expenses. This changed only after corruption was increasingly prosecuted. Just a few years ago, in 2015, Bilfinger had enormous trouble with the US Department of Justice because of a corruption case in Nigeria involving an American company, and Bilfinger had to pay a fine of \$30 million. For this reason, Bilfinger has also sold all of its shareholdings in JBN. (Krauß, 2023)

Prosecution charges included the payment of bribes to Nigerian elites for the awarding of construction contracts. Between 2015 and 2018, Bilfinger formally disassociated from Nigeria, and sold all shares in JBN in packages of 10-15% to Nigerian companies and individuals. Bilfinger would leave construction altogether, and now specialises in industrial services. In comparison, JBN has expanded its range of services in Nigeria to include logistics and port fast-tracking. While JBN retains an international office in Wiesbaden, this is owned by the Nigerian company

rather than the other way round. Stories of the corruption were well known by colleagues in Germany. Employees travelling to Nigeria would send their passports to the Wiesbaden office to have the 'Blue B' pasted on the passport (ibid). The logo had acquired status, and it carried weight with Nigerian officials. It is impossible to know the extent of the corruption during the period of study since anything of a sensitive nature would not have been included in the *Company Archives of Bilfinger SE*. What can be established is that the close relationship between the company and the political elites eased the path of the company, and the research has demonstrated the power that company leadership had to make recommendations to state officials on the future projects that they would undertake.

7.2. Answering the Research Questions: Reflection on Territories, Organisations and Media

Within the assemblage, a reading of connections, linkages, and continuities, as well as caesurae can be traced. Breaking points include factors that altered circumstances: the wrecking of ships on the 'Bar', delays in communication during the War, port congestion, and the relocation of the capital. These 'breaks' represent 'critical thresholds', indicating a change in phase in Lagos' history. Emergent factors associated with various levels of interaction, influence outcomes of complex processes that are not directly causal. Events serve to alter interaction, but emergent factors of 'coherence', 'speed', and 'reputation' have shaped the ways in which things have actualised, effecting new transformations and giving rise to other points of rupture. This next section builds on the response to the primary research question by reflecting on the sub-questions, considering territories, organisations and media as component-parts of the assemblage, and detailing the way in which assemblages are stabilised or destabilised through coding and territorialising processes.

7.2.1. Research Sub-Question One

How were these territorial objectives related to readings of landscape in Lagos, and to what extent would this shape infrastructure programmes in the two eras, with ideas functioning both at the level of individual attitude and systemically?

The embedded nature of the port facilities and the low draught over the sandbar at the harbour entrance made the Lagos port an expensive project. The topography of Lagos presented a challenge for building, involving reclamation of waterlogged land and use of deep foundations that could penetrate below the layers of sand. But the presence of the port enabled Lagos to retain its role as the 'mother city'. It represented an important node in the export of raw goods during the colonial era, particularly during the Great War, and was therefore strategic. Lugard, even suggests that competition between Germany and Britain for the tropical colonies was one of the causes of the War (1926:58). The amalgamation of 1914 represented Lugard's major effort to retain effective control of the vast territory of Nigeria for the Empire, and can be read as a form of territorialisation. But colonisation involves territorialisations and deterritorialisations of territories structured in terms of

relationships between interacting components. Bonds may be tightly or loosely connected and are maintained through coding processes which serve to stabilise and consolidate links in the assemblage. The imperial intention for control of productive territories linked to an extractive infrastructure of port and rail, represented a territorialisation at the scale of the 'nation', but connected to the macro-scale of Empire. From the perspective of the autochthonous, arrival of colonials and their continued administration of the colony, represented a deterritorialisation, altering relations to land, economy and the material culture of physical infrastructure and buildings. It would alter societal relations through coercing and disrupting the traditional hierarchical structure, and through the pervasive strategy of disease management which fed into all these sociomaterial domains.

Colonial policy was shaped from above and below, with perceptions and associations of landscape feeding into its creation and implementation, with back-and-forth causal relations functioning at the level of the Administration and of the local 'office' in Lagos. However, it is not the case that attitudes were uniform. Journalist E.D. Morel writes in a different tone of British exploitation of land in tropical Africa, but there are nevertheless biases in his accounts, which present Africans as having no agency: "For tropical Africa is one portion of the world's surface worthy the attention of capitalists, owing to its great natural wealth, whose inhabitants are helpless to offer resistance to the forces which, if they have their way, will reduce the role of the African native all over the Continent to that of tenant and hired labourer" (TNA: CO 879/109/2, *African (West)* 977, 1910:13). As to perceptions of environment, water was perceived as a hinderance in realising territorial objectives. While arguing for a new capital location, Lugard describes Lagos as being "an unhealthy river valley" and therefore unsuitable (TNA: CO 879/67, *African (West)* 647, 1900:18). To Lugard, water represented a deterritorialising force, and when considering the division of Nigeria into provinces, he rejects the use of rivers as defining limits, stating that "in Africa, rivers connect rather than divide" and they make for "the worst of boundaries" (TNA: CO 879/113, *African (West)* 1005, 1913:24). While certain ideas fall into dysfunction, others come to predominate. Unfavourable depictions of the topography of Lagos would continue into the postcolonial period, with the Nigerian State critical of Lagos' suitability as capital, and seeking instead to 'unify' the nation through both connectivity and symbolism, with the new capital coming to complete that realisation for postcolonial leaders. By comparison, indigenisation strategies of consultant engineering firm, JBN, would indicate more of a commitment to engage with the complexities of the Lagos terrain.

While the Julius Berger AG of the 1960s had not been stable, leading to their merger with BAUBOAG in 1969 (Krauß, 2023), they were also a risk-taking group, with a long tradition in international business dating back to 1912. They had been the first German construction company to take on projects overseas after World War II, in Egypt, and while many "major German construction companies were involved in the Maracaibo-project in Venezuela, it was Berger that took the risk to start a similar project in an unknown country on another continent" (ibid). The decision to remain in Nigeria during the Biafran War predates the comparatively larger-scale contracts of the 1970s. By the time of the second merger with Grün & Bilfinger in 1975, the Nigerian work was Berger's greatest asset (ibid). These decisions can be read as a form of risk management, which provides the strategy according to which the Nigerian setting can be navigated by the company. Expansion of their international portfolio was a direct result of the inverse fortunes of Germany and Nigeria during

the 1970s, with the dire economic situation in Germany negatively impacting the domestic construction sector (*Annual Company Report*, 1971:2).

While the second merger with Grün & Bilfinger brought two corporate cultures together, the risk-taking approach of the Berger team would set the trajectory for indigenisation of the JBN subsidiary in Nigeria. This included diversification beyond bridge building (Gaines, 1996:54), since Nigeria's development required a range of supporting infrastructures. The company monographs discuss risk explicitly, with the construction sector unique in that the construction site becomes "the basic unit of operations", requiring adjustment in strategy for each new site (Offenbach, 1980a:181). "This constant change of production site with every project gives rise to specific financial risks even at home" (ibid). Each national setting has its own policies, labour laws, and building codes, which must be studied, and relationships formed with state or municipal administration (ibid). With time and cost of working beyond Germany's borders much higher, the risk management strategy for Nigerian work had to be carefully calculated, but did enable the survival of the company during the recession years. The decision to remain was informed by their reading of public sector investment being insufficient to stimulate the domestic market in Germany, with the decline in employee figures at Bilfinger + Berger during the mid-1970s, pointing towards retrenchments (*Annual Company Report*, 1974:9).

Indigenisation requires contextual knowledge but in JBN's case did not preclude use of exotic tropes in written accounts of peoples and landscapes. JBN managers saw themselves as conquerors of the territory, with the landscape as antagonist. During the work on the Lagos-Ibadan Expressway, marshland had to be cut through and pile foundations were used to hold the road surface. The construction manager described the uneven settlement of the ground, which at times lead to shear failure: "It sometimes happened that thousands of cubic metres of fill material disappeared within a short time as if taken by an invisible lift, with a black viscous mass swelling up out of the site in its place..." (Offenbach, 1980a:268). Describing these forces at work within the landscape, he continues: "[t]hey transport whole sections of forest in the process, so that once, for instance, a whole river had to find a new bed" (ibid). JBN and personnel did not see themselves as conquerors of people but of environment attaining a monopoly and asserting their dominance in the setting. Where Lugard held the view that rivers serve as connectors rather than barriers, for JBN, 'site boundaries' were not absolute divisions, as all JBN sites in Lagos became part of the communal stockpiling of machinery, equipment and other assets, with potential to be redeployed wherever the need was greatest, representing an imposition of the logic of the project requirements onto the patterns and processes of the city. Similarly, this flexible approach meant that the expanded project infrastructure, including Cessna aircraft with flights for political elites, and divers, cranes, and dredgers used in a recovery effort after two plane crashes (Blum and Hassenkamp, 2002:163), was provided as a complementary benefit. Through consolidating their association with state power, the effective monopoly could be extended nationwide, to coincide with the State's jurisdiction, which extends to the very borders of the nation.

7.2.2. Research Sub-Question Two

To what extent were social interactions within the daily life of projects in organisations, as revealed through archival sources, manifested within the context of concrete outcomes, and how were these organisations themselves held together through a networking of ideas, processes and place, or through performance credentials?

