

MICHAEL FALSER (ED.)

ARCHITECTURE IN OCEANIA  
(1840-1970)

PARA-COLONIAL INFLUENCES  
COLONIAL TRANSACTIONS  
POSTCOLONIAL LEGACIES





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Para-Colonial Influences – Colonial Transactions – Postcolonial Legacies



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Colonial Transactions  
Postcolonial Legacies

Edited by Michael Falser

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# Introduction

## Para-Colonial Influences – Colonial Transactions – Postcolonial Legacies

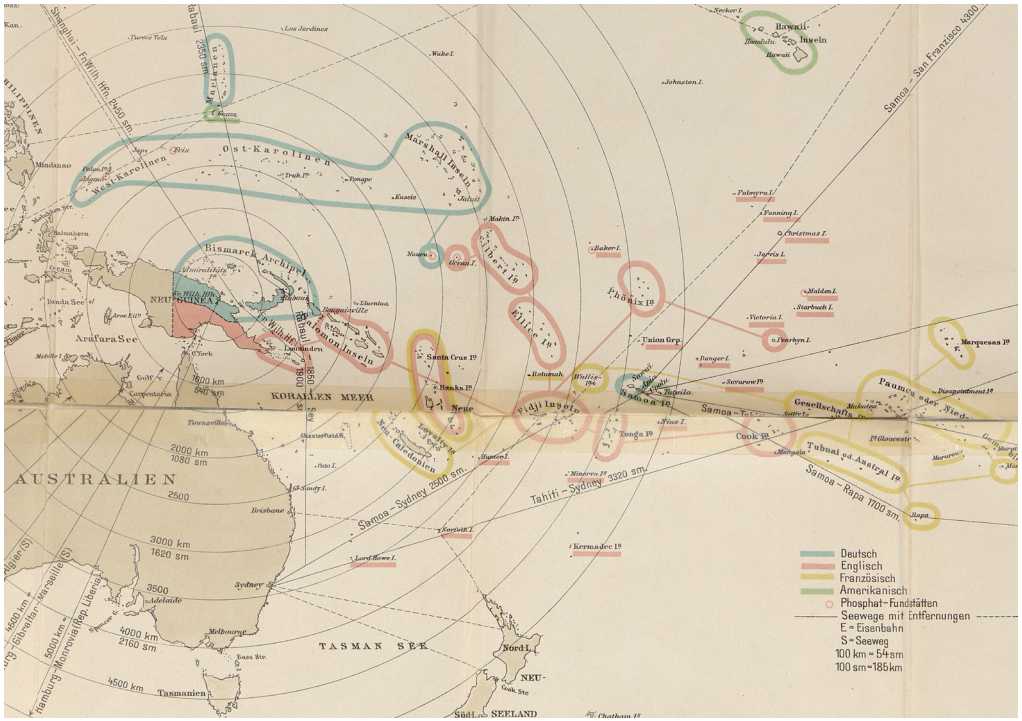
### Architecture in Oceania (1840–1970)

*Michael Falser*

#### 1. Preliminary observations

The beginning of global contact with the South Pacific is often automatically associated with the first explorative travels of James Cook in the 18th century. However, it was the late 19th century that culminated in a complex process of multinational developments, backwards and forwards, battles even. Imperialist interests already dated back many centuries, but in realising the trading potentials in this part of the world, the major colonising powers – such as Great Britain, France, USA, the German Reich, and others – occupied and took ‘possession’ of island countries in the Pacific during the latter part of the 19th century. This development reached its first peak in about 1900 and culminated in the confrontations of the First World War. Few other maps may have highlighted this complex political contact zone between the British, French, German, and American imperial powers better than the one being published in Admiral Gaprow’s book *Die deutsche Flagge im Stillen Ozean (The German Flag in the Silent Ocean)* of 1916 (Fig. 0.1). It is approximately this depicted South Pacific region – from the Mariana, Caroline, and Marshall Islands in the northern section, over German New Guinea all the way south to German Samoa, next to New Caledonia and the Fiji Islands to the west and the Cook Islands and Tonga to the east – which will stand in the centre of this edited volume (compare with illustration/map 7.1. in the chapter by Falser in this book).

However, much earlier trading firms and missionaries (to name the most important actors in the field) had already caused a first wave of *pre-colonial* impact before, in, and after 1800. By introducing, testing,



**Fig. 0.1:** A map of the colonial arena over the South Pacific before the First World War, from Graprow's 1916 publication *Die deutsche Flagge im Stillen Ozean* (Blue: German; Red: British; Yellow: French; Green: American)

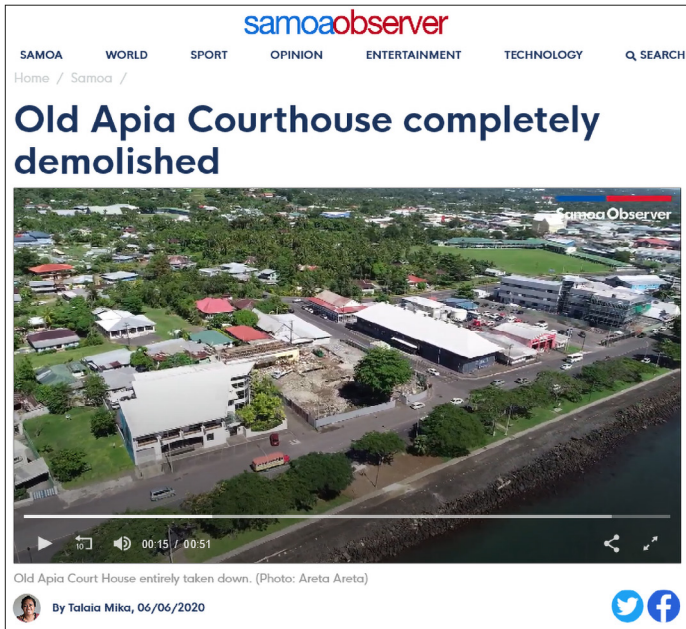
implementing, and improving foreign – often called *proto-colonial* – concepts from trading to civilising mission, their systems of cultural influence, economic exploitation, and social control gradually turned into *para-colonial* ('as-if'-colonial) constellations that ran – roughly from the 1840/1870s onwards to the high colonial benchmark in about 1900 – parallel to, competed with, but most often benefited from or even fostered direct and made-official colonial rule, which was then made official with a series of (often uneven) contracts, declarations, and flag hoists. This dynamic process of constant negotiations and change of power and foreign domination continued well into the first half of the 20th century. In the context and aftermath of the First World War, countries neighbouring the Pacific from the west, east, and south – like the USA and Japan to Australia and New Zealand – took over Mandated Territories from collapsing German colonies in the region, but at the same time acted themselves as *neo-colonial* players in the concerned island countries: those established economic

and political, cultural and institutional networks and power structures continued even beyond the Second World War well into the *post-colonial* era from the 1950s to the 1970s when most of the concerned countries would finally reach their national sovereignty. It is this overall time span from the 1840s to the 1970s that will be discussed in this book.

Today, the impact of these pre- and para-colonial, colonial, and post-colonial experiences is still widely felt in a region where now independent nation-states from Palau and the Federated States of Micronesia to Papua New Guinea and (West) Samoa are still struggling with their own cultural identity construction. Parallel to these contemporary culture-political uncertainties under fully globalised dynamics and overwhelming foreign (this time predominantly Chinese) investments in national infrastructure systems in the South Pacific, also the longest-lasting legacies of past troublesome eras are re-negotiated, sometimes appreciated and preserved, but most often demolished in fast speed: architecture.

Taking the recent discussions and the final demolition of the old German colonial Courthouse in Apia/Samoa as an example (Fig. 0.2), we can see how much different actors and cultures have interacted and how historical building from contested pasts continue to be in the centre of contemporary heritage debates: this building, designed by a German architect in 1902 but built with material from the US and other overseas places, first represented German colonial administrations, then New Zealand's military administration, and finally housed the Samoan Prime Minister's office. Unfortunately, the Courthouse was dismantled in 2020 despite many attempts to save it (architectural historians, local preservationists, and grass-roots activists often refer to it as an act of 'political vandalism'). If these still virulent heritage debates over past-colonial buildings do not stand in the centre of this edited volume as such (for the German context most recently, cf. Falser et al. 2024, see below), they nevertheless show how relevant the work towards a deeper understanding and knowledge about the historical construction processes of those ambivalent architectural structures is.

In this context, many questions emerge that will be dealt with in this book: How, then have the different changes of powers from outside or the inside – from incoming trading firms and missionaries to whole imperialist powers with their established colonies on the one hand, to the colonised island populations on the other – impacted on architecture? How have the various ruling powers in the South Pacific conceived and appropriated pre-colonial local architectural traditions (or not) in their



**Fig. 0.2:** The demolished old German colonial Courthouse in Apia (Samoa) when the new courthouse under Chinese investment was built elsewhere (screenshot from *Samoa Observer*, 6 June 2020)

knowledge systems? How did they develop and implement new forms of architecture in the Pacific Island nations? And how did gradual political independence in the region affect architectural production? And how can we, as the subtitle of this publication has it, finally, ‘read’ these complex, multi-layered, and intertwined architectural histories between para-colonial influences, colonial transactions, and post-colonial legacies? And how can this present publication contribute to an existing body of architectural research and, ideally, fill some open gaps with a new and fresh conceptual approach?

## 2. Architectural histories of the South Pacific in a wider colonial (particularly German) context

The knowledge about the architectural history in the colonial-time South Pacific is undoubtedly emerging since the last three decades, but connections with pre-colonial settings, para-colonial dynamics, cross-colonial

connections, and the post-colonial afterlife of this built legacy are often difficult to identify as such. Even if a comprehensive summary of the state of research in the whole field of architectural history over a vast region called South Pacific – one that is larger than the whole of Europe – is beyond the scope of this introduction, some corner posts around this emerging field of research are interesting to mention and recognise here.

Generally, the region is a latecomer in the global canon of architectural history – one that was since its beginnings as an academic discipline a Eurocentric one: Banister Fletcher’s famous *A History of Architecture on the Comparative Method* (first published in 1896) only covered ‘Oceania’ in its extended 19th and 20th editions of 1987 and 1996 (Taylor 1996), and Kenneth Frampton’s *World Architecture (1900–2000)* stepped in here in its 10th volume of 1999 (Taylor and Kim 1999). Studies on colonial architectural histories, structured along imperial empires across the globe, eventually included the South Pacific area, such as *Architecture and Urbanism in the British Empire* from North America to New Zealand (Bremner 2016), or *Imperial Islands. Arts, Architecture, and Visual Experiences in the US Insular Empire after 1898* with studies from Puerto Rico to Guam and the Marshall Islands (Hartman 2022) into American Samoa (Kruse 2018). Selected exhibition catalogues or monographs focused more into the region, such as for French Polynesia in *Les bâtisseurs: architecture à Nouméa de 1853 à 1940* (1996) or *British Colonial Space in the New Hebrides* (Rodman 2001). The publication *Architecture in the South Pacific*, edited by Jennifer Taylor and James Conner in 2014, got more site-specific and concerned with the colonial histories of *The Ocean of Islands* (Taylor and Conner 2014): its ‘study area’ covered a rough rectangle from the Salomon Islands, Vanuatu, and New Caledonia in the west, the islands of Fiji, Wallis and Futuna, Tonga and Samoa resp. American Samoa in the central section all the way to the Cook Islands and French Polynesia, but cut off the complex overlapping colonial political networks that de facto extended far north until and even beyond the equator. With a view on structural analyses of architectural production, most recent conference proceedings, such as *Architectural Encounters in Asia Pacific* (two of the editors, namely Amanda Achmadi and Paul Walker, are also contributing to the present publication) touch upon the present topic and its concerned time span, however with a much larger intercontinental contact zone and with a more specific theme of *Built Traces of Intercolonial Trade, Industry and Labour, 1800s–1950s* (Achmadi et al. 2024). As regards specialised forums and their affiliated journals, thematic panels and themed volumes over

the last years have addressed aspects of the basis conceptual, thematic, and geographical agenda of this publication. Most importantly, SAHANZ (Society of Architectural Historians, Australia and New Zealand) is a particularly rich repertoire of expertise of colonial architecture, as it has tackled, in its journal *Fabrications*, special issues such as ‘Networks and Flows’ (26:2) and ‘In and Across the Pacific’ (26:3), both in 2016.

The attentive reader of the table of contents will instantly recognise a special focus of the present edited volume that is constructed around the German para- and high colonial presence in Oceania. While this focus will be made clear from the larger research project and academic affiliation of the German-speaking editor of this book (see below), it also reacts to the fact that this topic was until now rarely touched upon in academia. In other words, German colonial architecture in Oceania can be identified as one of the largest desiderata in a critical architectural history over the region. This finding needs special attention in a short *tour d’horizon* of available research literature.

While the general impact of the *Deutsche Südsee* (the so-called ‘German South Seas’) was conceptualised within the larger global impact of German colonialism including Africa and Tsingtau/China, however without deeper architectural studies (for example, Moses and Kennedy 1977; Knoll and Gann 1987; Knoll and Hiery 2010; Naranch and Eley 2014), the core zone of the Southern Pacific was tackled with a view on the dynamics of the indigenous-colonial contact zone (cf. Hemptenstall 1978), of inter-colonial conflicts, competition, and collaboration between the German Reich and the other imperial powers (for Great Britain: Hiery and MacKenzie 1997; Japan: Peattie 1988; in general: Mückler et al. 2009, Mückler 2012) and the ongoing waves of foreign influences (cf. Fischer 2002; Lal and Fortune 2002).<sup>1</sup>

Hermann Hiery’s monograph *Das Deutsche Reich in der Südsee (1900–1921)* (Hiery 1995a) and his edited handbook *Die deutsche Südsee 1884–1914* (Hiery 2001) are profound historical explorations that provide only a few, but nevertheless relevant excursions into infrastructural, urban, and architectural plannings from Saipan/Mariana Islands and Rabaul/German New Guinea to Apia/German Samoa. His edited multi-volume series *Quellen und Forschungen zur Südsee* (Sources and Studies about the South Seas) touch upon further architectural insights, such as on *Public Health and Colonialism* with hospital buildings in German New Guinea (Davies 2002). Hiery’s to-date last monography *Fa’a Siamani. Germany in Micronesia, New Guinea and Samoa 1884–1914* (Hiery 2020) stands in this tradition. Few discussions about the architecture from pre-colonial

trading posts, para-colonial settings between ethnographic explorations (Buschmann 2009; Mückler 2009), commercial networks, settler communities (Eckstein and Hurley 2020) to direct colonial administration structures and gendered living spaces (Loosen 2014) are also found in further studies about the Mariana Islands (Spennemann 1999), the Marshall Islands Jaluit Society administration (Treue 1976), the *Colonial Rule in the Caroline and Marshall Islands* (Hezel 1995) or in photographic sources on the Marshall Islands and Nauru (Mückler 2016). Architectural photographs about the ‘German South Seas’ were also made available in *Bilder aus der deutschen Südsee. Fotografien 1884–1914* (Hiery 2005), before the extensive, but little contextualised collection of historic postcards in *Deutsche Kolonialarchitektur in China und der Südsee* provided rich visual material of German colonial architecture in the vast region (Hofmann 2016). Arguably, the conference at Heidelberg University in 2011 and its publication *Kulturerbe und Denkmalpflege transkulturell. Grenzgänge zwischen Theorie und Praxis* (Cultural Heritage and Historic Preservation. Explorations between Theory and Practice) of 2013 were among the first endeavours to discuss German colonial architecture in a comparative approach, with a panel that compared heritage configurations in today’s Qingdao/China (previously German *Tsingtau*), Namibia (previously *Deutsch Südwest-Afrika*) and Samoa (Falser and Juneja 2013).

From this short summary about the state of recent research, the desideratum can be derived that historical research on German colonial architecture in general and in the German South Seas with its particular inter-colonial environments is in need today. As a reaction to this observation, a research project was initiated in 2020 at the Technical University of Munich (TU Munich) in Germany: this present edited volume is one result of this project, the South Seas connections of which will be explained in the following.

### **3. Tackling the German colonial period: From a global architectural history to a global heritage inventory, and the position of the German South Seas**

The research project *German Colonial Architecture as a Global Project around 1900 and as a Transcultural Heritage Today* has been funded since 2020 by the German Research Foundation (Deutsche Forschungsgemeinschaft – DFG) and based at the Chair of Theory and History of Architecture, Art and Design (Department of Engineering and Design) of the TU Munich. Within its research design, Module 1 intended,



**Fig. 0.3:** Cover from the themed volume about ‘Global Spaces of German Colonialism. Terms and Methods – Case-Studies – Disciplinary Cross-Connections’ in the periodical *Kunstchronik*, issue 7 of July 2021. The cover featured the abstraction of an original artwork by Samoan artist Michel Tuffery, which quoted the form of a traditional Samoan comb in combination with two architectural heritages in the contact zone: the famous Brandenburg Gate in Berlin (above) and a traditional *fale* gathering house in Samoa (below)

for the first time, to conceptualise German-colonial architecture from a historical perspective in its structural globality across all German colonies on the three continents of Africa, Asia, and Oceania. In this vein, the publication *Globale Räume des Deutschen Kolonialismus. Begriffe und Methoden – Case-Studies – disziplinäre Querverbindungen* (Global Spaces of German Colonialism. Terms and Methods – Case-Studies – Disciplinary Cross-Connections) formulated a first conceptual and interdisciplinary approach as a themed volume in the German journal *Kunstchronik* in July 2021: with inter-connected chapters on curatorial practices, colonial language politics, provenience studies, and architectural history (Falser

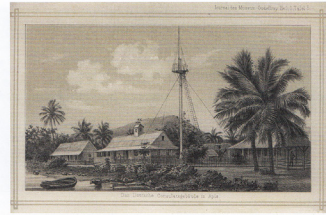
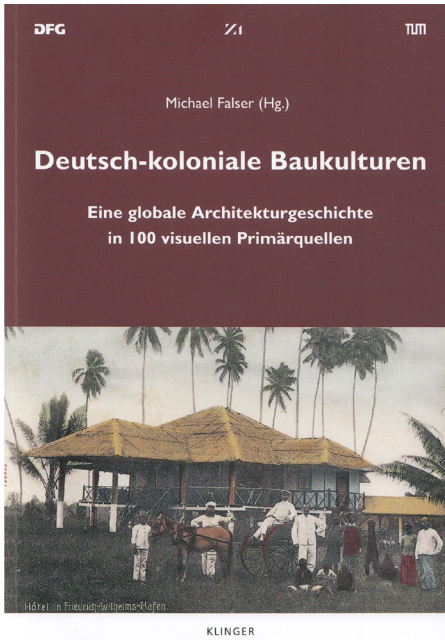


Abb. 1a und b: Oben: „Das Deutsche Consulatgebäude in Apia“ aus dem ersten Heft des *Journal des Museum Godeffroy* von 1873; unten: eine Fotografie des „Head Office“ der Deutschen Handels- und Plantagen-Gesellschaft der Südsee-Inseln zu Hamburg, publiziert in der *Cyclopaedia of Samoa* von 1907 (*JOURNAL DES MUSEUM GODEFFROY* 1873: Heft 1, Tafel 5; *CYCLOPEDIA OF SAMOA* 1907, S. 79)

**Fig. 0.4:** (a) Cover of the publication *German Colonial Building Cultures* with a historic postcard entitled ‘Hôtel in Friedrich-Wilhelmshafen’ (*Deutsch-Neuguinea*); (b) book page with two illustrations of ‘The German Consulate in Apia’ (German Samoa) as published in *Journal des Museum Godeffroy* of 1873 (above); and ‘Head Office of the Deutsche Handels- und Plantagen-Gesellschaft, Apia’, published in *Cyclopaedia of Samoa* of 1907 (Falser 2023a, cover, 77)

and Tauber 2021), Oceania was tackled with references to German New Guinea and Samoa (Fig. 0.3).

In 2023 the exhibition at the Zentralinstitut für Kunstgeschichte (Central Institute for Art History) in Munich<sup>2</sup> and catalogue *Deutsch-koloniale Baukulturen. Eine globale Architekturgeschichte in 100 visuellen Primärquellen* (German Colonial Building Cultures. A Global Architectural History in 100 Visual Primary Sources) brought some 60 international authors together to map out German colonial print sources with their written and visual references to architectural production (Falser 2023a, Fig. 0.4a-b). Some 30 four-page case studies also covered the colonial South Pacific, ranging from the Apia observatory (by Clemens Finkelstein, compare his chapter in this book), trading firm architectures in *Deutsch-Neuguinea* and Samoa, archaeological and ethnographic studies in Micronesia (compare the chapter by Robin Skinner in this book), hybrid-vernacular constructions on the German Salomon Islands,



**Fig. 0.5:** (a) Cover of the publication *Monuments and Sites De-Colonial! Approaches to the Built Heritage of the German Colonial Era* (Falser et al. 2024) with a photograph of the German administration/police (*boma*) building in Bagamoyo (Tanzania) (previously German East-Africa, photo Michael Falser 2023); (b) above: sample page from the introduction with photographs of the remains of the former telegraph station ensemble on Yap (Federated States of Micronesia) (previously Jap/German West Carolines, photo Michael Falser 2024); below: remains of the abandoned and partly sand-covered conveyor rail within the former phosphate mining ensemble on today's Republic of Nauru (previously Nauru/German Marshall Islands, photo Michael Falser 2024)

phosphate mining on Nauru and the Marshall Islands (compare the chapter by Jasper Ludewig in this book), all the way to commercial, vernacular, and ethnographic architecture in the German South Seas and explorations into PR-, biographical, and popular media, or gendered, living, visual, exhibition, and missionary cultures (compare the chapters by Hermann Mückler and Paul Steffen in this book).

Module 2 of the research project focused, from a present-day perspective, on the existing building remains of the German-colonial era and their gradual transformation processes, during the subsequent political regimes over 100 years (1920–2020), over three different continents, and in a reciprocal relation to mainland Germany. In this context, the international conference *Monuments and Sites de-colonial! Methods and Strategies of Dealing with the Architectural Heritage of the German Colonial*



**Fig. 0.6:** (a) Site visit by the writing author of the former administration building ('Dienstgebäude') of the German colonial agricultural surveyor ('landwirtschaftlicher Sachverständiger') in Apia (Samoa); (b) Archaeological remains of the former German colonial bridge foundation ram piles along to the so-called 'Boluminski Highway' on former Neu-Mecklenburg Island (German New Guinea) (today New Ireland/Papua New Guinea) (all photos: Michael Falser 2024)

*Era* (TU Munich, 3–4 November 2023) was held in cooperation with ICOMOS Germany<sup>3</sup> – with the conference proceedings being published in 2024 (Falser et al. 2024) (Fig. 0.5a-b). Finally, the two-volume monograph *Deutsche Kolonialarchitektur – Eine visuelle Spurensuche auf drei Kontinenten* (German Colonial Architecture – A Visual Survey on Three Continents) in the form of a critically annotated photographic inventory, on the basis of some 30,000 photographs being taken during three years of field studies, including the former German South Seas, is currently a work in progress by the writing author in the time of drafting this introduction (Falser forthcoming) (Fig. 0.6a-b).

#### From an international conference to the present edited volume – *Architecture of Oceania*

From the above-drafted *tour d’horizon* it became clear that the knowledge about the architectural history in the colonial-time South Pacific is undoubtedly emerging. However, the concrete connections between pre-colonial settings, para-colonial dynamics, cross-colonial connections, and the post-colonial afterlife of this built legacy are often still missing.

As a response to this observation and emerging from the concerned research project with its two focal points – architectural history on the one side, and architectural heritage on the other – the international conference *Para-colonial – Colonial – Post-colonial: Influences and Transactions in the Architecture of Oceania* was initiated by the writing editor of this book.<sup>4</sup> Its meeting was carried out – in times of travel restrictions due to the global COVID-19 pandemic – as a hybrid online event in cooperation with Unitec Institute of Technology (Auckland, New Zealand) from 29 June to 1 July 2022. Contributors to the conference were asked to link their concrete architectural case studies of buildings, ensembles, and urbanist projects with reflections on the influences of and transactions between locals and foreigners, the colonisers and the colonised, and their changing allegiances, even across changing political powers. With only a selection of the original papers now chosen (the original heritage aspect was abandoned) and complemented with additional contributions, the present edited volume gathers altogether ten chapters under the following conceptional agenda in its structural, thematic, and geographical/temporal framework and affiliated questions.

## The structural framework: Para-colonial, colonial, post-colonial

In the first part of this publication, the focus lies on the transition process from *pre-colonial* (prior to the direct colonial impact) and *proto-colonial* settings (referring to first in time, first formed, beginning, giving rise, pre-defining) to *para-colonial* architectural settings – this needs further explications.

Originally, the prefix ‘para-’ comes from classical Greek and means ‘next to’, ‘close to’, ‘side by side’, ‘in close vicinity’, ‘recurring/according to’, or ‘sidelining’ (Pape 1954, 467–471). As a prefix to ‘-colonial’, the neologism of the ‘para-colonial’ has spatial, structural, directional, and temporal connotations that are relevant here: to place (beside, alongside, or aside from the official colonial regime on the spot, in the same or partly overlapping colonial sphere of influence), to structure (influence without formal colonial control – an alternative or being similar to/resembling with, but not yet official or not fully qualified for, affiliated, or associated with an official colonial set-up), to direction (developing in the direction of, but possibly also an alternative or even a concurring momentum) and to time (during or parallel to the era of official colonial regimes). As regards their logistical and institutional, social and moral, technical and technological structural characteristics authors were asked to investigate constellations of a) a *colonialism avant la lettre*, by predefining, introducing, and even helping to implement structural (architectural) forms of foreign control and dominance, but also through indigenous mediation, adaptation, or even mimicking of colonial forms of architecture, or of b) being operational parallel to and often already profiting early onwards from the first official colonial treaties and alliances with local elites. In this context, case studies will investigate the contact zones of missionary spaces (Cook Islands/London Missionary Society or the Steyl Mission in German New Guinea), of immigrating and local elites (Tonga Islands), of ethnographic studies about indigenous architectural forms along Western taxonomies (including Yap, Palau, and Samoa) and of early trade firm networks (Marshall Islands, Nauru, and German New Guinea).<sup>5</sup>

The second part focuses on the *colonial* structures in relation to architectural processes. Here, the authors were asked to address – subsequent to military conquest and/or imposed ‘unequal’ contracts with local societies – the era of imperial regimes, with their colonies and protectorates in concrete territorial borders and a progressively elaborated set of policies and coercive structures of direct control, monopolising political power,

the systematic exploitation of people and their natural and cultural resources, and with it, establishing permanent architectural, urbanist, and infrastructural built environments. In this book with its geographical focus, these colonial constellations ‘took place’ in two sequences: taking the German colonial impact with its *Schutzgebiete* (protectorates) over the South Pacific as an example, the first started roughly from the 1880s (for *Deutsch-Neuguinea*), until 1900 (for German Samoa) and ended abruptly with the First World War. The second phase continued in the interwar period and often even beyond the Second World War, with the Japanese, British, French, and US-American imperial powers continuing their presence, while the neo-colonial regimes of New Zealand and Australia came into the game with United Nations (UN)-mandates over New Guinea and Samoa.

The reason for the original conference organiser and editor of the present book to focus on the German colonial impact over the Pacific – including its cross-colonial connections – was basically twofold: first historically, as Germany’s impact was, in comparison to other European powers like Great Britain or France, rather late (from the 1880s onwards) and short (just three short decades until the First World War), but extended over an exceptionally large area with islands of a great natural and socio-cultural diversity. The surface of the German *Schutzgebiete* covered some 6,000 km north-east, and ranged from Saipan (Mariana Islands), crossing German New Guinea, and Nauru, all the way to German Samoa, and some 4,000 km west-east from Palau (West Caroline Islands) to Jaluit (the Marshall Islands), and with this virtually hundreds of islands. These political facts, socio-cultural diversity, geophysical circumstances, and altogether logistical challenges necessitated from the start and indeed produced until the end a large variety of ‘influences and transactions’ in the dynamics and processes of architectural production. And second, the choice for this thematic focus was and is a response to the astonishing scientific lacuna when it comes to the available research results about the architectural history of the German Reich in ‘Oceania’ (see the *tour d’horizon* mentioned above).

The third part of this book addresses the *post-colonial* constellation, which is basically defined as being one ‘occurring or existing after the end of colonial rule’. Especially in the region of the South Pacific, however, this constellation cannot be delimited by a temporal and political frame that fits everywhere. Rather, the authors of this book were asked to investigate the various visible and invisible ruptures and continuities across orders

and borders and beyond clear-cut political orders, geographical borders, and timelines. The suffix ‘post-’ in one national background, such as of the German Empire, may mean another neo-colonial regime in the area (the Japanese, for example), or a continuity of foreign domination, but hidden behind UN mandate-structures (by Australia or New Zealand, for example).

### The thematic framework: Regimes, strategies, and building practices

A full set of questions were circulated through the original Call for Papers of the conference and then reformulated for the chosen circle of authors for this book: under which political regimes did individual actors, leaders or groups, firms, agencies, institutions, or whole networks in (or cultural brokers between) the foreign/indigenous respectively global/local divide implement their economic, cultural, and/or social agendas, programmes, and civilising missions? How would all this finally materialise in architecture? Which kinds of architecture emerged in pre- to para-colonial and then colonial and post-colonial contexts as regards infrastructural, agricultural and industrial production? Which place had pre-colonial, indigenous architecture as a source of local knowledge to be appropriated in new hybrid forms of the architecture of settler communities, trade firms with their cultivated landscapes (plantations) and building sites or religious missions? Or, how and by whom was ‘Oceanian architecture’ mapped out, published, and evaluated in ethnographic surveys, eventually integrated into early canons of global architectural histories and/or even displayed in exhibitions and museum environments of the imperial power nations themselves, or, finally at the far end of our timeline of investigation, appropriated early stereotyped forms of touristic leisure industries.

Which dynamics or strategies in situations of contact and encounter, competition, collaboration, mediation, exchange, or resistance unfolded between imported and local/regional forms of architecture? Which building practices, materials, technical, and logistical aspects, applied building norms, and eventual results of structural hybridisation in form, function, material, and style emerged?

Which normative strategies, aesthetic choices of particular styles in relation to the representation of power were employed, with which kind of implicit or explicit cultural references?

## The temporal framework

The ten contributions of the present volume are embedded into an overall time frame of some 150 years: Part I covers roughly the span from the 1840 to 1900 with a focus on ‘para-colonial forms of architecture and architectural knowledge’ production. Part II sheds light over the first peak of the imperialist (primarily German) impact over the South Pacific from the 1880s until the First World War (1914–18). Part III focuses on variations ‘from inter-colonial encounter to post-colonial building practices’ with a view on the continuities and disruptions in architectural productions between the First and Second World War and far into the post-war period of the 1960s and 1970s towards the threshold of final independence.

## The geographical framework – ‘Oceania’, a specific geographical area in focus

Current denominations such as the Pacific, the Pacific Ocean, and Pacific Islands are varying in their geographic and cultural definitions (cf. above others Lal and Fortune 2002; Fischer 2002) and comprise of an enormous region of the world that lies as whole beyond the manageable scope of this edited volume. Important to mention here is the fact that these denominations have colonial histories themselves, as *Mar del Sur* (literally South Seas) or the ‘Pacific’ (from Latin *Mare Pacificum*) refer to Spanish and Portuguese exploration and conquest of the region from the 16th centuries onwards. Zooming in, the ‘North Pacific Ocean’ is divided by the Equator from the subequatorial Pacific or ‘South Pacific Ocean’, which roughly covers the study area of this book. Ethno-culturally motivated denominations of the equatorial and our concerned South Pacific Ocean comprise of the ‘Micronesia’ (from the Mariana Islands to the Caroline and Marshall Islands), ‘Melanesia’ (from New Guinea in the west to Fiji to the east) and ‘Polynesia’ (in a triangle between Hawaii, New Zealand, and Easter Islands including Tonga and Samoa).

Consequently, the term ‘Oceania’ is used here to narrow down the core area of investigation: as the specific historic and geo-political entity that Germans often referred to as *Stiller Ozean* (Silent Ocean) or *Ozeanien* during the 30 years (1884 to 1914) of their colonisation (compare Fig. 0.1 of this introduction with Fig. 7.1 in the chapter by Falser in this volume). During this period, the German Reich took as colonies the *Marianen* (Northern Mariana Islands), the *Karolinen* (today Federated States of Micronesia and

Palau), the *Marshall-Inseln* (Marshall Islands), *Kaiser-Wilhelmsland* (today north-eastern Papua New Guinea) and the *Bismarck-Archipel* (today New Britain Archipelago) and *Deutsch-Samoa* (today independent Western Samoa, unlike American East Samoa). This geographical area and period stands in the centre of this book's Table of Contents with its three parts, but formulates connecting lines to the other two parts as well.

For the original conference, we particularly invited contributions about these specific territories, while case studies on neighbouring island regions, such as New Caledonia all the way to Tonga or the Cook Islands, in their own pre-, para-colonial, colonial, and post-colonial contexts, were equally welcome, and are now present in this edited volume as well.

Consequently, Pacific nations like Australia, New Zealand, the USA, or Japan are not targeted as geographical entities as such in this present publication. However, they are explicitly included as political players and national actors related to building practices in their mandated territories (Australia's Territory of New Guinea, New Zealand's Samoa, or the USA's past and present dominance from Guam to American (East) Samoa, and France's presence in New Caledonia).

#### 4. A glimpse into the ten chapters within the three parts of the book

Part I of the book, entitled *The 'South Seas': Para-Colonial Forms of Architecture and Architectural Knowledge*, is structured along three contributions.

In her chapter 'Re-scribing Indigenous Form: The 19th-Century Churches of the London Missionary Society in Rarotonga, Cook Islands' Carolyn Hill (University of Waikato, New Zealand) traces the historical arc of the origins and intentions of the London Missionary Society (LMS), the first significant European presence in the Cook Islands to launch its Polynesian mission from the early 19th century onwards. By preceding in 1888 formal British (then in 1901 New Zealand) colonisation of the region, it also acted like a para-colonial agent. Following the present edited volume's agenda to investigate the complex processes of influences and transactions in the variform architectural manifestations of Oceanian architecture, Hill examines the LMS's deep entanglement with European imperialism and its simultaneous imbrication in local agency. By focusing on Rarotonga, the Cook Islands' largest and most populous island, she unpicks the ways

in which Indigenous leadership mediated understandings and architectures of Christianity as tribal groups changed allegiance to a new god. In this time, as Hill explores, Rarotongan society was transformed from dispersed inland populations focused on *marae* to consolidated coastal villages centred on churches. Learning lessons from its earlier Tahitian mission, the LMS relied heavily on Indigenous Polynesians to lead these changes. Church architecture, first articulated in hybrid organic structures of wood, fibre, and LMS-introduced coral plaster, shifted to monumental coral stone structures from the early 1840s. With her exploration of four key moments in this architectural era – the island’s first stone church at Titikaveka (1841); the Institution House for the training of ‘native teachers’ (1843); the Avarua church (1853); and finally the Matavera church (1864) – Hill elaborates her observation, that not only the influence of resident British missionaries and their individual ideologies became clear in these stone buildings, as they were also pervaded by Indigenous meaning. This was most profoundly articulated in the Matavera church – the last monumental coral edifice from the mission era – where, as she concludes, local tribes created a lasting expression of Indigenous autonomy in a changing world, before the shift from mission to colony and its effect ended the architectural production of the mission era.

In her chapter ‘Tongan–German (Siamane) Relations and its Architecture in the Kingdom of Tonga’, Charmaine ‘Ilaiū Talei (University of Auckland) reviews the little-known Tongan–German context during the mid-1800s through to the early 1900s – a time of intense trading by German merchants with franchises across the archipelago and greater Pacific Islands – and investigates the extent of European Germans and Tongan-Siamane influence on local Tongan architecture. In 1867, the Hamburg-based company J C Godeffroy & Sohn (later the conglomeration of the Deutsche Handels- und Plantagen-Gesellschaft der Südsee Inseln zu Hamburg (DHPG)) set up its Tonga-based franchise, purchased Tongan copra, and soon dominated the market, having already established itself in other Pacific countries including Samoa, while after the First World War, other franchises joined the market like Burns Philp (compare chapter 8 in this book). With her two case studies, the timber-framed *pālasi*, or Royal Palace, and its chapel in Nuku‘alofa (the official residence of Tonga’s royal family), and the Neiafu township buildings, Talei’s structural investigation focuses on the shifting building practices amidst social and economic change in the Kingdom of Tonga and the para-colonial agents of architectural transformation (political actors, firms, and cultural brokers)

that negotiated and introduced these new architectural materials and building practices. As regards the palace, Talei weighs up speculations of its possible execution by J C Godeffroy & Sohn, of the rather un-German design of the original palace based on a Victorian style villa, and of the recently accepted version by architectural history accounts as being a pre-fabrication kit of parts from New Zealand, made from Kauri timber, and completed in 1867. In this case, architectural influences in style may have stood second to more relevant economical transactions in this para-colonial setting: Godeffroy and Son, effectively behind the procurement of the building materials, may at the time have already shifted their trading from Germany-sourced materials (and styles?) to industries available in nearby Australia and New Zealand. In Talei's second case study, to a lesser extent economical, but rather social transactions and political non-influence discouraged non-German style references: If German émigrés of the late 1800s were undoubtedly responsible for the development of Vava'u's early timber framed buildings, they appear to have renounced their ties to Germany, due to their retreat from their fatherland in poverty, war, inter-class discrimination, and political non-support by the German Kaiser. In this detachment from the *Vaterland* and its traumatic and oppressive past for German émigrés in Tonga may have reduced, as Talei concludes, any desire to mimic architectural origins in the buildings they built and lived in across Tonga. For those who did remain, they became part of Tongan society thus accepting the mainstream Tongan culture as the easier choice.