The Colonial Administration promoted norms, that were reinforced by the organisation and its officials at several levels. This can be read as a form of coding, in which the individual is viewed as being a product of prerogatives required by their social and historical environment, and would be expected to assume the rhetoric acceptable for the times and the circumstances. Social wholes such as the 'Empire', the 'Colonial Administration', and the 'Colonial Office' in Lagos consisted of everyday actors, officials of differing rank, constitution, and 'background'. Assemblage aims not to 'totalise' these macro-forms into 'seamless wholes', recognising instead the different scales of activity linked through double determination. The moulding of the colonial officer was important for maintaining discipline and ensuring conformity in the functioning of the administration. Through adoption of the assigned role, actions of an individual could feed upwards into the assemblage, consolidating the colonial project through the repetitive rhetoric.

Along with forming of the colonial functionary, there was an attempt to shape the colonial 'subject'. In Strachan's final lecture of 1910, he describes customary and habitual behaviours as "the hardest things to change, among all people" (UOM: Medical 11203.34:41). Lugard, in *The White Man's Task in Tropical Africa*, describes this as follows: "Education, it is hoped, will mean the raising of the standard of the people, not the denationalization of the few, making of the African a better and more efficient African and not an imitation white man" (1926:64). Colonial Administration documents provided a means of stabilising the assemblage through coding and territorialisation, aimed at effecting a greater homogeneity, while sharpening divisions between those who became exemplar role models in the coding process, a real 'pukka sahib', and the rest. Documents reveal a multiplicity of interactions between different groups: missionaries, traders, officials and traditional Yoruba elites. While only a few have been presented in this reading, this research has attempted to reveal something of the interactions and different ways of interpreting a setting, with the view to building up a picture of the period, both through daily and repetitive actions, and the top-down influences shaping these engagements.

An invasive power brings with it a very different sense of place, but also a disturbance of the traditional values and autochthonous identity, which was related to place. The autochthonous sense of meaning was invisible to an incoming people and was partially overridden through a process of colonial overcoding. Land tenure was one of the major transformations effected during the colonial period. Authority structures were also disrupted so that incompatible systems of colonial governance, traditional administration, and a "complex network of authority formed by clans, lineages and other associational ties" came to coexist (Cole, 1975:1). The situation was more complex in the south, as Lagos was under a system of 'direct rule', although Lugard would attempt, unsuccessfully, to extend indirect rule in the north to the country as a whole. B.H. Bourdillon, Governor of Nigeria from 1935 to 1940, stated that for indirect rule to succeed, adaptations required by autochthonous peoples "must be by way of

natural growth” (UOM: West Africa 10940.314, 1939:3). He elaborates with this statement: “[t]he fossil is essentially unadaptable; the machine can only be adapted by spasmodic alterations effected by an external agency; it is the living organism that can change imperceptibly and naturally” (ibid).

Through overcoding, the pre-existent structures remain, while an administrative superstructure is erected over and above it. With Bourdillon’s analogy of the organism, an evolutionary argument is made. Darwin’s 1859 book *On the Origin of the Species* was influential, but from the perspective of the present, the association between colonialism and evolution is a *non sequitur*. Bourdillon saw global contact between Africans and Europeans as a ‘natural outcome’ and part of the advancement of history. Great hope was held for the system of indirect rule, which was seen as offering “far greater elasticity” (ibid:4). Some colonials foresaw the eventuality of self-governance, with British historian Margery Perham in a 1938 address to the Oxford Summer School of Colonial Administration, referring to “the kindergarten of indirect rule” (ibid:1-4). For some, the challenge was the sheer extent of Nigeria and the diversity of its people, requiring different policies in different parts. The work of coding, decoding and overcoding is reflected in colonial rule, with emergence of ‘coherence’ serving to stabilise social interaction and functioning of the assemblage. Infrastructures and urban programmes were left behind as residual structures, not as monuments but as markers of colonial intention.

JBN company identity was consolidated through its brand, as well as through use of a dominant verbal and visual coding. In text, the colonial tropes reemerge, such as the ‘explorer myth’ and the clearing of the ‘jungle’. JBN worked together closely with Nigerian elites, while imposing the human reach over landscape; still perceived as something to be managed. State and Company were two major protagonists in postcolonial infrastructure development, but assemblage redefines the impact that an actor has, as they engage with a complex existing and unfolding set of circumstances. Both periods of analysis involve the aspect of ‘planning from afar’, entailing directives from elsewhere, from Whitehall or from Wiesbaden. The plans upon implementation encountered a layering of practices, and codes that shaped activity, and the strong Yoruba workings of the urban setting. JBN engaged with engineering logic, but was receptive to some local traditions. Before commencement of the Eko Bridge project, the Oba of Lagos performed rites at the project site, with an offering made to the Yoruba Goddess of the Sea (Offenbach, 1980b:265). The blessing was intended to secure the protection of the project, but also provided means for cross-cultural accommodations, for the project to be accepted within its setting. In spite of the factionalism and changing regimes, JBN would remain in the country and would continue to be awarded contracts, retaining relationships with a wide range of actors central to the Nigerian political scene. The strength of the company brand enabled them to navigate a series of transitions, from mergers, to establishment of the subsidiary-overseas branch, to the process of Nigerianisation and a changing ownership model, with continued good relations with clients. Their work on the port and ring roads represented the last *major* investments made in Lagos, before the State concentrated infrastructure development programmes on the new capital city of Abuja. JBN’s expertise, speed and efficiency, in combination with their access to powerful decision-makers, leaves behind an activity record in the form of an infrastructural edifice.

7.2.3. Research Sub-Question Three

To what extent did control of infrastructural narratives by elite project-actors serve to advance these territorial objectives at macro- and micro-scales of activity?

Following a deterritorialisation of the traditional social and urban structures, a reterritorialisation in the form of a rationale, provides an attempt to reconstitute an environment along new lines acceptable to the occupying power. Colonial Office records reveal underlying motivations common to different authors, disclosing presence of downward causality, as shaping perceptions of territory and society. Lugard's 1922 work, *The Dual Mandate in British Tropical Africa*, is a treatise on the merits of indirect rule. At 622 pages, the work is a remarkable investment in 'time', and it communicates awareness of the need for further engagement with context. A major inhibiting factor in the implementation of longer-term schemes was the temporary nature of the colonial officer's posting, as well as the lack of connection that British Officers felt to a locale, that for them represented only a temporary base. Lugard recognised the vital need for continuity, with some British Officers able to remain for longer periods in the colony to enable a degree of cooperation with Nigerian elites. The system of indirect rule was premised on cooperation and decentralisation, so that traditional and colonial authority structures might co-exist. In reality, the system did not work well at all outside northern states, and co-opting of elites bred distrust and was a delegitimising factor. The work is a justification of colonialism, which is more subtle and complex than many earlier attempts by other writers. British presence in Nigeria was often attributed to their role in eradicating the Trans-Atlantic Slave Trade in the region, which was stated as being the "sole object which induced his Majesty's Government in the year 1861 to take over the Sovereignty of Lagos Island" (UOM: West Africa 10940.74, 1912:1). Others characterised the autochthonous peoples as 'pagans', with Christianity employed as a means of legitimising colonisation (Cole, 1975:2).

In the wars that have occurred within the 'The Information Age', the relationship between military occupation and 'media' as a means of controlling public opinion can be more clearly established. But it is an old connection, Napoleon is known to have said that "[t]hree hostile newspapers are more to be feared than a thousand bayonets" (McLuhan, 1994:13). In this research, reflection upon the British Empire as a colonising force in Nigeria, has primarily been concentrated on the late 19th and early 20th Century up until the interwar period. Archival records of the Colonial Office and Ministries of Transport contain the output of ordinances and regulations, manuals and handbooks, Colonial Office reports, letters and telegraphs, and transcriptions of speeches and dialogues, as well as biographies. For "[e]ven writing itself, before it ends up in libraries, is a communication medium" (Kittler, 1999:5). Speech, writing and print are all media forms, and they reveal "biases" and "messages" that are inherent (Winthrop-Young and Wutz, 1999:xxii). Hence McLuhan's claim that "the medium is the message" (*Understanding Media: The Extensions of Man*, 1964). The rhetoric is highly coded, with much of the correspondence beginning with social formulae such as "it is my honour to present this report", among other phrases. The written medium communicates the presence of this coding, as a prominent feature in the body of written data.

With occupation comes a prescriptive response and prescriptive narrative of imperialism. Colonial territorialisation is experienced as deterritorialisation from the

perspective of the autochthonous, while use of writing and print as media, consolidates the process of reterritorialisation, as a negotiation and reorganisation of the structuring of autochthonous experience. In *The Dual Mandate* (1922), there was an intention for both extraction of resources and development, but the words of Lagos Governors recorded at public events make explicit attitudes that were current, with officials interpreting their role as 'civilising', as representing progress, and with references made to the paganism of the locals. These attitudes infuse and complicate infrastructure development, with emergence of hybrid and intersection infrastructure and sanitation policies. The written output can be understood as a media form, containing the rationale for colonisation as it was implemented in this historical setting. This rationale served to shape public opinion amongst colonisers, while manipulation of local hierarchies achieved some degree of compliance. This equivocal relationship between colonial and Nigerian elites is demonstrated in this extract from a dialogue on the water rate: "We have great respect for the Europeans. Formerly we used to live very well. They dealt with us amicably, but now-a-days there is no truth in their dealings again" (UOM: Nigeria 10398.26, 1916:4).