The third chapter to Part I of this book is entitled 'From Comparative Study to an Emergent Local Building Practice: Hermann Frobenius' Study of *Oceanische Bautypen* of 1899' and written by Robin Skinner (Te Herenga Waka–Victoria University of Wellington, New Zealand). He tackles the para-colonial constellation from a completely different viewpoint: in this case study, neither religious institutions or social groups of traders or merchants, local royal families, or émigrés stand in the centre of action, nor applied local practices of architectural production. Rather, an individual protagonist comes into the focal point of investigation who never visited the concerned region of the South Pacific himself, who participated in the issue of 'Oceanian architecture' only as an armchair architectural historian-ethnologist from far-away Germany, and whose practice was his particular approach of architectural knowledge production. In 1899, the original specialist in fortress construction and then retired Prussian military officer Hermann Frobenius (1841–1916) published his article

‘Oceanische Bautypen’ (Oceanian Building Types) on 27 written pages and 10 plates in the *Zeitschrift für Bauwesen*, one of the leading German journals ‘for applied building industries’. He attempted to document the architecture of the Pacific systematically according to building structure, type and location, and his study reinforced early forms of German knowledge about South Seas’ architecture. Applying the approach he had already used in an earlier study of African buildings, he determined that architecture in the Pacific occupied three coherent – southern, northern, and central – ‘building zones’ (*Baukreise*): Without ever undertaking field work to the southern hemisphere as such, he sourced publications, photographs, and museum models to formulate an argument connecting the structural traditions of an exceptionally large geographical area, covering today’s Indonesia and the Philippines to Micronesia, Papua New Guinea, Australia, the islands of Tonga, Fiji, and Samoa all the way to Hawai’i and the Easter Islands. Skinner subdivides his analysis of this curious document in two steps. He starts with a critical reading of Frobenius’ written arguments in combination with his systematic charts of intriguing simplicity and three-dimensional drawings of aesthetic persuasiveness. In a second step, Skinner engages into a detailed discussion of Frobenius’ sources of inspiration, ranging from a) available writings (including his own son and later Africanist Leo Frobenius with his *Kulturkreislehre* (theory of cultural circles)), b) house model collections in German ethnological museums and, finally c), the ephemeral and full-scale South Sea and African village scenarios that Frobenius himself certainly experienced during the Colonial Exhibition in Berlin 1896. As a conclusion, Frobenius’ study evidences a good example of a para-colonial acquisition process regarding knowledge about vernacular and traditional architecture in Oceania, with all its methodological shortcomings, argumentative shortcuts, and the neglected importance of local social drivers and cultural environments. Whether Frobenius’ curious text implicitly influenced further scientific analyses of the buildings traditions in the South Pacific (for example, Krämer or Tischner) or even triggered what he himself called ‘incentives for a skilled trained architect to consider the application and development’ rests, like Skinner explores in the final part of his chapter in relation to appropriation practices of the traditional Samoan *fale* buildings by local elites or the architects for the German colonial, later New Zealand mandate, and finally Samoa’s independent administration, an important question for further research.

Part II of the book, *German Colonialism in the Südsee and its Encounters (1884–1914)*, comprises of four contributions.

The first chapter, written by Hermann Mückler (Vienna University, Austria), is entitled ‘Administrative and Residential Architecture in the German Colonial South Seas: The Photo Albums of Wilhelm Knappe, Carl Schiesser and Ferdinand Kunzmann’. As particularly little architectural remains from the German colonial period have physically survived until today (due to the decay of wooden building material, natural hazards, destructive warfare of two World Wars, and little protection measures) Mückler’s focus on photographs is particularly relevant in this context to reconstruct the architectural, but also social and aesthetic histories of the German para- and then colonial impact. And even if Germans’ private and state expeditions of discovery and exploration clearly overshadowed those of the other colonial powers operating in Oceania, officially produced photographic records were limited due to the regime’s above-mentioned short existence. This makes, as Mückler indicates, the initiatives of individual photographers all the more important and interesting. Due to their respective professional functions and specific entrepreneurial, administrative, missionary, medical, or colonial political tasks, the authors of these private photographic collections often stayed in one place for a comparatively long time and therefore knew their immediate surroundings comparatively well. What makes Mückler’s visual sources of three rare photographic albums even more relevant is the fact, that a personal interest of three, from their social backgrounds very different, authors in the relatively new technology of photography was often combined with one in the respective local population and their cultural characteristics. The first photographic album was produced by Wilhelm Oskar Knappe (1855–1910), who resided in Jabwor on the Jaluit Atoll in his function as the first imperial commissioner of the German Empire to the Marshall Islands. This area was, compared to the other German colonial possessions, considered politically calm and conflict-free and Knappe was, compared to other German colonial administrators, judged as an exceptionally benevolent and particularly interested in the local culture and respect for the Micronesian islanders entrusted to him. With his parallel collection of ethnographically interesting objects, his album is today particularly instructive for architectural historians as it covers not only the different construction modes and functional–formal–stylistic variations in response to locally available building material, imported material for prefab-techniques and a hybrid ‘mixed types’ of

both, but also can serve to reconstruct the social strata of their residents, ranging from indigenous Marshall Islanders, settlers with little income to more influential entrepreneurs, traders, and agents. Mückler's second set of two photographic albums were made by the cook, confectioner, and amateur photographer Carl Schiesser (1889–1966): of particular interest here are his images of the phosphate island of Nauru (compare with the chapter by Jasper Ludewig in this book), which is rarely documented at all through the lens of German protagonists on the spot. However, the largest visual impact had the third of Mückler's quoted photographic albums, the one by Ferdinand Kunzmann who served from 1893 to 1896 as assistant doctor, pharmacist, and hospital administrator in Stephansort, the important trading station founded by the *Neuguinea-Compagnie*. In this particular case, the Kunzmann album is not only a rare source to understand the fragile architectural setting of the particularly short-lived German colonial settlements *Deutsch-Neuguinea* (compare the chapter by Michael Falser), but also worth mentioning above all because of the album's unique role in the circulation of colonial architectural motifs through globalising print media. Taking here the book's overall conceptual approach of 'influences and transactions' from another point of view can show architectural photographs were translated into commercial illustrations that were widely distributed in the period before the First World War as colour advertising collector's pictures, so-called merchant pictures (*Kaufmannsbilder*), as well as colour postcards. As one summarising effect, all three protagonists also chose their architectural motifs out of wild natural environments, in order to create, as Mückler summarises, a sense of orientation, identity, and security, a colonised homeland with 'German houses' in a sea of cultural otherness.

The second chapter, 'Extracting Growth: The Phosphate Mining Infrastructure on Nauru and Angaur (1906–1913)', is contributed by Jasper Ludewig (University of Technology Sydney, Australia). Based on the scientific enquiries of the German chemist Baron Justus von Liebig, who, as Ludewig explores in a kind of prologue to his chapter, introduced the new model of 'rational agriculture' through the use of NPK fertilisers, the emphasis on guano (a naturally occurring deposit of dried bird and bat excrement) brought the two Pacific Ocean islands – Nauru and Angaur – on the infrastructural (and therefore also architectural) radar of industrial exploitation. It was only those two islands of German Micronesia where rock phosphate was mined with profit for the burgeoning superphosphate industry of the early twentieth century. Nauru was

added to the German Marshall Islands through annexation in 1888 and was first worked by an Anglo-German consortium, the Pacific Phosphate Company, in 1906. Angaur, an island of Palau, was eventually administered from German New Guinea and mined by a German consortium, the Bremen-based Deutsche Südseephosphat Aktiengesellschaft (German South Sea Phosphate Company Limited) (DSPAG), starting in 1909. As commercial transactions were concerned, both companies provided chemical wholesalers in Germany, New Zealand, Australia, and Japan with high-grade Pacific phosphate until the First World War, when the latter two winning powers of this global conflict eventually took over the mining business on the spot. As Ludewig demonstrates in his chapter, attending to the infrastructure on Nauru and Angaur revealed a curiously ‘para-colonial’ figure within the German colonial set-up over Oceania: the *Regierungsbaumeister* (Government Architect or Superintendent) Wilhelm Schönian, a hydraulic and mining engineer whose career within and beyond the *Bauverwaltung* (colonial building administration) connected the development of both islands across the four thousand kilometres of open ocean that separated them. While on Nauru, Schönian served as a representative of the Colonial Section of the German Foreign Office in negotiations with the PPC, engaged on Angaur directly by the DSPAG on the basis of his experience throughout the German Marshall Islands. As Ludewig will explore, Schönian’s changing status – from colonial official to becoming an employee of a private mining company – was complicated by his close association with the Altona–Hamburg-based engineering and construction company, F. H. Schmidt, which supplied the early buildings and equipment for both Nauru and Angaur. By tracking Schönian’s movements together with a detailed overview of the mining operations on both islands, Ludewig explores a series of questions at play within the wider volume about the dynamics of architectural ‘influences and transaction’ of which this chapter forms part: what roles did buildings and other spatial technologies play in extracting raw materials from German colonial territory? How were they designed and constructed? By marshalling whose expertise? And how can an analysis of the phosphate industry, established throughout German Micronesia and embedded in the global fertiliser market, inform an understanding of the governmental practices of the German colonial state? Altogether, questions of what constitutes ‘German colonial architecture’ are enquired here through the ways in which buildings and structures located in German territory – commissioned, conceived, and constructed by German companies and

engineers – deepened the imbrications of European imperialism more broadly with the vicissitudes of industrial capitalism.

In the third chapter of this part II, Clemens Finkelstein (Princeton University, USA) investigates ‘Colonial Waves from Apia to Yap: Technoscientific Network Structures of German Expansionism in Oceania’. As he states in his introduction, imperial Germany underwent, coinciding with the establishment of colonial holdings in the Pacific since the mid-1880s, a radical socio-political rethinking of the environment: knowledge about Earth and its makeup became increasingly linked with modern conceptions of economic stability, futurity, and risk management. Within the process of technologically accelerated global expansionism and next to novel technological advancements in telecommunication (for example, electric telegraphy) or mobility (for example, steamboats, railroads), which drove imperial consolidation, German policymakers and scientists pondered the pioneering role of meteorology, oceanography, and geophysics in naturalising the colonial expansionism of the budding empire. The intricacies of waves, ubiquitous forms of natural motion, played a crucial role in German colonial dissemination, especially across the remote vastness of Oceania. Whether atmospheric (radio), hydrospheric (oceanic), or geospheric (seismic) waves, scientific and telegraphic stations across the growing territories in the Pacific Ocean cast German imperialism from Apia (Samoa) to Yap (West Carolines, today Federated States of Micronesia). Architecture – entwining building and technology – assumed, as Finkelstein defines it, a vital role as agential media for the remote sensing and transmission of the colonial waves that concretely shaped the conceptual and practical expansionism of the German empire in the South Pacific. Whether in its built form or dematerialised into its techniques and technologies, architecture set out to master the planetary waves and institute environmental control, befitting a colonial world-building mission. Within this larger context, Finkelstein’s chapter covers three case studies of technoscientific imperial operations across the German colonial South Pacific. The Geophysical Samoa Observatory in Apia (Samoa, since 1899 a German protectorate) was finished in 1902 and became a unique architectural hybrid in the history of German colonial architecture. At the intersection of appropriation, substitution, and translation it combined references of traditional Samoan building technology of the *fale* architecture with German modular units of prefabricated buildings. For Tetens, the first director of the observatory, the notion ‘native’ was, as Finkelstein concludes, reflected in his holistic design approach referred

both to transplanted German originality and local Samoan belonging – a subtle contraction contrary to German colonial policy but oddly in line with the loaded German term *Heimat* (home). Finkelstein’s curious second case study covers the oceanographic and anthropologic-ethnographic mission of the naval survey ship *S.M.S. Planet*. It was built and commissioned in 1905 to carry out cutting-edge research in oceanography and meteorology. Apart from the technoscientific equipment it held, the ship’s naval architecture was conceived especially for the tropical climate of Oceania and the environmental demands of scientific labour. As a floating laboratory through oceanic waves, Finkelstein discusses it in relation to the studies of traditional Oceanian dwelling houses and houseboats by the anthropologist-ethnologist Augustin Krämer. In his third case study, Finkelstein tackles radio waves whose nature of transmission spurned network infrastructures and specific technoscientific architectures in the form of wireless telegraph constructions. With constructions from Apia (Samoa) to Nauru, Rabaul (German New Guinea) and the West Caroline island of Yap, they paradigmatically punctuated the natural landscape of the respective islands.

The fourth and final chapter of part II is entitled ‘German Colonial Building Cultures in Kaiser-Wilhelmsland and the Bismarck-Archipel: Reconnecting a Fragmented Architectural History of Deutsch-Neuguinea’. With the help of rare visual sources of maps, plans, sketches, and photographs from colonial print media (from journals, scientific and expedition reports and autobiographies to early tourist guides and coffee-table-books), Michael Falser (Technical University Munich, Germany) explores the almost unknown architectural and urbanist history of the short-lived German colonial capitals in German New Guinea. All of the five capitals – three on mainland Kaiser-Wilhelmsland and two in the Bismarck-Archipel – were hastily installed. The first four of them (Finschhafen 1886–1891, Stephansort 1891–1892, Friedrich-Wilhelmshafen 1892–1899, and Herbertshöhe 1899–1910) were soon abandoned due to reasons of tropical diseases, political tensions, local resistance, and infrastructural constraints, and the last and short-lived capital Simpsonhafen/Rabaul (1910–1914) – arguably the first site with a real potential for a successful development – had to be handed over to the invading Australian troops in the first year of the First World War. From his historical viewpoint coming to terms with a critical architectural history of *Deutsch-Neuguinea*, Falser contextualises Germany’s self-contained colonial building cultures in their specific conditions of geographical remoteness, harsh environments

(tropical climate, natural hazards, and diseases) and an extreme scarcity of resources (limited availability of good building material, transport logistics, financial budget, expert cultures, and local manpower). Adding to the key processes being addressed in this edited volume, he adds a specific structural constellation to the discussion: from the inner-colonial perspective, ‘transactions’ between Germany’s metropole/centre back in Europe and this particular *Schutzgebiet* with its far-away Oceanian colony/periphery were extremely limited, and necessitated cross-colonial ‘interactions’ in building cultures, ranging from the import of building material to whole pre-fab houses from Australia and New Zealand to manpower deals reaching as far as into the Dutch-East Indies (Java and Sumatra) or the British Empire (Ceylon), adding to the black-birding of Chinese and indigenous people from the neighbouring islands. Finally, inter-colonial ‘influences’ in the modes of architectural representation and power (for example, the bungalow and veranda) or architectural style vocabularies became visible in the quoted primary source material. However, these last issues will need further in-depth comparative studies, such as about the transactions between modernism and regionalism to give one example.<sup>6</sup>

Part III, entitled *From Inter-Colonial to Post-Colonial Practices*, has three contributions.

In their chapter, ‘Burns Philp’s Encounters across Colonial Borders: Buildings for Export and Commerce in the South Pacific’, Amanda Achmadi and Paul Walker (both University of Melbourne) address the fragmented historiography of Asia Pacific’s built environment through the region’s intricate interconnectivity in the colonial era of the late 19th century and early 20th. When the industrialisation of agricultural production and the emergence of international commercial shipping routes opened up territories, it also facilitated fluid movement of goods, labour, capital, and ideas across colonial boundaries and left built traces in the form of buildings for trade, travel, and export-oriented agriculture. In their chapter, the authors seek to bring into view the architectural settings of one of such commercial entity and the cross-cultural encounters they entailed, by focusing on the architectural infrastructure that accompanied the inter-regional operations of the Australian firm Burns Philp in the Asia and South Pacific. With its headquarter building in Sydney from 1901 in Romanesque style as the firm’s most conspicuous investment in architecture, Burn Philp was responsible for a wide range of buildings that supported its activities in commodity trading, shipping, and retailing,

commercial agriculture, and tourism throughout Australia (Cairns), the Pacific (Port Moresby (Papua New Guinea), Suva (Fiji), Apia (Samoa)) and reaching in the interwar period into the Dutch East Indies. Embedded in veritable steam-ship network, the firm also commissioned a whole series of accompanying support structures, from jetties, warehouses, and sheds to houses for managers and more modest accommodation for workers. Trying to overcome the classical approaches of architectural historiographies of colonialism to evaluate Asia-Pacific buildings from this period only in relation to a canon of European and American models and their metropolitan and often overtly public-fronting prototypes, the authors aim to explore the invention of those buildings that were unprecedented in (or directly ‘influenced’ by) the metropolitan homelands of European imperial expansion, especially those to accommodate industrial scale colonial agriculture and extraction, and the transportation and export facilities associated with this. And, second, by criticising the tendency of architectural histories to use colonial boundaries of colonies to define investigation units over post-colonial nation-states, they focus on the intricate interconnectivity between territories and locations in the Asia-Pacific region that had evolved as cross-colonial trade networks by the late 19th century and that continued into the 20th. Already Burn Philp’s operations before the First World War complicated – as the authors explain in the following with the firm’s regional agencies from Port Moresby, Samarai, the New Hebrides and Suva/Fiji (British Empire); Merauke (Dutch East Indies); Herberthöhe, the Marshall Islands and Apia/Samoa (German Empire; compare the chapters by Falser, Mückler) all the way to Nukualofa (Tonga, compare the chapter by Talei) – the territorial marking of colonialism in the region, as also their flows of goods, information, labour, and capital depended on the border-crossing operations and movements of other inter-colonial agencies and shipping networks. However, Burn Philp also profited largely through political-territorial ‘transactions’ after the First World War when the German Empire left, and entered with its new built structures into Jaluit/Marshall Islands, Rabaul, Madang, Kavieng (taken by the Australian) or Samoa (occupied by New Zealand): with new plan and photo material of some of these buildings from Rabaul, Madang to Apia and their surrounding plantations, Walker and Achmadi conclude with a typology for the buildings of Burn Philp’s corporate empire with a full range of ‘influences’, ranging from modest structures of timber-framed buildings (retail and warehouse depots, storage facilities for copra, of for staff residential quarters) in pre-fabricated or at least pre-cut construction;

the group of smaller modest wooden buildings by/for European planters and plantations administrators in an architectural language of cultural hybridity between the picturesque and the local vernacular, combining local forms and craft skills related to indigenous material with verandas, single gabled, or hipped roofs, and sometimes even with decorations with local indigenous artefacts; and, finally, the group of more ambitious urban buildings (hotels, a cinema, and a retail stores), with representative buildings features (ground floor arcades or centrally expressed towers) with an architectural language of permanence and of a commercial architecture becoming global in the interwar period.

The second chapter 'Architectural Influence within Missionary Areas: The Steyl Mission Architecture during the German and the Australian Colonial Periods in New Guinea (1896–1914–1945)' by Paul B. Steffen (Pontificia Università Urbaniana of Rome, Italy) frames the phenomenon of architectural continuities as one of 'trans-actions' across colonial and post-colonial regimes, and architectural 'influences' in a whole set of building practices beyond the colonial–colonised divide. In his article, Steffen tries to present the different phases of the development of the typical mixed building styles of the Steyl Mission (the Mission of the Divine Word Missionaries; *Societas Verbi Divini* – SVD, with primarily German and Austrian missionaries), a Catholic Mission Society founded in 1875 in the Dutch village of Steyl) in its founding, transformative, and consolidating moments from its '(para-)colonial' environments in mainland German New Guinea (1896–1914) along the coast of Kaiser-Wilhelmsland and the 'post-colonial' Australian Mandated Territory of New Guinea (1914–1945). This time, the regional branches with architectural ensembles to form a veritable 'network' across Oceanian times, cultural spaces and political regimes were not constituted by individual trading posts (compare the chapter by Mückler), trading firms (compare Achmadi and Walker), or whole infrastructural industrial landscapes (compare Ludewig), but by an individual missionary society (compare Hill) with its institutionally inter-connected mission stations. Those mission stations were permanently inhabited main stations by foreign missionaries, local converts, and indigenous workers (to the contrary to not permanently inhabited outstations) and comprised – and still comprises today – of missionary-built facilities with a whole set of buildings, ranging from a church, a rectory or a residence, the Sisters' convent, mission (or boarding) school and a mission hospital, and associated gardens and even plantations of several hectares. In the following, Steffen explains

various mission stations in their different geographical and topographical setting and their individual buildings, from the oldest mission on Tumleo Island (founded 1896 with its first imported pre-fab house) to the curious mission church on Yuo Island or the chapel in remote Mogeï at Mont Hagen (Western Highland Province). In reference to indigenous architectures of habitation or religious veneration (such as the impressive spirit houses) Steffen explains how the hybrid architectural and stylistic character the various missions was not informed by ideological influences of changing political regimes, but rather through the availability of local material (local wood, palm leaves, rocks) and developed facilities of their preliminary treatment (most importantly saw mills), of manpower and knowledge (European missionaries with self-taught craftsmanship and local workers with traditional skills) and the adaptation strategies to cope with geophysical realities (remoteness, access, tropical climate, and so forth). Steffen's most important case study to show how mission stations developed rather independently from regime changes (however profiting from available transport infrastructure) is course the St. Michael Mission station in Alexishafen ('hafen' meaning harbour) that was founded in 1905 near and in lively exchange to Friedrich-Wilhelmshafen, the German colonial (third) capital of Deutsch-Neuguinea (compare the chapter by Falser). It then developed, during the Australian mandate period of the 1930s into the largest station with more than 100 buildings of progressively European-style influence, including the largest wooden cathedral of the entire Pacific, which was destroyed by the American air force in 1943 as a tragic side-effect of their bombings of the strongholds of their Japanese neo-colonial enemy during the Second World War, and later replaced.

In the last but not least chapter of part III and the whole book, entitled 'Australian Architects in Melanesia: Culture as Resource in the Late-Colonial Development of Papua New Guinea and New Caledonia (1950s–1970s)', the authors Peter Scriver and Amit Srivastava (University of Adelaide, Australia) and Louis Lagarde (University of New Caledonia) engage in the diverse and seemingly contrasting modes of architectural engagement undertaken in Melanesia by Australia-based architects Balwant Saini and Douglas Snelling and offer two cases of 'transactions', or as the three authors call it themselves, of cultural knowledge resourcing and exchange, through architecture. Both discussed protagonists clearly transcended the fundamental ambivalence that had coloured Australia's political and cultural engagement with its Pacific neighbours throughout most of its modern history and, arguably, ever since its own ignominious

colonial beginnings in the late 18th century, and, closer to the two central figures in this chapter, Australia's arguably neo-colonial engagement in the Pacific under a disguise of a United Nations (UN) mandate when the whole world entered the era of decolonisation. Comparison of their case histories reveals a deeper schism in Australia's own cultural identity and sense of place in its region that was becoming increasingly apparent in this period of rapid growth and change in Australian society itself. The first section discusses the work of Melbourne-based architectural consultant and educator Balwant Saini, who first travelled to Papua New Guinea in 1963. Over the next two decades, Saini continued to engage with several development initiatives aimed at improving the local building industry and educational institutions, as well as initiating local architectural training. In the second section, the chapter discusses the peculiar conditions that led to the engagement of Sydney-based architect and illustrator Douglas Snelling to design a range of built and unbuilt projects in New Caledonia, Fiji, and Vanuatu in the later 1960s and early 1970s.

Ironically, the 'transactions and influences in the architectures of Oceania' – as one may argue in the sense of the subtitle of this edited volume – had made here a surprising full circle: from monumental coral stone structures from the early 1840s on the Cook Islands by the pre-colonial London Missionary Society (compare Hill), or 'Ocean Building-Types' from para-colonial imaginations by the German arm-chair amateur Hermann Frobenius in 1899 (compare Skinner) to vernacular-cum-modernist investigations and experiments of 'bush-pole-frames' and 'crushed-coral-cement-blocks' in Germany's ex-colonial New Guinea (architect Saini) or to the fantasy-applications in late-colonial French-Polynesian tourist resorts (Snelling) by Australian architects in the 1950s and 1970s.

## Notes

- <sup>1</sup> Authors like Sack, Firth, and Hemenstall were important for a critical history on German New Guinea (see the state of research as regards primary and secondary sources in the chapter by Michael Falser in this book).
- <sup>2</sup> For the exhibition homepage: <https://www.zikg.eu/aktuelles/veranstaltungen/2023/ausstellung-deutsch-koloniale-baukulturen> (accessed 15 March 2025).
- <sup>3</sup> For the conference homepage at the TUM: <https://www.arc.ed.tum.de/arc/ueber-uns/aktuelles/news-single-view/article/international-conference-monuments-and-sites-de-colonial-methods-and-strategies-of-dealing-with-the-architectural-heritage-of-the-german-colonial-era/>; for the conference homepage including further information via ICOMOS Germany: [https://www.icomos.de/call-for-papers-tagung-quotmonuments-and-sites-de-kolonial-formen-und-strategien-des-umgangs-mit-den-baulichen-hinterlassenschaften-der-deutschen-kolonialzeit-quot-muenchen-3-4-november-2023\\_a\\_173.html](https://www.icomos.de/call-for-papers-tagung-quotmonuments-and-sites-de-kolonial-formen-und-strategien-des-umgangs-mit-den-baulichen-hinterlassenschaften-der-deutschen-kolonialzeit-quot-muenchen-3-4-november-2023_a_173.html), both accessed 15 March 2025.

- 4 For the original Call for Papers: <https://eahn.org/2021/12/para-colonial-colonial-post-colonial-influences-and-transactions-in-the-architecture-of-oceania-1840-1990-2/> (accessed 11 September 2025).
- 5 In her case-study on ‘Paracolonial networks. Some Speculations on Local Readerships in Colonial West Africa’ Stephanie Newell investigates this new conceptual term of the ‘para-colonial’. Focusing on West African literary and social clubs, and with it imported, mediated, adopted and appropriated forms of language, fashion and style (in the present book a transfer into questions of architectural language, fashion and style is one possible operational approach), she investigates ‘new social relationships and cultural forms which developed in response to the British presence and the spread of the English language in West Africa’, and explains that ‘the prefix para- contains an ambiguity which is ideal for describing cultural flows in colonial West Africa, for it signifies beside and also beyond. The shift to paracolonial allows us to discard the centre–periphery model and instead to analyse in historical and sociological detail the local cultural productivity which undoubtedly took place over the generations, alongside and beyond the British presence in the region, as a consequence of the British presence but not as its direct product. The term is thus immensely useful if one wishes simultaneously to acknowledge the effects of colonialism and also to displace the Eurocentric and deterministic periodization of culture and history in the colonies as being “pre”-colonial, colonial and “post”-colonial’ (Newell 2001, 350).
- 6 For a discussion of regionalist styles in the (late) imperial period between the centres/provinces of nation-states and colonies/peripheries of empire-nations, compare Falser 2023b.

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PART I

**THE 'SOUTH SEAS':  
PARA-COLONIAL FORMS  
OF ARCHITECTURE  
AND ARCHITECTURAL  
KNOWLEDGE**



# Chapter 1

## Re-scribing Indigenous Form

### The 19th-Century Churches of the London Missionary Society in Rarotonga, Cook Islands

*Carolyn Hill*

#### 1. Introduction

The expansion of European imperialism into Oceania during the 19th century operated through complex and overlapping channels of influence as colonial powers including Britain, France, Germany, and the United States of America jostled for economic and political dominance. Missionary societies, commercial ventures, and imperial governments formed an uneasy and ambivalent assemblage of interests that deeply impacted island societies (Aldrich 1989/2005). At the same time, Pacific peoples variously shaped and navigated this seismic cultural change through iterative forms of co-operation, appropriation and resistance (Hempenstall 2016).

While formal structures of colonisation often followed in the wake of early European enterprises (Christian missions, whaling, trade, plantation settlements and so on), these multiple and often competing external pressures created what can be described as a form of ‘para-colonialism’ in Pacific island societies. As an emerging concept, para-colonialism invites analysis of this period beyond a homogenous chronology that descriptors such as ‘pre-colonial’ or ‘proto-imperial’ can imply (Andrea 2018; Barker 2005). Rather, a para-colonial lens enables European influences to be understood as existing both ‘alongside of’ and ‘aside from’ direct imperial control, closely related, often antagonistic, and potentially encompassing a ‘before’ and ‘beyond’ (Archer 2001, 17). As a concept, para-colonialism provides an important framing to situate European endeavours within Pacific contexts, revealing how Indigenous leadership continued to mediate their own social and spatial priorities in a changing world.

A key group in the early years of European Oceanic expansion was the London Missionary Society (LMS). As the first Christian mission in

the Pacific, the LMS had a profound influence on the shape and tenor of expanding European interests in the region. This chapter explores the entanglement of LMS and Indigenous aspirations through a para-colonial reading of mission architecture. It traces the historical arc of the origins and intentions of the LMS as it launched its Polynesian mission and fanned out across the South Pacific in the early 19th century. Focusing on the island of Rarotonga in the Cook Islands group, it examines how the LMS was both deeply entangled with European imperialism and simultaneously enwoven with local agency. It also analyses the ways in which Indigenous leadership mediated understandings and architectures of Christianity as *ngāti* (tribes, tribal groups) changed allegiance to a new god.<sup>1</sup>

Church architecture, first articulated in hybrid organic structures of wood, fibre, and LMS-introduced coral plaster, shifted to monumental coral stone structures from the early 1840s. Four key moments in this architectural era are explored: Rarotonga's first stone church at Titikaveka in 1841; Institution House for the training of 'native teachers' in 1843; the Avarua church (1853); and finally the Matavera church, completed in 1864. While the influence of resident British missionaries and their individual ideologies is evident in these stone buildings, this study reveals the conflation of LMS and Indigenous aspirations in the para-colonial period. These churches were not only significant for their monumental presence – an important consolidation of Christianity from the LMS perspective – but for the pre-Christian traditions that were adapted and enwoven in their creation and use.

Through this architectural examination, the chapter focuses on the ways in which the *mana* (authority, power)<sup>2</sup> of *ngāti* was transposed onto a new Christian landscape, re-binding each tribal group to their ancestral land. By tracing the ways Indigenous leadership mediated the gospel message and reconstituted Christian architecture, this study reveals the entanglement of the LMS with European colonial endeavours while revealing Cook Islanders' continued agency within a (re)new(ed) socio-political order.

## 2. The LMS as a para-colonial agent

Founded in London in 1795, the LMS was one of the earliest mission organisations born out of the Evangelical Revival.<sup>3</sup> With a stated sole objective 'to spread the knowledge of Christ among heathen and other unenlightened nations' (Lovett 1899, 30), the LMS was an interdenominational

organisation with a strong social justice motivation and a commitment to Christianity as a deep personal conversion rather than state religion (Johnston 2003, 14; Porter 2005, 49).<sup>4</sup> The society had a significant role in the Christian mission across the globe for more than 150 years, with its mission field extending from the Pacific (1796) to India (1798), Central and Southern Africa (1799), the Caribbean (1808), Madagascar and Mauritius (1814), Southeast Asia (1815) and China (1844) (Archives Hub 2023). Merging with the Commonwealth Missionary Society in 1966 to form the Congregational Council for World Mission,<sup>5</sup> its legacy continues to influence world missions today.

The LMS had a particularly profound impact in Polynesia. It radically transformed social, cultural, religious, political, and physical norms across the islands in what has been described as ‘a large LMS Pacific empire’ (Goldsmith 2019, 461). In places like the Cook Islands, it preceded formal colonisation of the Cook Islands by multiple decades, and had an immediate and profound impact on Indigenous culture, social norms, settlement patterns and architectural expression. The societal transformation it wrought was a key aspect of colonial powers, including Britain, France and Germany later establishing a formal presence in the region. Missionaries’ widely published accounts of the islands, seeding of British systems of law and education, and ability to act as translators and mediators all ‘conditioned the entry of Indigenous peoples into the spreading economic and political hegemony of the Great Powers’ (Barker 2005, 87).

However, it is also important to recognise that the role of the LMS as a vehicle of para-colonialism in the Pacific was not straightforward. The mission both enabled and resisted imperial expansion, ‘operat(ing) on the front line of the colonial encounter’ (Thorne 1999, 9) while simultaneously sustaining and reshaping local Indigenous agency. Two aspects of these complexities have particular relevance to LMS architecture in the Cook Islands.

First, while the LMS was often an emphatic critic of colonial practice, its ministry paved the way for white encroachment as it carved inroads into Indigenous peoples’ lands and lifeways (Thorne 1999, 5–11, 155–156). A key aspect of this was the entanglement of Christianity with notions of civilisation. While the LMS’s primary objective was for all peoples to be ‘born again’ regardless of location or perceived level of ‘civilisation’ (Lovett 1899, 19–30),<sup>6</sup> the message of salvation was deeply bound with notions of civilising from its outset. Heartfelt conversion was evidenced by ‘correct’ (British) attire, cleanliness, dwelling type and layout, diet, education, and

regulations.<sup>7</sup> The expectation was that conversion and civilisation would progress in tandem,<sup>8</sup> and British-influenced architecture became material evidence of this interconnection in the Cook Islands as elsewhere.

At the same time, the LMS was explicitly dedicated to preparing evangelised peoples for Indigenous ministry and local congregational self-support, with ‘native agency’ perceived as ‘essential to (the mission’s) very existence... at once the reward and the glory of our early labours’ (Gill 1880, 130). In line with this vision (and with the practical realities of funds and personnel), the LMS had very few European missionaries in the Pacific at any time. In the Cook Islands, the larger islands of Rarotonga, Mangaia and Aitutaki seldom had more than one resident missionary and many of the smaller islands were visited annually at most. Instead, the LMS rapidly turned to Indigenous Polynesian converts to carry the message, to pastor new congregations, and to construct Christianity’s physical infrastructure. While Pacific Christian architecture was seeded from Britain, Cook Islanders themselves played a central role in its conception, construction, and legitimation.

These dialectical realities highlight ‘the eccentric forces at work’ (Aldrich 2005, 99) in the para-colonial condition, with missions such as the LMS simultaneously opposing and underpinning imperial expansion. Before exploring their architectural legacy, it is important to take a step back and examine both the inception of the LMS’s work in the Cook Islands and the local context of its main island, Rarotonga, which is the focus of this study.

### To the ‘South Seas’: The first LMS mission

Polynesia was at the centre of LMS’s evangelical ambitions from the society’s inception. Captain James Cook’s exploratory voyages had recently opened the South Seas to European imagination (Johnston 2003, 71), and the LMS chose Tahiti for its first mission venture. The islands were considered a suitable first target, perceived as being free from established religion and plentiful in food and resources. It was assumed that ‘natives’ would naturally see the benefits of Christianity and wish to reform accordingly (Lovett 1899, 68, 119–134).

The reality was not so straightforward. While the goal of bringing ‘light to the darkness’ was clear, effective means of achieving it were not. A group of eighteen approved missionaries, with six accompanying wives

and three children, arrived in Tahiti in March 1797, where they were left to their own devices to meet their practical needs and achieve spiritual transformation as best they could (Gunson 1978, 102, 121).<sup>9</sup> LMS's historian Richard Lovett records their initial efforts: 'they passed their time in completing their house, in assemblies for religious purposes among themselves, and in holding what intercourse they could with the natives' (Lovett 1899, 148). Their evangelism attempts made little headway, and fear of being caught up in local tribal conflict caused most of the group to leave for Port Jackson, Australia in 1799 (Taurira 2006, 67). For those who struggled on for the next decade, a low point was reached in 1808 when inter-tribal warfare left the mission in 'failure and ruin' (Lovett 1899, 182, 193–212). The situation only began to improve as a prominent chief, Pomare II, began to use Christianity as a way of advancing his power.<sup>10</sup> The subsequent political unification of the Society Islands under Pomare II in 1815 was overlaid with its conversion to Christianity. To the relief of LMS's directors in Britain, success was finally able to be demonstrated with the building of Christian villages, churches, and schools, and the Tahitian mission became the initial centre of LMS's expansion throughout the Pacific (Gunson 1978, 12).

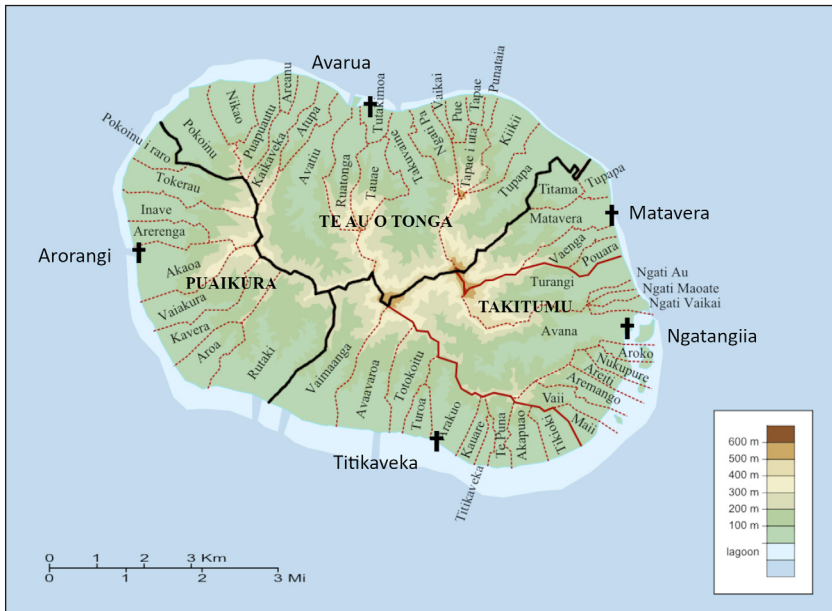
### The Rarotongan context

The importance of 'native instrumentality' (Stallworthy 1856) was a lesson carried forward by the LMS as they expanded their mission efforts west to the Cook Islands. Utilising the skills and cultural commonalities of Tahitian converts, missionary John Williams ventured first to the island of Aitutaki (1821) and then on to Atiu, Mitiaro, and Mauke in 1823 (Henry 2002, 104). Unlike the fruitless decades in Tahiti, the LMS was able to effect rapid and mass conversion in these islands as 'iconoclastic revolution' (Sissons 2014, 1) spread through Polynesia. Encouraged by these successes, in 1823 Williams continued to Rarotonga with Papehia, a Tahitian convert, and Tapaeru, a Rarotongan woman and granddaughter of an *ariki* (high chief in the island's hierarchical structure). In 1814 Tapaeru had been one of several Rarotongans who had been kidnapped from Rarotonga by a merchant ship, *The Cumberland*, and abandoned on Aitutaki. She had converted to Christianity and subsequently agreed to accompany Williams on the voyage to Rarotonga, where she proved pivotal to the mission's success. Papehia and Tapaeru were the only members of the LMS's voyage to land

on Rarotonga, and it was only through Tapaeru's intercession that Papehia was able to stay and preach the gospel (Maude and Crocombe 1962, 3–11).

The subsequent rapid uptake of Christianity was profoundly transformative to Rarotongan society. In less than ten years, the island's *marae* (delineated sacred spaces for religious and communal ceremony) had been almost totally destroyed, and the island's population had centralised from dispersed inland settlements to three consolidated villages on the coastal fringe. The earliest churches were constructed at monumental scale; the first, in Te Au o Tonga (Avarua), was more than 90 metres long (Gill 2001 [1871], 13). Their architecture merged local practices with Tahitian church precedents (Sissons, 2008), with timber posts and ridgepole structure, pandanus-thatched roofs and wattle and daub walls plastered with burn coral lime. Maretu, a Rarotongan convert and missionary, describes various types of Indigenous ornamentation and bark cloth wrapping applied to the interior timberwork (Maretu 2016, 65), including what Williams describes as 'indelicate heathen figures' (Williams 1837, 123–124). Jeff Sissons (2007) provides insight into these architectural responses. He describes how elaborate and ritually defined processes of constructing '*are atua* (god houses)<sup>11</sup> were translated to the new '*are pure*, the churches, as tribal allegiances shifted to the new religion. The figurative carving of '*are atua* was continued in the framing of the first timber churches, as was the wrapping of *ki'iki'i* with fine bark cloth through the wrapping of church posts and rafters (Sissons 2007, 51–53). Sissons suggests that, just as new wrappings on *ki'iki'i* had symbolically renewed their mana and life force in pre-Christian times, the wrapping of new church elements imbued the church with 'life-giving mana' (Sissons 2007, 54, 57), materialising a fusion of '*are atua*, and introduced elements to encompass the *tapu* (sacredness) of the church's predecessors.