In a motivation for the Amalgamation, one writer in 1911 paints an image of the "untapped" North, with its extensive and entirely localised commercial sector: "The great markets of the principal centres are full of wares of all sorts, and on every highway one meets a constant stream of petty traders carrying from east to west and from north to south the products peculiar to their districts... Northern Nigeria seems to provide within its borders everything that enters into the daily life of the people" (TNA: CO 659/1, 1911:89). Once there has been a deterritorialisation brought about by colonial hegemony, with interruption of local traditions and social organisations, new practices will then emerge through reterritorialisation. Within assemblages co-functioning components interact in relations which may "hold together", stabilising into a territory, or there may be processes of transformation, or a breaking apart of structures serving to organise the relations between component-parts (Müller, 2015:29). "Assemblages are caught up in a dynamic of *deterritorialisation* and *reterritorialisation*. *Deterritorialisation/ reterritorialisation* is a central axis of an assemblage, where 'reterritorialized sides, ..., stabilise it, and cutting edges of deterritorialization, ... carry it away'" (Deleuze and Guattari, 1987:88 quoted in *ibid*). Reterritorialisation provides a reorganisation following the deterritorialisation, this may be achieved through media or propaganda which enters the information space to displace ideas that have been lodged there and to produce alternative interpretations of the situation.

JBN monographs would not have been widely distributed, but their role was to preserve existing networks, while growing a client base, and to establish in the minds of elites a company image, through language and visual codes, that would transport reasonably intact to Abuja. The publication project was a considerable investment, and a second territorialisation. This 'printed monument' was produced as a narrative-management measure and justificatory form, covering their work in Nigeria. Read as a reterritorialisation, it was intended to preserve the reputation which had been earned. The works create an alternate landscape which is easier to manipulate than the reality. As infrastructure is a form of information (Kittler, 1996:718), with the physical infrastructure already there, this recording of motivations in a parallel 'media' project established a narrative from infrastructure to publication. The monographs communicate the pragmatism of the approach to projects, and a willingness to problem-solve, but they cover other aspects that may have enabled JBN to manoeuvre effectively within a largely unregulated environment. Their

reputation was highly prized and essential to the continuance of the work. Their attitude of 'anything can be done' was extended to doing whatever would be necessary, with a 'no-bribes-no-bridge' attitude as an underlying element.

7.3. In Conclusion: Two 'Projects' with Consequences for Metropolis and Capital

Lagos and Abuja were projective cities for the post-colony, representing two urban projects incorporating imported global models and organisations, to communicate the image of the modern Nigerian Nation-State, government and policy through infrastructure. Lagos was the Mother City and therefore carried a residual importance for leaders. In the 1970s it was a focus of major investment to resolve issues of terrain and congestion. The vision for Lagos gradually gave way to the flight mode, its problems seen as difficult to overcome. Following the 1975 assessment of the Aguda Committee and the promulgation of the Federal Territory Act, Abuja would provide opportunity to plan *ab initio* for a symbolic capital. Reasons for moving the administrative centre were both material and perceptual. In Lagos, the pervasive presence of the water, non-contiguous land, and tropical climate, were factors associated with physical territory, but its colonial past and peripheral location within the vast administrative territory of Nigeria provided additional motivation. With the Federal Government relocating to Abuja in 1991, the Head of State, General Babangida, would move into the Aso Rock Presidential Villa constructed by JBN. As a sign of commitment to the capital vision, JBN had moved its 17th Annual General Meeting from Lagos to Abuja in 1987 (Gaines, 2009:78). At the time, other large companies were hesitant to relocate as there was no certainty that the city would be fully realised (ibid:104).

JBN, amongst the first to headquarter in the city, would occupy their new 10,500 square metre office building from 2001 (Gaines, 2006:20-21). In their view, "[o]nce the city had officially become the seat of government, it was only logical that the company head office itself be relocated to Abuja" (Gaines, 2009:119). JBN reorganised its operations, with Abuja as the major base, with branches in the port cities of Warri, Port Harcourt and Lagos (ibid:119). JBN would choose a "prominent hill-top position" for their offices as a demonstration of their "loyalty to the new capital", with the ancient monolith of Aso Rock and the National Assembly within view (ibid:20-21): providing visual connection to the landscape and to the centre of the political hierarchy. Abuja's "varied topography", with Aso rock as a focal point and contributing factor to the image of the city, had been given as a reason for locating the capital in this setting (Federal Republic of Nigeria, 1975:48). This distinctive feature provided an iconic counterpoint in imagery, as set against the swampy terrain of Lagos, and a dominant visual coding for the new city intended to 'unify' the nation.

Two organisations have been studied, to reflect upon the thesis hypothesis, that perceived temporary involvement of the Colonial Administration in Lagos altered infrastructure programmes, while JBN's indigenisation and entrenched position would lead to more effective performance. An established organisation can think strategically, using its position to extend beyond its place. Indigenisation of JBN, with



Figure 40: JBN headquartered in their new building in Abuja from 2001.
(Julius Berger, 2023)



Figure 41: Construction of a bridge in Abuja.
(Blum, 1990)



Figure 42: JBN Chairman and Board Members with Chairman Alhaji Usman (centre) with Günther Hawranke to the right, and Mobolaji Johnson and Hans Wittmann (left-front). (Blum, 1990)

the support of the State, afforded the company a dynamic mobility enabling it to expand nationally. The Colonial Office, on the other hand, administered the imperial strategy, with expansion involving encircling of the globe by a naval-based power, with Lagos administered from the 'Centre', as an outpost. Both organisations in two eras worked at distance, maintaining a European connection, with place-engagement producing alternate acceptance of strategy and tactic, and bringing about rescripting of activity in the local setting.

The project of the Federal Military Government through JBN, can be considered the more successful in terms of level of investment in Lagos, speed of implementation, and consequent longevity of the JBN company, which is approaching 60 years in Nigeria. But the territorialisation of the Colonial Administration in Lagos had effected a deterritorialisation of the autochthonous in the restructuring of the environment for resource exportation, carrying long-term implications for the metropolis, with imperial strategy difficult to 'unpick'. The geographical complexity, infrastructure-deficit, political turmoil, and fluctuations in oil price and political will, led to underinvestment and made the challenges of the metropolis-project insurmountable, despite the 1970s infrastructure. Abuja has represented a 'line of flight', and Lagos over time has given way increasingly to becoming a social territory for 'tacticians'. The thesis hypothesis was premised on 'engagement with place' as a measure of performance. Colonials invested in infrastructure but they were not invested in place, setting up the metropolis for future sanitary crises and a paucity of potable water, sanitation and energy infrastructure. But colonialism left behind not only the remnants of imperial strategy but also the ideas, with the projects of these two eras coming to intersect, and postcolonial leaders' ambitions meeting the legacy of the colonial century.

Sloterdijk identifies the possibility of nomadism as a "self without place", and a "*place without a self*" (2014:955). In the first, the self is displaced or alienated by the environment, in the second, the colonial trope: an environment is portrayed as uninhabited and is therefore open for occupation. Colonial Administrators in Lagos considered the territory to be hostile, establishing a line of flight that would continue to function in the post-colony. Through the paradigm of the swamp, whole tracts of land in Lagos were characterised as uninhabitable. The infrastructures that have been studied were a response to crisis, a crisis of accessibility and a crisis of congestion, and as such, represented significant attempts to realise infrastructure as a resolution. Despite these investments, the perception of Lagos as 'congested', 'unsanitary', and 'insalubrious' would remain.

It is a sobering thought, and one that those who think that one more road plan will master Lagos' mushrooming growth should take to heart, that the "growing congestion of the island" was put forward as an objection to Lagos' suitability as early as the 1st January 1914 when Nigeria first came into being as a political entity. (Audu, 1974:i-ii) Thesis objectives were to study the infrastructures of the two periods, and to interpret causal influences between organisations and projects, with a view to identifying emergent factors, which in both scenarios served to 'bind' organisations delivering infrastructure. The empirical study has focussed on performance of organisations at distance, with decision-making divided between London and Lagos and Wiesbaden, Lagos and Abuja, and looking at interaction between place and projected ideas to consider what can be derived from the Lagos experience. The organisations of the Colonial Administration and JBN were operating during two very different technological times. Both were characterised by rampant advances in

technology and a speed of change. Wars create urgency to compete technologically, with better ships and weapons, with World-War-One-Lagos seeing completion of the port and extension of the rail to the coalfields at Udi. But the communications systems of the two periods are incomparable, moving from the telegraph and maritime postal system with lapses in communication, to a 1970s media network of radio and telephone, while sophisticated aircraft linked Germany and Nigeria, and would come to connect Abuja as a 'port'. This technological context affected the strategy of JBN and the futures of the metropolis and capital.

Just as FESTAC 77 had symbolised pan-African cultural unity, Abuja would adopt pan-African status, with sufficient buildings of stature to receive on a continental scale: the 'Geneva of Africa'. The Organisation of African Unity (OAU)⁵⁹ summit was held in Abuja in 1991, and the city also hosts the Headquarters of ECOWAS. Abuja, as an African capital city and symbol of the postcolonial nation, has been projected as an idea beyond Nigeria's borders. For Lagos, the old ideas have reasserted themselves, with abandonment by the State reflecting in recent years in the form of pockets of development and privatised investment, but with overall infrastructural decline for the majority of the population. Study of assemblage, territorialisation and coding in these two periods, involving urban projects, mobile organisations, and communication systems, has considered the holding together of social territories, with Nigerian infrastructure a product of a hybridised modernity.