These processes were not merely reapplying culturally meaningful material and construction techniques in a new context. Rather, they were part of an 'Indigenisation of the Christian churches, their incorporation into ... society, and the materialisation of a new religious and political order' (Treadwell 2016, 402–404). These deeply ingrained norms of spiritual and societal legitimation carried through into collective construction processes. Different *ngāti* worked collectively on Christian architecture in a projection of the competitive social structure previously maintained by warfare, and traditions of reciprocity in ritual feasting and labour became a communal endorsement of a transformed social order centred on *ariki* and the new (Christian) priests (Sissons 2007, 54–57).



**Fig. 1.1:** Rarotonga was divided into three vaka at the time of the LMS's arrival in a state of uneasy peace – Takitumu (east and south), Puaikura (Arorangi, west), and Te-Au-o-Tonga (Avarua, north) (Wikipedia 2008, overlay by author)

Through their form and process, Rarotonga's first churches and associated village settlements both usurped and drew on the paradigm of *marae*. Rarotonga's circular volcanic geography had historically determined its people's geopolitical divisions, with each *ngāti* laying ancestral claim to a *tapere*, a triangular wedge of land from the mountains to the sea (Crocombe 1964, 45) (Fig. 1.1). Located within each *tapere*, *marae* structured the island's cultural political world and determined its spatiality by binding descent groups to their ancestral land (Walter 1998, 25; Treadwell 2016, 327). Central to all religious ceremony, *marae* were critical to the *mana* of *ariki* and *mata'iapo*, independent leaders of *ngāti* who were collectively bound in a political system based on reciprocity, competition, and warfare.<sup>12</sup> Unlike dwellings and other structures that were deliberately temporal, *marae* were built for permanence as symbols of enduring land claim. High status *marae* were linked by an ancient road known as the Ara Metua, which encircled the island on the inland side of the coastal plain. A key part of pre-Christian society, it provided a practical and ceremonial link between *vaka* (larger alliance-based districts), with annual processions held in the 'aka'au atua (uniting gods) season to strengthen bonds between *tapere*.<sup>13</sup>

By changing allegiance to the new Christian god, Rarotongan *ngāti* leaders engaged in culturally understood processes of desecration and reconsecration (Sissons 2014, 81), destroying *marae* and their gods as they claimed a new religiopolitical order. Former *marae*-centred spatial relationships were reforged as *ariki* gifted land for Christian settlements, built missionary and chiefly residences directly adjacent to churches, and constructed a new road, the Ara Tapu (sacred path), on the coastal edge. Ceremonial practices were also re-centred: Christianised processions between churches on the Ara Tapu replaced those that had linked *marae* on the Ara Metua, effectively enabling the new road to usurp its predecessor's religious and social purpose.<sup>14</sup>

Williams provides important detail regarding the layout and architecture of these new centres of Indigenous life in his description of the village of Arorangi:

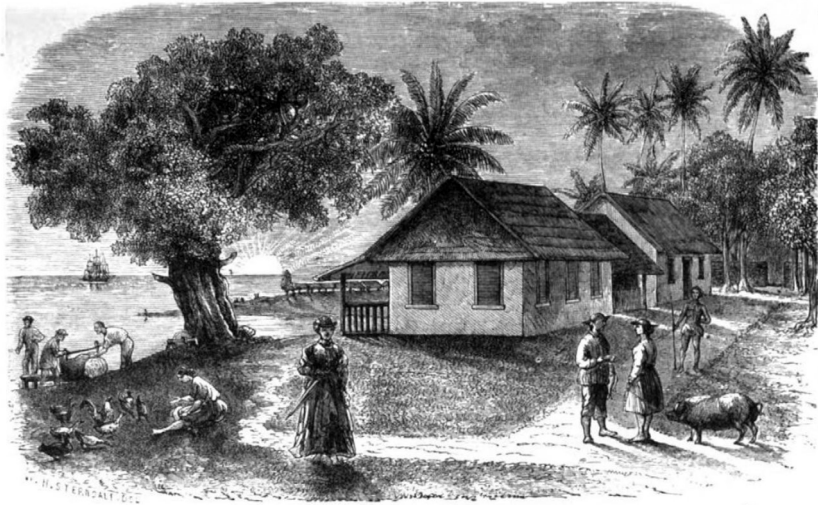
The site of this newly formed settlement was an extensive plot of flat land, stretching from the sea to the mountains. The houses stood several hundred yards from the beach (and) the settlement was about a mile in length, and perfectly straight, with a wide road down the middle, on either side of which were rows of tufted-top ti tree. ... The cottages of the natives were built in regular lines, about fifty yards from the border of this broad pathway, and about the same distance from each other. The chapel and school-house stand in the centre of the settlement; and by their prominence, both in size and situation, the natives would appear to express the high value they attach to the means of religious instruction. (Williams 1837, 379–380)

Williams' description seeks to overtly highlight the advancement of 'civilisation' wrought by the LMS (Fig. 1.2a-b). The mission had firmly cast a reformed society in a British mould, with church, mission-house, chiefly residence, school, and dwellings clustered along a tree-lined street, effecting permanent and profound para-colonial transformation in Indigenous space. At the same time, these Christian settlements were superimposed onto Indigenous symbolism that carried through into new material expression: a territorial claim from mountains to sea, the central prominence of the church as the new *marae*, and the victorious Christian road binding the island's three *vaka* in a permanent state of peace.<sup>15</sup>

None of these buildings survived the decade due to a devastating hurricane in 1831, and successive rebuilds were also destroyed by fire



A VILLAGE IN PUKAPUKA, UNDER HEATHENISM



THE SAME VILLAGE, UNDER CHRISTIANITY.

**Fig. 1.2:** (a) ‘before’ and (b) ‘after’ comparison of Pukapuka, one of the Cook Islands’ northern atolls. These illustrations indicate the transformation desired by, and expected of, LMS’s missionaries (W. H. Sterndale in Gill 1876, 18–19)

and storms (Maretu 2016, 75, 83; Gill 2001 [1871], 20, 41–45).<sup>16</sup> However, the restructuring of space was to endure, even as the island’s architecture was transformed once again through the use of coral stone.

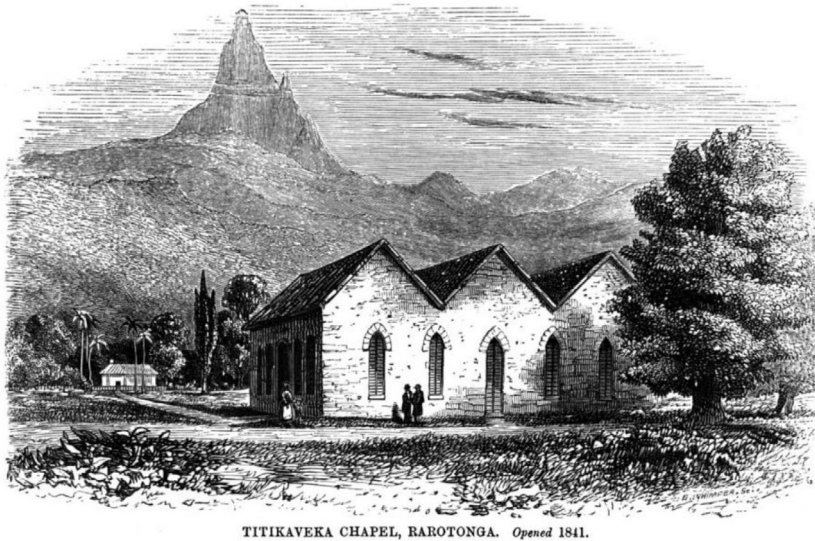
### 3. The first stone church: Titikaveka

The architecture of the LMS had, until the late 1830s, been confined to lightweight structures that combined Polynesian organic craftsmanship with LMS-introduced coral lime plaster. This changed in the mid-1930s as missionaries began to experiment in the use of coral stone as a building material. While the fragility and vulnerability of timber structures drove aspirations for safe and durable alternatives, this change was more than a matter of practical necessity. The move from timber construction to stone was an important conflation of mission and Indigenous aspirations in this para-colonial period.

Missionaries' ambitions are apparent in their frequent reports of church-building as evidence of success to their British support base (Gunson 1978, 131). The linkage of social improvement and Christian conversion meant that missionaries working in Pacific outposts endeavoured to 'progress' from outdoor preaching to temporary wattle and daub-type chapels, and finally to masonry churches, and they were consequently keenly supportive of a material change to stone. An important aspect from the LMS's perspective was the physical and symbolic durability of coral stone-based Christian settlements centred on a church – a permanent proclamation of Christianity implanted in place.

Missionaries' enthusiasm for stone churches was matched by that of *ngāti* leaders with their own motivations. The equation of masonry construction with social elevation was not new in Rarotonga, as stone had long been linked with *mana* through the construction of *marae* (Nia 2010, 23). Bound with the new god and demonstrating a new tectonic prowess in a highly competitive world, coral stone architecture rapidly supplanted both the older wooden church structures and the *marae* that had preceded them as the preeminent symbol of *mana*.

Various *ngāti* in Rarotonga had held out against Christianity through the 1820s and 1830s, particularly in the southern *vaka* of Takitumu where *ariki* leadership was less strong (Campbell 2002a, 234). It is no coincidence that it was one of these opposing groups, Titikaveka, that first took up stone when they finally did accept Christianity (Fig 1.3). Built directly on the new Ara Tapu and using coral blocks hewn from the reef, the church was a momentous construction task. Ta'unga, a Rarotongan convert and one of its first Indigenous missionaries, states that the sheer enormity of undertaking enabled the Titikaveka *ngāti* to regain *mana* lost by being among the last to embrace the new religion (Ta'unga 1968, 8). As religious



**Fig. 1.3:** Rarotonga's first stone church, Titikaveka, 1841 (Gill 1871/2001 [1855], 46)

and cultural meaning was transposed from *marae* to churches, so too was *mana* reasserted as old power structures were inscribed into new forms of architecture.

The Titikaveka church was built with the support of Reverend Charles Pitman, who was the resident missionary at Ngatangia at the time, and under the supervision of Alexander Cunningham, a Scottish settler.<sup>17</sup> The democratic influence of Congregationalism<sup>18</sup> can be seen in its design – a plain square plan with symmetrical, centrally placed doors at front and sides, simple lancet arch windows and minimal decoration. Devoid of a chancel and apse, the pulpit and communion table extended into the open floorplan, denying a stratified seating arrangement normalised in earlier churches. This egalitarian layout may have suited the people of Titikaveka, whose authority centred on a collective of *mata'iapo*, rather than on singular *ariki* as in the Avarua and Arorangi districts. The ashlar coral stonework remained unplastered both inside and out, again typical of Congregationalist rejection of adornment, but also evidencing the building's physical strength in an intensely competitive Indigenous world.

The detailing of the triple gabled roof is not described in Pitman and Maretu's records of the building. European construction methods and ideas were infusing new possibilities into Cook Islands' architecture; it is possible that elaborately constructed and ornamented open volumes, so

central to traditional Polynesian design, were giving way to a new expression of *mana* – that of monumental white enclosures. The intractable permanence of the church both resembled *marae* and extended on them through solidified containment. From the position of the LMS, the church tangibly advanced the cause of Christianity in leading the way to a democratic and civilised future; simultaneously, it re-legitimised and solidified the *mana* of Titikaveka’s people within their ancestral land.

The use of hewn coral blocks, and the Congregationalist style itself, was to be a one-off. In a letter to the directors in 1841, Pitman notes:

This was our first attempt at building with stone in Rarotonga, and I believe it is the first building to be built of that kind of stone in the South Pacific. An easier and more expeditious way of erecting edifices of stone has since been discovered, viz [sic] with broken fragments of coral which are to be found in large quantities upon the shore and in the reefs.<sup>19</sup>

Constructing impregnable walls with coral rubble was rapidly taken up as the preferred construction technique for churches, schoolhouses, *ariki* and missionary residences and common dwellings, along with stone edging walls that ordered property boundaries and controlled public and private space. Processes of construction, and the *ngāti* hierarchies and rivalries entangled with them, remained critical through this period. Each church’s erection was accomplished using community-wide ‘voluntary’ labour in a show of authority by *ngāti* leaders,<sup>20</sup> and other *ngāti* were invited to attend religious ceremonies and *ariki*-hosted feasts at key junctures.<sup>21</sup> Architectural accomplishment played an important role in the equipoise of *ngāti* and chiefly *mana* in a strongly rivalrous cultural framework.

Over the next decade the change from wattle and daub structures to stone occurred throughout the Cook Islands’ group as British missionaries and local converts took these techniques across the islands (Fig. 1.4).<sup>22</sup> The pattern of Christian place-making also began to be spread further afield as the LMS again extended the mission west.

#### 4. Further expansion: The Training Institute

It had been John Williams’ desire to establish a training institute on Rarotonga to prepare and send ‘pioneer teachers’ to other parts of the Pacific.<sup>23</sup> Following Williams’ death in 1839 the task was taken up by his

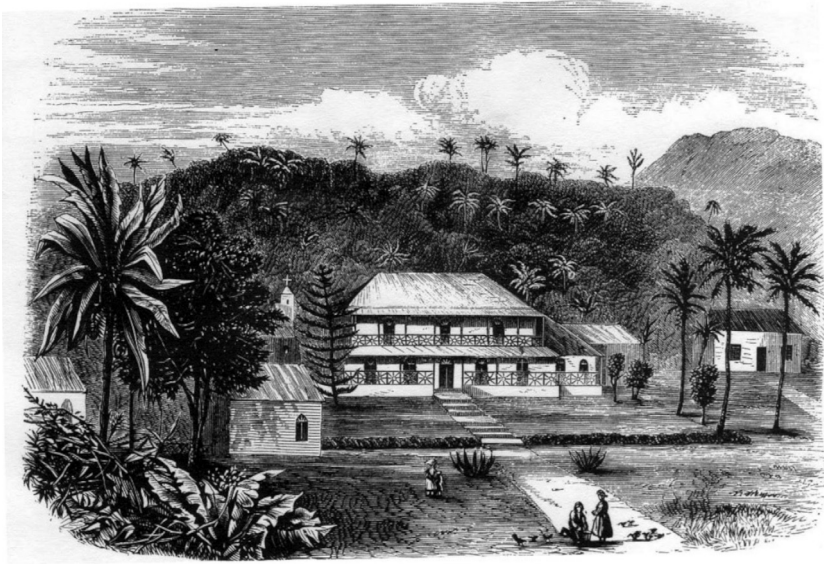


**Fig. 1.4:** A model Christian village – Rarotonga, Cook Islands, c.1910. (William Sanderson Cooper. Museum of New Zealand | Te Papa Tongarewa. Gift of Andrew Cooper, 2001 B.068713)

LMS friend and colleague Reverend Aaron Buzacott, who had arrived in Rarotonga in 1828. Fully aware of the importance of Indigenous agency in regional mission and congregational leadership, Buzacott established a ‘seminary for Pious Young Men’<sup>24</sup> in 1839, having already started a teaching programme with selected individuals. By 1843 work had commenced on ‘Institution House’ (Fig. 1.5). Buzacott describes its construction:

The middle part which is two storeys high is nearly roofed; when that is completed we intend to build the wings. We find it a heavy job, but the natives have hitherto worked well and cheerfully...<sup>25</sup>

Buzacott later mentions that in an earlier visit Williams had brought a proposed architectural plan for the building, ‘but that plan being considered unsuitable and inconvenient was afterward rejected and the present adopted in its stead’.<sup>26</sup> The institute’s design was therefore conceived locally. Buzacott himself clearly had a leading role,<sup>27</sup> but local people, including ariki Makea who had sold the land to the LMS,<sup>28</sup> Indigenous



**Fig. 1.5:** The Training Institute, 1843. The building, now known as the Takamoā Theological College, remains a centre of Christian teaching in Rarotonga (Buzacott 1866, 130)

church leaders like Maretu and Ta’unga who had previously led other stone construction projects, and the scholars themselves (who, after all, were soon called upon to undertake the work), are also likely to have had varying levels of architectural input. The building is almost archetypal in its expression of British architecture in a foreign land: a two-storey form set in a carefully controlled tropical landscape, deep verandas with lattice-like balustrades and slender timber posts, solid white walls symmetrically punctuated with round-arched fenestration, and enclosed by venetian shutters and segmented fanlights.

However, this appearance may bely an enduring hybrid symbolism within LMS’s places. Buzacott includes notable details of the design and building processes, including that at the foundation-laying ceremony ‘an immense stone was rolled into a place previously prepared by the chief’s party, which was the signal for general action’.<sup>29</sup> Ancient traditions continued to be carried over into new architecture in symbolic acts of consecration.

In addition, Buzacott also notes that ‘at different periods I had a bullock killed for them – thus they were very much encouraged in their work’.<sup>30</sup> The provision of feasts at key stages of construction were traditionally supplied by *ngāti* leaders as a payment token for their peoples’ labour. The transfer of this responsibility to Buzacott signals the shifting power dynamics that



**Fig. 1.6:** A group of scholars with the Hutchin family, c.1896 (photographer unknown, Museum of New Zealand | Te Papa Tongarewa, O.025507)

were occurring in this period. Power was increasingly concentrated in *ariki* and the LMS, meaning that *ariki* were less reliant on *mata'iapo* for support. Instead, mutual dependency lay between 'paramount chiefs' and individual missionaries, with both being able to place demands on 'their' people.<sup>31</sup> This dual authority remained essentially intact until the islands' power balance began to shift once again from the mid-century, as a significant increase in foreign traders followed by British and New Zealand colonisation eroded LMS (and later, *ariki*) control.<sup>32</sup>

The construction of a purpose-built training facility along with improved printing equipment was immediately successful in multiplying the number of 'native teachers' ready for new mission fields (Fig. 1.6). Rarotonga became central to the LMS's expansion in the Pacific: by 1893 it had sent 490 Cook Islander missionaries to Samoa, the Loyalty Islands, the New Hebrides, and New Guinea (Lovett 1899, 353). As with Tahiti and the Cook Islands, Williams' central ambition 'to carry the glad tidings of salvation' (Prout 1846, 51) was inseparable from the societal transformation it catalysed and required. Indigenous missionaries were cultural brokers of European norms and ideas as the Pacific began to open to European empires.

## 5. Avarua: The Gothic Church

Having completed the Institute, Buzacott's architectural aspirations turned to a new church for the Avarua mission station. Avarua had been Rarotonga's earliest Christian settlement, and its church had already been rebuilt several times.<sup>33</sup> By the late 1840s it was the only district not to have a coral stone church.<sup>34</sup> It is likely that this was a sore point both for the Avarua *ngāti* and for Buzacott himself. Locked in a long-standing feud with Pitman (the island's only other foreign missionary at the time),<sup>35</sup> it may have been particularly important for Buzacott to demonstrate his missionary prowess to the London directors through the construction of 'the best specimen of Gothic architecture in the South Seas' (Buzacott 1866, 219).

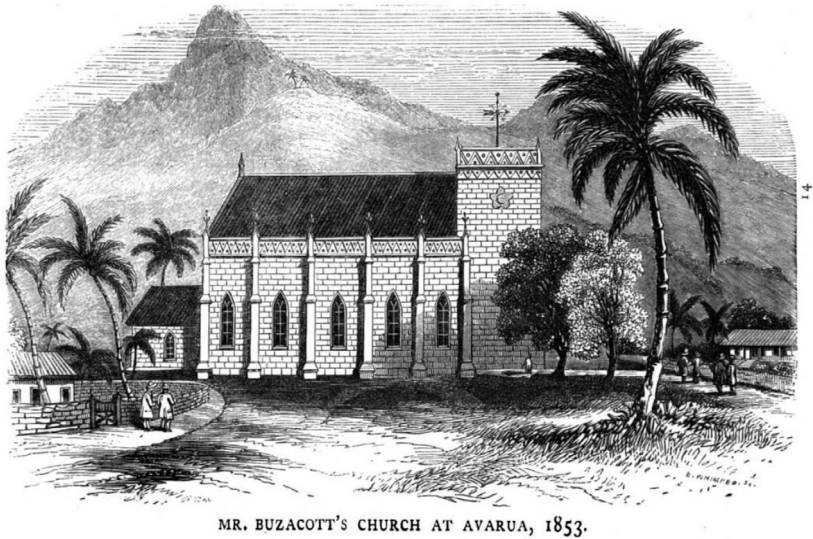
Influenced by the work of Augustus Pugin and others, Gothic Revivalism was at its zenith in mid-19th-century Britain. Having already achieved a mission station that, as described by one traveller, 'for neatness and comfort, surpasses anything we have met among the missionaries' (Captain Sir Edward Belcher, quoted in Buzacott 1866, 219), Buzacott was evidently keen for his work to culminate in a church designed in the 'true' and highest expression of Christian architecture. While on furlough in 1852 he had managed to obtain the architectural plans of the Congregational Church in West Melbourne, which he promptly actioned in Rarotonga (Fig. 1.7).<sup>36</sup> In a letter to the directors in July 1853, Buzacott writes:

Our people at Avarua have during the past year built a splendid Church quite in the Gothic style with a Tower one side and a vestry the other. I can assure you it is quite the wonder of the Island. We have built it as strongly as we can, no labour has been grudged by the people who have built it entirely on the voluntary principles.<sup>37</sup>

Ariki Makea also endorsed the project to the directors, writing in November 1853:

We are greatly delighted in the return of our Missionary (Buzacott). ... We have now another thing which greatly pleases us – a new stone chapel built by Mr Buzacott since his return – all the people men women and children have heartily united in its erection...<sup>38</sup>

Positioned between the Ara Tapu and the Institute and orientated east-west with its apse to the rising sun, the building featured the typical



MR. BUZACOTT'S CHURCH AT AVARUA, 1853.

Fig. 1.7: The church at Avarua, completed in 1853 (Buzacott 1866, 210)

elements of a Gothic church. Its vertical rectilinear form was set with evenly spaced stepped buttresses with pointed pinnacles, coursed walls topped by decorated entablature, slender lancet windows, and a prominent front bell tower projecting above the roofline. The interior layout was hierarchical, with front seating arranged in a chancel-like formation around the central altar and a three-sided gallery above. Tellingly, a later missionary James Chalmers describes the Avarua church as ‘more of a foreign building... it lacks real native style of architecture within, though the whole of the work was done entirely by natives’.<sup>39</sup>

By the time of this church's completion, two decades had passed since Papehia and Tapaeru's dramatic introduction of Christianity to Rarotonga. The church at Avarua completed a landscape that was distinctly structured as a model mission station. The expectations, both of missionaries and of local people, were firmly set as to what Christianity was in practice and form in the Pacific mission field. For the LMS, the churches and Training Institute epitomised the consolidation of Christianity and an important step towards the perceived benefits of (European) civilisation. For *ariki*, these new forms were critical for the reassertion and enhancement of their *mana*. Christian churches and the sacred Ara Tapu road that linked them had usurped *marae* on the Ara Metua, and as such had become the preeminent symbol of tribal authority and land claim.

## 6. Reclaiming expression: The Matavera church

Pitman and Buzacott left Rarotonga in 1854 and 1857 respectively, and Reverend Ernst Krause was appointed as Rarotonga's sole European missionary in 1860. Settling in Avarua, Krause's visits to the island's other *vaka* were rare. In 1862 he makes the following note as an afterthought to the directors: 'We are building a new chapel in Matavera and I have to assist a little with tools.'<sup>40</sup>

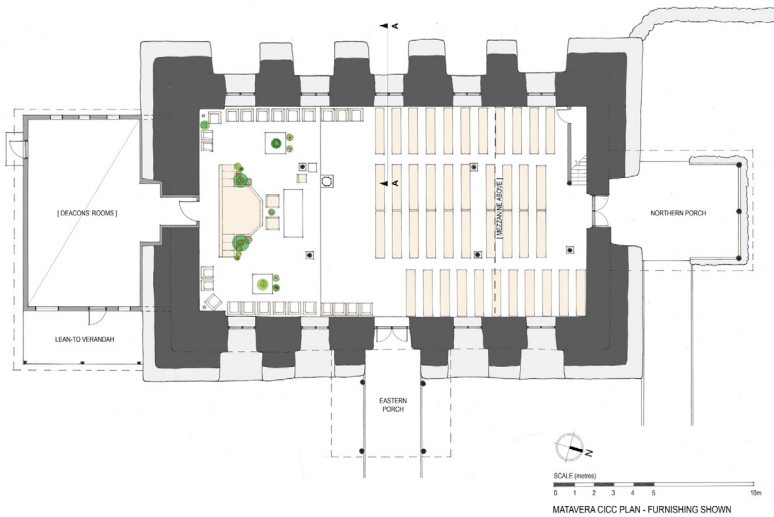
This comment is the first record of the coral stone church that sits at the centre of the Matavera district in north-east Takitumu. Krause's interests were clearly elsewhere: based at the Training Institute, his focus was on teaching the next generation of Indigenous missionaries, and the Matavera project appears to have been an unwelcome distraction. It is not until 1864 that Krause mentions the church again:

Matavera has erected a fine large chapel, but [the district's leaders] being very wise in their own eyes, listening to no advice have procured a most undefinable order of architecture.<sup>41</sup>

What was this building that seemed to irritate Reverend Krause? Unlike the churches at Titikaveka and Avarua, which were endorsed and led by resident British missionaries and celebrated in LMS's records, the Matavera build is barely mentioned in LMS's correspondence. The inception story of Matavera indicates that the Avarua church was not the last word in Christian architectural expression in this para-colonial period.

Forming the northern part of the Takitumu *vaka*, Matavera had, with Titikaveka, been a stronghold of anti-mission activity. However, the formation of the church in Titikaveka impelled the *mata'iapo* of Matavera to seek the creation of a fifth station in their own ancestral land. This demand was steeped in controversy. Opposed both by Takitumu's *ariki* (whose power was concentrated in the existing Christian villages at Titikaveka and Ngatangia) and by Pitman (who wanted to avoid further fragmentation), a separate district was only agreed as a lesser evil to intertribal warfare.<sup>42</sup> The *mata'iapo* of Matavera had shown themselves to be staunch opposers of the gospel; now, upon conversion, they equally demonstrated their tribal *mana* and independence by demanding a church on their own land.

A timber church and Christian village was erected on the old Ara Metua road in 1849. However, it was only after the Ara Tapu, the new coastal road, was completed through their *tapere* in 1857 that the Matavera



**Fig. 1.8:** (a) The Matavera church in 1904 (George Crummer, in Wragge 1906, 131); (b) The Matavera plan (as at 2025) has formal similarities to a *marae* layout, with the piers acting as bounding stones to a central platform with hierarchical spatial ordering (drawing by author)

*ngāti* chose to build a stone church (Fig. 1.8a-b). The entire settlement was relocated to the Ara Tapu as Matavera's leaders both conceded to, and claimed, its enhanced coastal status.

The church's siting and architecture were deliberately aimed at re-staking Matavera's tribal land claims in a transformed and rapidly consolidating social order. It is not difficult to understand why Krause saw the Matavera building as 'undefinable'. Designed as a simple gable-roofed rectangle with two levels of round-arched windows, the church was immediately remarkable for its massive buttressed walls. Their scale of construction – well beyond the magnitude of any other church on the island and almost three metres thick at base – indicates a preoccupation with monumentality exceeding any environmental requirements. If Titikaveka *ngāti* had regained *mana* by being the first to use stone and in its arduous ashlar shaping, it appears that Matavera sought to equal and eclipse these efforts by sheer scale and bulk.

Unlike Titikaveka, which is clearly structured to a Congregationalist style via Pitman's influence, and the Avarua church, shaped by Buzacott's Gothic Revival vision, the Matavera church is at neither end of the Christian stylistic spectrum. Krause's irritation at Matavera 'listening to no advice' strongly demonstrates the creative control of the district's *mata'iapo* and its people, as para-colonial notions of Christian architecture were selectively adopted and reconstituted. Adopting an architecture that both supplanted and emulated *marae* in form and practice, the church landscape reconsecrated Matavera's ancestral claims on the land.

## 7. Legacy

By the time of Matavera's church construction, Rarotonga had become an informal centre of trade for the island group. The establishment of primary industry in the form of plantation crops had successfully proven LMS's ambitions for the island – an exemplar of Christian outreach with industry, civilisation and commerce following in its wake. However, it had also monetised labour: from the mid-19th century the LMS had increasingly been required to pay for construction undertaken by their congregations (Gilson and Crocombe 1980, 42, 48), which consequently led to a decline in monumental building projects. The Avarua church was to be the last substantial building instigated by a LMS's missionary. Matavera therefore emerges as a singular work by its people alone – a final expression of Christian architecture Indigenised.

British colonisation of the Cook Islands was encouraged and facilitated by the LMS. Exploitative commerce, land appropriation, alcohol and licentiousness were all concerns of the mission as white traders gained stronger footholds, and British government was increasingly seen as both inevitable and a necessary responsibility of the empire.<sup>43</sup> However, its enactment – as a British protectorate in 1888 and then as a New Zealand colony from 1901 – also caused the power of the LMS to wane. The uneven transition from LMS theocracy to secular democracy was the final end to substantial church construction as mission and *ngāti* leadership was undermined and legal changes severed the vestiges of free labour supply.<sup>44</sup>

The five historic coral churches – all heavily altered – remain in Rarotonga. Their grounds have changed, trees have been cut, and school buildings and church halls have been replaced or repurposed over time. The regular homogeneity of white village dwellings and tidy boundary walls have been lost as they have outlived their practical utility and societal meaning. But the churches continue to function as important parts of the Cook Islands' religious life and culture. Many *ariki* and *mata'iapo* are also church deacons, with their title investitures involving both church and *marae* ceremonies. The Ara Tapu continues to encircle the island, directing daily activity and centring ongoing expressions of cultural and religious celebration.

As shown through this discussion, Rarotonga's 19th-century coral stone churches and training institute conflated LMS and Indigenous aspirations in the para-colonial mission period. Even as British and Rarotongan missionaries became cultural brokers for European imperial expansion, their architecture was vested in pre-Christian socio-political structures that endured in the interstitial spaces of para-colonial encounter. Their spiritual and political significance was not only in their tangible completion and monumental presence, a key aspect for the LMS, but in the transposed rituals of pre-Christian tradition that were enwoven in processes of making and occupation. Recontested and renewed with each generation, such processes continue to define and shape the ongoing sustainment and use of these now historic places. Churches, like *marae*, remain entwined with strongly Indigenous associations of tribal hierarchy, *mana* and land, belying and enveloping their para-colonial origins.

## Notes

- <sup>1</sup> This chapter draws from Hill 2016.
- <sup>2</sup> Prevalent across Oceania and without direct European parallels, *mana* is a complex concept that encompasses status, power, authority and prestige, and in 19th-century Cook Islands was deeply tied to land (Campbell 2006).
- <sup>3</sup> Led by radical Christians such as John Wesley and George Whitefield, the Evangelical Revival that swept Britain through the 18th century was tied to Britain's abolition of slavery and was the fountainhead of various evangelical, social justice, and mission-orientated organisations. This included the LMS, the Wesleyan, Baptist and Church Missionary Societies, London City Mission, Salvation Army, the Young Men's Christian Association (YMCA), Scouts and Guides, and the Society for the Prevention of Cruelty to Animals (SPCA) (Mangalwadi 2012, 272; Johnston 2003, 4).
- <sup>4</sup> See also David Bogue's paper 'To the Evangelical Dissenters who practise Infant Baptism', published in September 1794 in *Evangelical Magazine*. This publication was very influential in the establishment of the LMS the following year (Lowett 1899, 5–10).
- <sup>5</sup> The Congregational Council for World Mission shortened its name to 'Council for World Mission' in 1980, and continues to function internationally (Council for World Mission 2023).
- <sup>6</sup> This was a point of contention between mission societies, with some such as the Church Missionary Society deeming that 'civilization' (through teaching of trades and so forth) was an essential precursor to the gospel (Gunson 1978, 36, 102–103).
- <sup>7</sup> For an example of a 'before and after' comparison, see Buzacott (1866, 238–243). The intrinsic relatedness of Christianity and civilisation was evident in a LMS deputation to the South Sea mission in 1821, tasked with inspecting the state of the mission stations in terms of gospel delivery and 'the occupations and habits of civilized life', including church buildings, schools, trades, and agriculture (Lovett 1899, 232).
- <sup>8</sup> As expressed by missionary William Gill in 1856, 'industry, civilization and commerce follow in the footprints of Christianity, and derive from her their security, extension and glory' (Gill 1871/2001 [1855], 125). It is important to note that organisational and situational intentions remained complex, and the entanglement of evangelisation and civilising agendas continued to be debated. Examples include missionary John Philip writing in 1828: 'it is very well in its place to urge the civilizing influence of a missionary society. But this is not the main object of such an institution... the great aim of which is to preach Christ to sinners' (Philip 1828, 360; Philip references missionary John Chalmers). The LMS's general regulations more than 40 years later in 1873 similarly state: 'Do not anglicise your converts. Remember that the people are foreigners. Let them continue as such. Let their foreign individuality be maintained. Build upon it, so far as it is sound and good; and Christianise, but do not needlessly change it' (*General Regulations for the Guidance of the English Missionaries of the Society* (London, 1873), Part II, General Instructions for Missionaries, Article 12K, quoted in Porter 2005, 328).
- <sup>9</sup> The isolation of the mission was absolute: for the next nine years the missionaries only received two official communications from LMS's headquarters (Lovett 1899, 187).
- <sup>10</sup> Having failed in a bid in 1803 to establish sole rule in Tahiti and Mo'orea (French Polynesia), Pomare II had fled Tahiti and taken residence in Mo'orea, where an LMS missionary, Henry Nott, remained with him. As Jeff Sissons describes, 'as the relationship between the two men strengthened so too did Pomare's interest in the political possibilities of Christianity' (Sissons 2014, 33). In 1812 Pomare 'publicly declared his allegiance to Jehova' (35) in a strategic (and this time successful) move to unite Tahiti and Mo'orea under his authority.
- <sup>11</sup> Built within the bounded confines of marae, these small wooden structures were used to house *ki'iki'i* – carved wooden pole god figures ceremonially wrapped in layers of bark cloth (Campbell, 2006, 106).
- <sup>12</sup> The power of *ariki* and *mata'iaho* varied and was contestable: *mata'iaho* were independent landholders who gained their position by success in war or by relation to an *ariki*; *ariki* generally had more *mana* than *mata'iaho* and they governed the inter-*tapere* alliances that formed *vaka*. Obligations were reciprocal and based on mutual dependency (Campbell 2002a, 222, 237).

- <sup>13</sup> *Vaka* boundaries were easily reshaped by warfare and changing allegiances (Maude and Crocombe 1962, 38–39; Sissons 2007, 56).
- <sup>14</sup> Throughout Polynesia an important distinction is drawn between seaward and inland, with the coast having higher status through its associations with ‘tapu, horizons and things foreign’ (Campbell 2002b, 153, 166).
- <sup>15</sup> The church-centred villages represented a re-scribing of the three *vaka* onto the land, with territorial claim no longer through *marae* but through monumental churches. The LMS’s desire to centralise the population and establish clear lines of authority typified the mission’s approach and created the conditions for the societal norms of the colonial period that followed. It also concentrated power in *ariki*, with *mata’iapo* and other tribal authorities becoming increasingly subordinate to a new hierarchy of church and chief (Garrett 1992, 249–250).
- <sup>16</sup> Some fires were arson by *ngāti* that continued to oppose the gospel through the 1820s and 1830s.
- <sup>17</sup> Pitman, 27 February 1837; Pitman, 8 June 1841.
- <sup>18</sup> Most LMS missionaries, including Pitman, were Congregationalists (Gunson 1978, 42).
- <sup>19</sup> Pitman, 26 August 1841.
- <sup>20</sup> Pitman was ambivalent about the work involved, noting that the people undertaking it were largely commoners who were obliged to obey their chief (Pitman, 26 August 1841). His comments are a reminder that church construction for the *mana* of chiefs and missionaries often created a heavy burden for local people.
- <sup>21</sup> Gill describes this in the construction of Arorangi’s first stone church in 1844, where a large ceremony was held to fix the centre stone of the building. *Ariki* from Takitumu and Avarua attended and, with Tinomana, Arorangi’s *ariki*, the three set the stone together (Gill 1871/2001 [1855], 37). Similar rituals in Mangaia are recorded by Maretu (Maretu 2016, 131, 152, 153). The historian Joe Gray notes that when Ngatangiia completed its first stone church in 1848, the tribe was unable to invite the island’s other tribes to its opening due to a personal disagreement between Pitman and Buzacott. Ngatangiia was frustrated at not being able to flaunt their success to Avarua, who still had an old-style timber church, and their humiliation that Titikaveka and Arorangi had built stone churches before them. Ngatangiia’s disgruntlement would have been shared by their rivals due to the mutually understood importance of maintaining the competitive system, albeit in a transformed state under Christianity (Gray 1975, 397, 398).
- <sup>22</sup> Gill G., 7 February 1846.
- <sup>23</sup> Hutchin, 12 January 1888.
- <sup>24</sup> Buzacott, 1 October 1839.
- <sup>25</sup> Buzacott, 11 July 1843.
- <sup>26</sup> Buzacott, 3 June 1844.
- <sup>27</sup> Buzacott evidently had a personal interest in architecture and construction. While in Sydney in 1842 he had busied himself ‘obtaining information on the various branches of building, carpentry, cabinetmaking...’ (Buzacott, 29 September 1842), and was drawn to Gothic Revival as evidenced in his later church.
- <sup>28</sup> Buzacott, September 1839.
- <sup>29</sup> Buzacott, 3 June 1844.
- <sup>30</sup> Buzacott, 3 June 1844.
- <sup>31</sup> Buzacott was fully confident in his personal ability to expect free labour, stating in an earlier letter that ‘the labour part of it will principally be done free of expense by the natives for me as *their missionary*’ (my emphasis). Buzacott, 29 September 1842. It is notable that *ariki* were also having large coral stone residences built for themselves during this period to surpass those of the missionaries, sited in close proximity to the church as an explicit reminder of their ancestral title and prestige (Gilson and Crocombe 1980, 33, 34).
- <sup>32</sup> Krause laments in a letter to the directors in 1863, 25 years before British annexation: ‘Now the tide of events is becoming more critical every year. Foreigners try to settle in the island, enterprising and unscrupulous merchants try to get workers from here for America and Australia and all seem to feel, that it is only the Missionary who hinders, of what was called in the Auckland papers “The opening up of Rarotonga”’ (Krause, 14 October 1863). The consequent refocus of ordinary

- people's commitments is evident in a letter from Hutchin where, in discussing the need for major repairs to mission property following a hurricane in 1888, he complains that 'it is only by constant speaking and urging that you can get the natives to bestir themselves in these matters' (Hutchin, 15 January 1889).
- <sup>33</sup> Buzacott, 20 October 1835; Pitman, 8 June 1841.
- <sup>34</sup> Titikaveka, Arorangi, and Ngatangiia had completed their new buildings from 1841 to 1848. Matavera, discussed below, had not yet been established as its own separate district (Gill 1871/2001 [1855], 42–43; Gilson and Crocombe 1980, 27; Gray 1975, 402–404).
- <sup>35</sup> Pitman, 5 February 1847; Royle, 25 June 1847.
- <sup>36</sup> The church was the recently constructed West Melbourne Congregational Church, pastored by Reverend Thomas Odell and designed by R. R. Rogers. An 1851 etching of the church (available in the National Library of Australia collection) shows distinct similarities with its Avarua emulation (Buzacott, 16 January 1854).
- <sup>37</sup> Buzacott, 6 July 1853.
- <sup>38</sup> Makea, 22 November 1853.
- <sup>39</sup> Chalmers, November 1890.
- <sup>40</sup> Krause, 15 March 1862.
- <sup>41</sup> Krause, January 1864.
- <sup>42</sup> Maretu, *Cannibals and Converts*, 186–192; Pitman, 28 November 1849.
- <sup>43</sup> LMS missionaries were often concerned by, and sought to curb, changes brought by colonisation, including perceived loosening morals around alcohol and marriage, but also foreign settlement and control and loss of Indigenous language. For examples, see Harris, George, 1888, 1891, and 1892 (white settlement, unfair trade, language substitution, land loss, liquor, divorce); Hutchin, John, 1888, 1890, and 1891 (law, liquor); and Lawrence, William, 1893 (laws).
- <sup>44</sup> Major construction projects had already become financially challenging for the LMS, as described above. The final insurmountable changes were new wage requirements for work that had previously been undertaken at the behest of *ngāti* or church leaders, alongside the abolition of laws that had labour punishments, for example, construction of stone walls or roading (Moss 2; Scott 1991, 48).

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## Chapter 2

# Tongan–German (Siamane) Relations and their Architecture in the Kingdom of Tonga

*Charmaine 'Iaiū Talei*

### 1. Introduction

Growing up in reportedly the largest Polynesian city in the world, Auckland, its Tongan society included half-caste Tongans of European descent from an earlier world. I attended church with the Wolfgramms. At school I learned about the Tongan artist Dagma Dyck. My father had his good friends, the Guttenbeils, whom he remembers fondly during his years teaching at the local high school, Mailefihi Siulikutapu, in the main town, Neiafu, Vava'u. Tongans with German ancestry, or as we say, Tonga 'Siamane' (Tonganised word of German) were among us and part of us. In the end, we are all Tongans. In the same way social assimilation has occurred, I argue that the same could be said for the architecture built in Tonga, funded or supplied by German émigrés and the Tonga Siamane community at the turn of the 19th century. This chapter seeks to contribute to an under-researched area of Pacific architectural history by investigating how the Tongan–German relational context influenced the *fale* (building) construction in Tonga during this early period. Much has been discussed about German colonialisation of other parts of the Pacific Islands, but less about their interactions in the archipelago of Tonga. This is largely due to the early establishment of the Tongan King George Tupou I's dynasty prior to the mid-19th century, which limited foreign influence over his Kingdom. This chapter asks to what extent did European Germans, who chose to live in Tonga, and then followed by their descendants—the Tonga Siamane, influenced local Tongan architecture and what architectural legacy continued.

Historical information (in English) of this early period in Tonga is scarce and relies on cross-disciplinary investigative research methods.

Before presenting two case studies, the chapter presents brief Tongan architectural context and the Tongan-German *vā*, or sociospatial relations, which existed during the mid-19th century through to the early 1900s. Two case studies are presented that include the Royal Palace and Neiafu's buildings built by European Germans and Tonga Siamane. A key finding is that the German influence on Tonga's built environment is not obvious, and the paper suggests several explanations for this lack of architectural visibility.

The first Germans arrived in the Kingdom of Tonga in the late 1800s as part of worldwide exodus from the *Vaterland* and populated the archipelago over several decades. Although Germans have become assimilated into Tongan society for more than 100 years now, one could argue that it is unusual that Germanic stylistic and architectural influences are hard to find. It then raises the question, why is this so? I will present the sociopolitical reasons for this anomaly to preface two architectural case studies that reflect Tongan–German social relations.

## 2. Tonga's sociopolitical relations and architectural transformation during the 1800s to 1900s

The architecture of the Kingdom of Tonga during the 1840s to the 1990s reflects the cultural, economic, and geopolitical transformation of this Island nation. Architecturally, this included thatched *fale* made from fibrous materials sourced locally. The late 1800s saw the introduction of timber-framed *fale*, namely houses of early missionaries and traders; followed by important national buildings like Tonga's Royal Palace in Nuku'alofa, Tongatapu Island. The 1900s experienced the most drastic changes when industrialised buildings materials were increasingly available, due to more economic trade and imports ('Ilaiū Talei 2016).

Copra' is the dried kernel of fruit from the *cocos nucifera* palm, or coconut tree. The trade of copra began as early as the 1840s in Tonga, when at about this time King George Tupou I wanted to expand coconut plantations to satisfy international demands (Campbell 1992, 103). At about the same time, an influx of emigrating Germans appeared at different parts of the world, which led to a significant number of Germans arriving at the shores of Oceania by the late 1800s, coinciding with the economic and architectural changes already occurring in these Island nations.

Early German émigrés arrived in Tonga during the mid-19th century with the promise of great profits from coconut oil, and they ‘were generally employees of the Godeffroys or DHPG by way of Samoa’ (Bade 2014, 5, 11). Tupou I’s 1862 revised Codes of Law of Tonga perpetuated this trend, attracting many foreigners to lease land for 21 or 99 years. In 1867, the Hamburg-based company J C Godeffroy & Sohn (later the conglomeration of the Deutsche Handels- und Plantagen-Gesellschaft der Südsee Inseln zu Hamburg (DHPG)) set up its Tonga-based franchise and soon dominated the market, having already established itself in other Pacific countries including Samoa (Cook 2017, 7, 17).

At the turn of the 19th century, Tonga’s once subsistence and cultural exchange economy became diversified with the addition of a cash economy fuelled by agricultural products such as copra. Copra allowed Tongan commoners to move beyond subsistence cultivation of their *‘api ‘uta*, or agricultural allotments, and participate in a market economy. Driven by the high demand in Europe for this edible fat and oil, the copra industry grew quickly in Tonga, as it did in other parts of the Pacific during this time. The trade of copra for cash enabled Tongan commoners to purchase new building materials and acquire tools to modernise their Tongan *fale*.

A Tonga Siamane descendant explained that one village in the outer islands of Vava‘u called Holonga was prosperous during the mid-20th century because of the copra trade. From young to old, there was enough prosperity to purchase and build new houses. By the late 1800s, expansion of the German merchants through the Pacific was at its peak. The German company Deutsche Handels- und Plantagen-Gesellschaft was one of the first foreign trading companies to purchase Tongan copra, and after the First World War other franchises joined the market like Burns Philp, Morris Hedstrom, Brown Joske Limited, and Lever Brothers (Cook 2017, 144; Eustis 1997, 203). The trade of copra continued to increase over the next decades, which allowed Tongan commoners to increase their production and purchasing power of foreign goods supplied by the same trading stores. Before the influx of German émigrés, the British settlers, traders, and missionaries were already present, however, the German firms soon held the greatest proportion of Tonga’s export trade and almost 50 per cent of the imports into the country (Firth 1973). As part of the imports German merchants sourced their goods, including building materials, from Germany and eventually the British colonies. Next, I discuss two important architectural case studies that best reflect Tongan–German relations.

### 3. Royal Palace: German connections?

Little is cohesively published about who constructed the timber-framed *pālasi*, or Royal Palace, and its Royal chapel in Nuku'alofa – the present-day official residence of Tonga's royal family. There are several photos of the Royal Palace from the late 1800s, through the 1900s, and after its renovation in 2010. But who designed and built the original palace is not clear apart from references found in disjointed published sources.

In Emeritus Professor James Bade's book *Germans in Tonga*, he explains that the palace was built by J C Godeffroy & Sohn. He explains that the source of this reference lies in Kurt Düring's book titled *Early photography: Tonga and Samoa 1855–1900* (Düring 2001), with foreword by His Majesty King Tāufa'āhau Tupou IV, which has an early photo of the Royal Palace with the caption: 'The Royal Palace (built 1867) and chapel (built 1882) in Nuku'alofa. Both buildings have been erected by the "German firm." Prefabricated Kauri-wood from New Zealand was used.' Bade identifies 'the German Firm' as the J C Godeffroy & Sohn, taken over by DHPG in 1878.

In past newspapers from New Zealand and Australia, the palace appears to be still under construction during 1875<sup>2</sup> costing 8,000 pounds, at that time,<sup>3</sup> and was reportedly 'nearly finished'. Similar but equally conflicting past newspaper accounts<sup>4</sup> claim that in 1877 King George Tupou I 'is having a magnificent palace built ... [i]t is to cost 3000 pounds and is being constructed of Australian hardwood'. In more recent architectural history accounts the Royal Palace is widely accepted as a pre-fabrication kit of parts from New Zealand, made from Kauri timber, and assembled from 1865 to the late 1870s ('Ilaiū Talei 2024) (Fig. 2.1). However, if the palace was indeed constructed of Australian hardwood, as reported in the newspapers of that period, then it was due to 'the Auckland timber' being 'refused' and not 'uniformly good', as highlighted in another article.<sup>5</sup> I propose that it appears timbers were sourced from New Zealand and Australia, and after trialling the timber from New Zealand, Australia became the preferred supplier for the Royal Palace. Historical data give dates that do not add up and that span more than 10 years. A prefabricated building would have been erected easily within a year or two after materials were supplied to site. In a similar muddled history about where the king sourced his materials are the historical accounts regarding who the king employed to build his palace.

Personal historical accounts are unfolding about the involvement of other non-German families living in the Pacific at the time (Davis 2024).



**Fig. 2.1** Photograph of Kingdom of Tonga's Royal Palace (by Charmaine 'Ilaiū Talei, 2022)

Irregular data and privileged retelling of historical narratives, namely about British involvement in comparison to German, I argue, is apparent in current architectural literature about the Royal Palace of Tonga in Nuku'alofa. To assist in setting the record straight, I purport the Royal Palace in Nuku'alofa was a building realised by Tonga's first monarch, King George Tupou I, who built it with materials from the British colonies of New Zealand and Australia, and even furniture from Germany, and could be argued as Tonga's first international building. This approach to building is not new. In fact, as my research ('Ilaiū Talei 2013) about transmission of Fijian building technologies to Tonga and vice versa emphasises, Tongans, like other Pacific peoples, were free agents borrowing ideas from their neighbours and learning from foreigners and were innovating local building technologies continuously for as long as we know.

The design of the original palace is based on a Victorian style villa with a tall, squared dome with metal cresting on the palace tower is part of a world-wide response to developments in Paris during the 1850s where the extension of the Louvre, with a pavilion roof and truncated pyramids, was copied around the world ('Ilaiū Talei 2007, 75). To date, I have found no tangible proof in archival collections that the J C Godeffroy & Sohn company built the palace. However, if we reflect on the amount of trade occurring at this time in the Pacific and the monopolisation of trade by the

German firm in the South Pacific then it can be speculated that they could have had some involvement in the trade of the timbers. If J C Godeffroy & Sohn were indeed responsible for the procurement of the building materials, then I suggest that their trading had already switched from Germany-sourced materials to building industries available in nearby Australia and New Zealand.

In my research about *fale 'ae Pālangi* (Ilaiū Talei 2007, 69–88), a term that refers to timber-framed cottage houses once built by white foreigners (Pālangi) from the 1800s to the early 1900s, I explain how New Zealand was closer to Tonga and therefore was a popular source of prefabricated Victorian elements. New Zealand's late 19th century housing industry was thriving, due to the use of steam-powered woodworking machinery, which reduced production time and produced a variety of standardised forms and items. By the 1880s timber company catalogues advertised these different architectural elements, which made the items more accessible to people overseas, particularly Tongans and Pālangi in Tonga. Thus, if Düring was correct that the German firm was involved and I would insert as the agent of procurement of the Royal Tongan Palace, its actual sources of building materials were from the British colonies. Confusion over sources and agents of procurement would have disguised the actual German connections to this important Tongan building.

Architectural historians have commonly referred to the 'British influence' on the Royal Palace (Ilaiū Talei 2007; Taylor and Conner 2014, 196; Eustis and Egan 2002, 38, 41, 45), but evidently other groups, such as the Germans, likely helped build Tonga's national buildings and it raises another question: why has this information been subdued for so long? I assert that it is very probable that the retelling of history was shaded by the underlying political issues of that time between Britain and Germany in the Kingdom of Tonga. From the late 1800s up until the 20th century Britain wanted to control Tonga's future. Germans in Tonga resolved that the German Friendship Treaty<sup>1</sup> November 1876 would be all that is possible, although the Germans too had early colonisation interests over Tonga (Bade 2014, 15).

King Tupou with his shrewd advisor and later Prime Minister Shirley Baker appeared to play both sides of the colonial forces. The disputes between Baker and British colonial authorities led to Baker being deported twice by the British to New Zealand, as Bade explains 'partly because of his German sympathies' and advocacy for Tonga's independence (Bade 2014, 14). Later due to political concerns around the Second World War, Germans in Tonga were considered 'enemy aliens' (Cook 2017, 28–29) and

outcasted as British influence increased in Tonga. Eventually, this would lead to the British gaining political influence over Tonga again. Regional influence by British colonies – New Zealand and the like – undoubtedly cast a shadow on the German businesses, including their architectural feats. If this is the case, it could be that J C Godeffroy & Sohn was involved in other important buildings in Tonga, like the Royal Chapel built in 1882, and perhaps other early palaces in Ha‘apai and Vava‘u, given the German economic presence and political influence in both these outer Tongan archipelagoes during the late 1800s. I propose that German émigrés and Tonga Siamane’s likely involvement was the coordination and procurement of building materials from the colonies.

#### 4. Neiafu buildings: German enterprise

During the late 1800s, Vava‘u was considered a German settlement with most of its European residents having arrived from Germany (Fig. 2.2). Bade writes, ‘[i]n 1875 ... the German frigate *Gazelle* reported that in all three ports of Tonga every ship ... was almost without exception German, and that of seven or eight business houses in Vava‘u six were German’ (Bade 2014, 5). Scholar of Tongan–German studies, Kasia Cook, writes: ‘the pioneer of the Guttenbeil family in Tonga was Gustav Hermann Theodor Gutenbeil (Hermann) ... Hermann arrived with his brother in Tonga in 1881. They lived in Vava‘u, where Hermann worked with the DHPG’ (Cook 2017, 33–34). Bade adds, ‘Hermann Gustav Guttenbeil established a hotel and bar, which he set up in a commanding position overlooking the harbour. It was later known as the German Club and the Vava‘u Club’ (Bade 2014, 11). A raised timber-framed rectangular building lined with timber shiplap was simply adorned with timber trimmings around window awnings.

There are other important figures who set up businesses in Vava‘u during the mid-1800s onwards. Cook describes:

Sanft was born in Pyritz, ... in 1820, and like many other young German adventurers, set out early to seek his fortune in the mining goldrushes of the mid-1800s. Failing to find wealth in California – his first destination – Sanft learned of the ‘white gold’ of the Pacific’s copra trade. He thereafter travelled on to Australia, New Zealand, and Samoa before finally settling in Vava‘u in 1855 where he ... set up a business importing general wares from Germany and exporting copra to Hamburg. (Cook 2017, 31–32; cf. Bade 2014, 11)



**Fig. 2.2** Photograph of Vava'u main street in Neiafu (by Charmaine 'Ilaïū Talei, 2023)

Undoubtedly the German émigrés of the late 1800s were responsible for the development of Vava'u's early timber-framed buildings (Cook 2017, 157–158, 160), some still standing in the Port of Refuge of Neiafu and their Tonga Siamane descendants have continued to operate these early commercial, tourist, and residential properties, leading to the modernisation of Neiafu's buildings (Fig. 2.2). The earlier timber-framed 'Sanft' building was demolished in 2022 and now a new two-storey building erected by the influential Sanft family has replaced it. Moreover, the Guttenbeil family's modernised plaza, also donning their family surname, has replaced the earlier building's location (Fig. 2.3). The Wolfgrams also have a building in Neiafu. Outside of Neiafu, there are village settlements that were known for early German émigré residents, which located them closer to their copra plantations. For the Guttenbeils, here they had their bakery and other stores (Fig. 2.4).

During the 1800s, Neiafu's timber-framed buildings were in stark contrast to the local thatched buildings built by Tongan locals. Only the *fale 'ae pālangi* houses of Tongan royalty and nobility would have matched the European built buildings. Copra traders, including the Germans, motivated and influenced the architectural transformation in Tonga by creating monetary opportunities for Tongan farmers. After the Second World War, there was a visible changeover from German to British and



**Fig. 2.3** Photograph of the Guttenbeil plaza and next to it the new Sanft building in Neiafu built by Tonga Siamane (by Charmaine 'Ilaiū Talei, 2023)



**Fig. 2.4** Photograph of old Guttenbeil family home near their inland copra plantation (by Charmaine 'Ilaiū Talei, 2023)

other non-German traders, who soon exerted their influence over the copra trade in the Kingdom of Tonga. My research has studied such transactions between Tongan house owners and Australian company Burns Philp and British/Swedish owned Morris Hedstrom franchises during the early to late 1900s, which saw an increase in concrete block housing. My findings also highlight that agricultural returns from cash crops like copra motivated Tongan farmers to think more strategically and unify their efforts to determine their own financial futures. An example of this is that in the early 1900s Tongan farmers created a trading co-operative called the Tonga ma'a Tonga kautaha (or 'Tonga for the Tongans Company') (Ilaiū Talei 2016, 99). The purpose of this collective society was to ensure Tongan farmers received higher returns from their trade and avoided the foreign trading companies altogether. Such Tongan-led cooperatives led to further acceleration of architectural transformations within the domestic realm across the Tongan Island Kingdom.

## 5. Conclusion

Given the number of Germans living in Tonga from the 1800s to 1900, a time of critical architectural transformation, it begs the question why there is no clear evidence of Germanic architectural influence. The architecture of this period in Germany consisted of thick masonry walls, gable A-frame roofs, and decorative European styles and facades. But instead, a more regional architectural expression of tropical lightweight and timber-framed bungalows was built, similar to the Australian Queenslander or New Zealand villa. A future study of the uses of these transformed Tongan houses by German émigrés and Tonga Siamane would help to determine if there was indeed a Germanic influence present in how such spaces were used, furnished or allocated during the 1800s.

To rationalise the visible absence of Germanic stylistic influence on early Tongan architecture, I turn to my observations of the descendants of Tonga Siamane in present-day society, who are very much assimilated and part of Tongan communities. They are not too different from Cook's review of the Tongan-Germans in the late 1800s and early 1900s. Cook explains that the Germans who arrived in Tonga were part of a wave of retreat from their motherland due to poverty, war, and inter-class discrimination and were seeking new opportunities in foreign lands (Cook 2017, 36–37). Most came from rural Germany in search of new worlds of opportunity

and freedom from oppressive political and economic situations back in the homeland and they sought refuge in the distant Pacific Islands (Cook 2017, 15). I suggest this too is a likely reason for limited German architectural influences on Tongan buildings. Early Germans did not desire a nostalgic form of architecture as mimicry or homage to their German *Vaterland*, but instead they found new identities, including architecture, and renounced their ties to Germany.

Moreover, there were several other political factors that made permanent relocation to Tonga difficult for German émigrés. Cook explains the disinterest of the German Kaiser Wilhelm to expand its dominion in the Oceanic region (Cook 2017, 21). Established German traders did not receive the support they desperately sought from the *Vaterland* to extend the German colonisation programme to Tonga. The Kaiser's lack of support perpetuated a lack of land security for German traders and Tonga Siamane alike. German émigrés were considered foreigners under Tonga's land laws, which meant they could never own their properties and the buildings on them. Tonga's land laws, however, did provide a tenuous form of stability with its long-term land leases. German males in Tonga also chose to marry Tongan women in greater numbers compared to their counterparts in Sāmoa (Cook 2017, 45). These intermarriages surely strengthened cultural links to the *fonua* (or land of Tonga) and provided personal reasons to commit to Tonga.

Ultimately, King Tupou I's prohibition of land sales to foreigners has continued to this day, as well as land leases in its place. Together they have successfully deterred strong attachments to property (including architecture) by foreigners in Tonga with economic ambitions alone. German émigrés eventually returned to Germany and some Tonga Siamane migrated abroad to other countries (Cook 2017, 26–27). Evidently the lack of land stability reduced the likelihood of permanent residency in Tonga, and thus is another feasible explanation for the absence of German stylistic influence on early Tongan buildings. Since their houses could never be their forever homes, early Germans in Tonga appear to be satisfied with what architecture was readily available.

For Germans who did stay, it is evident that their cultural assimilation into the mainstream Tongan culture took priority. Cook highlights:

[I]n the Tongan case almost full integration with Tongans led to the German language and culture being all but lost after just the first generation. Although German-Tongan descendants growing up in the islands and elsewhere often

have some idea of their European heritage, their German ancestry is usually not a decisive factor in their careers, homes, or lives. .... [R]esearch suggests that the preservation of cultural and national identity was actually less of a conscious desire for Germans in Tonga than Germans in other areas. (Cook 2017, 26–27)

The German residents in Tonga were clearly influenced by political agents beyond their control – the German Kaiser and the Tongan King. The unusual lack of Germanic architectural influence, given their dominant presence across the Tongan archipelago during the 1800s, can be explained by these sociopolitical affairs of that time. I suggest Tonga then was primarily an abode for economic reasons and the simple timber or wooden framed and unadorned architectural buildings that remain show a detachment from the Vaterland and its traumatic and oppressive past. For those who did remain, they soon became part of Tongan society, taking on the local customs and relations, and eventually accepting the mainstream Tongan culture as the easier choice.

In conclusion, the two Tongan architectural case studies presented in this chapter discuss the agents of material transformation, and the political actors and cultural brokers amidst Tonga's architectural transformation during the 19th century and early 20th. German businesses in Tonga spurred the critical momentum from subsistence living to agricultural farming of cash crops. Monetary currency and the availability of new and durable building materials further perpetuated the shift in building practices away from vernacular thatched-styled *fale* towards new types of contemporary Tongan *fale* ('Ilaiū Talei 2018). Thus, it is fair to say that German traders and merchants were participating as agents of architectural transformation in Tonga, even if the architectural German stylistic qualities did not transfer directly and visibly to the Tongan architecture of that time. However, the German influence on architectural transformations of Tongan *fale* may in fact be wider than we think acting as conduits of new building materials and technologies and given their dominance of the copra trade during the late 1800s.

## Notes

- <sup>1</sup> By pressing these dried coconut flesh pieces coconut oil can be produced. The oils can be consumed when used to cook food, as medicine, or an energy light source for lighting and machinery.
- <sup>2</sup> 'AUCKLAND (FROM A CORRESPONDENT)', editorial, *Lyttelton Times*, 10 August 1875.

- <sup>3</sup> In 2017, the equivalent purchasing power of £8000 in 1875 would be approximately £500,872.00 (Source: <https://www.nationalarchives.gov.uk/currency-converter/#currency-result>)
- <sup>4</sup> 'TONGA AND SAMOA (From a Correspondent)', editorial, *Auckland Star*, 5 February 1877.
- <sup>5</sup> 'TONGA AND SAMOA', *Auckland Star*, 1877.

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## Chapter 3

# From Comparative Study to an Emergent Local Building Practice

### Hermann Frobenius' Study of *Oceanische Bautypen* of 1899

*Robin Skinner*

#### 1. Introduction

In his 1899 study on 'Oceanic Building Types', military officer and writer Hermann Theodor Frobenius (1841–1916) attempted to systematically document the architecture of the Pacific according to building structure type and location. Drawing from available sources, he worked to extend German knowledge of South Seas architecture. Applying an approach he had used previously in his earlier study of African buildings, he classified architecture in the Pacific within three coherent geographic zones: southern, northern, and central. Undertaking no field work in the southern hemisphere, he instead reviewed publications, photographs, and museum models available to him in Germany in order to classify the structural traditions of the Pacific Ocean.

Frobenius' analysis was influenced by the early work of his self-taught ethnologist son, Leo Frobenius (1878–1938). Leo's approach was grounded in a wider belief that geographical proximity and migrational shifts shaped cultural development. Largely restricted to such patterns of influence, Hermann Frobenius' study now seems eccentric. His myopic focus on structure neglected the wide range of influences on the development of architectural tradition. There is limited discussion of materials and little mention of cultural drivers, or of the intense heat of the equatorial zone. His approach would certainly attract criticism if it were to appear as new research today. While now largely forgotten, Hermann Frobenius' study nevertheless had some impact. Significantly, Herbert Tischner cited Hermann's study as an initial point of departure for his own 1934 study.

Hermann Frobenius ended his 1899 study entreating that the 'peculiar charms' of oceanic buildings be retained as new technologies were

introduced. In a brief final statement he called for western architects to undertake work in the Pacific, and to apply the lessons available there. Some may have heeded his call with several projects appearing that combine traditional form with opportunities offered by the technical developments of the early 20th century. Such synthesis continues to the present day.

## 2. Hermann Frobenius (1841–1916): A biographical sketch

Hermann Frobenius' ambition was noble and challenging. He wanted to develop a framework to explain the development of structural form in the traditional architecture of the Pacific. No one had attempted to study and classify the architecture of the Pacific in such an overarching way. He looked to understand this wide tradition through an analysis based upon structural form coupled with an interpretation based upon migration and influence. While profoundly flawed, this was a commendable objective. However, Frobenius took no account of the cultural influences on architectural design and gave limited acknowledgement of the impact of materials and climate. Yet it remains a remarkable achievement especially in terms of his project's breadth and the volume of, at times, obscure research material that he sourced from a multitude of diverse sources. Hermann Frobenius produced an impressive study that was the result of many hundreds of hours of sustained, methodical work. A disciplined, scientific background, coupled with an impressive ability to process information, contributed to his project's successful completion, which continues to prompt discussion today.

Born in 1841 in Langensalza (now Bad Langensalza) in the Prussian Province of Saxony, Hermann was the son of the Lutheran pastor Hermann Theodor Frobenius (1808–1868). They were part of an extensive family of civil servants and scholars that descended from the 16th-century Lutheran reformer, Volckmar Frobenius (1490–1551/1552).<sup>1</sup> Trained as an engineer, Hermann joined the Prussian army and participated in the Franco-Prussian War of 1870, where he received the Iron Cross, 2nd Class. He subsequently became a notable specialist in fortress construction, teaching at several prestigious schools, including at the Kadettenhaus in Berlin where he developed an approach to terrain theory. He then taught at the Prussian War Academy, which was the principal military training facility for the German land forces, and later at the United Artillery and

Engineering School at Charlottenburg. In 1885 he was appointed as an engineering officer at the Boyen Fortress in East Prussia, and took a similar position in Silesia a year later. Attaining the rank of major, Frobenius was appointed director of the Fortress Construction School in Berlin from 1888 to 1891.

Retiring from military work at about the age of 50 years, he turned his attention to writing, principally focusing on military books and ethnographic studies. This was a radical departure from his professional life, which perhaps evidences a strong, longstanding interest. His initial ethnographic works considered African case studies. In 1893 he published a general study of people of the Sudan (Frobenius, H. 1893) and completed a more focused study of African building types a year later (Frobenius, H. 1894). A work on earth buildings in Sudan appeared in 1897 (Frobenius, H. 1897).

In 1899 he published a 12,000-word article on the building types of the Pacific in the architectural journal *Zeitschrift für Bauwesen (Journal of Construction)*, which is the focus of this chapter (Frobenius, H. 1899a). Its large format 15-page offprint of the same year appears to be the first monograph on this topic, which is a notable achievement in itself (Frobenius, H. 1899b).<sup>2</sup> His other publications included a biography of Alfred Krupp, a work on the reigning imperial family, and several military texts including the military encyclopedia, *Militär-Lexikon*, a two-volume history of the Prussian engineering officers, and his publication, *Des Deutschen Reiches Schicksalsstunde* (Frobenius, H. 1898; Frobenius, H. 1910; Frobenius, H. 1901; Frobenius, H. 1906; Frobenius, H. 1914).

Hermann's ethnographic works of the 1890s were all based upon secondary sources with no fieldwork thought to have been then undertaken. Art historian Itohan Osayimwese summarised Frobenius' approach in *Afrikanische Bautypen*, the 'African Building Types' study of 1894, thus:

Synthesizing existing ethnographic studies and travel narratives, Hermann Frobenius mapped the geographic distribution of building types in Africa through a detailed analysis of formal, structural and aesthetic elements, which he then correlated with ethnic and linguistic categories. (Osayimwese 2013, 16)

She identifies Heinrich Barth, Gustav Nachtigal, and other explorers as his sources. Synthesising their works, Frobenius identified three basic types of structural traditions: the 'Bantu type' with a tectonic frame with infill and cladding; the 'Saddle roof' type where separately built space-enclosing

components are fixed on site and are attached to each other, before being clad with clay; and the ‘Sudan style’ combining the ‘Bantu type’ and ‘saddle roof’ systems. Osayimwese has described how Frobenius stripped foreign elements away to reveal the formal, structural, and material essences of each of these structural types. She identified how the ‘dominant motifs of this approach were biological and cultural authenticity, hybridity, and displacement’, which persisted in subsequent discussion about indigenous architecture in the German colonies (Osayimwese 2013, 16). Frobenius’ approach here foreshadows that of his later oceanic building type study.

### 3. *Oceanische Bautypen*

Frobenius’ study of building types of the Pacific region drew from a wide range of source material to formulate ‘a developmental series of the individual principles of construction’ (Frobenius, H. 1899b, 3). He studied travellers’ reports and their images, viewed models held in European museums, and met with people who had been to the Pacific. He systematically classified and charted more than 50 building forms into three oceanic *Baukreise*, or ‘building circles’: southern, northern, and central. For each of these regional groupings he identified a pair of original archetypes from which he traced the migration of a series of separate structural types. Frobenius stated that examining the buildings as a whole, rather than individually, provided insight into the buildings’ genesis, or rather their ‘spiritual content’.<sup>3</sup>

He presented his findings in a series of four illustrated charts. His chart (‘Table 1’) of the ‘Southern Oceanic building circle’ (‘Süd-oceanischer Baukreis’) identifies two archetypes from the southern region: the planar lean-to structure of Australia and the hemispherical domed form that he ascribed to the New Hebrides, West Timor, Sāmoa, New Zealand, and Australia (Fig. 3.1a). He classified structural forms in this region into five traditions, which he presented in four rows showing increasing complexity:

1. conical structures from the New Hebrides, Australia, New Caledonia, and the Nicobar Islands
2. vaulted structures from Tonga, the New Hebrides, the Tuamotu islands in French Polynesia, and New Zealand
3. gabled structures from Australia and New Guinea

4. elongated forms from Easter Island, Tonga, the Bismarck archipelago, Hawaii and Fiji
5. ovate forms from Sāmoa, Nias, and the Louisiade Archipelago in Papua New Guinea

While he considered the constructions of aboriginal people of Australia to be so simple that they were not considered houses as such,<sup>4</sup> he included these structures as points of origin stating these buildings were in close genetic relationship ('in engem genetischen Zusammenhang') to the islands of Melanesia, Polynesia, and Micronesia (Frobenius, H. 1899b, 1). Some of the links he made between architectural form across the southern Pacific parallel current understanding of migrancy patterns.<sup>5</sup> For example, he saw the *Māori whareniui* (the gabled meeting house) of New Zealand as an adaptation of the barrel-vaulted houses of New Zealand that had been documented in the late 18th century, which he argued were in turn derived from the tunnel-shaped houses of the Tuamotu Islands (the Paumotu Islands) of today's French Polynesia, and from the vaulted, open-ended canoe houses of Tonga and the New Hebrides. Frobenius cited several accounts of the Māori house including those written by the European voyagers James Cook, Jules Dumont d'Urville, and the collector Arthur Baessler (1857–1907) who had travelled through New Zealand and Polynesia in 1896–1898.<sup>6</sup>

Some of the other five groupings are somewhat arbitrary in terms of geographic proximity and do not align with the current view of Pacific migration patterns. For example, he assembled the domed and conical buildings of the New Hebrides, Australia, New Caledonia, and the Nicobar Islands into a group. He connected gabled buildings of Australia and New Guinea together, which now seems to be a tenuous connection. The elongated buildings of Easter Island, Tonga, Hawaii, and Fiji, and the Bismarck Archipelago formed another group. Elongated curved roof buildings of Sāmoa (the *fale afolau*), Nias near Sumatra, and the Louisiade Archipelago were grouped together, supposedly deriving from the circular domed *fale tele* of Sāmoa.

Almost a third of Frobenius' text is devoted to discussion of the structural forms of the 'Northern Oceanic building circle' ('Nord-oceanischer Baukreis') (Fig. 3.1b). Finding connection across the region, he discussed gabled roof structures, stone foundations, and construction methods. He identified the two archetypal lean-to forms from the Philippines as points of origin on his Northern Oceanic region chart: one form supported by two

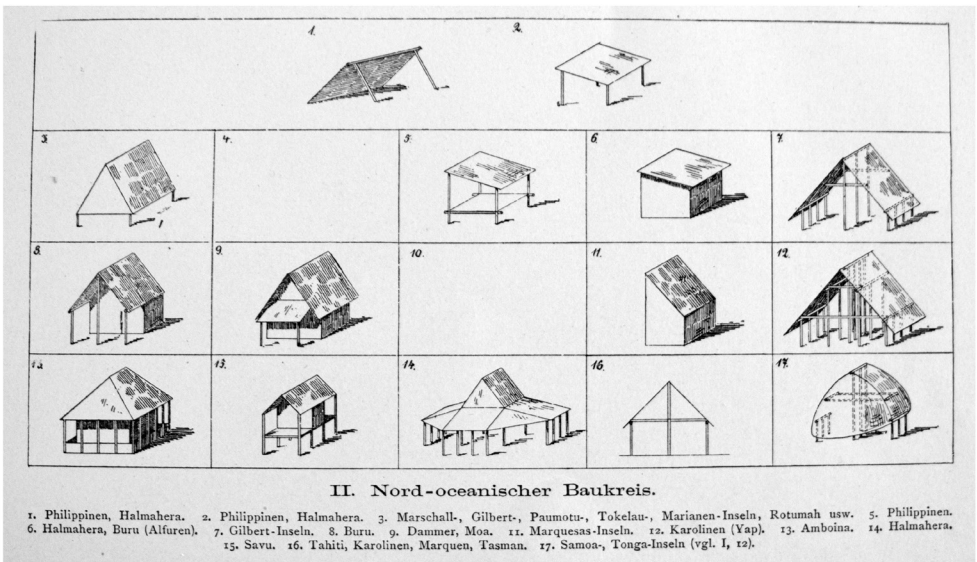
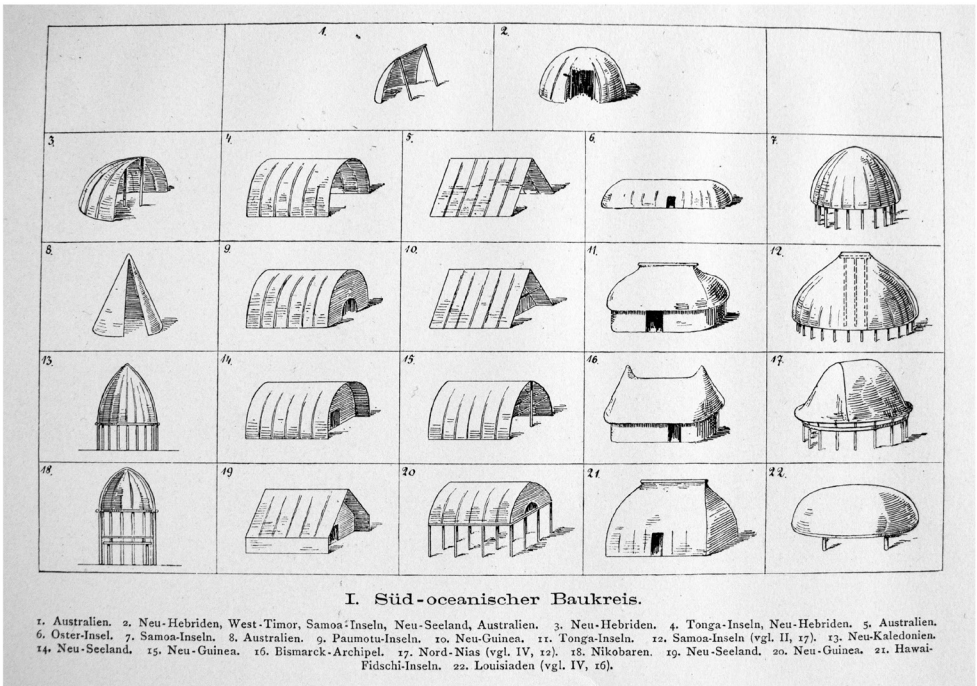
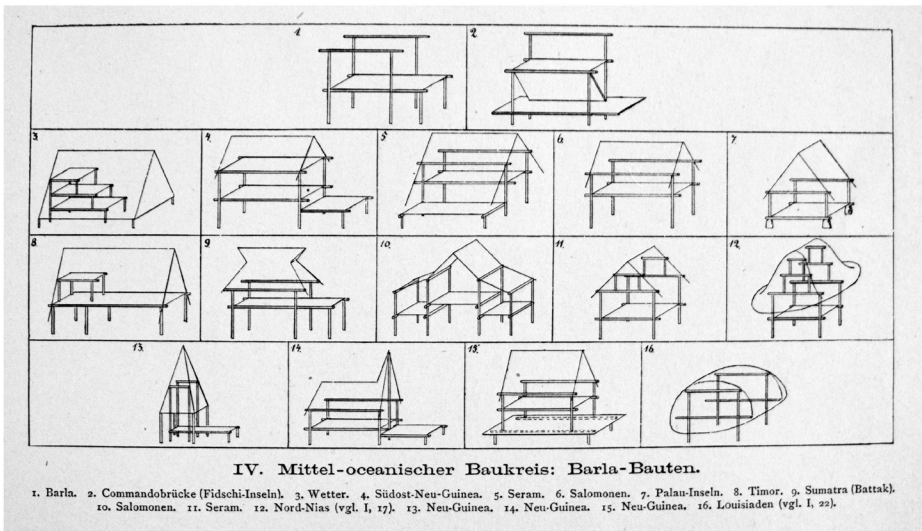
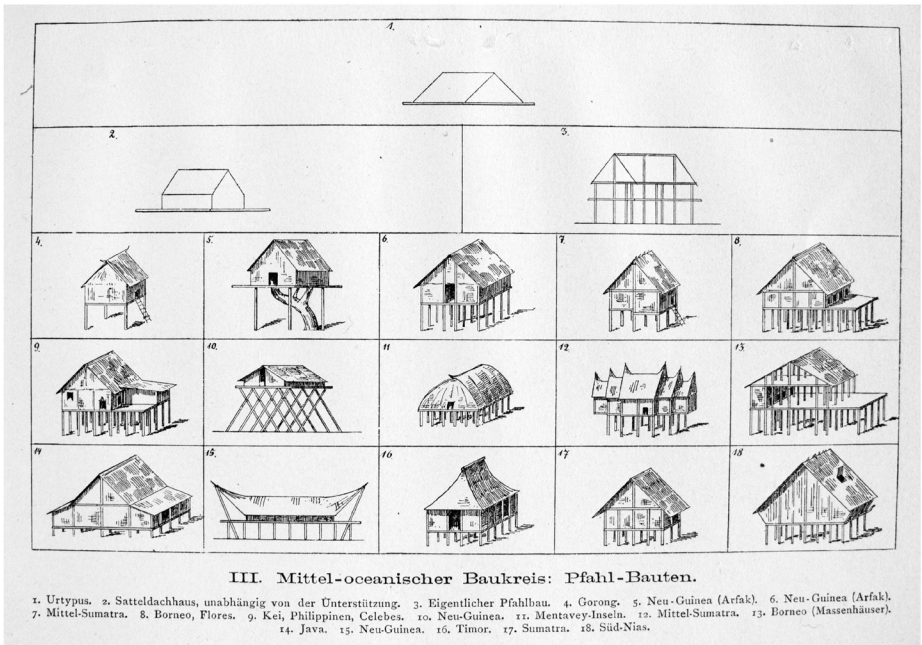