JBN projects of the 1970s and 1980s represent that unique moment in time, in which political will, financing, and expertise come together in project form, and all in a context of considerable political discontinuity. While implementing the infrastructure projects in Lagos during the 1970s, JBN would work with three Military Federal Governments until the return to civilian rule in October of 1979. The 1980s and 1990s would also be predominated by military dictatorship, under changing Heads of State up until the Fourth Republic in 1999 and the fourth Constitution of the Republic of Nigeria. While the company was able to retain its monopoly position on infrastructure and has delivered over the decades in Nigeria, an impressive range of roads, ports, bridges, dams and industrial plants, amongst other projects, a true measure of the success of this partnership between parastatal and alternating governments, would have been the embedding of technical knowledge within the public administration, as the longer-term entity and institutional memory of the Nigerian State. However, there is no evidence that this process of skills transfer was ever operationalised through work-based training schemes between company and public administration, with technical expertise remaining internal to the company, and the privileged relationship of JBN contingent on its access to key figures in the political elite and public administration.

The company was also highly reliant on imported materials, in part due to the speed with which many projects had to be implemented, existing as they did under political pressures. The question of how development from a resource base can be directed in such a way as to bring about wider growth, by, for example, using oil wealth to fund infrastructure programmes, merits reflection if African states in general hope to transform and diversify their economies. Clearly this did not happen in Nigeria as there was economic decline from the 1980s and the decade of infrastructure development in Lagos did not carry a sufficient multiplier effect. An infrastructure

⁵⁹ See: (Talba, 1991)

project is a value-chain in principle, but it involves numerous ad-hoc solutions along the way to realising that value-chain. The possibilities for connecting these project-based value chains to the indigenisation programme are clear in retrospect, and as a case study of infrastructural programmes of this significance and scale, this could inform future perspectives on partnerships between the government, public administration and the private sector, that conceptualise this cooperation taking place in a more cohesive manner.

Bibliography

Archives and Libraries

Company Archives of Bilfinger SE

Berger Welt: Berger-Bauboag Nachrichten. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany.

Berger Welt, 1963, Issues: 1-3

Berger Welt, 1964, Issues: 5-8

Berger Welt, 1965, Issues: 9-12

Berger Welt, 1966, Issues: 13-16

Berger Welt, 1967, Issues: 17-20

Berger Welt, 1968, Issues: 21-24

Berger Welt, 1969, Issues: 25-28

Berger Welt, 1970, Issues: 29-32

Berger Welt, 1971, Issues: 33-36

Berger Welt, 1972, Issues: 37-40

Berger Welt, 1973, Issues: 41-44

Berger Welt, 1974, Issues: 45-48

Berger Welt, 1975, Issues: 49-52 (Final Issue 49, December)

Unsere Bauwelt: b aktuell. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany.

Unsere Bauwelt: b aktuell, 1976, Quarters 1-4

Unsere Bauwelt: b aktuell, 1977, Quarters 1-4

Unsere Bauwelt: b aktuell, 1978, Quarters 1-4

Unsere Bauwelt: b aktuell, 1979, Quarters 1-4

Unsere Bauwelt: b aktuell, 1980, Quarters 1-4

Annual Company Reports (Geschäftsbericht). Bilfinger + Berger Bauaktiengesellschaft,
Mannheim, Germany

Annual Company Report, 1 January to 31 December 1970

Annual Company Report, 1 January to 31 December 1971

Annual Company Report, 1 January to 31 December 1972

Annual Company Report, 1 January to 31 December 1973

Annual Company Report, 1 January to 31 December 1974

Annual Company Report, 1 January to 31 December 1975

Annual Company Report, 1 January to 31 December 1976

Annual Company Report, 1 January to 31 December 1977

Annual Company Report, 1 January to 31 December 1978

Annual Company Report, 1 January to 31 December 1979

Annual Company Report, 1 January to 31 December 1980

Bilfinger + Berger and Julius Berger Nigeria Company Monograph Collection

Biedermann, U. (1990). The Company and its social involvement. In: Blum, D. and Gaines, J. (1990). *Julius Berger in Nigeria*. Julius Berger Nigeria LTD and Bilfinger + Berger Bauaktiengesellschaft, Lagos, Nigeria and Wiesbaden, pp. 46-93.

Blum, D. (1980). *One Hundred Years of Construction: 1880-1980*. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany.

Blum, D. (1980). *One Hundred Years of Construction: 1880-1980*. In: Blum, D. (1980). *One Hundred Years of Construction: 1880-1980*. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany, pp. 102-180.

Blum, D. and Gaines, J. (1990). *Julius Berger in Nigeria*. Julius Berger Nigeria LTD and Bilfinger + Berger Bauaktiengesellschaft, Lagos, Nigeria and Wiesbaden.

Blum, D. and Gaines, J. (1996). *Julius Berger Nigeria: 1970-1995 25th Anniversary Publication*. Bilfinger + Berger, Wiesbaden, Germany.

Blum, D. and Gaines, J. (2006). *Abuja 30 Years*. Julius Berger Nigeria PLC, Riederich, Germany.

Blum, D. and Gaines, J. (2009). *Julius Berger Nigeria 2009*. Julius Berger Nigeria PLC, Waiblingen, Germany.

Blum, D. and Hassenkamp, S. (2002). *Hans Wittmann: 40 Years of Success*. Weinbrenner, Karl, & Söhne GmbH & Co. KG, Leinfelden-Echterdingen, Germany.

Blum, D. (1981) *Construction in Nigeria*. Bilfinger + Berger, Wiesbaden, Germany.

- Dimel, E. (1981). Construction in Nigeria. In: Blum, D. (1981). *Construction in Nigeria*. Bilfinger + Berger, Wiesbaden, Germany, pp. 73-208.
- Gaines, J. (1996). The Julius Berger Nigeria Story: From Bridge Builder to All-Round Construction Company". In: Blum, D. and Gaines, J. (1996). *Julius Berger Nigeria: 1970-1995 25th Anniversary Publication*. Bilfinger + Berger, Wiesbaden, Germany, pp. 45-101.
- Gaines, J. (2006). Abuja the Projects. In: Blum, D. and Gaines, J. (2006). *Abuja 30 Years*. Julius Berger Nigeria PLC, Riederich, Germany, pp. 20-21.
- Gaines, J. (2009). Lagos and Outwards. In: Blum, D. and Gaines, J. (2009). *Julius Berger Nigeria 2009*. Julius Berger Nigeria PLC, Waiblingen, Germany, pp. 64-119.
- Hausmann, L. (1996). Julius Berger – 25 Years. In: Blum, D. and Gaines, J. (1996). *Julius Berger Nigeria: 1970-1995 25th Anniversary Publication*. Bilfinger + Berger, Wiesbaden, Germany, pp. 125-128.
- Hawranke, G. (1981). Foreword. In: Blum, D. (1981). *Construction in Nigeria*. Bilfinger + Berger, Wiesbaden, Germany, p. 29.
- Kupfer, H. (1980). 100 Years of Civil Engineering and Construction. In: Blum, D. (1980). *One Hundred Years of Construction: 1880-1980*. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany, pp. 93.
- Offenbach, S. (1980a). Construction Abroad. In: Blum, D. (1980). *One Hundred Years of Construction: 1880-1980*. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany, pp. 101-183.
- Offenbach, S. (1980b). Bridge Building – Road Construction. In: Blum, D. (1980). *One Hundred Years of Construction: 1880-1980*. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany pp. 260-279.
- Offenbach, S. (1980c). Port Construction. In: Blum, D. (1980). *One Hundred Years of Construction: 1880-1980*. Bilfinger + Berger Bauaktiengesellschaft, Mannheim, Germany, pp. 280-287.
- Schaffner, K., (1981). Construction in Nigeria: 1965-1981. In: Blum, D. (1981). *Construction in Nigeria*. Wiesbaden, Germany: Bilfinger + Berger, pp. 208-221.
- Weinert, W. (1981). JBN: Julius Berger Nigeria Ltd. In: Blum, D. (1981). *Construction in Nigeria*. Wiesbaden, Germany: Bilfinger + Berger, pp. 44–58.

Pamphlets

- Hemmleb, R. (1969). *Die zweite Festlandbrücke in Lagos/Nigeria*. Julius Berger-Bauboag Aktiengesellschaft, Berlin.
- Wittmann, H. (1980). *Erfahrungen bei planung und bau von zwei schlüsselfertigen hafenanlagen sowie einer hafenerweiterung in Nigeria*. Bilfinger + Berger Bauaktiengesellschaft, Germany.

Film

JBN – 25 Years of Success (1970-1995) (1995). Julius Berger Nigeria PLC. Hamburg: Bergmann Film Studio. [DVD]. Collected by Bauforum24.biz: www.bauforum24.biz/

JBN – 40 Years (1970-2010) (2010). [DVD]. Julius Berger Nigeria PLC. Hamburg: Bergmann Film Studio. [DVD].

Eko Bridge Lagos (c. 1970). Julius Berger-Bauboag Aktiengesellschaft, Wiesbaden. Film Dienst. [DVD].

The National Archives of the UK (TNA)

CO 323/647: *War correspondence*, 1914.

CO 323/665: *Offices: Admiralty and Offices Crown Agents*, 1915.

CO 323/701: *Despatches*, 1916.

CO 659/1: *Customs and Trade Journals*, 1911-1912.

CO 879/67: *Colonial Office: Railway construction in Lagos and Nigeria; correspondence*, African (West) No. 647, 1902.