Fig. 3.1: (a) 'Süd-oceanischer Baukreis' (Southern Oceanic building circle); (b) 'Nord-oceanischer Baukreis' (Northern Oceanic building circle) (Frobenius, H. 1899b, table I, II)

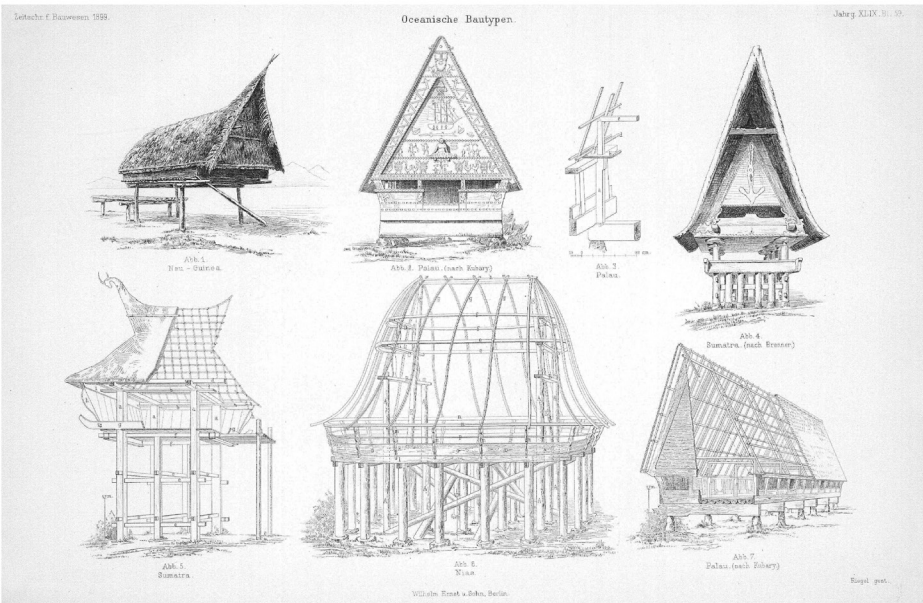
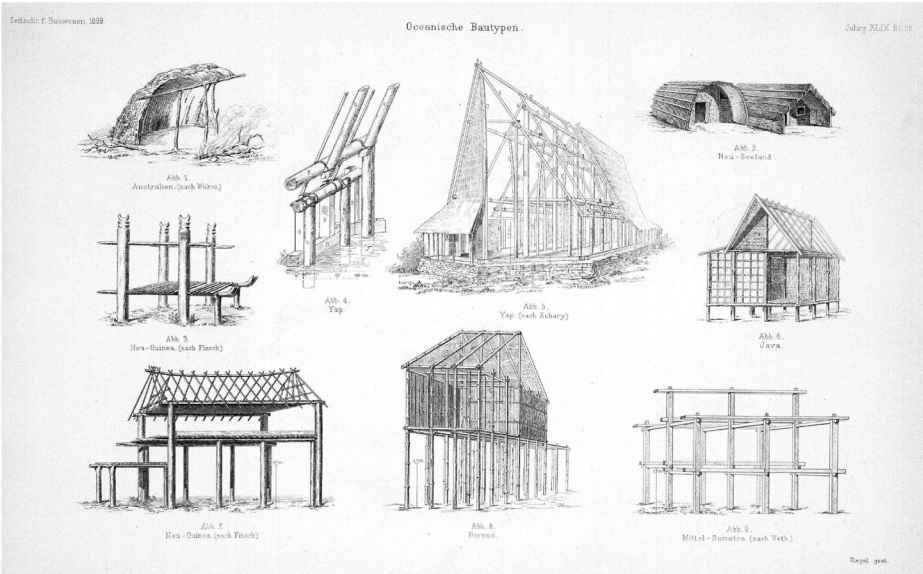
struts with an edge on the ground, and another supported by four struts. He described how the lean-to roof structure was used throughout this region, identifying how increased roof panels created greater living area. His discussion included buildings on the islands of Buru in Indonesia, the Marquesas islands, the Marshall Islands, Kiribati (the maneaba), Vanuatu, Tokelau, Rotuma, the South-Eastern Maluku Islands, Yap, and the Takuu and Nukumanu atolls of eastern Papua New Guinea. Otto Finsch (1839–1917) appears to have been a principal source for Frobenius' assertion here. He also cited descriptions of Nan Madol (Tauatsch) by Johann Stanislaus Kubary (1846–1896) and Willy Georg Kükenthal (1861–1922) (Kubary 1873/4; Kükenthal 1896). Frobenius argued that the ovoid houses of Tonga and Sāmoa derived from forms he identified in this northern tradition (Frobenius, H. 1899b, 7–8).

Frobenius' discussion of the buildings of Melanesia, or the 'Middle Oceanic building circle' ('Mittel-oceanischer Baukreis') described two structural types: pile buildings or stilt houses ('Pfahl-Bauten') (Fig. 3.a) and platform buildings ('Barla-Bauten') (Fig. 3.2b). Frobenius charted the stilt houses on this chart as derivations of three archetypes: the two-panel gable roof similar to that of the northern region, a gable roof house structure independent of support and a gabled dwelling on piles. He then identified specific examples from New Guinea, the Philippines, and Timor, as well as locations from present-day Indonesia, including the Gorom Archipelago, the Mentawai Islands, the Kai Islands, Flores, Sumatra, Borneo the Celebes, Java, and South Nias. These stilt house forms included raised structures, tree house forms, multi-platform construction, buildings with projecting gables, buildings with open or closed lean-to porches and boat-like forms. Frobenius' term 'Barla' describing houses with a platform was probably derived from Otto Finsch's writing about his *Samoafahrten* (Finsch 1888, 46–7). Frobenius considered these structures with four high posts and two low posts to be the most interesting construction in the Pacific region.<sup>7</sup> He included examples of structural frames on his Barla house chart from Fiji, Wetar Island (Indonesia), South-East New Guinea, the Solomon Islands, Palau, Timor, Sumatra, North Nias, and the Louisiade Archipelago.

In addition to his four charts, Frobenius also included two plates of perspective views of specific examples of the Pacific especially engraved by Riegel (Fig. 3.3a-b). These showed more substantial views of buildings from Australia, New Guinea, Yap, Java, New Zealand, Borneo, Sumatra, Palau, and Nias, which Frobenius had collected from many sources. Frobenius's commentary on the structure of buildings in Northern Nias



**Fig. 3.2:** Charts about 'Mittel-oceanischer Baukreise (Middle Oceanic building circles): (a) Pfahl-Bauten' (pile buildings or stilt houses); (b) 'Barla-Bauten' (Platform buildings) (Frobenius, H. 1899b, tables III and IV)



**Fig. 3.3:** Engravings of Pacific buildings: (a) Plate 58 with nine examples; (b) Plate 59 with seven examples (Frobenius, H. 1899a, Atlas pl. 58 and 59)

and Palau described the respective building frames' load-bearing mechanisms in detail. He declared that the buildings of Palau were the pinnacle of architectural development in the Pacific, writing that they 'must be regarded not only as the most picturesque and attractive, but also as the most suitable and constructively advanced of the whole of Oceania'.<sup>8</sup>

#### 4. Sources of information and ideas

As has been noted, Frobenius' research was based upon existing documentation and studying museum models held in Germany. He specifically cited the traveller and collector Arthur Baessler, the director of the Museum für Völkerkunde in Berlin Adolf Bastian, Otto Finsch, Johann Stanislaus Kubary, Georg Kükenthal, George Turner, Georg Gerland, John William Lindt, C.B.H. von Rosenberg, Daniël David Veth, Joachim von Brenner-Felsach, James Cook, Jules Dumont d'Urville, and the records of the United States Wilkes Expedition of 1838–1842. Annotations on Frobenius' two plates of perspective views acknowledged Wilkes (Australia), Finsch (New Guinea), Kubary (Yap and Palau), Veth (Sumatra) (Sumatra), and Brenner (Sumatra) as sources. Former Pacific travellers Arthur Baessler and Otto Finsch were possibly significant personal informants.

Frobenius examined models held in German museums although he complained that many required checking against written descriptions and pictures (Frobenius, H. 1899b, 3). In his report of his 1896 tour of the Pacific collections held around the world, the director of the Bernice Bishop Museum, William T. Brigham, also recorded models of houses from New Caledonia, Hawaii, and Kosrae (supplied by Finsch in 1883) at the Museum für Völkerkunde in Berlin, a model of a house from Fiji at the Det Kongelige Etnografiske Museum in Copenhagen, a Sāmoan house model at the Museum für Völkerkunde in Hamburg, and models of Tongan and Māori houses in Paris (Brigham 1898, 18, 21, 26, 28). The Staatliche Museen zu Berlin, Ethnologisches Museum now holds old photographs of a model of a building from Palau, which is similar to that illustrated by Frobenius.<sup>9</sup> Frobenius mentions a model of a house from the Northern part of Luzon sourced by Wilhelm Joest that was also held in the Museum für Völkerkunde in Berlin (Frobenius, H. 1899b, 14).

Photographs of houses in Sāmoa and Sumatra were reproduced in Frobenius' publication. Thomas Andrew's now well-known 1890s photograph of a partially thatched *fale* under construction was taken from



**Fig. 3.4:** Photograph of a *fale* under construction used in Frobenius (1899). From the album: 'Samoa, 1890–1910', by Thomas Andrew. Te Papa (O.041843)

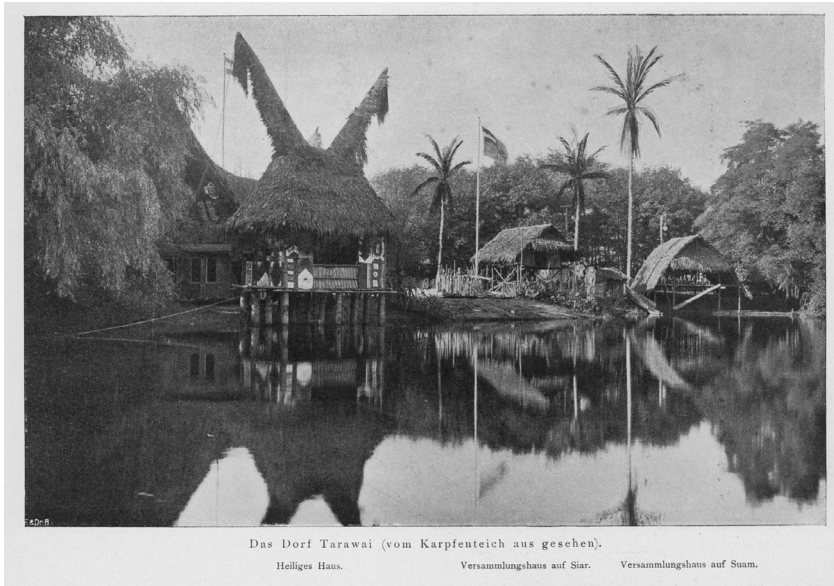
Arthur Baessler's *Südsee-Bilder* of 1895 (Fig. 3.4) (Frobenius, H. 1899b, 7; Baessler 1895, 16).<sup>10</sup> This photograph shows the *fale* at a specific stage in its construction process, with the right-hand portion yet to be thatched. Temporary scaffolding can be seen, while the overhanging eave was not yet trimmed.<sup>11</sup> Frobenius provided an informative, lengthy commentary on the stages of design and the elements visible in Andrew's illustration. Photographs of houses in Sumatra were taken from the collection of the travelling ethnologist Paul Staudinger (1859–1933) who had visited South-East Asia and Sumatra from 1888 to 1889.

In addition to sourcing publications, photographs, and museum models, Frobenius also had the opportunity to see facsimiles of buildings from New Guinea at the *Berlin Colonial Exhibition* (Berliner Kolonialausstellung) in Treptower Park.<sup>12</sup> Running from 1 May to 15 October 1896, this was the first colonial exhibition in the German Empire. It was integrated into the larger (900,000 m<sup>2</sup>) Berlin Trade Exhibition, which attracted seven million visitors while the smaller colonial exhibition (of 60,000 m<sup>2</sup>) attracted two million visitors. The colonial exhibition aimed to show people in Germany the advantages and opportunities that the colonies offered people at

home. Visitors gained an impression of the life and customs of the indigenous people from the approximately 100 women, men, and children who occupied the scenic colonial villages that were built along the banks of the Karpfen Teich (Carp Pond). There were replicas of a Cameroon village, a Togo village, huts from various peoples of Southern Africa and a New Guinea Village (cf. Geppert 2010, 296). The organisers aimed to replicate these sites as authentically as possible (Lindenberg 1896, 180).<sup>13</sup>

The colonial village's collection of buildings from New Guinea and the adjacent islands included eight people from New Britain (Neu-Pommern) in the Bismarck Archipelago, who constructed the buildings themselves (Lindenberg 1896, 40–41; Meinecke 1897, 18). There were elongated round men's and women's huts as well as an ancestors' house with relics from New Britain (Meinecke 1897, 15). There was a treehouse that was characteristic of Kaiser-Wilhelmsland (German New Guinea), British New Guinea, and the Solomon Islands. Near the pond, the 'village of Tarawai' combined several house types from Kaiser-Wilhelmsland. This zone included Tarawai (Tandanie) Island in the Schouten Islands group off the coast of the East Sepik (Fig. 3.5).

Commentary by Gustav Meinecke, the Director of the Deutsche Kolonial-Museum who had travelled in German East Africa for a time, noted in his exhibition report that the buildings of the Papuan people showed great skill in house construction and an aesthetically refined layout (Meinecke 1897, 15, 17–18). The village included an amphibious men's house supported on poles with a pair of splayed projecting wings from its gable. It was similar to one photographed by the explorer and colonist Richard Parkinson (1844–1909) (Meyer and Parkinson 1894, pl. 49). A traditional ancestral worship house – a 'Haus Tambaran' – from Mushu Island, East Sepik with its projecting gables and decorated sides stood nearby. Meinecke described this building as outstandingly picturesque with an ingeniously devised roof truss construction that gave the building great resilience (Meinecke 1897, 18). Again, this was similar to an example photographed at Muschu Island by Parkinson (Lindenberg 1896, n.p.; Meyer and Parkinson 1894, pl. 43). There was also a large assembly hut with a more ordinary roof from Siar Island and a large two-storey stilt house from Suam on New Guinea's northern coast. Between these two buildings stood a 'telum', or ancestor figure. Around the bay of the Karpfen Teich there were smaller buildings – or 'miserable huts' ('erbärmlichen Hütten') as Meinecke called them – from the coastal settlements of Bom, Bogadjim, and Suam in Finschhafen, near German missionary



**Fig. 3.5:** Tarawai Village at the *Berlin Colonial Exhibition 1896* (Meinecke 1897, 19)

settlements (Meinecke 1897, 18). The specially designed entrance structure to the exhibition's colonial villages section was a fanciful expression of the double-winged men's house described above (Meinecke 1897, 14, 16–17, 19–20, 195).

Visiting this colonial exhibition was the closest Hermann Frobenius came to experience field work in the faraway Pacific. These 1:1-scale examples, coupled with photographs and commentary in text and spoken word, must have prompted many of Frobenius' perceptions that he articulated in his 1899 study. He documented fourteen structural types from Northern New Guinea and the adjacent Islands on three of his 1899 charts. Several of these structures were included at the 1896 exhibition, including the women's house from the Bismarck Archipelago, the Suam meeting house, the Siar meeting house, a tree house, and the Sepik Haus Tambaran. Other structures that Frobenius documented from New Guinea, such as the A-frame structure were also photographed by Parkinson (Meyer and Parkinson 1894, pl. 37).

Hermann's 1899 work relates to the early work of his self-taught ethnologist son, Leo, then in his mid-twenties. Leo's approach was strongly influenced by a wider belief that geographical proximity and migratory shifts shaped cultural development. As has been noted earlier, Frobenius'

text associates the term ‘genetics’ (‘engem genetischen Zusammenhang’) with the transfer of structural systems across the Pacific.<sup>14</sup> He almost certainly would have discussed this with his son. A brief 1900 biography of Hermann stated that his African and oceanic studies were stimulated by Leo,<sup>15</sup> and an American newspaper of 1911 also reported that Leo collaborated with his father on several occasions.<sup>16</sup> During his father’s lifetime, Leo made seven journeys to Africa from 1904 to 1915,<sup>17</sup> and it is possible that his father may have joined him on some of these journeys.

Leo’s early work helps us understand Hermann’s approach, with them both relying on published accounts without undertaking any field work abroad at that time. Leo’s interest in Africa and ethnology had developed through childhood visits to the Berlin Zoological Garden where his grandfather, Heinrich Bodinus, had been director since 1871. Here, Suzanne Marchand wrote, Leo saw the ‘Nubian shows’ that his grandfather organised through returning German travellers from Africa (Marchand 1997, 156).<sup>18</sup>

Without a high school diploma, Leo began an apprenticeship as a merchant in Bremen and worked as a trainee in the ethnological museums in Bremen, Basel, and Leipzig. Leo’s early scholarship appears to have been poorly directed. His dissertation on ‘Afrikanische Geheimbünde’ (African Secret Societies) of 1894 and his habilitation thesis ‘Der Ursprung der afrikanischen Kulturen’ (The Origin of African Cultures) of 1898 were both rejected. Through this period, Leo produced further papers on African ethnology. From 1897 to 1901 he published several few works on artefacts of Oceania, including an article on house construction and village layout of the people of North Sumatra (Frobenius, L. 1900, 92, 225; cf. Niggemeyer 1950, 382–387).

Leo introduced the notion of ‘Kulturkreise’ (culture circles) in his 1898 thesis. This term describes a phenomenon of zones of interaction where cultures show similarities or affinities that are spread by diffusion or invasion. Progressive chronological development was a fundamental characteristic within these circles. Although now largely discredited, the *Kulturkreise* school of thought was central in the early 20th-century German school of anthropology. This idea permeated Hermann Frobenius’ world view where similar notions of zone and influence determined his analysis of the architectures of the wider Pacific. Hermann Frobenius’ term ‘Baukreise’, which he used to describe a similar concept relating to buildings, is clearly indebted to Leo’s concept of ‘Kulturkreise’.

## 5. Shortcomings

Frobenius' approach to find coherent, comparative series shows how colonial powers canonised non-European building cultures along their own investigative standards, aesthetic expectations, and operational terms. Even within a European context, Frobenius' myopic focus on structural systems further limited his study. Structure is not developed in a vacuum. Climate, material availability, and cultural influences all impact on architectural decision-making, which further contributes to structural design. Frobenius' knowledge of these matters was limited. However, he acknowledged the impact of materials and tectonic memory, writing:

It can also not be doubted that most of the bonds used in timber construction in Middle Oceania have derived from bamboo constructions, while some others may have been adopted from the highly developed boat building technology. (Frobenius, H. 1899b, 11)

Frobenius made several similar references to the impact of boat-building tradition in his text, although he did not explore this to any great extent (Frobenius, H. 1899b, 9, 11, 13). Further connection to such nautical tradition and the architecture of the Pacific would be made by future researchers in the 20th century.<sup>19</sup> Frobenius resisted aligning the design of the Sumatra house to boat form as some had interpreted, and instead suggested that the building form had been developed to reduce longitudinal buckling and to increase shade (Frobenius, H. 1899b, 9). This acknowledgement of shade was one of the few references Frobenius made to the impact of climate. Had he travelled to the tropics, he would have better understood the impact that need for cool ventilation and protection from the sun has upon architectural decision making. This would not have been immediately apparent in the temperate environment of the Treptower Park, despite the suggestive faux coconut palms surrounding the site.

Similarly, had Frobenius visited the Pacific, he would have seen many structurally tensile, often amphibious, constructions with flexible lashed connections. He would have experienced many varied interiors, which could have prompted further discussion. Mike Austin has observed that Frobenius had limited understanding of the ridge pole that Austin argues is a fundamental structural element found throughout the Pacific.<sup>20</sup> He has also stated that Frobenius did not fully appreciate the disconnection between the structural frame and the roof, as many roofs of Pacific

structures can be understood as floating in the air almost independently of their substructure.

As has been noted, Frobenius determined 'genetic' trajectories of influence across the Pacific that generally progress from Asia to the western Pacific in an eastward direction. Nevertheless, some strange shifts emerge. The multitude of architectural forms found in New Guinea prompted Frobenius to track many connections to other examples throughout the Pacific in a somewhat haphazard way. Other anomalies occur; the Nicobar Islands in the Indian Ocean appear on the Southern Pacific chart and there are other erratic connections across Polynesia.

Some of the similarities claimed by Frobenius would be seen as coincidental or erroneous today. Frobenius connected the built form of the Toba Batak *ruma* with buildings of Palau. He extended this connection to the Philippines, based upon a model of a house reputedly, and possibly erroneously, from the Northern part of Luzon that was then held at the Museum für Völkerkunde in Berlin. While Frobenius' charts and commentary suggest architectural influence within the Pacific regions, he doubted connection over greater distances. He suggested that the similarity between house form in the Marquesas and the Maluku Islands in eastern Indonesia was 'a curious happenstance'<sup>21</sup> with the same basic motive developing parallel forms in a comparable direction (Frobenius, H. 1899b, 5). He denounced any design connection between the Pacific and ancient Greece that has sometimes been proffered. He dismissed the fanciful connection that some had made with the curved headrests of the Pacific and the Ionic volute (Frobenius, H. 1899b, 13), and between the beam forms of ancient Greek temples and the foundation structure of the *ruma* (Niessen 1997, 1,012–1,013) building of Sumatra.<sup>22</sup>

Perhaps the most concerning aspect of Frobenius' analysis is his lack of awareness of the cultures of the Pacific peoples in their own terms. His approach reinforced European standards, and aesthetic and cultural expectations, paying little respect to the status and values of the communities he sought to interpret. He did not consider the lives of the people living in these groups. To an extent, this information was partly available to him, with many of his informants having gained some understanding and appreciation of the cultures and lives of these peoples. Clearly, this was something that Frobenius gave little consideration on.

## 6. Scholarly impact

Frobenius' study is unlike other works appearing in *Zeitschrift für Bauwesen* at that time. In the two-year period about the time of Frobenius' article, the prestigious construction journal published on such diverse topics as the Mausoleum at Halicarnassus, new building construction, historic restoration, bridge design, technical reports on dams, railway and canal design, and reports by Hermann Muthesius on recent church construction in England. In this context, a study of the structure of the buildings of the Pacific appears to be an odd addition; however, the significance of his study must have clearly impressed the editor, Otto Sarrazin (1842–1921). That the study later appeared as a separate offprint from the journal's publishers, Wilhelm Ernst and Sohn, further affirms Hermann's standing and the value of his research.

With few reviews appearing, it is difficult to gauge the impact of Hermann Frobenius' text at its time of publication. The zoologist and ethnographer, Friedrich Grabowsky reviewed the work in the journal *Deutsche Kolonialzeitung*, in 1900 (Grabowsky 1900). Grabowsky had first-hand experience of the Pacific, undertaking research trips to Borneo, Java, and the Indian subcontinent in the 1880s, and he later founded a research station in New Guinea. Despite finding the journal's folio format awkward, he thought the work offered a welcome opportunity to read about the building types of Oceania without the need to read the numerous travel books Frobenius had surveyed. Grabowsky summarised Frobenius' classification of the structural zones without commenting on the notion of a genetic transfer of ideas, nor with any discussion of the cultures of the Pacific that he had known.

It seems significant that Augustin Krämer (1865–1941) did not cite the work in his substantial 1902 study of Sāmoan material culture, although his extensive bibliography includes several references mentioned by Frobenius, including writing on Sāmoa by George Turner (Krämer 1995 [1902–3], II, 259, 276, 279). Whether Krämer was unaware of the work, or was sceptical of the connections Frobenius proffered is yet to be determined. Some decades later, Herbert Tischner began his 1934 study of oceanic house forms, *Die Verbreitung der Hausformen in Ozeanien*, critiquing Frobenius' earlier investigation (Tischner 1934, 1–2). He stated that there was no detailed study of the distribution of house forms in Oceania at that time, with the only study approaching his present project being that of Hermann Frobenius. Tischner's criticism of Frobenius' work was

unrelenting, yet it provided a convenient point of departure to introduce his own work (Tischner 1934, 1–2). He was sceptical of Frobenius' inclusion of Indonesia and Australia in his Pacific study area. He found the earlier writer's southern, central, and northern building groups somewhat contrived geographically. He specifically noted that case studies for the Tuamotu archipelago and Tonga were discussed among the northern group, while a Hawai'ian case study was included in discussion of the southern building group. He queried how Frobenius arrived at the archetypal groupings, asking whether these were initiated from a geographic, or a formal, classification.<sup>23</sup> He complained that minimal background information was provided on the compilation of the charts, which he thought showed uncritical alignments based upon building form. He found some of Frobenius' groupings eccentric, noting that the fourth column in Frobenius' Southern Oceanic chart included examples from across the wide Pacific: the Easter Island inverted boat-type house, the Tongan house, the house with raised gable ends of the Gazelle Peninsula in New Britain, and grass house form of Hawaii and Fiji. He complained, in particular, about the need for more information on the domed and semi-domed houses of the New Hebrides, and the domed Sāmoan *fale*. He found the alignment of conical forms from Australia, New Caledonia, and the Nicobar Islands in the first column of the Southern Oceanic architectural region chart to be nonsensical. Tischner also bemoaned the lack of references, which seems harsh as Frobenius had identified authors who had contributed to his thinking. Nevertheless, Tischner conceded that Frobenius had made some valuable connections, although he stated that his own 1934 study would show that the situation was immensely more complicated, as was evidenced by the varied house forms of New Guinea.

## 7. Architectural impact

Hermann Frobenius ended his oceanic study observing that any further architectural development beyond that which he had described had been impeded by European influences. He bemoaned that new building materials and tools had begun to supplant the architectural methodology of the indigenous people, and prefabricated, factory-built constructions were now being erected. He complained that European-style huts of 'the most sober style' were appearing. He would have seen examples of such

buildings at the 1896 colonial exhibition. Meinecke's report illustrated a New Guinea plantation manager's house, while the Astrolabe Company showed house models of a rectilinear, gabled tropical-house type (Meinecke 1897, 54, 57, 58).

Frobenius lamented that it was rare for a European architect to emigrate to the Pacific, and that few planters or merchants communicated with people at home about the cultures of indigenous people. He questioned where the understanding and resolve should originate to teach indigenous people how to construct their buildings and improve their sanitation, all while maintaining the 'peculiar charms' ('eigenartigen Reize') of their traditional buildings. He thought that, beyond finding employment creating South Seas follies in botanic gardens and installations at occasional colonial exhibitions, there were many incentives for a skilled trained architect to consider the application and development ('Verwendung und Entwicklung') of such an approach.<sup>24</sup> Frobenius concluded saying that he hoped that his research would arouse such interest, and that it would encourage European architects to give oceanic structures more attention.<sup>25</sup>

It is possible that this briefly stated argument had an impact in the Pacific. Several architectural works emerged in the German Pacific Empire that combined traditional form with technological developments of the 20th century. In Sāmoa, Albert Schaaffhausen (1876–1960) was appointed as the Government Architect during the Governorship of Dr Wilhelm Solf in the early 20th century. After a period working in Africa, Schaaffhausen returned to Germany before leaving for Australia and Sāmoa in 1899. He arrived in Upolu about 1900 initially taking up a position as inspector of buildings and roads (*Cyclopedia of Samoa, Tonga, Tahiti, and the Cook Islands* 1907, 62; cf. Schnoor 2009). After emigrating to the island colony, he may have been able to read Frobenius' text in a copy of *Zeitschrift für Bauwesen* dispatched to Sāmoa.

Schaaffhausen's design for the market hall of 1904 and an infant school of 1907 at Malifa, Apia are examples of the work of a colonial who drew from the traditions of the community where they lived (Pringle 1989, fig. 32). Although they are rectangular, both designs share characteristics with the *fale* form. They each have a raised paepae-like building foundation pad, circumferential poles, and a pitched venting roof (Pringle 1989, figs. 32, 33) (Fig. 3.6).



**Fig. 3.6:** Albert Schaaffhausen, Infant school, Malifa, Samoa, 1907 (Photo: Scherl / Bridgeman Images)

A contemporary Sāmoan newspaper of 1907 recorded:

Built in bungalow form, it will be quite pleasant for the Samoan pupils. ... This school has given the Government welcome opportunity to quite substantially oblige the wishes of the Samoans. Whereas in most Samoan schools the rooms are very low, the school rooms in the Malifa School are 14 feet high. ... Since the building has been erected in form of a bungalow, it will catch the well-desired sea-breeze to be enjoyed on the verandas which run all around the building. ... Ample ventilation will provide coolness and the room will be lighted fabulously by the windows and glass doors provided.<sup>26</sup>

While conforming to a decidedly European typology, Schaaffhausen's 1909 design for the 'Musik Pavillon' (a bandstand) opposite the Post Office at Matafele, Apia could also be interpreted as a European interpretation of the *fale* form. Standing alone on an open waterfront site, its raised octagonal foundation base, peaked roof and open floor supported by perimeter posts recall the form of the circular *fale tele* (Fig. 3.7).<sup>27</sup>

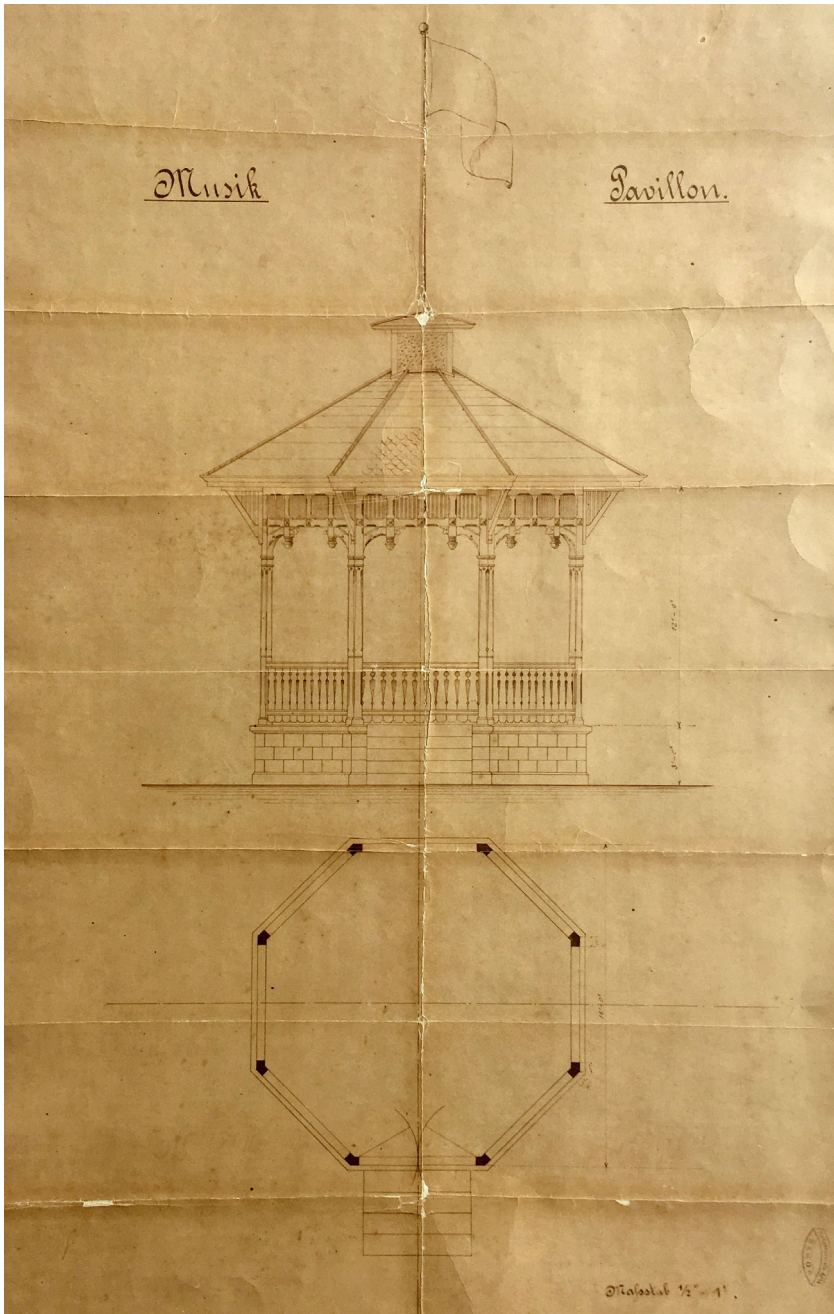


Fig. 3.7: Albert Schaaffhausen, 'Musik Pavillon', 1909 (Archives New Zealand)

In the late 1920s it was relocated to nearby Vaimoso on another expansive site (Tone 2024).<sup>28</sup> About September 1929, its side walls were infilled when it became the office of the Mau independence movement.<sup>29</sup> Perched in an open space, the elevated octagonal structure echoed a *fale* form. This association with the *fale tele* may have contributed to the office becoming a central symbol of the independence movement from that time to the present day.

In 1926, on the north central coast of Upolu, Lepea was refashioned as a model village under the direction of the New Zealand government. To benefit the health of the people of the village, a series of large *fale* were positioned in an orderly, peripheral arrangement around the *malae* (central open space) (Milbank 2013). This development required building consents to be issued and that the *fale* be constructed to a particular standard. Contrary to the Sāmoan concept of communal land ownership and space, spacing between buildings and functions was regulated (Milbank 2013, 831). While few, if any, New Zealand government officials were aware of Frobenius' publication, the scheme nevertheless aligns with his call for development that retained the 'peculiar charms' of traditional buildings while improving sanitation and health.<sup>30</sup>

Some traditional buildings were commandeered by colonial powers, becoming cross-cultural spaces where respective parties gathered and where power was exercised. The large *fale* at Mulinu'u where the Sāmoan chiefs met is a case in point. In subsequent years it, and its replacement structures, have presented an architectural metaphor for the shifting political landscape of Sāmoa. After the official group of Sāmoan chiefs, the Fono Faipule had been established in 1873, they met at a large *fale* at Mulinu'u peninsula, Apia. After the declaration of the German protectorate in 1900, the Fono was retained by Dr Solf in an unpaid, advisory capacity. This in effect diminished its power (Campbell 1999, 100). In 1905 the Fono was reconstituted as a paid national advisory body that met twice a year, effectively operating under the German government. Its purpose was to disseminate information for the German administration and to voice concerns of the Sāmoan people. An image taken prior to 1907 shows a group at the *fale* meeting under the German flag, which appears as emblematic of a hybrid colonial political condition (Fig. 3.8).<sup>31</sup> Despite Dr Solf's sensitivity to Sāmoan attitudes and opinion, and his accommodation toward traditional Sāmoan leadership (Davidson 1967, 76–88), here we see German power reigning supreme. After the New Zealand officially gained control of the region under the League of Nations Mandate of 1920,



**Fig. 3.8:** Group at Parliament house, Mulinu'u, Samoa, during German administration. Before 1907 (Photograph by Alfred Tattersall, ATL Library 1/2-044318-F)

there would be similar assembly at the then rebuilt *Fale Fono*<sup>32</sup> under the flag of the new regime.<sup>33</sup> Decades later, upon independence in 1962, that *fale*, fitted with a ceiling and furnished by the New Zealand government, would become the Fono (parliament) for the Sāmoan Government, independent of other national powers for the first time since colonisation. The Fono was subsequently replaced in 1972 and 2020, with the current building being funded by the Australian government.<sup>34</sup> This impressive succession of *fale*-form structures can be interpreted as evidence of the kind of cross-cultural synthesis that Frobenius had proposed in 1899.

## 8. Conclusion

A study such as that undertaken by Frobenius in the 1890s would not be possible today. An empirical study restricted to structure would require acknowledgement of wider context and complexity. There is now much greater awareness of the parameters that have contributed to the

formation of the architectures of the Pacific. There is more knowledge of the shifting climate cycles of the Pacific, and there is better understanding of the performance of available indigenous building materials. Most importantly, there is now an awareness of the significance of the layered cultural foundation that shapes the spiritual and material culture of the peoples of the Pacific. Few Europeans had much awareness of these matters at the end of the 19th century, and even today outsiders sometimes have limited knowledge of these issues. It would also be difficult for a remotely based European to partake in such an exhaustive heavy-handed analysis today without the significant, central contribution of researchers from the indigenous communities of the Pacific (for example, Engels-Schwarzpaul, Lopesi, and Refiti 2023). ‘Research through Imperial Eyes’ is now subject to sustained well-argued criticism that no longer sees colonised peoples and their material production as fit to be examined by outsiders as specimens for collection and classification.

Nevertheless, it cannot be denied that in his time Frobenius produced an ambitious study that understood the architecture of the Pacific to be a subject of great complexity and one worthy of study. Flawed though his project was, it now prompts further attention toward a complex matrix that describes the development of Pacific architectures. Significantly, many projects today align with his early call for the preservation of the ‘peculiar charms’ of traditional building coupled with the opportunities of new technology. It has become a standard design approach for key developments undertaken throughout the Pacific. Arguably, this call for the skilled architect to consider the application and development of this approach remains Frobenius’ most enduring achievement.

## Notes

- <sup>1</sup> ‘Hermann Theodor Wilhelm Frobenius (1808–1868)’. *WikiTree*. <https://www.wikitree.com/wiki/Frobenius-9>
- <sup>2</sup> Notes in this chapter will refer to page numbers in the monograph rather than to the pagination in the journal.
- <sup>3</sup> ‘...seines sozusagen geistigen Gehaltes...’ (Frobenius, H. 1899b, 3).
- <sup>4</sup> ‘Man kann bei ihnen von einem Hausbau eigentlich nicht reden’ (Frobenius, H. 1899b, 3).
- <sup>5</sup> Hoturoa Barclay-Kerr, ‘Waka, canoes, Pacific origins’, *Te Ara – the Encyclopedia of New Zealand*, <http://www.TeAra.govt.nz/en/map/5994/pacific-migration> (accessed March 2024).
- <sup>6</sup> Frobenius, H. 1899b, 4. The perspective images of the barrel-vaulted and gabled house forms of Māori (Fig. 6, item 2) appear to be derived from images by Louis Auguste de Sainson in the published account of 1833 of Dumont d’Urville’s 1827 travels on the *Astrolabe* (see also Baessler 1895, 1900). Frobenius appears to have been unaware of H. W. Williams’ 1896 paper on Māori houses

- published in New Zealand (Williams 1896). There were no members of the society in Germany at that time.
- <sup>7</sup> The term 'barla' may derive from the Malay word '*balay*' which means *house*, and '*balai*', which is a Malay word for a hall, or a large building. 'Typically, the *dubu* consists of an oblong rectangular platform, supported by horizontals which pass between opposite pairs of massive carved wooden uprights, one of which stands at each corner, constituting the most characteristic features of the structure' (Seligmann 1910, 60–61). Frobenius charted variations of this form in New Guinea including Yos Sudarso Bay (Humboldt Bay) and the Louisiade Archipelago; Sumatra (Toba Batak people), Nias, and Seram Island in Indonesia; Timor, Palau, the Solomon Islands, and Fiji.
- <sup>8</sup> '... welche nicht nur als die malerischsten und reizvollsten, sondern auch als die zweckmässigsten und constructive fortgeschrittensten von ganz Oceanien zu betrachten sind' (Frobenius, H. 1899b, 14).
- <sup>9</sup> 'Ein Hausmodell (dunkel), Palau'. Ident. Nr. VIII B Nls 65. Staatliche Museen zu Berlin, Ethnologisches Museum. <https://recherche.smb.museum/detail/1541441/> & <https://recherche.smb.museum/detail/1541443/> (accessed 25 May 2025).
- <sup>10</sup> This is the *Fale Maota* (Meeting House) of Seumanutafa Pogai, the Matai (High Chief) of Apia, which was near the site of the present New Zealand High Commission. Personal communication, Steven Meredith, 18 June 2024.
- <sup>11</sup> On the construction of the Sāmoan *fale* see Te Rangi Hiroa 1930, 1–97; Higginson and Benyon 1992, 43, 58.
- <sup>12</sup> I am grateful to Michael Falser for alerting me to this exhibition and to its accompanying publications.
- <sup>13</sup> '... in einer möglichst den wirklichen Verhältnissen entsprechenden Weise aufzubauen' (Lindenberg 1896, 180).
- <sup>14</sup> Elsewhere he wrote, 'However, it would be erroneous to conclude from the fact that the area of expansion of these stone foundations [of the eastern Pacific] roughly corresponds to that of the North Oceanic architectural circle that both are genetically related' (Frobenius, H. 1899b, 8).
- <sup>15</sup> Stimulated by his son, he also dedicated his energies to colonial and cultural studies, for example: 'The heathen negroes of Egyptian Sudan (Frobenius, H. 1893); African building types (Frobenius, H. 1894); Oceanic building types; Monthly report in Africa.' ('Oberstleutenant H. Frobenius.' 1900, 237).
- <sup>16</sup> 'German discovers Atlantis in Africa', *The New York Times*, 30 January 1911, 1.
- <sup>17</sup> 'Dr. L. Frobenius', *The Times* [London], 11 August 1938, 13.
- <sup>18</sup> She cites Frobenius, L. 1925; cf. Bönisch 2009. Hans-Jürgen Heinrichs similarly recounts that Leo stated that he first felt his longing for Africa as a small boy at the Frankfurt Zoo, which his grandfather also helped establish (Heinrichs 1998).
- <sup>19</sup> For example, Vroklage 1936; B.A.G. 1936; Lewcock and Brans 1976; Waterson 1990, 20–23; Asfarilla and Prihatmaji 2019.
- <sup>20</sup> Personal communication, Mike Austin, 2021.
- <sup>21</sup> '... es ist als ein eigentümlicher Zufall zu betrachten ...' I thank Monika Smith for her translation of this phrase.
- <sup>22</sup> '... dismissing other scholar's claims for such a connection based upon headrest design ... of the Toba Batak in Sumatra' (Frobenius, H. 1899b, 13).
- <sup>23</sup> 'Es ist jedoch nicht klar, wie der Autor überhaupt zu der Aufstellung der Baukreise gelangt, da hierzu zunächst festgestellt werden müßte, welche Bauformen in jedem einzelnen Kulturgebiet vorkommen' (Tischner 1934, 1).
- <sup>24</sup> 'Wo sollte das Verständniß und der Trieb hervorkommen, die Eingeborenen zu unterrichten, wie sie ihre Bauten unter Festhaltung aller ihrer eigenartigen Reize constructiv vervollkommen und hygienisch verbessern können? Und doch liegen hierin so viele Motive für einen geschickten Architekten, dass es sich lohnen würde, einer Verwendung und Entwicklung nicht nur in zoologischen Gärten und gelegentlich von colonialen Ausstellungen nachzusinnen' (Frobenius, H. 1899b, 14).

- <sup>25</sup> 'Möchte es mir gelungen sein, das Interesse hierfür anzuregen und das eingehendere Studium der oceanischen Bauwerke unseren Architekten etwas näher zu rücken' (Frobenius, H. 1899b, 14).
- <sup>26</sup> *Samoanische Zeitung*, vol. 7, no. 47 (23 November 1907) quoted in Schnoor 2009. I thank Christoph Schnoor for drawing my attention to this example.
- <sup>27</sup> Bauerlaubnisse. Baupolizei [Building Permits, Building Police] – 'Musik Pavillon', p. 168 [SEP no. 62], 1909. Archives New Zealand. R26282103 Box 124 Part 1. Sep 62. Position 400. No. VI 12 c.
- <sup>28</sup> The bandstand was on its original site at Matafele in early 1927. 'Sir Maynard Hedstrom', *Samoa Times*, 28 January 1927, 3.
- <sup>29</sup> 'Mau Headquarters', *Sun* (Auckland), 3 October 1929, 18; 'Samoa Affairs', *Auckland Star*, 3 October 1929, 31. Group photograph of the Sāmoan Mau at the opening of the Vaimoso office. Photograph by Alfred James Tattersall. Alexander Turnbull Library, Wellington. PA1-0-795-50 <https://natlib.govt.nz/records/22855492>
- <sup>30</sup> Frobenius' 1899 publication had almost no circulation in New Zealand. No holdings of the *Zeitschrift für Bauwesen* were held there, and the separate monograph was not held by an institutional New Zealand library until 1919. Personal communication Anthony Tedeschi, Alexander Turnbull Library, 27 February 2025.
- <sup>31</sup> Group at Parliament house (Fono), at Mulinu'u, Sāmoa, during German administration. Photograph taken by Alfred James Tattersall. 1/2-044318-F. <http://natlib.govt.nz/records/22338203>
- <sup>32</sup> The *fale* was rebuilt in 1916. 'Samoan Government demolishes symbol of nation's independence', *New Zealand Herald* [Auckland], 8 March 2012.
- <sup>33</sup> Major-General Sir George Spafford Richardson and the Faipule a Fono, Western Sāmoa. January 1924. Alexander Turnbull Library. PAColl-3799-19. <http://natlib.govt.nz/records/22684298>
- <sup>34</sup> 'Parliament of Samoa Maota Fono | Guida Moseley Brown Architects', Australian Institute of Architects, 2020. <https://www.architecture.com.au/awards/parliament-of-samoa-maota-fono-peoples-choice-2020-international-architecture-awards>

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PART II

**GERMAN COLONIALISM  
IN THE *SÜDSEE* AND  
ITS ENCOUNTERS  
(1884–1914)**



## Chapter 4

# Administrative and Residential Architecture in the German Colonial South Seas

The Photo Albums of Wilhelm Knappe, Carl Schiesser,  
and Ferdinand Kunzmann

*Hermann Mückler*

### 1. Introduction

The number of photographic representations from the period of German colonial involvement in the Pacific Islands is limited. Although the Germans' private and state expeditions of discovery and exploration clearly overshadowed those of the other colonial powers operating in Oceania, the period from 1885 to 1914 – the era from the German Empire's first colonial acquisitions in the Marshall Islands to the outbreak of the First World War and the loss of all colonies – was too short to produce large numbers of photographic records in Micronesia, German New Guinea, and Samoa. This makes the initiatives of individual photographers all the more important and interesting in this context. Due to their respective professional functions and specific entrepreneurial, administrative, missionary, medical, or colonial political tasks, they often stayed in one place for a comparatively long time and therefore knew their immediate surroundings well. For some, a personal interest in the relatively new technology of photography was combined with a locally awakened interest in the respective local population and their cultural characteristics, which became the occasion for more extensive photographic documentation.

In the case of at least one, if not two, of the three people mentioned here, it is possible to speak not only of colonial contexts in which they were embedded and in which they acted at the time, but also as paracolony contexts. This is permissible because the ship's cook, for example, took photographs on his regular voyages between the islands of Oceania and, although he benefited from the colonial infrastructure and the

networks already in place, he himself was in no way involved in any kind of colonisation measures. Similarly, the assistant doctor, who worked for a trading and plantation company, can be perceived as a paracolonial figure who was in direct contact with the indigenous Papuans as well as Chinese and Javanese contract labourers during medical procedures, but who otherwise stayed and acted within the colonial expatriate community.

## 2. From the Imperial Commissioner's photo album

Wilhelm Oskar Knappe (born 20 October 1855, Erfurt (Thuringia); died 5 February 1910, Berlin-Grunewald) was the first Imperial Commissioner of the German Empire to the Marshall Islands. Having worked in the consular service of the Foreign Office from 1883, he was appointed Vice-Consul in Apia, Samoa, in 1885 and was subsequently appointed the first Imperial Commissioner to the Marshall Islands on 22 September 1886, an office he held until 5 December 1887. In the Marshall Islands, Knappe succeeded Gustav von Oertzen, who was temporarily administering the Marshall Islands from German New Guinea, as Germany's first local political and administrative representative. He resided in Jabwor, the main town on the Jaluit Atoll, the then Port-of-Entry and centre of the archipelago during the German colonial period. Knappe was regarded as a benevolent colonial administrator who was explicitly sympathetic to the locals. Overall, compared to other German colonies in the South Seas, the Marshall Islands were considered politically calm and conflict-free, and therefore comparatively easy to administer. Knappe had a great interest in the local culture and respect for the Micronesian islanders entrusted to him.<sup>1</sup>

On his trips to the individual islands and atolls of the Marshall Archipelago as part of his administrative work, Knappe collected ethnographically interesting objects, which he incorporated into his collection. The largest single item was a traditional outrigger boat (*walap*) of the Marshall Islanders, which he later brought to Germany and can now be admired together with his photographic legacy and other ethnographic objects in the Erfurt Folklore Museum. Due to the fact that leisure activities were very limited on Jaluit after professional commitments, collecting these objects was both a pastime and a hobby for him. From today's perspective, however, Knappe made a substantial contribution to shedding light on the material culture of the Marshall Islanders for ethnological and ethnographic research (Raßloff 2005; Moritz and Steiner-Sohn 2010).

Knappe took photographs himself and acquired photographs documenting his time in the Marshall Islands. After his return to Germany, he had several copies of a photo album made by a master bookbinder in Erfurt,<sup>2</sup> in which he presented his own photographs of the Marshall Islands as well as those he was able to acquire or received as a gift from the New Zealand photographer Thomas Andrew,<sup>3</sup> who was living in Samoa at the time and whom he demonstrably met in Jaluit. It is not always possible to reconstruct which photographs were taken by Knappe himself and which by Andrew; in individual cases, however, evidence clearly points to the authorship of one of the two (Mückler 2016a, 152–159). One copy of this photo album is in the museum in Erfurt, two others were sold at auction to private collections, one of them verifiably in the USA, and parts of another album are in the collection of the author of this article in the form of loose sheets. Knappe's entire photo album is published in a book on early photography in the Marshall Islands together with photographs by other authors (Mückler 2016a).<sup>4</sup> The approximately 75 photographs (the exact number differs slightly in all the photo albums) show an astonishing number of depictions of buildings. On the one hand, there are those made by locals from the materials available locally on the islands and atolls, and on the other, the buildings erected by the foreign settlers, entrepreneurs and the German colonial administration.

If one concentrates on the residential buildings and those buildings that housed administrative facilities and limits this to the period from the mid to late 1880s, then one can basically distinguish three types of buildings on the Marshall Islands: 1) those that were built entirely from imported, that is, not locally available materials; 2) those that were built exclusively from the (building) materials available on the islands and atolls, and finally 3) various forms of 'mixed types', as those in which materials 'from both worlds' are combined. Due to the financial resources required for the construction of a house, it is already clear that the buildings constructed with local materials were obviously inhabited by indigenous Marshall Islanders, but also by private individuals with little capital who had settled on the island, mostly settlers who hired themselves out as copra suppliers on the archipelago. The imported prefabricated houses, in turn, were inhabited by entrepreneurs, traders, and agents of the respective local trading companies, depending on their size, condition, and the financial means of their owners. The smaller ones housed colonial facilities, such as the post office, a police station, the headquarters, or offices of the colonial administration and so on. The warehouses of the individual German,

Australian, British, or American companies as well as places of worship of the local missionary churches are not included in the considerations here; however, the Hotel Germania, which was for some time the only hostel for arriving guests on Jabwor or Jaluit, is mentioned here.

The photograph showing a building on which the plaque *Kaiserlich Deutscher Commissar zu Jaluit* (German Imperial commissioner to Jaluit) is attached to the outer wall of the main colonial administration building is almost iconic, as it represents the most visible sign of German hegemony on site (Fig. 4.1a). According to multiple accounts, the man with the travelling bag in his hand is supposed to be Knappe himself, while standing next to him is a man whose name is unknown, equipped with an insect net, a botanising drum, and an umbrella. The house itself is one of the typical houses, being prefabricated and then quickly erected on site. They mostly came from Australia, and only in a few cases were imported from Germany itself. The fact that this building must have been the centre of the entire settlement of Jabwor can be seen from the ropes supporting the flagpole, which is no longer visible in the picture. The building in Fig. 4.1b is very similar in shape – compare the windows and doors, especially their frames – which is also not a residential building, but is dedicated to a specific function that cannot be clearly assigned. The man in the long white coat seems to have gone about his work here. The design of the eaves and the suspension of the gutter is interesting. The highest local authorities of the colonial administration lived in a prestigious and therefore comparatively large house. Knappes' next but one successor as Imperial Commissioner was Eugen Brandeis (1846–1930), who held office from March 1889 to April 1890, from February 1892 to February 1893 and finally as Governor from March 1898 to January 1906. Fig. 4.1c shows the house he lived in with his wife Antonia and his first daughter Margarete, who was born in Jaluit.<sup>5</sup> Typical of the 'better' houses was the wrap-around veranda and the low-pitched roof, which provided shade and kept out the tropical rain. Regardless of whether such houses were prefabricated or made from local building materials, such a covered veranda was an indispensable attribute of these buildings. Fig. 4.1d shows a house with traditional palm leaf roofing. The palm leaf bundles were mostly made from pandanus leaves; the production was often done by women, while the roofing was done by men. The house in Figure 4d was occupied by relatives of the wife of Adolph George Capelle (1838–1905), Limenwa (Sophia, 1840–1893). Capelle was a German merchant and trader from Hannover; he had married a local Marshallese woman from Likiep and had five children with her.



**Fig. 4.1:** A set of four photographs from Knappe's photographic album. (a), (b), and (c) clearly show prefabricated houses, of which (a) and (b) represent a standardized model without individual extensions, (d) house with traditional palm leaf roofing (private collection Hermann Mückler)

The only accommodation available in Jabwor on Jaluit for the comfort of travellers was the original 'Germania' restaurant, which was converted into a hotel shortly after it was founded. The history of this building shows, on the one hand, how it was adapted and expanded as needs increased and, on the other, the risks to which such buildings were exposed in the tropics. The building, which was initially erected at ground level by the Jaluit Gesellschaft (Jaluit Company) (Fig. 4.2a) and managed by an elderly sea captain named Carl Domnick<sup>6</sup> from about 1904 to 1915, was later extended by adding another storey. Otto Kessler (1861–1933), a captain in the service of the Jaluit Company, described this hotel as follows: 'It contains six guest rooms, a mess room, various guest rooms with piano and billiards and the inevitable gramophone. There is also a good bowling alley and various verandas where you can enjoy the view of the harbor.'<sup>7</sup> The building was largely destroyed by the great cyclone on 30 January 1905 and had to be completely rebuilt (Fig. 4.2b). Most of the other houses of Jabwor were in the same state of total destruction after this catastrophe, which hit most of the islands and atolls of the southern



**Fig. 4.2:** The accommodation building on Jabwor/Jaluit along history. (a) The building in its original condition (private collection Hermann Mückler), (b) After destruction in 1905 (Dirk H.R. Spennenman, Micronesian Area Research Center, University of Guam. Historic photograph album image no. 38); (c) As the rebuilt hotel during Japanese Mandate period (private collection Hermann Mückler)

Marshall Islands with a twelve-metre-high tidal wave, killing many people and necessitating considerable reconstruction work (Jeschke 1905, 248–249). The last of the three images shown here is a colour postcard from the Japanese Mandate period after the First World War, when the rebuilt hotel was converted into a dormitory for male Japanese military personnel on the atoll (Fig. 4.2c). The building did not survive the fighting of the Second World War.

The surrounding verandas, or at least those usually on the front sides of the houses, form a central element of the colonial residential buildings in those regions for weather and microclimatic reasons, while these are missing on some official buildings (see Fig. 4.1a-d). Knappe's photo album contains a number of different forms, that is, variations, which these roofs could have.

They appear either in the form of a direct extension of the sloping roof, or as a separate extension with a canopy often sloping at a shallower angle. One exception is the roof in Fig. 4.3a, which was 'built into' the front



**Fig. 4.3 a–b:** The different appearances of the houses in Knappe’s photograph album allow conclusions to be drawn about the financial means of the local entrepreneurs and settlers (private collection Hermann Mückler)

and front side of a house and is therefore atypical. It is the home of the Protestant missionary of the American Board of Commissioners for Foreign Mission (ABCFM), Clinton Francis Rife (1866–1943), who headed the ABCFM’s Micronesian mission on the Marshall Islands and acted as a doctor, a ‘medical missionary’. Rife worked from Jaluit in the eastern Micronesian Marshall Islands, together with his wife Isadora ‘Dora’ Roté (1868–1961) (Mückler 2014, 333). In this picture, as in many others, there is prominently shown a fence surrounding most of the houses. On the one hand, this served to prevent free-roaming pigs from devastating the garden, where vegetables were often grown, but, on the other, it also served to define clear ownership structures and, in particular, to keep the Marshallese, who often engaged in violent conflicts with one another, away from the houses of foreigners. Fig. 4.3b shows a modern house in the background (likely for the storage of goods) and a hut-like house in the foreground that was built with local materials according to local building traditions. In front of them are the owner and inhabitants of both houses, a German trader called sea captain Felix Becker with his local wife, Mary Jacklick (Schneider 1891, 31). The picture shows not only the bicultural connection between Germans and Marshallese women, but also the incorporation or combination of different building traditions.

### 3. The ship’s cook of the ‘Prince Sigismund’ on Nauru

The cook, confectioner, and amateur photographer Carl Schiesser (born 23 February 1889, Ochsenfurt (Lower Frankonia); died 12 April 1966, Darmstadt) had a completely different approach to the people of

Micronesia. After completing his training and military service, he arrived in Sydney, Australia, in 1912 and signed on as a ship's cook on the German Imperial Mail steamer *Prinz Sigismund*. This *Norddeutscher Lloyd* ship sailed the route from Sydney via several stops in German New Guinea and Micronesia to Hong Kong and Japan every two months. Schiesser also reached the Marshall Islands and Nauru, which were under German colonial administration. As an enthusiastic photographer, he took numerous pictures during his stays in the German colonies of Oceania, which can be found in two photo albums that he carefully designed and most of which are now in the Australian National Library.

A total of 165 photographs, however, are in the possession of the author of these lines, namely those photographs that focus on Schiesser's impressions and experiences in New Guinea and the Marshall Islands and the phosphate island of Nauru (which belonged to the administrative territory of the Marshall Islands).<sup>8</sup> Some of the photographs, namely those on Nauru, were published by me in a book with photographs from the German colonial period on the Marshall Islands and Nauru, but at that time I was unable to say anything more precise about Carl Schiesser's biographical background.<sup>9</sup> More details have since emerged about Carl Schiesser's biographical background and it can therefore be added that he was interned in Brisbane at the outbreak of the First World War and had to spend four years in several Australian camps, mostly in the Sydney area, before he was able to return to Germany. After the war, Schiesser initially lived in Ochsenfurt again and worked there as a confectioner. In 1922, he married the daughter of a carpenter, with whom he also began working as a carpenter for a time and was able to apply the carpentry skills he had acquired during his time in captivity. His wife bore him two children. In 1924, he moved first to Rothenburg, later to Würzburg and finally to Darmstadt in 1930, where Carl Schiesser died in 1966, five years before his wife (Pfeiffer 2018; Menig 2024).

Of particular interest are the colonial architecture-related photographs taken by Schiesser on the phosphate island of Nauru, as there is generally little photographic evidence from the brief German colonial period on site. Two aspects will be discussed here. First, we find several pictures in which several men are sitting together comfortably on a veranda (Fig. 4.4b). There is probably a grave in the background. The veranda can be identified insofar as it is the one on the picture of a general view of a building (Fig. 4.4a), which shows the Catholic mission station on Nauru.<sup>10</sup>



**Fig. 4.4a-d:** Another set of photographs from Knappe's photographic album with various house types from the outside, the inside and in a row (private collection Hermann Mückler)

The veranda is on the right of the picture. The house as a whole follows construction principles typical of the period with a surrounding covered veranda and a railing, which can also be found with its struts in other photos of the period and locations. Unfortunately, there is no further information on the people depicted. Of greater significance are probably the two photos taken by Carl Schiesser on Nauru, in which an interesting detail can be seen in a number of houses that had previously gone unnoticed. The houses, which apparently stand in a row next to one another along one and the same street, are the homes of the local German officials. Built in the bungalow style from wood on cement pillars and roofed with corrugated iron, these buildings are very similar on the outside. Each of the buildings has a small front garden and a tank to collect rainwater. On closer inspection, you can see a small wooden plaque on each house, attached to the railing or balustrade, with a name on it. It is the name of the house, and these names can now be differentiated more precisely, as there are several pictures with similar details: they are all names of German towns. The two illustrations by Carl Schiesser show such houses,



**Fig. 4.5:** House 'Stuttgart' on Nauru from the collection of the Marshall Islands photographer Joachim DeBrum (The Alele Museum & National Archive in Majuro, Marshall Islands)

on the one hand a house called 'Homburg' (Fig. 4.4c) and on the other a house called 'Mainz' (Fig. 4.4d; to the left).

With this knowledge, a previously unlocatable photograph from the collection of the Marshall Islands photographer Joachim DeBrum can now be clearly identified for the first time (Fig. 4.5): the picture with the identification number J-295<sup>11</sup> shows a house 'Stuttgart', which is described in the data collection of DeBrum's photographs as possibly originating from Jaluit (with a question mark). The fact that it is a house in Nauru is not only clear from the nature of the house itself, but also from the proper name, and can therefore be precisely localised: Nauru. Paul Hambruch had already mentioned in the first half-volume of the results of the South Sea expedition 1908–1910 that the houses of the officials had proper names, without adding that at least several of them were the names of German cities (Hambruch 1914, 19). It is no longer possible to reconstruct whether the choice of names can be traced back to the original origin of the people living in these houses from the German towns mentioned, but it is certainly conceivable. The size of the houses depended on the position that

the respective official held within the colonial administrative hierarchy and ranged from two-room houses to four- and five-room houses.

#### 4. An assistant doctor in Stephansort

The photo album of Ferdinand Kunzmann (born 1 August 1860, Duttonbrunn (Bavaria); died 29 August 1906, Netherlands East-India<sup>12</sup>) is also significant for other reasons. He served as assistant doctor, pharmacist, and hospital administrator in Stephansort (an important trading station founded by the Neuguinea-Compagnie (New Guinea Company) in 1888 on the Astrolabe Bay) in the years 1893 to 1896 in what was then German New Guinea. He worked there as an assistant to the two government physicians Bernhard Hagen (1853–1919), who was in office from 1893 to 1895, and Wilhelm Wendland (1867–1944), who was the local medical director until 1897.<sup>13</sup> Kunzmann spent his free time in Stephansort, where he lived from 1893 to 1896, collecting fish, reptiles, butterflies, insects, birds, and other small animals to sell to dealers in Germany and Belgium; he also photographed extensively in Stephansort and the surrounding area. He had at least a selection of his photos made into a ‘New Guinea album’ by the Graphische Kunstanstalt Meisenbach, Riffarth & Co. book printing and binding company in Berlin-Schöneberg, which contains a total of 42 loose plates with a total of 58 photographs mounted on stiff cardboard sheets. Bernhard Hagen confirms in his book *Unter den Papua’s in Deutsch-Neuguinea* that Kunzmann himself produced the images in the album (Hagen 1899, 142). The album in the possession of the author of this article is one of two known copies;<sup>14</sup> it is not known whether there are any others. Some photos have also found their way into Hagen’s book, with corresponding references and mentions of Kunzmann in the text (Hagen 1899, pls. 28, 33, 42 and pp. 177, 182). However, the Kunzmann album is worth mentioning above all because some of the illustrations were widely distributed in the period before the First World War as colour advertising collector’s pictures, so-called merchant pictures or more common trade cards (in German: *Reklamesammelbilder*), as well as colour postcards, without the author of the illustrations being known. Three photographs in particular were used in large editions: one shows a sailing boat of locals from Bilibili; two show architectural evidence of colonial architecture from Stephansort and are presented here (Fig. 4.6a, 4.7a). Both photographs show so-called ‘assistants’ houses’, that is, the



**Fig. 4.6:** (a) Sample of the first 'Assistant House' in Kunzmann's photographic album; (b) The corresponding illustration on a trade card (both private collection Hermann Mückler)

homes of colonial officials and administrators, who also used these buildings as offices. What is striking is the distance from the ground and consequently the thick trunks that support the living and working levels as piles. These buildings are therefore visually 'elevated' in comparison to the buildings occupied by the plantation workers, which are all at ground level. In addition to microclimatic aspects and preventive measures to counteract possible flooding near the seashore, subtle status-related hierarchical intentions can also be assumed here, which manifest themselves in different building heights. This impression is reinforced by the people depicted: Chinese contract workers and a native Papuan are standing below, while the white colonial officials are standing on the balustrade on the second floor. It is also striking that both buildings were made from locally available materials and are neither prefabricated houses nor stylistically modelled on European building traditions.

After his return, Kunzmann must have offered these two photographs to the manufacturers of postcards and advertising collector's pictures (so-called trade cards) for purchase and thus for use as templates for the graphic artists who produced these contemporary mass print media. Fig. 4.7b clearly shows the house of the photograph (Fig. 4.6b) with the title 'Assistant's House on the Minjoine River'<sup>15</sup>, both times as illustrations on the front side of the trade cards, which were produced as advertising material by the largest outfitter for tropical travellers at the time. One is a small cartouche picture in the form of a semicircular inset, while



**Fig. 4.7:** (a) Sample of the second 'Assistant House' in Kunzmann's photographic album; (b) The corresponding illustrations on a postcard (above) and on a trade card (below) (private collection Hermann Mückler)

the second trade card shows the assistant's house as the main motif. The backs of the two collector's pictures were used to advertise the company Deutsches Kolonialhaus Bruno Antemann (German Colonial House Bruno Antemann), which was based in Berlin and sold its goods through numerous dealers, who could also have their own company details printed at the bottom of the back for advertising purposes. The title of the original photograph was used word for word for the trade card. Although it is no longer possible to reconstruct the exact print run of such collector's pictures today, at least 5,000-10,000 of each were produced, often significantly more (Weyers and Köck 1992; Ciolina and Ciolina 1985; Mückler 2016b).

The second photograph that depicts an assistant's house looks very similar both in terms of its construction and spatial structure, and there is also a roofed passage to a storage building behind, probably directly attached. Nevertheless, these are two completely different buildings, which were probably erected close to each other. Even more so than in Fig. 4.6a, Fig. 4.7a clearly shows that no modern windows with corresponding frames were installed, but that the entire building was probably constructed on site using the materials found there. The commercial use of the photograph of this building is illustrated by a colour picture postcard and a trade card (Fig. 4.7b).

It is not only the architectural evidence of these contemporary popular media that follows Kunzmann's model, but also the other details such as the tobacco planting. Tobacco was actually grown on a large scale in



**Fig. 4.8:** The photograph 'Worker's house along the way to Erima' in Kunzmann's photographic album (private collection Hermann Mückler)

Stephansort in the 1890s.<sup>16</sup> However, as the cultivation and sale were not profitable and was also threatened by drought on several occasions, the planting of tobacco plants was stopped in 1901 and only carried out to a limited extent until the outbreak of the First World War.

A final photograph by Kunzmann depicts another type of building, namely a 'workers' house' built at ground level (Fig. 4.8), in contrast to the raised assistants' house. This was also characterised by the use of locally available building materials. The hinged window openings at ground level, which are intended to allow a draught in the hot tropical climate, are remarkable. The roof is equally striking, which is a hipped roof with a striking pointed verge in the upper gable area (dutch gable roof). The narrow-gauge field railroad visible in the foreground was another special feature of Stephansort, where there was a total of more than 24 kilometres of track for transporting the produce grown and harvested on the plantations to Bogadjim and further north to Erima Harbour (McKillop and Pearson 1997). Through such details, Kunzmann's photographs represent

an important testimony to German colonial achievements in the construction of residential and work buildings as well as other infrastructural construction measures.

## 5. Conclusion

In summary, it can be noted that all three of the people presented here with their photographs have one thing in common in that the houses of the people they visited played a central role in their choice of motifs. Often these architectural achievements were indeed the most attractive motifs, if only because in Oceania – both in Micronesia and Melanesia – they were the only major buildings in an environment that was primarily characterised by the natural environment. The fact that these buildings also represented associations with the homeland, and thus offered at least to some extent a point of contact that suggested a sense of security, may also play a role here. In this way, the houses of the Europeans – and in the examples mentioned here those of the Germans – often represented islands in a sea of cultural otherness. They were thus bulwarks against the foreign, the unknown, the hostile, and therefore represented important points of reference for the colonisers, providing them with a sense of identity and orientation.

## Notes

- <sup>1</sup> On Knappe's stay in the Marshall Islands, see: Mückler 2016a; on the archipelago as a whole, especially the German colonial period, see Hager 1886; Krämer and Nevermann 1938; Treue 1976; Wegener 1903.
- <sup>2</sup> In the 1889 address book of Erfurt, he is found with the name Edmund Götze; this name is also printed on the cover of the photo album.
- <sup>3</sup> Thomas Andrew (1855–1939) was a New Zealand photographer who first had a photo studio in Napier, later in Auckland, and – after it burned down – in Apia on Upolu.
- <sup>4</sup> The photographs of the other authors in the book mentioned are those from Erwin Steinbach and Carl Schiesser.
- <sup>5</sup> This photograph is not from Knappe's photo album, but is a single photograph for comparison purposes; an albumen print mounted on cardboard; collection H. Mückler; see also: Micronesian Area Research Center, University of Guam, Historic photograph album image no. 121.
- <sup>6</sup> Carl Dönnick (1860–c.1925), originally from Bavaria, also acted as official postal agent from 1899 to 1904, handling postal matters on Jaluit on his own in addition to his activities as captain, pilot, and harbor master.
- <sup>7</sup> Cited in Sdouz (2010, 362). The text was written by Otto Kessler, who gave photographic lectures on his time in Jaluit after the First World War, giving details of the living conditions on Jaluit.

- <sup>8</sup> Schiesser's two photo albums originally contained a total of 987 photographs (540 in the first and 447 in the second album). However, sheets with a total of 165 photographs from the second album, which exclusively deal with Oceania, were removed and sold separately by an antiquarian bookseller, so that today the two albums with the remaining 822 (540 + 282) photographs can be found in the archive of the National Library of Australia; the other photographs are in the possession of the author.
- <sup>9</sup> It is thanks to the commendable research of the two historians Jürgen Pfeiffer and Georg Menig that this gap could be closed in the meantime. My biographical details refer to their research and publications: Pfeiffer 2018; Menig 2024.
- <sup>10</sup> This assessment is based on a comparison with a photograph in Erdland (1914, 367).
- <sup>11</sup> Joachim DeBrum's photographic collection is now in the Alele Museum & National Archive in Majuro, and I thank the museum for allowing me to use this image, along with others, for scientific comparisons back in 2015.
- <sup>12</sup> I am particularly indebted to Mrs Syuzan Karimi for the biographical information, whose extensive research on Ferdinand Kunzmann provided essential information.
- <sup>13</sup> On the region and the time horizon, see Zöllner 1891, especially chapter 4; Leidecker 1916; and Wendland 1939.
- <sup>14</sup> The second known album is in the collection of the Deutsches Historisches Museum in Berlin.
- <sup>15</sup> Also Minjim River; a river draining into Astrolabe Bai south of Stephansort, with a swampy estuary.
- <sup>16</sup> See 'Der Tropenpflanzer', Vol. 1 (1898), 126; 'Deutsche Kolonial-Zeitung', Vol. 16, no. 31 (1899), 278.

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## Chapter 5

# Extracting Growth

## The Phosphate Mining Infrastructure on Nauru and Angaur (1906–1913)

*Jasper Ludewig*

### 1. Introduction

The German chemist Baron Justus von Liebig, writing in the mid-19th century, fundamentally reorganised the place of agriculture within industrial capitalism.<sup>1</sup> Liebig's enquiries into the chemical composition of soils and plant metabolism informed his 'mineralist' model of fertility management in which plant growth was viewed as the result of highly specific chemical interactions that could be understood on a systematic basis and, thereby, controlled (Liebig 1848, 29–30). From his celebrated 'knowledge factory' in Giessen, Liebig attacked traditional crop-and-fallow methods in favour of a new model of what he called 'rational agriculture' premised on the application of synthetic fertilisers. These would contain the building blocks of plant growth identified by Liebig – nitrogen (N), phosphorus (P), and potassium (K) – and could be used to maximise agricultural yields: whereas potassium and nitrogen assisted crops in fighting off disease, storing water, and photosynthesising; phosphorus drove flowering and fruiting. Over the course of the 19th century, NPK fertilisers contributed to an eighty-fold increase in the productive capacity of agricultural soils around the world. As a result of their newfound chemical commensurability, the world's soils could henceforth be subjected to similar management strategies across different landscapes (Marchesi 2020, 206).

Liebig's disaggregation of the molecular life of plant growth identified new resources and sites in the global expansion of agricultural production. Chemical fertilisers accompanied homesteaders in the westward expansion of the United States, protected colonial populations in South Africa, Australia, and New Zealand against food shortages and drought, dramatically increased the productive capacity of European farmland,

and gave rise to a global search for the raw materials of which they were comprised. In particular, Liebig's research – following earlier experiments by Alexander von Humboldt – emphasised the potential of guano: the naturally occurring deposits of dried bird and bat excrement known to contain large quantities of nitrogen, phosphorus, and potassium. Unlike nitrogen and potassium, only very small amounts of phosphorus circulate as part of the atmosphere; instead, phosphorus accumulates through organic and inorganic cycles that produce sedimentary deposits in water bodies or in Earth's crust, such as in the form of guano (Dixon 2018, 769).

A first phase of guano mining followed closely on the heels of Liebig's studies, ultimately centring on approximately one hundred islands in the Pacific Ocean predominantly annexed by American companies under the United States Guano Act of 1856. Mining activity on some islands intensified around the turn of the 20th century following the discovery of large deposits of rock phosphates, which held even greater promise than guano as an industrial fertiliser.<sup>2</sup> Rock phosphates are formed over millennia through combinations of guano, decomposed marine life and water, leaving behind minerals that transform the coral substrate of cays and atolls into a fossilised, chalk-like substance. The experiments of John Bennet Lawes, who is credited with producing the world's first chemical fertiliser in the early 1840s, revealed that when rock phosphate is treated with sulphuric acid – producing what is known as superphosphate – it becomes sufficiently soluble for crops to access the phosphorus it contains, increasing yields and improving plant metabolism. As the sociologist Marion W. Dixon has observed, from 1870 to the First World War, during the period of the first Green Revolution, 'all the imperial states were securing access to phosphate rock deposits, either domestically or abroad, and superphosphate fertilizer became the main fertilizer in a new class of chemical fertilizers' (Dixon 2018, 769). While the Pacific rock phosphates were not as large as those discovered in North America, Tunisia, Algeria, and Europe, they were by far the most pure of any deposits found anywhere in the world.

This chapter considers two islands within German Micronesia – Nauru and Angaur – where rock phosphate was mined for the burgeoning superphosphate industry of the early 20th century. Although small shipments of guano had been mined by the Neuguinea Companie on Purdy Island in the Bismarck Archipelago in the early 1890s, Nauru and Angaur were the only rock phosphate deposits in German colonial territory deemed commercially viable (Scharpenberg and Müller 1977, 149). Nauru was added to the

German Marshall Islands through annexation in 1888 and was first worked by an Anglo-German consortium, the Pacific Phosphate Company, in 1906; whereas Angaur, an island of Palau eventually administered from German New Guinea, was mined by a German consortium, the Bremen-based Deutsche Südseephosphat Aktiengesellschaft (DSPAG), starting in 1909. Both companies provided chemical wholesalers in Germany, Australia, New Zealand, and Japan with high-grade Pacific phosphate until the start of the First World War. As the following discussion will demonstrate, attending to the infrastructure on Nauru and Angaur reveals a curiously ‘para-colonial’ figure: the *Regierungsbaumeister* (Government Architect or Superintendent) Wilhelm Schönian, a hydraulic and mining engineer whose career within and beyond the *Bauverwaltung* (colonial building administration) connects the development of both islands across the 4,000 kilometres of open ocean that separates them.<sup>3</sup> On Nauru, Schönian served as a representative of the Colonial Section of the German Foreign Office in negotiations with the PPC; on Angaur, he was engaged directly by the DSPAG on the basis of his experience throughout the German Marshall Islands. As the following sections will elaborate, Schönian’s changing status – from colonial official to becoming an employee of a private mining company – is complicated by his close association with the Altona–Hamburg-based engineering and construction company, F. H. Schmidt, which supplied the early buildings and equipment for both Nauru and Angaur. In tracking Schönian’s movements between these roles and colonial territories, the discussion provides a detailed overview of the mining operations established on both islands, drawing on previously overlooked primary source material. It engages this evidentiary base in keeping with a series of questions at play within the wider volume of which this chapter forms part: what roles did buildings and other spatial technologies play in extracting raw materials from German colonial territory? How were they designed and constructed? By marshalling whose expertise? And how can an analysis of the phosphate industry established throughout German Micronesia inform an understanding of the governmental practices of the German colonial state?