CO 879/109/2: *Colonial Office: Concessions and the alienation of native lands in the Gold Coast; correspondence*, African (West) No. 977, November 25, 1909 - September 25, 1911.

CO 879/109/2: *Colonial Office: Papers relating to the estimates of the West African colonies and protectorates for 1912 and 1912-13; correspondence*, African (West) No. 981, 1911 - 1913.

CO 879/109/2: *Colonial Office: Southern Nigeria Reports Relating to Railway Facilities and Wharfage Accommodation at Lagos*, African (West) No. 982, June 1912.

CO 879/109/2: *Colonial Office: Medical and Sanitary Matters in Tropical Africa*, African (West) No. 984, October 1912.

CO 879/109/2: *Colonial Office: Medical and Sanitary Matters in Tropical Africa*, African (West) No. 984, October 1912.

CO 879/113: *Amalgamation of Northern and Southern Nigeria; correspondence*, African (West) No. 1005, 1913 May 15 - 1914 January 27.

CO 879/113: *Amalgamation of Northern and Southern Nigeria; correspondence*, African (West) No. 1008, 1913 May 15 - 1914 January 27.

CO 1069/65: *Nigeria 11, Photographs*, by Major C T Lawrence, 1910-1939.

MR 1/1804(5): Maps and plans extracted from CO 147/43, 1880.

MT 10/1374, Board of Trade Harbour Department: correspondence and papers, Southern Nigeria No. 90, H3595, 1911.

MT 10/1374, Board of Trade Harbour Department: correspondence and papers, Southern Nigeria No. 440, H10135, 1911.

MT 10/1647, Board of Trade Harbour Department: correspondence and papers, Southern Nigeria No. 195, H5992/1916.

MT 10/1647: *Board of Trade Harbour Department: correspondence and papers*, Southern Nigeria No. 195, H8713, 1914.

MT 10/1962: *Board of Trade Harbour Department: correspondence and papers*, Harbour Department, 1918.

The University of Manchester: Library and Special Collections

Medical 11203.34: *Diseases, and how to prevent them*, 1900-1910.

Nigeria 10398.26: *Report of the proceedings at an interview on the water rate question at the secretariat compound, on Saturday the 6th May, 1916, at three o'clock p.m.*, 1916.

Nigeria 10398.31: *Proceedings at the official banquet given by his excellency the governor of Nigeria, at Government House, Lagos, 3rd June, 1920: in celebration of the fifty-fifth anniversary of the birthday of His Majesty, the King*, 1920.

Nigeria 12782.13: *The development of Lagos in 50 years from head town of "slave coast" to be "The Liverpool of West Africa"*, 1924.

West Africa 10940.19: *Land tenure in West Africa*, 1897.

West Africa 10940.24: *Report of the Commission on the proposed sea pier at Lagos*, 1900.

West Africa 10940.41: *Departmental regulations: Public Works Department: Colony and protectorate of Southern Nigeria*, 1911.

West Africa 10940.47: *Rules relating to the examination in a native language of European officers of the Southern Nigeria Civil Service*, 1909.

West Africa 10940.51: *Proposed rules with regard to buildings, etc.*, in Lagos, 1910.

West Africa 10940.55: *Harbour regulations and tide tables from January to December, 1911: for the port of Lagos: Southern Nigeria*, 1910-1911.

West Africa 10940.74: *Views of the Lagos auxiliary of the Anti-Slavery and Aborigines Protection Society upon the present policy of His Majesty's Government with regard to lands in Lagos and the rights of the White-Cap-Chiefs and private owners*, 1912.

West Africa 10940.134a: *Indirect rule, land tenure, and the European's function in West Africa: Sir Hugh Clifford's frank talk to the business men of Lagos*, 1925.

West Africa 10940.314: *Memorandum on the future political development of Nigeria*, 1939.

West Africa 10940.328: *Report on the introduction of co-operative societies into Nigeria*, 1934.

Digital Archives

ICE Virtual Library

Coode, D. C. (1957). Maritime Paper No. 37: Design and Construction of the Apapa Wharf Extension, Lagos. *Proceedings of the Institution of Civil Engineers*, 7(3), pp. 499-519. Available at: doi.org/10.1680/iicep.1957.2606 [Accessed 25 November 2021].

The University of Illinois at Urbana-Champaign and the Open Content Alliance:

Annual Reports on the Colonies, Nigeria, [1897-98-1938]. Library of Congress Photoduplication Service for] Andronicus Pub. Co., Washington. Available at:
<http://hdl.handle.net/10111/UIUCAFRICANA:Serial/3064634>. [Accessed 20 September 2021].

The Annual Blue Books: Great Britain Colonial Office (GBCO):

GBCO (1914a). Colonial Reports Annual No. 782. Southern Nigeria. *Report for 1912*. His Majesty's Stationary Office, London.

GBCO (1914b). Colonial Reports Annual No. 821. Southern Nigeria. *Report for 1913*. His Majesty's Stationary Office, London.

GBCO (1916). Colonial Reports Annual No. 878. Southern Nigeria. *Report for 1914*. His Majesty's Stationary Office, London.

GBCO (1917). Colonial Reports Annual No. 920. Southern Nigeria. *Report for 1915*. His Majesty's Stationary Office, London.

GBCO (1920). Colonial Reports Annual No. 1030. Southern Nigeria. *Report for 1918*. His Majesty's Stationary Office, London.

GBCO (1921). Colonial Reports Annual No. 1064. Southern Nigeria. *Report for 1919*. His Majesty's Stationary Office, London.

The World Bank (TWB)

TWB (1962a). *Announcement of Nigerian Port Loan on December 10, 1962 (English)*. Bank Press Release; no. 1962-42. Washington, D.C.: World Bank Group. [online] Available at:
<<http://documents.worldbank.org/curated/en/952961586244082137/Announcement-of-Nigerian-Port-Loan-on-December-10-1962>> (Accessed 19 September 2022).

TWB (1962b). *Report No. P - 304, Memorandum & Recommendation of the President: Nigeria - Apapa Wharf Project*. Washington D.C. World Bank Group. [online] Available at:
<<http://documents.worldbank.org/curated/en/128511468098060956/Nigeria-Apapa-Wharf-Project>> (Accessed 19 September 2022).

TWB (1973a). *Announcement of Fifty-Five Million US Dollars Port Loan in Nigeria on July 5, 1973 (English)*. Bank Press Release; no. 1973-49 Washington, D.C.: World Bank Group. [online] Available at:
<<http://documents.worldbank.org/curated/en/099922108112213126/IDU061c24c1f0e49c048f2097f30dd7f559f7a92>> (Accessed 19 September 2022).

TWB (1973b). *Report No. 137a-UNI, Appraisal: Nigeria - Second Lagos Port Project*. Washington, D.C. World Bank Group. [online] Available at:
<<http://documents.worldbank.org/curated/en/140241468097763807/Nigeria-Second-Lagos-Port-Project>> (Accessed 16 September 2022).

TWB (1973c). *Report No. P-1283a-UNI, Memorandum & Recommendation of the President: Nigeria Second Lagos Port Project*. Washington D.C. World Bank Group. [online] Available at:
<<http://documents.worldbank.org/curated/en/330611468290166870/Nigeria-Second-Lagos-Port-Project>> (Accessed 16 September 2022).

TWB (1976). *Report No. 1235-UNI: Nigeria Economic Memorandum*. Western African Region: Official Document of The World Bank.

TWB (1982). *Report No. 4032 Project Performance Audit Report: Nigeria Second Lagos Port Project*. Washington D.C. World Bank Group. [online] Available at: <<http://documents.worldbank.org/curated/en/918161468915257094/Nigeria-Second-Lagos-Port-Project>> (Accessed 16 September 2022).

AU Archives

Talba, I. (1991). *Organization of African Unity; 1991 Abuja Summit: A commemorative hand book*. Available at: <https://archives.au.int/handle/123456789/5932> (Accessed 5 January 2024).

Private Collection of Professor Nnamdi Elleh

Azikiwe, N. (1974). *Dialogue on a New Capital for Nigeria: A Political Analysis*. Zaria, Nigeria: Ahmadu Bello University Press.

Audu, I. S. (1974). Foreword in Azikiwe, N. (1974). *Dialogue on a New Capital for Nigeria: A Political Analysis*. Zaria, Nigeria: Ahmadu Bello University Press.

Federal Republic of Nigeria (1975). *Report of the Committee on the Location of the Federal Capital of Nigeria*. Lagos, Nigeria: Federal Government Report.

Kirk-Greene, A.H.M. (1968). *Lugard and the Amalgamation of Nigeria: A Documentary Record*. London: Frank Cass and Company Limited.

Lugard, F. D. (1919). 'Report on the Amalgamation of Northern and Southern Nigeria, and Administration, 1912-1919' in Kirk-Greene, A.H.M. (1968). *Lugard and the Amalgamation of Nigeria: A Documentary Record*. London: Frank Cass and Company Limited, pp. 49-171.

Interviews

Krauß, Martin. Personal Interview. Conducted by Patricia Theron. 30 June 2023.

Secondary Sources

Abdurrahman, S. A. (1985). *The Housing of Soldiers in Military Barracks: with particular reference to Nigeria*. Doctoral thesis. Heriot-Watt University Edinburgh.

Achebe, C. (2012). *There was a country: a personal history of Biafra*. Penguin Press, New York.