Crucially, the archival record emphasises that the infrastructural development of Nauru and Angaur must be understood in relation to the global fertiliser market that both islands supplied. As the chapter will argue, the question of what constitutes ‘German colonial architecture’ becomes less important from this perspective than the ways in which buildings and other structures located in German territory – commissioned, conceived,

and constructed by German companies and engineers – deepened the imbrications of European imperialism more broadly with the vicissitudes of industrial capitalism. This is not to substitute an architectural analysis for an economic one; rather, it is to offer an analytical framework attuned to the manner in which colonial governance was in fact practised on Nauru and Angaur as a basis for understanding the role of different kinds of infrastructure in linking industrial mining, manufacturing, and agriculture between colony and metropole. In a similar vein, Dirk van Laak has located German colonialism within a broader *Weltverkehrspolitik* in which territorial and state expansion remained secondary to the ‘technical penetration’ of the globe in pursuit of transaction and exchange (Van Laak 2004, 80). As the following sections intend to substantiate, Schönian’s various roles throughout German Micronesia, where his engineering-cum-administrative activities transcended neat distinctions between public and private, company and state, arguably embody Laak’s *Weltverkehrspolitik*. Propelled by the assertive agendas of rival powers in the region, the colonial industry in which Schönian deployed his design and engineering expertise established new forms of labour, technical apparatus, and modes of governance within an entrenched global phosphate imperialism that – to paraphrase Edward D. Melillo – fused the changing nature of work with the work of changing nature (Melillo 2012, 1,028).

## 2. Nauru and the PPC

Nauru is a 21 km<sup>2</sup>, roughly circular island located more than 300 kilometres from its closest neighbour, Banaba (Ocean Island). A 200-metre-wide strip of flat and fertile land runs around its perimeter, which rises up to a central plateau approximately 70 metres above sea level (Fig. 5.1). Prior to contact with Europeans in the late eighteenth century, Nauruans are believed to have lived in relative isolation from other Micronesian populations, sustained by the coconuts and pandanus fruit that thrived in the tropical conditions, as well as the marine life found on the substantial coral reef that fans out from the island into the South Pacific Ocean. Whalers and traders continued to land at Nauru until the late 19th century by which time the island had been annexed as part of the German Marshall Islands protectorate, administered by the Hamburg-based Jaluit Gesellschaft under corporate charter. Trade was modest and the island



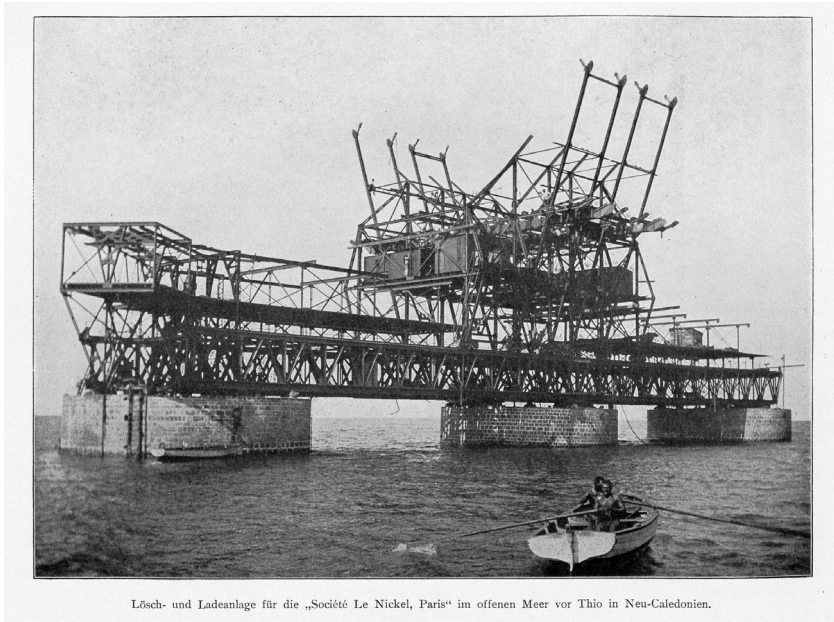
The Pacific Islands Company moved quickly, entering into prolonged negotiations with the German Imperial Government and the Jaluit Gesellschaft, which held exclusive mining rights throughout the German Marshall Islands under the terms of its charter. The negotiations culminated in the establishment of the Pacific Phosphate Company (PPC) in 1902. One-third of the PPC's board was occupied by members of the Jaluit Gesellschaft; the remaining two-thirds comprised a cast of influential advocates for British expansion in the Pacific (Ludewig 2022, 353). With the consortium in place, work eventually commenced on industrial facilities and an administrative settlement in 1906. As *Regierungsbaumeister*, Wilhelm Schönian was instrumental to the early work on Nauru, described in PPC reports as a 'competent engineer' responsible for the original layout of facilities, and the specification and contracting of the buildings and equipment (Ellis 1936, 128). Sites were selected at a remove from the villages of the 1,500 Nauruans living on the island who were deemed unsuitable as an industrial labour force. Instead, 50 Chinese workers were contracted from the German concession of Kiautschou to commence digging and to erect the company settlement as soon as possible.

F. H. Schmidt was engaged to fabricate the PPC settlement and initial industrial equipment for Nauru, further imbricating its commercial geography with the expanding frontiers of German imperialism. Since its establishment in 1845 in the Danish-ruled town of Altona near Hamburg, the company had expanded in size and scope, keeping pace with Germany's rapid industrialisation. In 1867, F. H. Schmidt moved into an enlarged facility, complete with a sawmill, joiner's workshop, and metal workshop in addition to a factory in Wilhelmsburg dedicated to the manufacture of structural iron. Early work included villas and suburban houses, high-rise buildings, bridges, and maritime infrastructure around Hamburg before the company entered into the prefabrication of buildings for export in the 1880s, coinciding with German colonial expansion into Africa (Anonymous 1905/1906). Itohan Osayimwese has shown that despite fierce competition from rival companies – Christoph & Unmack (Niesky), Philipp Holzmann AG (Frankfurt), Drenckhahn & Sudhop (Braunschweig), and the Deutsche Barackenbaugesellschaft (Cologne) – F. H. Schmidt quickly rose to become the colonial government's supplier of choice (Osayimwese 2017, 210–211). Five prefabricated government dwellings constructed using a hybrid system of iron and timber framing were prepared in Hamburg before being erected along the coast of Dar Es Salaam in German East Africa in the early 1890s, followed six years later by three timber houses

for high-ranking German officials in Qingdao (Osayimwese 2017, 220). Although comprehensive company records prove elusive, it seems F. H. Schmidt established a substantial presence in Qingdao from the late 1890s on, employing a large local labour force, and designing and constructing barracks, government buildings, a brewery, hospitals, factories, offices, and villas, as well as much of the civic and maritime infrastructure throughout the German concession<sup>4</sup> (Jin 2015, 31; Yokell 2018, 1,919).

By the early 20th century, F. H. Schmidt was already deeply involved in colonial construction projects around the world, having provided prefabricated dwellings, warehouses, wharves, bridges, and industrial facilities for companies and various levels of government throughout China, Cameroon, Tanzania, Togo, and New Guinea. In its promotional material, the company regarded its various engineering and logistical achievements as part of a wider narrative of German colonial ascendancy: ‘Since Germany has acquired its own colonies,’ one such pamphlet observed in 1906, ‘the company has substantially developed its activities in turn.’ But it also recognised the broader cultural task (*Kulturaufgabe*) it faced as a global agent of German expertise, ‘to secure a home for German work and building science (*Bauwissenschaft*) abroad’ (Anonymous 1905/1906). Its contracts eventually extended to Romania, Turkey, Serbia, India, Burma, Vietnam, Madagascar, Peru, Argentina, Uruguay, and Chile (Schmidt c.1930). As Osayimwese suggests, ‘F. H. Schmidt became a multinational company with a range that mirrored the geography not only of German colonialism but of the entire European colonial project’ (Osayimwese 2017, 224–225). Among the most spectacular examples beyond the German empire – and perhaps the most relevant project to the company’s imminent contract for Nauru – was the loading and discharging facility constructed for the Paris-based *la Société Le Nickel* in the middle of the Pacific Ocean, off the coast of New Caledonia (Fig. 5.2). Reflecting on this and the many other projects it had completed by 1906, F. H. Schmidt was happy with its progress to date, claiming that it had, ‘for a number of years already, successfully elevated the reputation of German companies, German work and German ability through its building operations’ (Anonymous 1905/1906).

F. H. Schmidt proved an easy choice for *Regierungsbaumeister* Schönian, whose brief for the company fell squarely within the purview of its highly regarded technical expertise: prefabricated housing, workshops, stores, mining equipment, and harbour facilities. Intriguingly, records suggest that during his involvement with the PPC on Nauru, Schönian



Lösch- und Ladeanlage für die „Société Le Nickel, Paris“ im offenen Meer vor Thio in Neu-Caledonien.

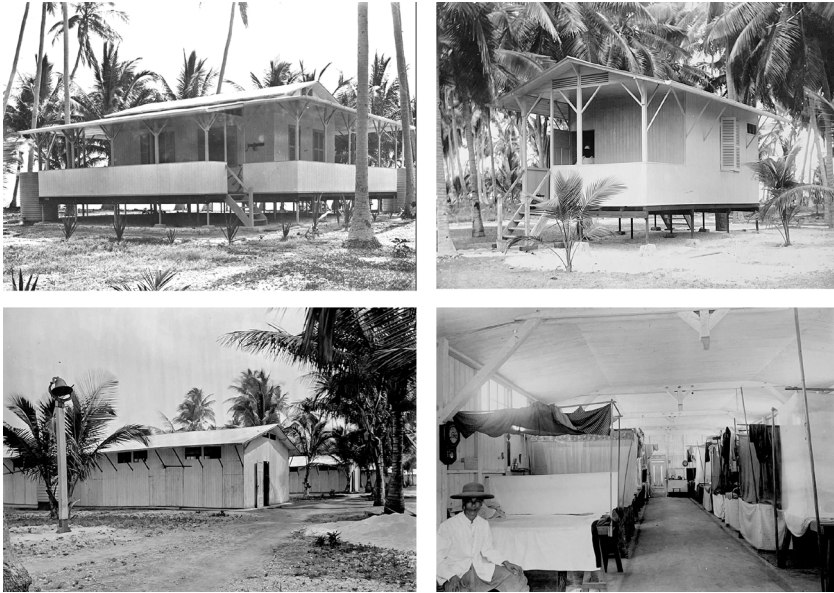
**Fig. 5.2:** Bulk loader constructed in the open ocean by F. H. Schmidt near Thio, New Caledonia on behalf of the Société Le Nickel, Paris (‘F. H. Schmidt, Bauunternehmung, Altona, Hamburg, Tsingtau’, *Historisch-biographische Blätter. Der Staat Hamburg* 7 (1905/1906), n.p.)

was simultaneously employed as the technical director of F. H. Schmidt while also fulfilling the role of *Regierungsbaumeister*. The implications of this arrangement will be developed further below in relation to the phosphate mines on Angaur. Nevertheless, Schönian’s dual role as both a colonial official and an employee of a private construction company raises numerous questions regarding the degree to which F. H. Schmidt, as a technical consultant of sorts, was entrenched within the German colonial state apparatus. Neither Nauru nor Angaur are mentioned in the company’s promotional material discussed above, either indicating that its involvement in German Micronesia was undertaken on different terms, or that it viewed Schönian’s work with the PPC and DSPAG, and therefore also his post as *Regierungsbaumeister*, as somehow distinct from its purely commercial ventures.

By the middle of 1907, numerous F. H. Schmidt buildings were already being erected at Yangor, the PPC’s main settlement in Nauru. These included a variety of timber houses for PPC employees, ranging from larger residences to smaller, single-room dwellings. All were painted

entirely in white, with raised floors, covered verandas, window shutters, and stack ventilation to mitigate the hot and humid conditions. The larger dwellings clearly resembled the timber buildings included in F. H. Schmidt's catalogues, in particular the so-called 'planter's house for tropical climates', manufactured using the company's own prefabrication system (Fig. 5.3a) (Schmidt c.1930, 7). Eaves on gabled roofs were tied down with additional external brackets to protect against high wind loads, as were the covered verandas, which employed F. H. Schmidt's characteristic branched columns to further reinforce the timber roof structure. The smaller dwellings supplied by F. H. Schmidt in Nauru may have been adapted from the patented Döcker collapsible barrack system (Fig. 5.3b) (Osayimwese 2017, 192–195). F. H. Schmidt's designs for Nauru adopted an almost identical layout to the Döcker buildings, which were supplied by rival firm Christoph & Unmack to German companies and government agencies in Cameroon and Tanzania, barring the covered veranda, which is unique to the dwellings in Nauru. Additionally, the PPC buildings were not designed to be transportable and were therefore constructed from more robust materials. Therefore, the PPC residences in Nauru, along with the general office buildings and company canteen, sit somewhere in the middle of the spectrum of F. H. Schmidt's overseas projects: significantly less ornamented and refined than the prefabricated houses provided to colonial officials in German East Africa, yet more considered in composition and construction than the industrial buildings shipped, for example, to Cameroon.

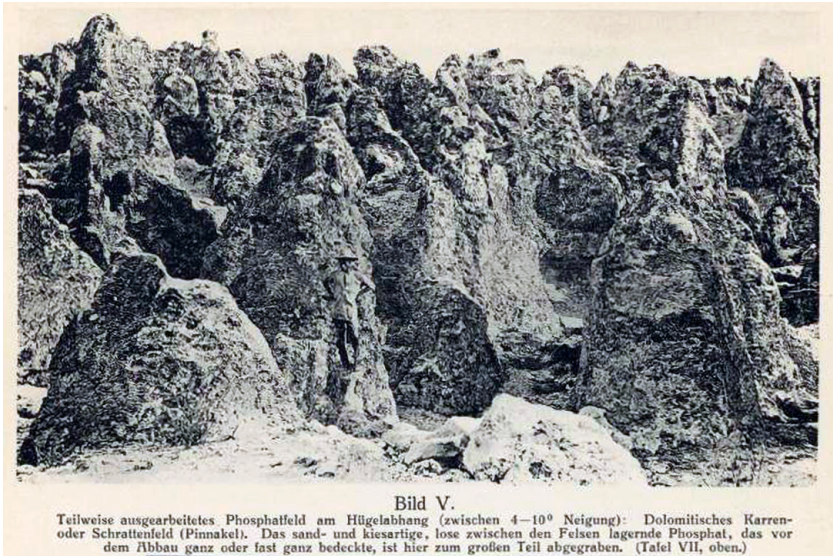
The same cannot be said about the accommodation provided by F. H. Schmidt for the non-white workforce in Nauru. Within only a year of commencing operations, the number of Chinese labourers contracted to the island by the PPC already exceeded 600 people, soon joined by labourers from Japan and from the PPC's recruiting grounds throughout the Pacific Islands. As I have discussed elsewhere, labour was heavily racialised – a fact reflected in the distribution and design of the different workers' dormitories on the island (Ludewig 2022, 357–360). Unlike the dwellings considered above, the dormitories for Chinese, Japanese, and Pacific Islander labourers were not raised from the ground to increase passive ventilation and were provided with only minimal external shading (Fig. 5.3c). The design for the initial buildings supplied by F. H. Schmidt to house the PPC's original Chinese workforce resembled a modified version of the warehouse and workshop buildings in Nauru, with the exception of the concrete slabs poured for each dormitory. The



**Fig. 5.3:** (a) and (b) Prefabricated officers' dwellings in Nauru, manufactured by F. H. Schmidt; (c) and (d): 'Coolie barracks' in Nauru, manufactured by F. H. Schmidt (Nauru Photos Attached to Report by A. H. Gaze, 1907, National Archives of Australia 671741)

buildings' timber framing was clad with painted timber boards, incorporating minimal ventilation at the gable ends. Internally, conditions were cramped, but differentially so – a prevailing idea being that Japanese workers were more 'space efficient' than their Chinese and Islander counterparts, able to be packed into their accommodations in greater numbers and, therefore, at less cost.<sup>5</sup> Pairs of glazed highlight windows, spaced along every second structural bay of the dormitories, illuminated the small areas assigned to each worker internally (Fig. 5.3d). The stifling and cramped conditions undoubtedly exacerbated the health issues and mortality rates experienced by the PPC workforce over decades. Two hospital buildings provided by F. H. Schmidt were set within the central precinct of the Yangor settlement, enabling the PPC to deliver healthcare to white company staff separately from its contracted labourers.

The PPC organised an inspection of the F. H. Schmidt buildings and mining facilities erected in Nauru under Schöinian's supervision in 1907. It appointed the Melbourne-based engineering company J. M. & H. E. Coane for the job and its director, John Montgomery Coane, arrived at Yangor in early June. This led to the cancellation of a number of contracts with F. H.



**Fig. 5.4:** Limestone pinnacles in Nauru left behind after the rock phosphate was removed (Elschner, Carl. 1913. *Corallogene Phosphat-Inseln Austral-Oceaniens und ihre Produkte*. Max Schmidt, illustration v)

Schmidt, whose turnaround time for the storage bins, phosphate dryers, and numerous other industrial buildings, once shipping from Germany was taken into account, was deemed too slow compared with hiring contractors from Australia. Nevertheless, Schönian had already overseen the construction of the railway system on the island, which carried rock phosphate from the inland deposits to the crushing, drying, and loading facilities located at its outer edges (Fig. 5.4). Passages from Coane's report betray the gruelling work involved in prying the phosphate from the coral substrate of the island. 'The actual stirring of the phosphate and filling into skips or cars,' noted Coane, 'will probably always have to be done for the most part by hand, as the presence of numerous coral pinnacles would prevent the use of self-filling scoops or drag buckets.' This presented a problem in retrieving the loosened product from the increasingly deep lacerations being made into the island's bedrock, 'but if the lifting of it out of the cuts by means of baskets or wheel barrows could be avoided,' Coane continued, 'it might be found possible to get the stirring and filling carried out at reasonable contract rates by Chinese, Japanese and Kanakas, or even by Spanish and Italian labourers, who have been found very satisfactory on the Panama Canal Works' (Coane and Coane 1907, 11). What

F. H. Schmidt delivered to the PPC was therefore the foundations upon which to develop a full-scale industrial mining operation. Coane advised the PPC that far greater mechanisation was required in Nauru wherever possible, along with improved communication systems, additional loading points, an increased power supply, water harvesting facilities, a sewerage system, and further harbour improvements. These would all come in the following decades – often by repurposing the original building stock provided by Schönian and F. H. Schmidt as machines, equipment, and bulk storage all grew larger to keep up with the increasing global demand for superphosphate.

### 3. Angaur and the DSPAG

Angaur is the southernmost island in the Palau archipelago and is approximately half the size of Nauru, its limestone forests covering almost the entire ten-square-kilometre area of the island (Fig. 5.5). Angaur's highest point, sitting roughly at its centre, is 40 metres above sea level, grading down across jagged terrain to swampy land in the southeast and staying higher to the north. Steep cliffs run along the edges that give way to small natural harbours and beaches, offered little protection by the thin reef that encircles the island. Human inhabitation of Palau is estimated to have occurred 3,000 years ago, based on a matrilinear society organised around a system of villages spanning the archipelago (Clark and Wright 1952). Following the Spanish-American War, Palau was sold to Germany in 1899 as part of the Caroline Islands, which were administered from Yap at a district level but formed part of the larger German New Guinea protectorate.

Following the discovery of phosphates in Angaur by District Commissioner Arno Senfft in late 1905, German New Guinea's enterprising governor, Albert Hahl, initially offered the deposits to Wilhelm Wischer – a German chemist and manufacturer of superphosphates in Melbourne. The discovery came at a fortuitous time for Hahl who was seeking to develop the productivity and administration of the protectorate. Upon analysing the samples sent to him, Wischer quickly arranged to travel to Angaur to inspect the deposits in person. As in Nauru, preliminary surveys suggested that the majority of the island was covered in phosphate (Hahl 1980, 117). Wischer expressed his interest in establishing a company to mine and import the phosphate to Victoria to which Hahl consented



Bernhard Fürst von Bülow, a withering assessment of Wischer, explaining that he was 'a good German, but only insofar as this can be reconciled with his own interests ... I do not think that the Germans settled here would be interested in investing their money in his attempt to mine an island in the Pacific Ocean [Stillen Ocean], because no one trusts his word' (Brahe 1906, 30).

Investigations into Wischer continued into June 1906 when a confidential, deidentified letter was sent from Sydney to von Bülow outlining Wischer's plan to undertake the Angaur venture together with his competitor, Cuming, Smith & Co. The companies were located directly next to each other in Yarraville and competed for market share in supplying the Wimmera wheat district with superphosphate fertiliser. Clearly, both had closely followed the developments of the PPC in Nauru and now spotted an opportunity to cut out their common middleman. Ever since Wischer had returned from his trip to Angaur, the letter explained, 'the relationship between the two companies has become friendly and they have started cooperating'. Cuming, Smith & Co. 'will bring the capital and he [Wischer] will bring the concession. The financial success of the Pacific Phosphate Company clearly shows that the two companies, if they can mine their own phosphate, stand to make significant savings,' transforming Wischer from one of the weakest into one of the strongest manufacturers in the Australian fertiliser market (Krauss 1906, 46). Sceptical of Wischer's motives but willing to proceed, the Colonial Office drafted terms for the Angaur concession, stipulating that any third parties involved in the venture must legally reside in the protectorate of German New Guinea. Wischer prevaricated and Hahl became impatient, returning to Germany to find a more suitable candidate. Although they had missed the opportunity to secure their own supply of raw rock phosphate, Wischer and the other Australian fertiliser producers would remain closely linked to the Angaur deposits as clients of the company Hahl was hoping to form while in Germany.

At the same time as Hahl was undertaking his trip, Bernhard Dernburg was appointed as head of the Colonial Office, espousing a reformist agenda for the German colonies based on the fusion of state power with private German capital and expertise. Angaur became one of the first matters to which Dernburg turned his attention in his new role at Hahl's request (Hahl 1980, 118).<sup>6</sup> In Bremen, Hahl met with the general manager of the Norddeutscher Lloyd shipping company, Heinrich Wiegand, to outline the commercial viability of the Angaur deposits, believing that the company was uniquely placed to work the deposits on the island given its existing

shipping activities throughout German Oceania. The Norddeutscher Lloyd agreed, stating: ‘The great importance of the further economic development of the South Seas protectorate for our steamship lines prompted us last year to send an expedition to explore the mineral resources of the island region in conjunction with a number of associated companies’ (Scharpenberg and Müller 1977, 141). This voyage was led by Wilhelm Schönian and confirmed Senfft’s earlier findings, as well as identifying a further phosphate deposit on the island of Fais, located north-east of Yap (Hahl 1980, 118).

The Deutsche Südseephosphat Aktiengesellschaft was established in the year following the Schönian-led inspection tour as a substantially more German affair than the PPC. In fact, the major shareholders in the DSPAG arguably epitomised Germany’s 20th-century financial–industrial–chemical complex: two seats were occupied by the Norddeutscher Lloyd, which viewed the venture as an opportunity to extend the broad network of companies amassed under Wiegand’s leadership; two were held by the Frankfurt-based mining and chemicals company Beer, Sondheimer & Co; the Deutsche Nationalbank zu Bremen held one position on the board, administered the company’s investment capital and hosted its annual board meetings; the Deutsche Bank in Berlin and H. & E. Albert of Wiesbaden-Biebrich, a superphosphate fertiliser producer formed in the immediate wake of Liebig’s discoveries, also held one seat each. H. Mueller & Co., a Rotterdam-based mining and shipping company, occupied the final seat on the board of the DSPAG. Notably, draft documents relating to the formation of the DSPAG list the construction company F. H. Schmidt of Altona–Hamburg as an additional founding member; however, the company’s name was struck-through and removed from final versions of the agreement (Naumann 1907, 20). Was F. H. Schmidt, having had an insider’s view of the Nauru project via Schönian, now interested in investing in the DSPAG directly? Or was Schönian’s initial role as technical advisor to the DSPAG seen as an extension of his position at F. H. Schmidt? In any case, initial DSPAG budgets include a one-off severance payment of 70,000 mark paid directly to F. H. Schmidt ‘for Schönian’, suggesting his resignation from the construction company to work exclusively for the DSPAG in Angaur (Anonymous 1909b, 35). In 1911, Schönian was elevated from lead engineer to managing director of the entire company. The implication is that, while working in Nauru as *Regierungsbaumeister*, Schönian remained an employee of F. H. Schmidt, to whom the contract for the early PPC facilities was awarded. This does not seem to have been known by the PPC, who

viewed Schönian as a representative of the German colonial administration. The strategic entanglements of colonial governance and extractive industries therefore also delivered benefits to, and drew on the expertise of, Germany's overseas construction industry – including in German Micronesia where all three domains were at times blended entirely.

Schönian's most pressing task in his new role with the DSPAG was to negotiate terms for a mining concession with the government of German New Guinea and the Colonial Office in Berlin. A contract was prepared in November of 1909 that at the same time both transferred the ownership of Angaur from nine island chiefs – representing a population of 150 Angaurese permanently residing on the island – to the treasury of German New Guinea, while also granting the DSPAG exclusive mining and settlement rights over approximately 600 hectares – that is, 80 per cent – of the island for 35 years.<sup>7</sup> The contract left the Angaurese community with a 150-hectare reservation in the south-eastern corner of the island and a one-off payment of £60. At the same time, the treasury of German New Guinea received a payment of 1200 mark for the mining rights in addition to a 1.25 mark levy per tonne of exported phosphate to a minimum of 30,000 mark in the first four years – terms considerably less favourable than those adopted for Nauru. The same contract permitted the Angaurese to collect food and timber anywhere on the island, except in areas occupied by the DSPAG, and any existing plantations located beyond the reserve were protected until such time as all other deposits had been exhausted. This ran against a 1906 mining law for the German colonies, which enabled the proprietor of a mine to 'use the landed property of third parties as far as it is necessary for the working of the mine and the accessory installations' (Grosser 1907). The DSPAG seemingly preferred to adhere to the earlier law and the company promptly removed most of the plantations on Angaur much sooner than agreed, refusing to replant them with food-bearing species (coconut, taro, and so forth), and insisting that it was obliged and permitted to secure firewood for the furnaces it used to dry the phosphate prior to export.

Twenty Chinese tradesmen, recruited by Schönian in Hong Kong, were brought to Angaur in 1909 to begin constructing the facilities required by the DSPAG, followed by 60 more in the following year. To manage this process while he oversaw the wider operations of the DSPAG, Schönian engaged the engineer Heinrich Hagedorn as technical assistant and foreman of works. Prior to his role in Angaur, Hagedorn had also been employed by F. H. Schmidt as both a technician and site manager and may

have been involved in preparing the PPC's early facilities in Altona prior to shipment to Nauru. This explains the importance of Hagedorn's early duties after joining the DSPAG, which included the preparation of designs and drawings for all the buildings and technical equipment brought to Angaur (Sammlung Heinrich Hagedorn zu deutschen Südseekolonien (Palau) 1908–1912, 223). Unsurprisingly, given the overlap in personnel, the contract to fabricate and supply the DSPAG's initial facilities in Angaur was again awarded to F. H. Schmidt. Steamers departed from Bremen and Hamburg in the autumn of 1908 carrying the first shipment of 'buildings, technical equipment and necessary materials' to commence operations on the island as quickly as possible. This included a full arsenal of locomotives, wagons, rails, and sleepers, storing and loading equipment, prefabricated Pitch Pine (*Pinus rigida*) buildings, water treatment facilities, as well as the electrical and transmission devices required to establish a radio connection with the telecommunications hub at Yap (Anonymous 1909a).

Early company records include costings for a director's house for Schönian, separate houses for each of the four managers of the phosphate works, ten houses for company officials, twenty houses for supervisors, seven workers' dormitories, three transportable warehouses, a twenty-six-bed hospital, a separate mess hall for DSPAG officials and workers, a kitchen, office building, laboratory, and goods stores (Anonymous 1909b, 35). A large casino was erected for the entertainment of the officers in the evenings, containing a bowling alley, a billiard table, a piano, and 'the latest newspapers, albeit that they are already three to four months old by the time they get here' (Sammlung Heinrich Hagedorn zu deutschen Südseekolonien (Palau) 1908–1912, 223, 178). A large company settlement and provisional mining infrastructure were established within a year. Hagedorn was a prolific photographer during his four-year residence in Angaur, carefully recording the development of these facilities (Fig. 5.6a). As Hagedorn reflected:

We also worked on Angaur in the Palau Islands for several years, helping to set up a large industrial operation to mine phosphate. The work has begun, the bush has been cleared and the houses have been erected. The beginning of the construction of the colony. You see a lot of small houses, these are the houses of the officials, so each European has a small house for himself with a room, a veranda at the front and back, and a large garden at his disposal. All the materials, houses, machines etc. have of course been brought over from Germany, as there is no opportunity to make them over there. (Sammlung Heinrich Hagedorn zu deutschen Südseekolonien (Palau) 1908–1912, 223, 222)<sup>8</sup>



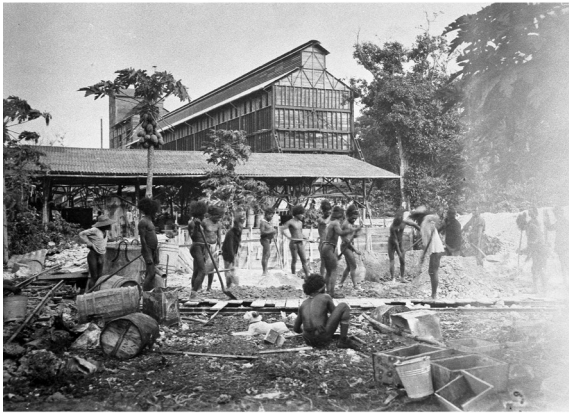
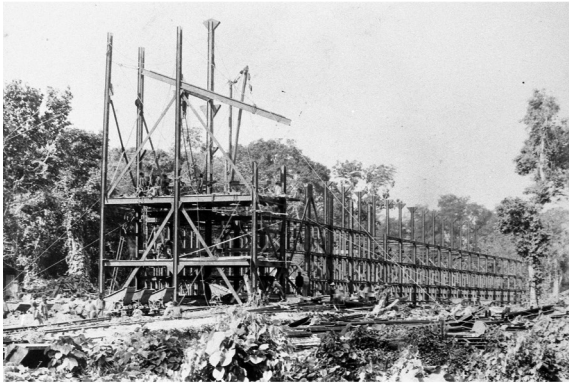
**Fig. 5.6:** (a) Prefabricated housing for the European employees of the German South Sea Phosphate Company in Angaur, supplied by F. H. Schmidt, c.1909; (b) Manual phosphate mining underway in the early period of the DSPAG's activities on Angaur. A tramway has been cleared through the old growth forest. Up to five metres of phosphate have already been removed in some areas, c.1909 (Deutsches Bundesarchiv, Sammlung Heinrich Hagedorn, Bild 223–158 and 223–153)

Over time, the DSPAG also constructed a sawmill, a shipyard, and a carpentry workshop, as well as water reservoirs and rain harvesting systems. Despite its smaller size, Angaur hosted roughly the same extent of industrial facilities as Nauru during the German colonial period.

The total volume of the Angaur deposits was estimated at 2.5 million tons of about 86 per cent phosphate of lime, buried under a thin layer of humus and cleaved between the limestone pinnacles dotted throughout most of the island (Fritsch 1911). Once the trees and soil covering a given deposit had been removed, the phosphate was initially shovelled by hand into hoppers on a narrow-gauge tramway that led to improvised loading facilities in the north-east and west of the island (Fig. 5.6b). Here, the phosphate was dried and stored under cover until a steamer arrived to collect it. After being loaded back into the hoppers, the phosphate was then deposited into a fleet of 20 boats that ferried small quantities between the tidal natural harbour and the steamer anchored in deeper water. This loading method proved extremely labour intensive and could take up to three weeks to load one vessel for export (Sammlung Heinrich Hagedorn zu deutschen Südseekolonien (Palau) 1908–1912, 223–017). When Guangdong Province banned the recruitment of Chinese labour by German companies due to their use of corporeal punishment, withholding of wages, reduced lunch breaks, and inadequate rations, the DSPAG focused on recruiting Caroline Islanders from throughout Palau, Yap, and the surrounding atolls instead. Poor working conditions soon led to further complaints from the DSPAG's workforce, sparking a protracted

discussion between Schönian, district officials in Yap and the colonial administration in Berlin. By 1910, the lack of labour was so severe that Schönian redirected the entire workforce to process phosphate only, temporarily abandoning any further construction on the island (Anonymous 1910). Following the suppression of the rebellion in Pohnpei, 100 prisoners were brought to Angaur in 1911 as forced labourers under police guard. Hagedorn's photographs capture the *Schutztruppe* employed to suppress any potential rebellions by the workforce, which had grown to approximately 800 people by 1912, as well as the deforestation and excavation with which the labourers were tasked (Sammlung Heinrich Hagedorn zu deutschen Südseekolonien (Palau) 1908–1912, 223–005).

With a secure labour supply in place, attention could once again be directed at increasing the productivity of the operations on Angaur (Firth 1978, 36–52). These efforts ultimately centred on the so-called '*Gute Hoffnungshütte*', a hulking 18-metre wide by 18-metre high, 100-metre-long multipurpose cast-iron structure – of 'dazzling construction' in the words of Hagedorn – located close to the phosphate fields in the island's interior (Fig. 5.7a) (Sammlung Heinrich Hagedorn zu deutschen Südseekolonien (Palau) 1908–1912, 223–140). The *Hoffnungshütte* integrated numerous critical aspects of the works on Angaur, while also dramatically increasing the rate at which rock phosphate could be prepared and stored ahead of export. It seems to have been designed as a reaction against the legal minutiae of colonial regulation following a dispute between the DSPAG and the Colonial Office in Berlin concerning the correct procedure for calculating the moisture content of exported phosphate. Whereas the DSPAG argued that moisture levels should be calculated once a shipment arrived at its destination port and thereupon be valued at an agreed rate with the purchaser – which would reduce capital investment in drying equipment in Angaur – the Colonial Office insisted that the moisture content must be measured prior to export, the justification being that these were the same terms set for the PPC on Nauru (DSPAG 1910). The real reason, however, is likely to have been the aforementioned levy raised on phosphate exports from German New Guinea, which flowed directly to the treasury of Hahl's administration. By insisting that moisture content must be measured prior to export – that is, when the phosphate was at its heaviest – the Colonial Office was effectively protecting the balance sheet of German New Guinea, which derived between 50 and 75 per cent of all taxation revenue from the DSPAG. Moreover, the export levy placed on the DSPAG was set to increase by 10 per cent after twenty-five years, which



**Fig. 5.7:** (a): The 'Gute Hoffnungshütte' under construction; (b) Concrete mixing underway in Angaur, the end section of the 'Gute Hoffnungshütte' is visible in the background, c.1912; (c) Preliminary tracks, carts, and loading equipment in Angaur, provided to the Deutsche Südseephosphat Aktiengesellschaft by F. H. Schmidt. A Lloyd steamer waits to be loaded in the background, c.1908 (Deutsches Bundesarchiv, Sammlung Heinrich Hagedorn, Bilder 223–227; 223–046 and 223–046).

further incentivised investment in technology that could increase the rate of extraction and export while the DSPAG's tax burden was at its lowest (Scharpenberg and Müller 1977, 156).

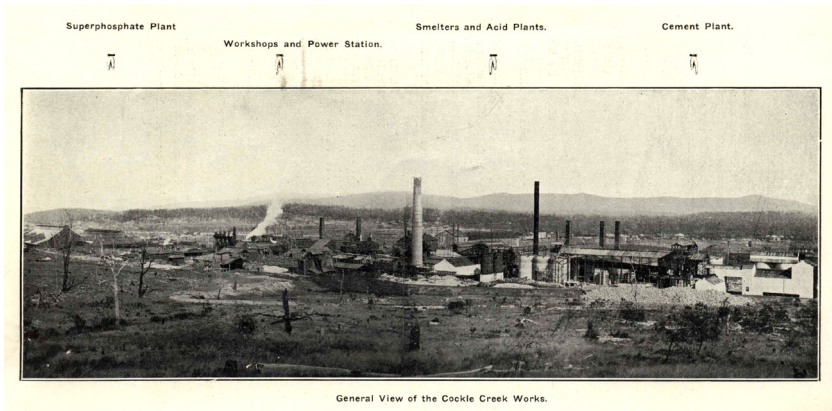
The Hoffnungshütte was an innovative example of German colonial engineering, minimising the footprint of the total plant required on Angaur in order to maximise the area available for mining. Its two-storey configuration meant that damp phosphate could be conveyed to its upper level by a cable railway and into large driers heated by furnaces from the level below, fuelled by timber harvested from the old growth forest on the island (Fig. 5.7b). Once dried, up to 5,000 tons of export-ready phosphate could be stored in the Hoffnungshütte, which also incorporated a mechanical workshop, forge, and storage shed for the DSPAG's five locomotives. These carried the product along ten kilometres of tracks laid on the island to upgraded loading facilities on the coast where a newly installed mechanical loading arm – designed by Schönian – cantilevered 60 metres out to sea (Fig. 5.7c). This enabled the phosphate to be loaded directly into the hull of a ship via a continuous conveyor belt. Two steam-powered cranes completed the loading facilities on the island.<sup>9</sup> Together, these upgrades significantly reduced the time required to load a vessel from three weeks to twenty-four hours, saving on freight costs while also minimising the export levies payable to the administration of German New Guinea. The effects were immediate and dramatic: annual exports from Angaur climbed by 40 per cent from approximately 9,000 tons in 1909 to more than 36,000 tons in 1910 before continuing to rise to 89,000 tons in 1913 – totalling 307,000 tons of exported phosphate by the end of 1914.