- Acey, C. (2007). Space vs. Race: A Historical Exploration of Spatial Injustice and Unequal Access to Water in Lagos, Nigeria. *Critical Planning*, 14(Summer), pp. 49–70.
- Adepeju-Fashina, D. (2023). *Religious diversity and conflict in Nigeria: Identity formation and economic development*. Doctoral thesis, University of Kansas, United States of America.
- Adetiba, A.S. (2019). *The Tropical Environment and Malaria in Southwestern Nigeria, 1861 - 1960*. Doctoral thesis. Rhodes University, South Africa.
- Adeyemi, K. and Theron, P. (2017). "Interview: The Prospects of the Lagosian Future". In: *DOMUS Future African Cities Supplement*, 1015, pp. 82-84.
- Ado-Kurawa, I. (2008). "The Role of Resource Control and Restructuring in the Political Economy in Nigeria". In: A. A. Ikein, D. S. P. Alamiyeigha and S. Azaiki (Eds.), *Oil, Democracy and the Promise of True Federalism in Nigeria*, University Press America Inc, Maryland, United States of America, pp. 401-416.
- Afinotan, L.A. (2014). Praetorianism the Public Service: Analysis of the Impact and Consequences of Military Rule on Public Administration in Nigeria. *Canadian Social Science*, 10(2), pp.171-180.
- Agbo Jr. and Das,J. (2019). "Stealing the Coast". In: *DOMUS*, 1033, pp. 286–293.
- Akinsanya, A. (1978). Federalism and Military Rule in Nigeria, 1966-75. *Journal of the Indian Law Institute* (0019-5731), 20 (3), pp. 387-405.
- Akinsanya, A. (1994). The Power Structure in Nigeria and the Indigenization of the Economy. *Pakistan Horizon*, 47(2), pp. 63-79.
- Akinsemoyin, K. and Vaughan-Richards, A. (1976). *Building Lagos*. Pengrill, Lagos, Nigeria.
- Alexander, C. (1965). A City is Not a Tree. *Architectural Forum*, vol. 122(1), pp. 58-62.
- Anonymous (2023). Aliyu Mohammed Gusau at 80: A Guarantor of Nigeria. *Defense & Foreign Affairs Strategic Policy*, 51(5), p. 20.
- Anonymous (1930). The Park-Lander Memorial. *African Affairs*, XXIX(CXVII), p. 508
- Asiwaju, A.I., (1995). "Dahomey, Yorubaland, Borgu and Benin in the nineteenth century". In: Ajayi, J.F.A. (Ed.), *General History of Africa Volume 6: Africa in the nineteenth century until the 1880s*. U.S.A: UNESCO, pp. 699-723.
- Ate, Bassey E. (1984). International Security and Issues of Economic Development: Recalling the Nigerian: German Dialogue. *Africa Spectrum*, 19(3), pp. 309–16.
- Atkinson, P. (2016). *Assemblage and différance: an institutional theory and methodology*. Doctoral thesis. Brunel University. London.
- Awolowo, O. (1947). *Path to Nigerian Freedom*. Faber and Faber. London.
- Ayu, I.D. (1984). *Militarism, student resistance and the press in Nigeria, 1970-1979*. Doctoral thesis. University of Leicester.
- Balabkins, N.W. (1980). Indigenisation: The Nigerian Experience. *Africa Insight*, 10(1), pp. 21-26.
- Berger. M.T. (2001). The nation-state and the challenge of global capitalism. *Third World Quarterly*. 22(6), pp. 889–907.
- Bergson, H. (1998). *Creative Evolution*. Dover Publications. New York.

- Bigon, L. (1974). *A history of urban planning in two West African colonial capitals: residential segregation in British Lagos and French Dakar (1850-1930)*. The Edwin Mellon Press, United States of America.
- Bigon, L. and Katz, Y. (2014). *Garden Cities and Colonial Planning: Transnationality and Urban Ideas in Africa and Palestine*. Manchester University Press, United States of America.
- Boahen, A.A. (1992). The states and cultures of the lower Guinean Coast. In: Ogot, B.A. (Ed.), *General History of Africa Volume 5: Africa from the sixteenth to the eighteenth century*. UNESCO, United States of America, pp. 368-398.
- Braudel, F. (1973-1985[1967-1979]). *Civilization and Capitalism, 15th-18th Century*, Volumes I to III. University of California Press. U.S.A.
- Braudel, F. and Wallerstein, I. (2009). History and the Social Sciences: The Longue Durée. *Review* (Fernand Braudel Center), vol 32(2), pp. 171-203.
- Chilaka, E. (2017). 50 Years of Maritime Trade Development in Nigeria, 1960-2010: A Review of the Major Milestones. *Lasu Journal of Transport*, pp. 107-135.
- Chilaka, E. (2019). Impact of the Apapa Traffic Gridlock on Global Maritime Trade and Nigeria's Economy: The Case for Renewal of an Old African Port City. *Journal of Research in National Development*, 17, pp. 120-133.
- Cole, P. (1975). *Modern and traditional elites in politics of Lagos*. Cambridge University Press, Cambridge.
- Coquery-Vidrovitch, C. (2005). *The History of African Cities South of the Sahara: From the Origins to Colonisation*. Markus Wiener Publishers, Princeton.
- Coquery-Vidrovitch, C. (2009). *Africa and the Africans in the nineteenth century: A turbulent history*. M.E. Sharpe Inc., United States of America.
- Crain, W. and Oakley, L. (1995). The Politics of Infrastructure. *Journal of Law and Economics*, 38(1), pp. 1-17.
- Daodu, O.A. (2000). *University Staff Perception of Military Governance and Social Change in Nigeria, 1973-1993*. Doctoral thesis. University of Lagos, Nigeria.
- Darnton, J. (1976). "Nigerians Fear New Revelations in Cement Scandal". In *The New York Times*, 28 June, pp. 6.
- Darnton, J. (1976). "Nigeria's 'Indigenization' Policy Under Fire". In *The New York Times*, 30 October, pp. 32.
- Davidson, B. (1959). *The Lost Cities of Africa*. Little Brown and Company in association with the Atlantic Monthly Press, United States of America.
- de Certeau, M. (1984). *The Practice of Everyday Life*. Berkeley: University of California Press.
- DeLanda, M. (1997). *A Thousand Years of Nonlinear History*. Swerve Editions. New York.
- DeLanda, M. (2006). *A New Philosophy of Society: Assemblage Theory and Social Complexity*. Continuum Books, London.

- DeLanda, M. (2012). *Assemblage Theory*. [Recorded lecture]. European Graduate School Video Lectures. 2011. Available at: <www.youtube.com/watch?v=5HSMTUZ64bY&list=PLPnnu4UmTVaf6_iKlulJnp8eb7r-klilf> (Accessed: 19 July 2021).
- DeLanda, M. (2015). *A Thousand Years of Non-linear History*. [Recorded lecture]. AA School of Architecture. 11 March 1998. Available at: <www.youtube.com/watch?v=u3aE3Z6lIMc&t=32s> (Accessed: 3 August 2021).
- DeLanda, M. (2016). *Assemblage Theory*. Edinburgh University Press, United Kingdom.
- Deleuze, G. (1986). *Foucault*. University of Minnesota Press, Minneapolis.
- Deleuze, G. and Guattari, F. (1986a). *Nomadology: The War Machine*. Semiotext(e). U.S.A.
- Deleuze, G. and Guattari, F. (1986b). *Kafka: Toward a Minor Literature*. University of Minnesota Press, Minneapolis.
- Deleuze, G. and Guattari, F. (1987). *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Masumi, B. Minnesota Press, London.
- Deleuze, G. and Parnet, C. (1987). *Dialogues II*. Columbia University Press. New York.
- Dibie, R.A. (1997). *The military-bureaucracy relationship in Nigeria: A study of public policy making and implementation*. Doctoral thesis. Western Michigan University, United States of America.
- Dikas, S.O. (1992). *The Nigerian Bureaucrats: Socio-Cultural Setting of Administrative Behaviour*. Doctoral thesis. Nova University, Lisbon.
- Durose, C., van Ostaijen, M., van Hulst, M., Escobar, O. and Agger, A. (2022). Working the urban assemblage: A transnational study of transforming practices. *Urban studies* (Edinburgh, Scotland), vol. 59(10), pp. 2129-2146.
- Edmonds, P. (2010). Unpacking Settler Colonialism's Urban Strategies: Indigenous Peoples in Victoria, British Columbia, and the Transition to a Settler-Colonial City. *Urban History Review / Revue d'histoire Urbaine*, 38(2), pp. 4–20.
- Elleh, N. (2017). *Architecture and Politics in Nigeria: The Study of a Late Twentieth-Century Enlightenment-Inspired Modernism at Abuja, 1900-2016*. New York, U.S.A: Routledge.
- Emenyeonu, B.N. (1997). *Military Intervention in Nigerian Politics: What Has the Press Got to Do With It?* Doctoral thesis. University of Leicester, United Kingdom.
- Faleye, O.A. (2017). Environmental Change, Sanitation and Bubonic Plague in Lagos, 1924-31. *International Review of Environmental History*, vol. 3(2), pp. 89-103.
- Fenk, A., Lee, R. and Motylińska, M. (2020). Unlikely Collaborations? Planning Experts from both Sides of the Iron Curtain and the Making of Abuja. In: Frey, M., Kunkel, S. and Kwak, N. (Eds.) (2020). *Comparativ*, 30(1/2), pp. 38-59.
- Foucault, M. (1963). *Naissance de la clinique*. Presses Universitaires de France, Paris.
- Foucault, M. (1966). *Les mots et les choses*. Gallimard, Paris.
- Foucault, M. (1969). *L'archéologie du savoir*. Gallimard, Paris.
- Foucault, M. (1975). *Surveiller et punir: Naissance de la prison*. Gallimard, Paris.

- Fourchard, L. (2011). Lagos, Koolhaas and Partisan Politics in Nigeria. *International Journal of Urban and Regional Research*. 35(1): pp. 40-56.
- Fraser, N. (1989). *Unruly Practices*. University of Minnesota Press, Minneapolis.
- Gandy, M. (2004). Rethinking urban metabolism: Water, space and the modern city. *City*. 8(3), pp. 363-379.
- Gandy, M. (2005). Learning from Lagos. *New Left Review*, 33(May-June), pp. 37-52.
- Gandy, M. (2006). Planning, Anti-planning and the Infrastructure Crisis Facing Metropolitan Lagos. *Urban Studies*, 43(2), pp. 371-396.
- Gandy, Matthew (2007). Cyborg Urbanization: Theorizing Water and Urban Infrastructure: Full Research Report. *ESRC End of Award Report, R000271228*. ESRC, Swindon.
- Godwin, J. and Hopwood, G. (2012). *Sandbank City: Lagos at 150*. Lagos: Prestige.
- Greenberg, C. (1961). *Art and Culture: Critical Essays*. Beacon Press, Boston.
- Grenzebach, K. (1978). The Structure and Development of Greater Lagos: A Documentation in Aerial Photographs. *GeoJournal*. 2(4), pp. 295–309.
- Grosz, E. (1994). *Volatile Bodies: Toward a Corporeal Feminism*. Indiana University Press, U.S.A.
- Harman, G. (2016). Series Editor's Preface. In DeLanda, M. (2016). *Assemblage Theory*. Edinburgh University Press, United Kingdom.
- Heerten, D. and Moses, A. D. (2014). The Nigeria–Biafra war: postcolonial conflict and the question of genocide. *Journal of Genocide Research*, 16(2-3), pp. 169-203.
- Hill, M.B. and Webb, J.E. (1958). The Ecology of Lagos Lagoon II: The Topography and Physical Features of Lagos Harbour and Lagos Lagoon. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*. 241(683), pp. 319-333.
- Hobsbawm, E.J. (1969). *Industry and Empire: From 1750 to the Present Day*. Penguin Books, United Kingdom.
- Hofmeyr, I. (2002). Dreams, Documents and “Fetishes: African Christian Interpretations of ‘The Pilgrim’s Progress’”. *Journal of Religion in Africa*, 32(4), pp. 440–456.
- Ibrahim, J. Loch, C. and Sengupta K., (2022). *How Megaprojects Are Damaging Nigeria and How to Fix It*. Palgrave Macmillan, Cambridge
- Immerwahr, D. (2007). The Politics of Architecture and Urbanism in Postcolonial Lagos, 1960-1986. *Journal of African Cultural Studies*, 19, pp. 165-186.
- Ingold, T. (2013). *Making: Anthropology, Archaeology, Art and Architecture*. Routledge, United Kingdom.
- Joseph, R. A. (1978). Affluence and Underdevelopment: The Nigerian Experience. *The Journal of Modern African Studies*, 16(2), 221–239.
- Kant, R., Satyanarayana, K., Sharma, A. & Katoch, V.M. (2012). Indian Journal of Medical Research enters its centenary year. *Current science* (Bangalore), vol. 103(11), pp. 1257-1258.

- Kaplan, R. (1994). The Coming Anarchy. *World Policy Journal*, 17(2), pp.95-96.
- Karatani, K. (2003). *Architecture and Association* [conference presentation], Bauhaus University, Germany. Available at: <www.db-thueringen.de/servlets/MCRFileNodeServlet/dbt_derivate_00042750/karatani_pdfa.pdf>. (Accessed: 28 September 2023).
- Krauss, R. (1980). Re-Presenting Picasso. *Art in America*, vol. 68(10), pp. 90-96.
- Kilborn, P. (1975). "Nigeria's Glut of Cement Epitomizes Growing Pains of an Undeveloped Nation". In: *The New York Times*, 4 December, pp. 63.
- King, A. (1990). *Urbanism, Colonialism and the World-Economy: Cultural and Spatial Foundations of the World Urban System*. Routledge, London, United Kingdom.
- Kittler, F. (1996). The City Is a Medium. *New Literary History*, vol. 24(4), pp. 717-729.
- Kittler, F. (1999). *Gramophone, Film, Typewriter*. Stanford University Press, California.
- Koolhaas, R. (2001). Lagos: Harvard Project on the City. In: Koolhaas, R., Boeri, S., Kwinter, s., Tazi, N. and Obrist, H. U. (2001), *Mutations*, ACTAR editorial, Barcelona, Spain, pp. 650-720.
- Koolhaas, R. (1994). *Delirious New York: A Retroactive Manifesto for Manhattan*. The Monacelli Press Inc., New York, United States of America.
- Koolhaas, R. and Mau, B. (1998). Generic City. In: S,M,L,XL. (2008). Taschen, Germany, pp. 1238-1267.
- Lapoujade, D. (2000). From Network to Patchwork. In Ockman, J. (Ed.) (2000). *The Pragmatist Imagination: Thinking About "Things in the Making"*. Princeton Architectural Press, New York, pp. 52-61.
- Lecomte, J. (2011). *The Anonymous City. From Modern Standardisation to Generic Models*. Master's thesis, Goldsmiths, University of London, United Kingdom.
- Lecomte, J. (2017). *Projecting Modernity: Infrastructural projects and Global Urbanisation in Lagos (1880-2008)*. Doctoral thesis, University of Manchester, United Kingdom.
- Levi Strauss, C. (1962). *La Pensée Sauvage*. France: Plon.
- Lewis, O. (1977). Nigeria's Third National Development Plan, 1975-1980: An Appraisal of Objective and Policy Frame. *The Developing Economies*, 15(1), pp. 60-79.
- Lugard, Frederick D. (1922). *The Dual Mandate in British Tropical Africa*. Blackwood and Sons, London.
- Lugard, F. (1926). The White Man's Task in Tropical Africa. *Foreign Affairs*, vol. 5(1), pp. 57-68.
- Luhmann, N. (1995). *Social Systems*. Stanford University Press: Stanford, United States of America.
- Mabogunje, A. L. (1965). Urbanization in Nigeria. A Constraint on Economic Development. *Economic Development and Cultural Change*, 13(4), pp. 413-438.
- Mabogunje, A.L. (1978). "Growth Poles and Growth Centres in the Regional Development of Nigeria". In: Kukulinski, A. (Ed.), *Regional Policies in Nigeria, India and Brazil*. Mouton Publishers, The Netherlands, pp. 3-93.

- Manning, P. (1985). "Merchants, Porters, and Canoemen in the Bight of Benin: Links in the West African Trade Network". In Coquery-Vidrovitch, C. and Lovejoy, P.E. (Eds.) (1985). *The Workers of African Trade*. Sage Publications, California, pp. 25-50.
- Marwah, H. (2011). *Investing in Ghosts: Building and Construction in Nigeria's Oil Boom and Bust c. 1960-2000*. Doctoral thesis. University of Oxford.
- Massumi, B. (1987). Translator's Foreword: Pleasures of Philosophy. In: Deleuze, G. and Guattari, F. (1987). *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Masumi, B. Minnesota Press, London.
- McLuhan M. (1994[1964]). *Understanding Media: The Extensions of Man*. New York: McGraw-Hill.
- Misawa, B. (1992). *The consequences of military growth, military expenditures, and military political dominance on Nigerian foreign policy, 1960-1990*. Doctoral thesis. University of Pittsburgh, United States of America.
- Merkel, P.H. (Ed.) (1982). *West German Foreign Policy: Dilemmas and Directions*. The Chicago Council of Foreign Relations, Chicago, Illinois.
- Merriman, J. and Winter, J. (2006). Colonies. In: *Europe 1789 to 1914: Encyclopedia of the Age of Industry and Empire*. 5th ed. Thomas Gale, United States of America, pp. 503-510.
- Müller, M. (2015). Assemblages and Actor-networks: Rethinking Socio-material Power, Politics and Space. *Geography compass*, vol. 9(1), pp. 27-41.
- Müller, M. and Schurr, C. (2016), Assemblage thinking and actor-network theory: conjunctions, disjunctions, cross-fertilisations. *Transactions of the Institute of British Geographers*, 41, pp. 217-229.
- Ndlovu-Gatsheni, S. and Cupers, K. (2023). Architectural Expertise and the Coloniality of Knowledge. *ABE Journal*, 21(2023).
- Neto, F. L. (2019). Aesthetic Delirious Urbanism – Rem Koolhaas. *IOP Conference Series: Materials Science and Engineering*, vol. 603(3).
- Nolte, A. (2016). Political infrastructure and the Politics of Infrastructure: The Jerusalem Light Rail. *City: Analysis of Urban Change, Theory, Action*, 20(3), pp. 441–454.
- Nwankwo, G.O. (1980). The Bureaucratic Elite in Nigeria. *Philippine Journal of Public Administration*, XXIV(3), pp. 295-318.
- Ockman, J. (1998). Form without Utopia: Contextualizing Colin Rowe. *Journal of the Society of Architectural Historians*, vol. 57(4), pp. 448-456.
- Ockman, J. (Ed.) (2000). *The Pragmatist Imagination: Thinking About "Things in the Making"*. Princeton Architectural Press, New York.
- Odusanwo, A. O. (1975). Efficient Infrastructures as Catalysts of Economic Development. *The Daily Times*, 1 October, p. 7.
- Ogbuagu, C.S.A. (1983). The Nigerian Indigenization Policy: Nationalism or Pragmatism? *African Affairs*, 82(327), pp. 241–66.
- Olasupo, O., Oladeji, I.O. and Ijeoma, E.O.C. (2017). Nationalism and Nationalist Agitation in Africa: The Nigerian Trajectory. *Rev Black Polit Econ* 44, pp. 261–283.

- Olukoju, A. (1992a). The Development of the Port of Lagos, c. 1892–1946. *The Journal of Transport History*, 13(1), pp. 59-78.
- Olukoju, A. (1992b). Elder Dempster and the Shipping Trade of Nigeria during the First World War. *The Journal of African History*, 33(2), pp. 255-271.
- Olukoju, A. (1993). *Maritime Trade in Lagos, 1914-1950: Its Nature and Impact*. Doctoral thesis. University of Ibadan, Nigeria.
- Olukoju, A. (1994). The Making of an “Expensive Port”: Shipping Lines, Government and Port Tariffs in Lagos, 1917-1949. *International Journal of Maritime History*, VI(1), pp. 141-159.
- Olukoju, A. (2003). *Infrastructure Development and Urban Facilities in Lagos*. IFRA, Ibadan, Nigeria.
- Olukoju, A. (2020). African seaports and development in historical perspective. *The International Journal of Maritime History*, 32(1), pp. 185-200.
- Olumba, Ezenwa E. (2023). Anchored in history: Understanding the persistence of eco-violence in Nigeria’s middle belt through collective memory. *Genealogy*, 7(3):45, pp.1-18.
- Onyebadi, U. (2018). Political Messages in African Music: Assessing Fela Anikulapo-Kuti, Lucky Dube and Alpha Blondy. *Humanities*, 7 (4), pp. 1-19.
- Onyejekwe, L.O. (1978). *The Role of the Military in Economic and Social Development: An Analysis of Regime Performance in Nigeria*. Doctoral thesis. Ohio State University, United States of America.
- Osoba, S.O. (1996). Corruption in Nigeria: Historical Perspectives. *Review of African Political Economy*, vol. 23, no. 69, pp. 371–86.
- Peil, M. (1991). *Lagos: the city is the people*. Belhaven Press, London, United Kingdom.
- Perham, M. (1937). *Native Administration in Nigeria*. Oxford University Press, London.
- Perham, M. (1968). *The Diaries of Lord Lugard, Volume 2*. Faber and Faber, London.
- Peters, L. (2016). *Cliché and Organization: Thinking with Deleuze and Film*. Cambridge Scholars Publishing, United Kingdom.
- Porter, T. (2004). *Archispeak*. Routledge, United Kingdom.
- Rajchman, J. (2000). General Introduction. In: Ockman, J. (Ed.) (2000). *The Pragmatist Imagination: Thinking About “Things in the Making”*. Princeton Architectural Press, New York, pp. 6-15.
- Richards, D.C. (2001). *Military Governments and Economic Development: A Case Study of Nigeria from 1960-2000*. Doctoral thesis. Sheffield Hallam University, United Kingdom.
- Rowe and Koetter (1978). *Collage City*. MIT Press, U.S.A.
- Schmidt, H. (1982). Europe and Africa – Partners with Equal Rights. In: Hanrieder, W.F. (Ed.) (1982) *Helmut Schmidt: Perspectives on Politics*. Boulder, Colorado: Westview Press, pp. 83-88.
- Schumacher, P. (2011). *The Autopoiesis of Architecture, Volume 1: A New Framework for Architecture*. John Wiley & Sons Ltd, London, United Kingdom.

- Segun, E.O. and Victor, O. (2019). Indigenised popular songs for oppositional political communication: Fela Kuti and Miriam Makeba in perspectives. *African Renaissance*, 16 (1), pp. 231-251.
- Shusterman, R. (2000). On Pragmatist Aesthetics. In: Ockman, J. (Ed.) (2000). *The Pragmatist Imagination: Thinking About "Things in the Making"*. Princeton Architectural Press, New York, pp. 116-121.
- Simone, A. (2000). The Place of African Cities. In: Ockman, J. (Ed.) (2000). *The Pragmatist Imagination: Thinking About "Things in the Making"*. Princeton Architectural Press, New York, pp. 234-243.
- Simone, A. (2004). People as Infrastructure. *Public Culture*, vol.16 (3), pp. 407–429.
- Simone, A. (2014). Relational Infrastructures in Postcolonial Urban Worlds. In *Infrastructural Lives: Urban Infrastructure in Context*, edited by Graham, S., and McFarlane, C. Routledge, New York.
- Simpson, M., and Hugill, D. W. (2022). The settler colonial city in three movements. *Progress in Human Geography*, 46(6), pp. 1311-1330.
- Sithole, T. (2012). Fela Kuti and the oppositional lyrical power. *Muziki: Journal of Music Research in Africa*, 9 (1), p. 1.
- Sloterdijk, P. (2014). *Spheres, volume 2: Globes, Macrospherology*, trans. Hoban, W. Semiotext(e), Pasadena.
- Sloterdijk, P., and Engels-Schwarzpaul, A. C. (2011). Architecture As an Art of Immersion (2006). *Interstices: Journal of Architecture and Related Arts*, 12(12), pp. 105-110.
- Stanek, L. (2020). *Architecture in Global Socialism: Eastern Europe, West Africa, and the Middle East in the Cold War*, Princeton University Press, Princeton, United States of America.
- Stier, B. and Krauß, M. (2005). *Drei Wurzeln - ein Unternehmen. 125 Jahre Bilfinger Berger AG*. Institut für Unternehmensgeschichte, Heidelberg, Germany.
- Titlestad, M.F. (2021). *Shipwreck Narratives: Out of our Depth*, Palgrave Macmillan, Switzerland.
- Uche, C.U. (2012). British Government, British Businesses, and the Indigenization Exercise in Post-Independence Nigeria. *Business History Review*, 86(4), pp. 745-771.
- Udo, R.K. (1970). *Geographical Regions of Nigeria*. University of California Press, Berkeley.
- Ugorji, Basil. (2022). *Nigeria-Biafra war and the politics of oblivion: Implications of revealing the hidden narratives through transformative learning*. Doctoral thesis, Nova Southeastern University, United States of America.
- Virilio, P. (2006). *Speed and Politics*. Semiotext(e), Los Angeles.
- von Schnitzler, A. (2008). Citizenship Prepaid: Water, Calculability, and Techno-Politics in South Africa. *Journal of Southern African Studies*, 34(4), pp. 899-917.
- Weizman, E. (2017). *Forensic Architecture: Violence at the Threshold of Detectability*. Zone Books, New York.

Winthrop-Young, G. and Wutz, M. (1999). Translators' introduction. In Kittler, F. (1999). *Gramophone, Film, Typewriter*. Stanford University Press, California.

Film

Lagos / Koolhaas (2003). Directed by Bregtje van der Haak. 55 mins. First Run/Icarus Films. [Video: DVD]

Lagos Wide and Close: An Interactive Journey into an Exploding City (2004). Directed by Bregtje van der Haak. 120 mins. Submarine Media. [Video: DVD]

Websites

Anonymous (2022). Tema Port Expansion: delivering infrastructure and opportunities. Civil Engineering: Magazine of the South African Institution of Civil Engineering, 30 (4), pp. 8-12.

Boughton, J. M. (2000). The IMF and the Silent Revolution: Global finance and development in the 1980s. *International Monetary Fund*. [online]. Available at: <www.imf.org/external/pubs/ft/silent/index.htm> (Accessed 10 April 2023).

Centres for Disease Control and Prevention (2023). *Breastfeeding*. Available at: <www.cdc.gov/breastfeeding/faq/index.htm> (Accessed: 08 September 2023).

Eze, V. C. and Fasquelle, E. (2023). 'Élection présidentielle au Nigéria: les questions sécuritaires au cœur du scrutin'. *The Conversation*. Available at: <theconversation.com/election-presidentielle-au-nigeria-les-questions-securitaires-au-coeur-du-scrutin-197825> (Accessed: 20 February 2023).

Ilo, I.C. (2020). 'Remembering my father's Biafra: The politics of erasing history', *Aljazeera*. Available at: <www.aljazeera.com/opinions/2020/5/30/remembering-my-fathers-biafra-the-politics-of-erasing-history-2> (Accessed: 08 October 2023).

Julius Berger (2023). Available at: <www.julius-berger.com/about-julius-berger/profile-and-history> (Accessed 19 October 2023).

Nairaland Forum (2023). Available at: <www.nairaland.com/> (Accessed: 20 January 2023).

Reade, O (2013). 'Controversy and the National Arts Theatre in Lagos', *Africa is a Country*. Available at: <https://africasacountry.com/2013/08/controversy-surrounding-the-national-theatre-in-lagos> (Accessed 12 September 2024).

Wade, A. (2017). March 1878: Cleopatra's Needle obelisk comes to London. *The Engineer*. Available at: <www.theengineer.co.uk/content/news/march-1878-cleopatra-s-needle-obelisk-comes-to-london/> (Accessed: 28 October 2023).

Wreck Site (2023). Available at: <www.wrecksite.eu> (Accessed: 28 October 2023).