#### 4. Extracting growth

Nauru and Angaur reflect a colonial paradigm in which the core fascinations of state governance focused on the circulation of value (in the form of phosphate) within a world market – a process that was central to agricultural industrialisation and modern state building efforts more broadly (Dixon 2018, 771). Bismarck had first articulated such a programme for German colonialism in the 1880s, describing a form of 'commercial sovereignty' or 'mediated government' protected by the German state in lieu of a 'complicated colonial administration' that demarcated its sovereignty directly through expensive public construction projects in remote locations and an increased civil service (Zollmann 2020, 281–283). As Peter Hemenstall has

argued, the legacies of this administrative paradigm throughout German New Guinea can be seen in the discrepancy between the paltry European population figures up to the First World War and the fact that the territory was – comparatively speaking – heavily developed by this time, containing 10,000 hectares of plantations, roads, industrial infrastructure, a functional taxation system, and a ten-year plan for future works prepared by Albert Hahl, the *Landeshauptmann* (state chairman) of the German New Guinea Company prior to his appointment as governor of the protectorate in 1901 (Hempenstall 2018, 143). As stated by Dernburg following his appointment as Secretary of State for the Colonies in 1906, German colonial methods should focus on precisely this kind of development, substituting the means of destruction (*Zerstörungsmitteln*) of the past with German medical, missionary, and engineering expertise aimed at the ‘utilization (*Nutzbarmachung*) of the earth, its treasures ... and especially the people’ (Dernburg 1907, 5). Although the real-world impacts of Dernburg’s official rhetoric remained limited throughout the wider German colonial sphere, the establishment and administration of Nauru and Angaur as industrial sites within German New Guinea, managed by corporate proxies for the German state, nevertheless provide an example of the particular form of colonialism both Bismarck and Dernburg endorsed (Conrad 2012, 64). According to Stewart Firth, in its administration of both islands, the German state effectively functioned as an agent of ‘private companies, providing legality for whatever the companies wished to do’ and supplying them with ‘cheap land, long mining leases, low royalties and a disciplined, underpaid labour force’ subject to minimal regulation (Firth 1978, 37; 51).<sup>10</sup> When these arrangements failed, the state would take over and administer the colonies directly.

One repercussion of this liberal approach to colonial governance in German Micronesia was that by 1913 annual phosphate exports totalled almost 200 million kilograms. Overall, half of this material was shipped to Germany, one-third to Australia and New Zealand and one-sixth to ports in Asia (Hofmann 2016, 178). The export destinations for the PPC and the DSPAG differed considerably, reflecting the original interests of the founding members of each company. Nauruan phosphate was almost exclusively sent to ports in Australia and New Zealand, especially Melbourne, Adelaide, Auckland, Fremantle, Newcastle, Lyttelton, Port Kembla, and Port Chalmers (British Phosphate Commission 1920–1925). Independent superphosphate manufacturers were stationed at each port, ready to receive and process the rock phosphate prior to bagging and distribution. Once primitive mixing works developed into substantial complexes, integrating fertiliser



**Fig. 5.8:** View of the Cockle Creek Works of the Sulphide Corporation. The superphosphate plant is shown on the left (England, E. 1926. *Sulphide Corporation Limited Cockle Creek Works*. Sulphide Corporation Limited)

manufacturing into multiple other industrial processes in order to repurpose chemical by-products and diversify production. At the Sulphide Corporation in Newcastle, cargoes of rock phosphate arrived at the port before being transported by rail to the works at Cockle Creek (Fig. 5.8). Here it was crushed finely enough to pass through a mesh screen before being weighed on an automatic scale and mixed with sulphuric acid. ‘After thorough but rapid mixing,’ stated a company brochure, ‘the material is dropped into a den from the mixer. ... The moist, hot superphosphate is transported by conveyor belt to the storage sheds, there to complete the ripening and drying process.’ Demand for superphosphate was so high on the other side of the First World War that a new storage shed was required, bringing the total storage capacity to 35,000 tons at Cockle Creek alone. ‘It is in these storage sheds,’ continued the brochure, ‘that the final chemical reactions take place, and from these the fully-matured superphosphate is bagged ready for market’ (England 1926, n.p.). By adopting a variety of techniques to promote the benefits of their different blends of chemical fertiliser, including travelling displays, competitions, and demonstration farms, manufacturers such as the Sulphide Corporation played an important role in educating Australian farmers about the benefits of Pacific phosphates. Combined with innovations in agricultural machinery and further penetration into the country’s agricultural districts, the effect was to transform Australia into the world’s highest user of superphosphate prior to the First World War (Byerlee 2021, 100).

Reflecting on the German superphosphate industry in 1913, the chemical engineer Carl Elschner saw a similar transition: from the 'once primitive facilities' to the 'highly developed superphosphate factories' of the present day (Elschner 1913, 116). Just as the Sulphide Corporation's Cockle Creek works had invested in new state-of-the-art superphosphate facilities, chemical fertiliser producers in Germany now boasted 'larger, ventilated storage and working spaces, rationalised crushing facilities with increased capacity', alongside widespread automation and mechanisation of the production process (Elschner 1913, 116–117). Elschner argued that it was important to view the modernisation of the superphosphate industry as on par with the successes of the more celebrated chemical industries in Germany – especially paints and pharmaceuticals – for which the country had become known in recent decades. 'If one were to briefly consider the history of the superphosphate and artificial fertiliser industry, especially in the last thirty to forty years,' Elschner hypothesised:

then I imagine one would come to the conclusion that it readily sits alongside the other branches of German chemical engineering – indeed, I would like to assert that it far surpasses them all, even if the majority of the German people have no real idea of the tremendous value that fertilisers represent annually and, much less, of the incalculable increase in the monetary value of our agricultural products that have been achieved as a result of the German artificial fertilizer industry. (Elschner 1913, 118)<sup>11</sup>

At the time Elschner was writing, only 40 per cent of Germans lived in rural areas compared to almost 70 per cent at the time of unification in 1871. Despite this rural exodus, however, the value of annual harvests in Germany had doubled over the same period as rates of chemical fertilisation increased by more than 1,000 per cent in line with Liebig's entrenched model of rational agriculture. The DSPAG was established to service this industrialisation and close to 60 per cent of its early exports arrived in Europe. As founding members of the DSPAG, Beer, Sondheimer & Co. (Frankfurt) and W. H. Mueller & Co. (Rotterdam) held exclusive importation rights and the majority of rock phosphate seems to have arrived at three manufacturers: Chemische Fabrik Kalk (Cologne), Superphosphatfabrik AG Nordenham/Guano Werke AG (Bremen), and the superphosphate works at Zwijndrecht (Netherlands).<sup>12</sup> Japan and Australia shared the remainder of the pre-war Angauerse exports: manufacturers in Japan purchased approximately 25 per cent of all exports and the remaining

20 per cent arrived on Australian shores, including in Yarraville, at the superphosphate plants of Wischer & Co. and Cuming, Smith & Co, who had missed the early opportunity to establish a vertically integrated model of superphosphate production. As Anneliese Scharpenberg and Hartmut Müller have argued, no German colonial-political measures were adopted in the phosphate industry ‘that would have incentivised exportation to the motherland and thus shifted the market position in favour of European sales’. Instead, trade relations in German Micronesia ‘were governed exclusively by global economic considerations’, influenced by factors such as comparative freight costs, more recent discoveries of phosphate deposits closer to Europe, and the introduction of new types of synthetic fertiliser. Given these factors, Scharpenberg and Müller contended that the gradual shift of sales towards the Japanese and Australian markets in the 1910s was the inevitable outcome of fluctuations in the world phosphate market (Scharpenberg and Müller 1977, 168).<sup>13</sup> The wartime seizure of Angaur by Japanese and Nauru by Australian troops therefore ended a period in which the phosphate industry in German Micronesia had delivered substantial returns to investors in Bremen, Berlin, Frankfurt, Rotterdam, London, Liverpool, Sydney, and Melbourne, as well as to the German colonial state, which bemoaned the loss of its ‘orderly mining operations’ as a result of the Treaty of Versailles (Schnee 1920, 164, 319).<sup>14</sup>

Wilhelm Schönian is an intriguing para-colonial figure against this wider backdrop, first appearing on Nauru as a representative of the German state, responsible for contracting further German expertise into the Pacific, before being hired by the DSPAG directly and rising to the position of company director.<sup>15</sup> His close relationship with F. H. Schmidt over the duration of his changing engagements in German Micronesia provides an insight into how governmental objectives overlapped with and reinforced those of commercial actors and vice versa, establishing continuity and connection within seemingly ever-changing administrative structures. Moreover, Schönian’s development of the phosphate mining facilities in Nauru and Angaur connects both islands to a much broader history in which European imperialism became wedded to a techno-scientific paradigm intent on controlling the means and benefits of sustained global growth – a possibility first described by Liebig in relation to rationalised agricultural production in the mid-19th century. Dixon has suggested that the long history of this paradigm – and the place of superphosphate fertilisers within it – is best understood as one of increasing ‘chemification’: a series of interlinked processes through

which ‘imperial states gained territories (and land, labour, etc.) through industrial power built on assemblages of production, energy, and materials connected via a handful of chemicals’ (Dixon 2018, 783). The phosphate mining infrastructure established in Nauru and Angaur prior to the First World War – funded, designed, and manufactured by German individuals, companies, and government agencies – contributed directly to the chemification of industry, agriculture, and the economy in Germany, Australia, New Zealand, and Japan. ‘In world-ecological terms,’ Dixon suggests, ‘this historical moment was the beginnings of a long wave of accumulation – of a great expansion in the scope, scale, and speed of appropriation of unpaid work/energy’ through which nature was brought ‘into the circuits of capital’ (Dixon 2018, 772). Approaching the history of Nauru’s and Angaur’s phosphate mining infrastructure in these terms reveals the role the built environment played in enabling certain privileged populations to intervene in the fundamental processes that govern the biosphere. As a result, we get to see the artificial stratifications inherent to this intervention – between certain types of life, matter, groups of people, forms of value, and political legitimacy – alongside the various delimitations that rendered the German colonial state as but one, highly ambivalent actor within a much broader and enduring project.

## Notes

- <sup>1</sup> This chapter is adapted from the following reports, originally prepared as part of the Society of Architectural Historians H. Allen Brooks Fellowship: Jasper Ludewig, ‘On Form: Infrastructuralism and the *Schutzgebiet*’, 2023; ‘On Territory: Extractive Sovereignty and Australian Empire’, 2024; ‘On Layering: Surviving Angaur’, 2024; ‘On Improvement: Waste, Wheat and White Possession’, 2024.
- <sup>2</sup> Prior to the major Pacific rock phosphate discoveries considered throughout this chapter, phosphate was first mined in South Carolina (1867) and Florida (1890) before deposits were located in France, Belgium, and Algeria. Today, Morocco is estimated to hold approximately 70 per cent of the world’s reserves of phosphate, although the United States is the world’s largest producer of phosphates (Strotmann, Herment, and Page 2021, 5).
- <sup>3</sup> Wilhelm Schönian is listed as having graduated as a hydraulic engineer in 1901 (Unknown 1901, 141).
- <sup>4</sup> An excerpt from a promotional brochure published by F. H. Schmidt depicts a Chinese labour force working on government buildings in Kiautschou (Source: ‘F. H. Schmidt, Bauunternehmung, Altona, Hamburg, Tsingtau’, *Historisch-biographische Blätter. Der Staat Hamburg* 7 (1905/1906), n.p.).
- <sup>5</sup> The workers’ barracks designed by J. M. & H. E. Coane were the most cramped and basic, providing bunks and an earthen floor, albeit it with more ventilation than the buildings provided by F. H. Schmidt.
- <sup>6</sup> My translation: ‘Die große Bedeutung, die die weitere wirtschaftliche Entwicklung des Südseegebietes für unsere dortigen Dampferlinien besitzt, hat den Norddeutschen Lloyd im verflossenen Jahre veranlasst, in Verbindung mit befreundeten Firmen eine Expedition zur Durchforschung der Erdbodenschätze des Inselgebietes zu entsenden.’

- <sup>7</sup> The signatories listed in the contract are transliterated as follows: Ugerbalau, Ungerbunch, Gagelbai, Riguchel, Midechulsch, Gaithan, Thalowak, and Guang. Contract of Acquisition. Imperial District Administrator Fritz and Director Schönian of Angaur, 20 November 1909. University of Hawai'i Library A21.
- <sup>8</sup> My translation: 'Auf Angaur in den Palauinseln waren auch wir mehrere Jahre tätig, um bei der Errichtung eines großen industriellen Betriebes beim Abbau von Phosphat mitzuwirken. Die Arbeit hat begonnen, der Busch ist abgeholzt die Häuser sind aufgestellt. Der Anfang des Aufbaues der Kolonie. Sie sehen lauter kleine Häuser, es sind dies Häuser der Beamten, so hat jeder Europäer ein kleines Häuschen für sich mit einem Zimmer, vorn und hinten eine Veranda und einen grossen Garten zur Verfügung. Sämtliche Materialien, Häuser, Maschinen u.s.w. sind natürlich von Deutschland fertig mitgenommen worden, da dort drüben keine Gelegenheit zur Anfertigung derselben ist.'
- <sup>9</sup> Interestingly, the DSPAG sought quotes for this equipment from English companies, not from F. H. Schmidt (Scharpenberg and Müller 1977, 158).
- <sup>10</sup> For a discussion of the *Schutzgebiet* as applied in the Pacific, see Cait Storr, 2020. *International Status in the Shadow of Empire: Nauru and the Histories of International Law*. Cambridge University Press.
- <sup>11</sup> My translation: 'Wenn man die kurze Geschichte der Superphosphat- und Kunstdünger-Industrie, besonders in den letzten 30 – 40 Jahren überblickt, so glaube ich, da sie sich ruhig den genannten Zweigen chemischer Technik an die Seite stellen kann, ja, ich möchte noch behaupten, da sie dieselben an wirtschaftlicher Bedeutung bei weitem überragt, wenn auch ein großer Teil des deutschen Volkes keine rechte Ahnung davon hat, welche gewaltigen Werte die Produkte der deutschen Dünger-Industrie eines einzigen Jahres repräsentieren und, noch mehr, welche ins Unberechenbare gehende Steigerung des Geldeswertes unserer landwirtschaftlichen Produkte durch die Anwendung der Erzeugnisse der deutschen Kunstdünger-Industrie erzielt wird.'
- <sup>12</sup> This was the case in the early years of the operations on Angaur (DSPAG 1909, 55).
- <sup>13</sup> My translation: 'Irgendwelche kolonialpolitische Maßnahmen, die eine Ausfuhr des Kolonialproduktes nach dem Mutterland begünstigt und dadurch die Absatzverhältnisse zugunsten des europäischen Absatzes verschoben hätten, bestanden nicht. Die Handelsbeziehungen regelten sich ausschließlich nach weltwirtschaftlichen Gesichtspunkten. Da die Absatzbedingungen nähergelegener Gebiete Asiens und Australiens sich vorteilhafter für die Deutsche Südseephosphat AG gestalteten, war die zunehmende Absatzorientierung nach Japan und Australien selbstverständlich.'
- <sup>14</sup> My translation: 'geregelte bergbauliche Betriebe'.
- <sup>15</sup> According to the German Colonial Lexicon, *Regierungsbaumeister* were typically organised into 'Referenten für Hochbau, Seebau, Wegebau, Wasserbau [und] Eisenbahnbau'; however, only one 'Baureferat' was afforded in the Südseeschutzgebiete (Schnee 1920, 153).

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## Chapter 6

# Colonial Waves from Apia to Yap

### Technoscientific Network Structures of German Expansionism in Oceania

*Clemens Finkelstein*

Geography's discursive attachment to stasis and physicality, the idea that space 'just is,' ... is terribly seductive: that which 'just is' not only anchors our selfhood and feet to the ground, it seemingly calibrates and normalizes where, and therefore who, we are. ... Geography is not, however, secure and unwavering: we produce space, we produce its meanings. (McKittrick 2006, xi)

#### 1. Introduction

Coinciding with the establishment of colonial holdings in the Pacific since the mid-1880s – the annexation of the northern Solomon Islands, the Marshall Islands, German New Guinea, various Micronesian Islands (for example, Yap), and Polynesian Islands (for example, Samoa) – imperial Germany underwent a radical socio-political reassessment of its environment (Hiery 1995, 61–78). Knowledge about Earth and its composition became increasingly linked with modern conceptions of economic stability, futurity, and risk management (cf. Cronon 1991; Coen 2018). The environment, observes historian David Thomas Murphy, thus entangled 'German journalists and political activists, academics, patriotic students, and others eagerly embraced in geopolitical ideas, using them to relocate the sources of German history, culture, and politics in geographic factors' – at home or abroad (Murphy 1997, 1). Latching onto this ideological excitement, the technologically accelerated global expansionism fostered a novel 'European planetary consciousness' that, in turn, produced imaginaries of apocalyptic catastrophe to be avoided or wealth to be gained from internalising knowledge about the planet (Pratt 2008 [1992]; Diogo and Laak 2016). Next to novel technological advancements

in telecommunication (for example, electric telegraphy) or mobility (for example, steamboats, railroads), which drove imperial consolidation, German policymakers and scientists pondered the pioneering role of meteorology, oceanography, and geophysics in naturalising the colonial expansionism of the budding empire. The intricacies of waves, ‘one of the most ubiquitous forms of natural motion’, played a crucial role in German colonial dissemination, especially across the remote vastness of Oceania (Loper 2017, 12). Expansive and seemingly ‘empty’ spaces, as highlighted by architectural historian Samia Henni, have been historically utilised by colonial and imperial logic – arid landscapes in Henni’s case, aqueous seascapes in this case (Henni 2022, 2024).

Whether atmospheric (radio), hydrospheric (oceanic), or geospheric (seismic) waves, scientific and telegraphic stations across the growing territories in the Pacific Ocean cast German imperialism from Apia to Yap. Architecture – entwining building and technology, natural and built environments – assumed a vital role as agential media for the remote sensing and transmission of the *colonial waves* that concretely shaped the conceptual and practical expansionism of the German Empire in the South Pacific. Whether in its built form or dematerialised into its techniques and technologies, architecture set out to master the planetary waves and institute environmental control, befitting a colonial world-building mission.

This paper thus emulates a colonial *kymatology* (Greek *kyma*, wave), a study of waves and wave motion, offering a brief survey of three paradigmatic technoscientific imperial operations across the South Pacific: the Geophysical Samoa Observatory on Apia, the oceanographic and anthropologic-ethnographic mission of the naval survey ship *S.M.S. Planet*, and the radio architectures of the Telefunken company. Each historiographic component unravels at the conceptual intersection of imperial ‘infrastructures’ – the material substructures of a technological, scientific, socio-political, or economic nature that facilitate colonial governance – and large-scale ‘networks’ – whose techno-social determinism distinctly configure the former infrastructural systems (Hughes 1983, 5–6; van Laak 2004, 35–43; cf. van Laak 2018). Rippling outwards from the planet’s interior to its atmospheric hull (and beyond), these interlinking examples of wave dynamics reflect a German colonialism that nurtured, alongside its imperial desires, an ideological drive from *globalisation* towards *planetarisation* (cf. Pyenson 1981, 1985).

## 2. Geospheric waves: Earthly links of environmental control

Concluding the Second Samoan Civil War and two decades of heated confrontation with the colonial empires of Great Britain and the United States of America, Germany acquired the islands of Western Samoa (Upolu, Savai'i, Apolima, Manono) as a colonial protectorate in the Tripartite Convention of 1899 (Malloy 1910, 1,576; Stevenson 1892). Apart from its ideological value, Samoa gained significant importance due to its geographical properties (Meinecke 1897; cf. Thode-Arora 2014). Surrounded by the Pacific Ocean, it was isolated from various natural and anthropogenic disturbances and strategically located relative to Central Europe and the great Japanese earthquake fault lines (G. Angenheister, 1921). All these aspects, argued the geographer Hermann Wagner, made Samoa the ideal location for the 'unveiling of seismometrical problems' concerning the entire planet (Wagner 1908, 20).<sup>1</sup>

As the leading voices behind the Geophysical Commission of the Göttingen Academy of Sciences, Wagner and the geophysicist Emil Wiechert hitched their wagon to the heroic pioneering spirit evoked concurrently in the German public by Erich von Drygalski's German South Polar Expedition to Antarctica (1901–1903) (cf. Murphy 2002). Stressing the benefits of obtaining coordinated meteorological and geophysical data, Wiechert and Wagner linked Antarctica and Samoa as environments of contrasting imperial imagination and scientific potential, promising the twofold satisfaction of scientific curiosity and colonial ambition. In a memorandum from 24 March 1901, the Geophysical Commission listed three significant lines of enquiry to develop through a coordinated year of scientific measurements (Geophysikalische Kommission der Akademie der Wissenschaften zu Göttingen 1901):

- (1) Registration of the temporal variance of the Earth's magnetic field, especially during the German South Polar Expedition (1901–1903), producing a 'year of measurements' (February 1, 1902–March 1, 1903), a German-led inquiry to which most of the globally dispersed, international observatories ought to contribute.
- (2) Registration of the temporal variance of air electricity in the tropical climate.
- (3) Registration of the seismic waves generated by earthquakes.

Shortly after the memorandum, in August 1901, the Imperial Government and the Royal Prussian Ministry of Education declared their support of 30,000 mark for the erection of a temporary Geophysical Observatory on Samoa (Wagner 1908, 15).

Numerous architectural structures were subsequently planned for the modern scientific compound. In addition to serving as living and working spaces for the director and staff, they also had to house sensitive scientific instruments to ensure their flawless operation. Given the lack of Western building materials or engineering expertise suited to these dwellings – a limiting environmental condition decried by Wagner – buildings and scientific devices had to be produced in Germany in advance of their shipment to Samoa (Wagner 1908, 18). Time was a defining factor. Only the second choice for the observatory's first director, the former assistant at the Royal Astronomical Observatory in Strasbourg, Otto Tetens, began work under the auspices of the Göttingen Academy of Sciences, already delayed on 16 January 1902, hoping to gain familiarity with the devices and architecture (Wagner 1908, 15). Concerning this central component of the expedition, the eleventh-hour confirmation of the director, replacing the original choice that dropped out last minute for personal reasons, caused a tedious delay (Wagner 1908, 12, 15). As Wagner recalled, the observation huts had already been sent from Potsdam to Bremen. They now had to be ordered back to Göttingen, where they were set up on the site of the Geophysical Institute for a few months 'to give the new observer every opportunity to get to know their equipment and use and also be present for their subsequent disassembly and packaging' (Wagner 1908, 15–16). The final manifest lists crucial equipment first, beginning with architecture: 'observation huts: two huts made of pinewood, built in Potsdam, one for absolute geomagnetic measurements, the other for storing the variation instruments; one modular hut made in Göttingen of firwood with double side walls, housing the Wiechert seismometer; and a meteorological hut' (Wagner 1908, 17–18).

Already massively delayed in beginning the agreed-upon year of scientific observations in conjunction with Drygalski's South Polar Expedition, Tetens arrived in Apia on the evening of 11 June 1902. Before his journey, he had sought the advice of the Imperial Governor of Samoa, Wilhelm Solf, and the well-known German anthropologist and ethnologist Augustin Krämer, who had previously travelled the islands, to identify suitable locations for the observatory (Tetens 1908, 29; cf. Krämer 1902; Krämer 1903). He finally decided on the western projection of the bay of Apia, the northernmost part of the peninsula of Mulinu'u, where the

outer reef formed a natural boundary of shallow water on which the constantly surging swell of the Pacific Ocean would break (Tetens 1908, 31). This provided an area close to the beach that was generally calm and relatively safe from natural seasonal phenomena such as climatic or tidal fluctuations. Convinced by the natural composition, Tetens sought political affirmation to put his choice of location for the observatory ‘under the protection of the representatives of the whole country’ – the Imperial German government and the local native government it had appointed: ‘Mataafa, along with five chiefs from the houses of previous rulers, the *Taimua*, and representatives of the districts of the protected area, the approximately 30 *Faipule*, along with some church servants and scribes’ (Tetens 1908, 31).

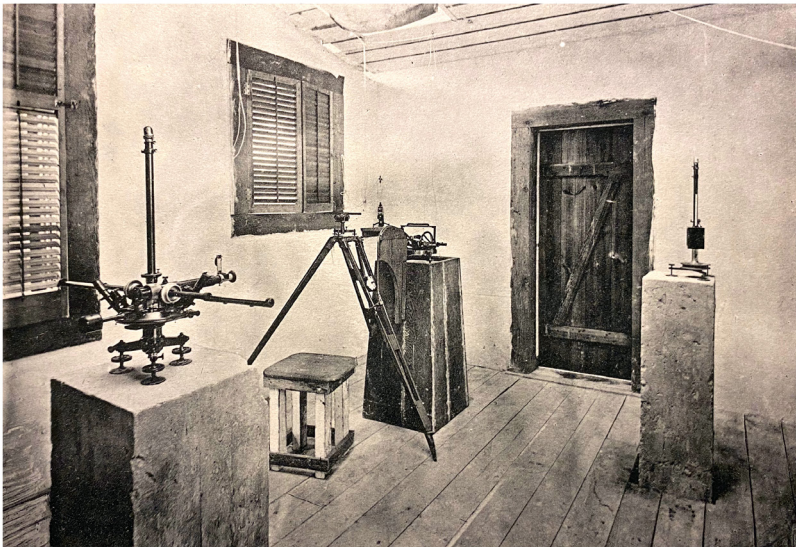
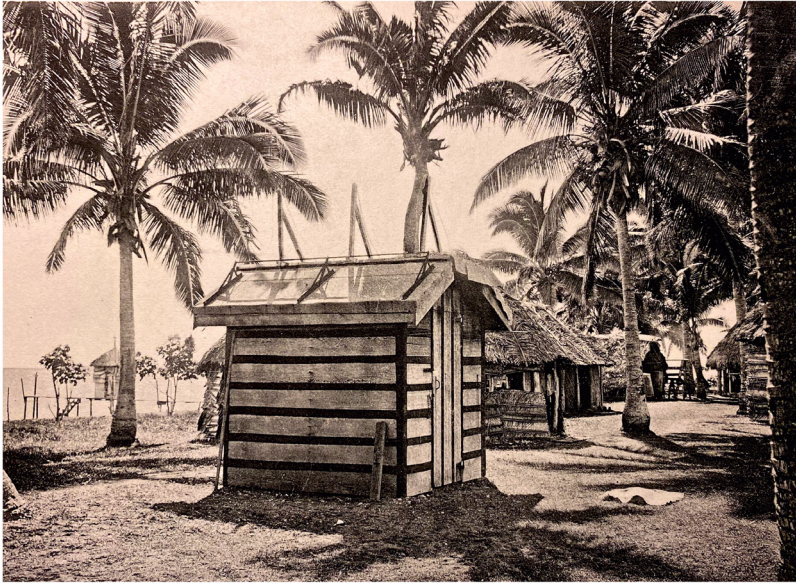
Architecture eclipsed in importance even the technologically advanced seismometers and other geophysical devices for the abstraction, translation, and transmission of planetary atmospherics. The built environment – even the smallest hut – served as an essential conditioning tool of the natural environment, thus guaranteeing the feasibility of empirical work. Architecture was conceived to equalise climatic variations and create a consistent, reproducible interior milieu regardless of exterior environmental conditions. More than shelter, tectonic structures materialised to acculturate geological and colonial ‘shadow zones’ (unknowns) (cf. Gräbel 2015; Storch and Gräbel 2018).

Traditional Samoan *fale* – circular or oval buildings ranging from 5 to 10 metres in circumference, characterised by non-existent walls and a domed roof, whose skeleton frame is held up by an often ornately carved central pillar and smaller posts on the outer edges – were the first architectural structures to be built on the observatory grounds (cf. Frobenius 1899a, 1899b). The prefabricated German buildings came second. Deputy Governor Heinrich Schnee assigned two local representatives of German colonial architecture to assist Tetens. The structural engineer Friedrich ‘Fritz’ Stünzner served as the master builder, while architect-in-training Albert Schaaffhausen acted as the building supervisor for the scientific compound (cf. Schnoor 2009; Falser and Juneja 2013). Construction of the observatory commenced on a 40-metre-wide and 150- to 200-metre-long peninsula that covered an area of approximately two-thirds of a hectare, beginning with the eradication of sprawling bushes and demarcating its boundaries with barbed wire (Linke 1908, 58). The compound was then oriented astronomically and geomagnetically by erecting brick pillars on which the scientific instruments would later be placed, and around which

the architectural structures were built (Tetens 1908, 31–33). Through these equally calibrated and calibrating pillars, Lammert and Tetens sought to acculturate the landscape for geophysical work, emphasising in their action ‘to colonise’ the transformative process of ‘cultivation’ of geological matter, already emblazoned in the term’s original Latin root *colere* (Arneil 2017; cf. Jarzombek 2013, 515–548).

As soon as all pillars were erected, Stünzner was recalled by Schnee. Schaaffhausen continued under Lammert’s management to build a small observation house with roof flaps around the passage pillar, after which the prefabricated huts were constructed: ‘two huts made of pinewood, built in Potsdam, one for absolute geomagnetic measurements, the other for storing the variation instruments; one modular hut made in Göttingen of firwood with double-sided walls, housing the Wiechert seismometer; and a meteorological hut’ (Wagner 1908, 17–18) (Fig. 6.1a-b). The observatory was essentially finished by October 1902, courtesy of the forced labour of a workforce consisting mainly of inmates from the local governate prison, few remunerated Indigenous Samoan artisans, and even fewer white German craftsmen. Aside from the how – deplorable labour practices standard across the colonies – the question remains whether Tetens succeeded in erecting a functional scientific compound?

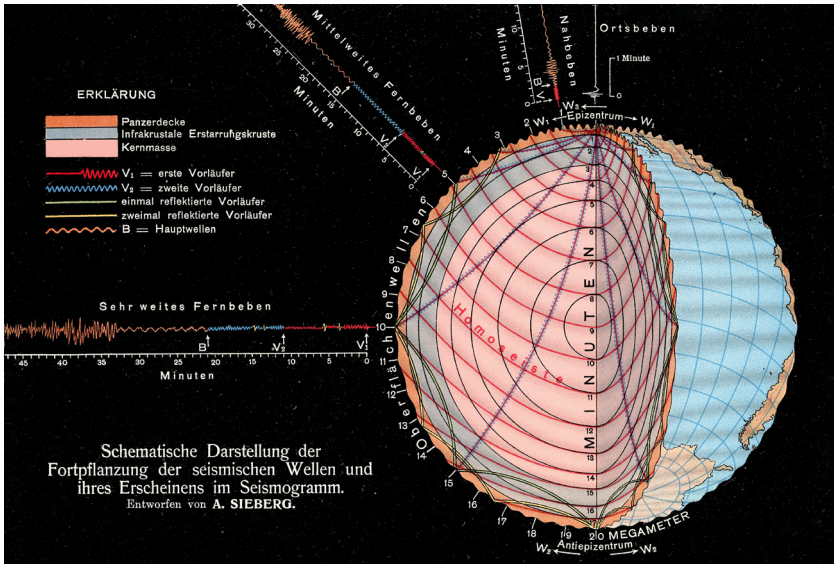
Natural environmental conditions led Tetens to ponder the possible adaptation of the German architectural structures through Samoan building technology. Proving himself an interesting architectural producer without formal training, he opted to fuse local building techniques and materials with prefabricated German designs to form creolised structures ideal for the island’s climatic and atmospheric conditions. The seismic hut, for example, which had to shelter the frame and heavy parts of the 1,000 kg Wiechert seismograph from the influence of extreme fluctuating heat and humidity, was covered in the Samoan tradition with *lau* – a double-layered thatch that consists of dry sugarcane leaves twisted and attached to poles. Other structures of the scientific compound were similarly covered by *lau* (Tetens 1908, 34). Most walls of the architectural structures, including the seismic and variation hut, were likewise made of Samoan *pola* – 30–40 cm wide and one-meter-long braided blinds made of 6 to 10 threads from coconut tree fronds. Attached to the outside of the structural posts, the *pola* could be pulled up or down as required, letting in the sunshine to read the scientific devices, or keeping out rain and heat (Tetens 1908, 35–36). This alleviated the extreme daily temperature fluctuations that had a significant impact on the efficacy of the apparatuses.



**Fig. 6.1:** Geophysical Samoa Observatory near Apia on Upolu: (a) Astronomical hut (front) and staff housing (background), 1904; (b) Interior of the absolute house for magnetic measurements, featuring pillars and instruments (Photographer unnamed (likely Otto Tetens), 1904. From: Hermann Wagner, 'Ergebnisse der Arbeiten des Samoa-Observatoriums der Königlichen Gesellschaft der Wissenschaften zu Göttingen. I. Das Samoa Observatorium', *Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-Physikalische Klasse*, vol. VII, Neue Folge, no. 1 (1908))

Tetens' dualistic embrace of 'native' (*einheimisches*) design presents a unique opportunity to examine how architecture served as a defining marker of the Samoa Observatory at the intersection of appropriation, substitution, and translation. Architectural historian Michael Falser importantly distinguishes the strategic differences between these translational processes, where 'substitution' refers to the material replacement of a specific object or fragment with another to counter, for example, resource shortages, retaining the original entity's cultural integrity, whereas 'appropriation' functionally embraced transcultural markers on a more inclusive level (Falser 2019; cf. Carbonell 1996; Komeda 2020). Likewise, the Göttingen Academy of Sciences and the imperial government emphasised the importance of transplanting 'native' German design and materials, such as firwood or pinewood, to the colonial outpost, aiding in the acculturation of foreign soil through a form of medium-specific transubstantiation. Mere material presence would legitimise the expedition in its twofold representative role as a scientific and geopolitical beacon, rooted in European standards (Falser 2015). Whereas the aesthetic guidelines of colonial architecture limited the degree to which transcultural translation may occur, the temporary nature of the geophysical observatory – formerly intended to cease operation once the year of international geophysical measurements concluded towards the end of 1903 – easily allowed its director to skirt such restraints for the sake of producing timely scientific measurements. Known for his affinity towards traditional Samoan culture, Tetens was convinced that appropriation held the key to the functional operation, cheap local construction, and socio-cultural goodwill of the native population (Niggemann 2004). Whether moving into pre-existing Samoan *fale* or combining indigenous materials and building techniques with German modular units, for Tetens, the notion 'native' that was reflected in his holistic design approach referred both to transplanted German originality and local Samoan belonging – a subtle contraction contrary to German colonial policy but oddly in line with the loaded German term *Heimat* (home).

For scientists like Wiechert, the seismic waves recorded and analysed on Upolu would not only provide essential knowledge about Earth's internal geophysical structure but also carry the potential to link the German homeland not merely symbolically but physically with its New Germanies overseas (Finkelstein 2022, 2023) (Fig. 6.2). Wiechert thus became a vociferous advocate of a geophysical world project that would utilise seismic waves, controlled through model architectural structures,



**Fig. 6.2:** Schematic representation of the propagations of seismic waves and their appearance in seismograms. From: August Sieberg, *Der Erdball, seine Entwicklung und seine Kräfte* (München: J. F. Schreiber, 1908), plate XXXIV.

for a novel type of *seismic colonialism* (cf. Tetens 1908, 33). In 1903, at the Second International Seismological Conference of the newly founded International Association of Seismology and Physics of the Earth's Interior (IASPEI) in Strasbourg, Wiechert reflected on the recent establishment of scientific outposts in the German colonies, particularly German-Samoa's Geophysical Samoa-Observatory. Foregrounding the potential of applied geophysics, he addressed IASPEI's soaring interest to establish a centrally coordinated and organised network of seismic sensors that could emulate through the recording, measuring, and analysing of pulsating planetary vibrations (seismic waves) what Wilhelm Röntgen had shown to be possible with the application of his X-rays (electromagnetic waves): namely, making transparent to scientific enquiry, solid, opaque bodies (Röntgen 1896; Wiechert 1896). In his conference presentation, Wiechert grounded the international motivation for his global scientific endeavour in *Heimatsgefühl*, a shared, common sense of *Heimat* that encompasses diverse notions of home, nationality, and original belonging. This feeling, he stressed, transcends any national, social, or racial boundaries since 'just as the individual pays loving attention to the things that surround them in their daily home ... so for humanity as a whole, personal interest

connects it to the special cosmic body “Earth” (Wiechert 1904, 313). With the sober aside, ‘[a]nd where love does not guide, material needs force attention’, the geophysicist’s words channelled an uncharacteristically prescient environmentalism that connected the violence of planetary geography with that of human industry as legitimising strands of colonial expansionism (Wiechert 1904, 313).

Outlining Germany’s pioneering role in this endeavour, Wiechert rationalised the investment of considerable assets to establish further colonial outposts based solely on the seismicity of the colonies. Detailed observations require at least three, ideally spaced, stations to determine the origin of a seismic event, such as an earthquake. He thus envisioned a tripartite system of nested tripartite stations in Africa (Togo, German South-West Africa, and German East Africa) and the Pacific (Samoa, Kaiser-Wilhelmsland, Kiautschou).<sup>2</sup> These ‘outposts’ would complement the datafication of the planet and its atmospheric systems already underway in the ‘mother stations’ of Europe. The applied geophysics of planetary waves would aid Germany in laying claim to an untapped well of minerals and materials hiding within the opaque interior of Earth.

Confronted with a wide variety of geographical, geological, and climatic zones across colonial territories – Namibian deserts, arid or mesic savannas in East Africa, tropical rainforest in Cameroon, temperate climate in Kiautschou, variegated mountainous volcanic terrains and lush tropical vegetation in the South Pacific (Conrad 2012, 62) – architecture materialised as means to realise Wiechert’s plans for a technoscientific network:

For each of the colonial main stations, a house is to be built that contains the seismic recording devices. For their installation, a space 2.5 meters high and at least 5 x 6 meters of floor space is to be provided. During the construction, care must be taken to protect the interior from rapid temperature changes and keep its walls from direct exposure to the sun and wind. It will be best to sink the house into the ground as far as the groundwater conditions and other circumstances allow. In front of the entrance, a small portal is to be installed, allowing passage through at least two doors that are never open at the same time. The doors should close adequately and be constructed in a way that provides the best possible thermal insulation. If artificial lighting cannot entirely bypass the system of windows, great care must also be taken with their construction. They must have double, thick glass walls and shutters that close tightly on both the outside and inside. Since a person’s weight affects the apparatuses already from

a considerable distance, they must have very deep, free-standing pillars, or a suspended floor must be arranged for the visitors. The cost of the house is estimated at 5,000–10,000 Mark. (Wiechert 1904, 316–317)

The architectural units Wiechert proposed for this global network would facilitate colonial emplacement as modular system boundaries, all while isolating a regulated interior space from the uncontrollable atmospherics of the exterior. With 30 m<sup>2</sup> colonial units telegraphically connecting into a planetary system of controlled environments, Wiechert's geomorphic regime ultimately aspired to cover the 510.1 trillion square metres of Earth's surface. Yet, despite its ascribed paradigmatic function as an architectural model, Mulinu'u's natural environment posed unanticipated problems for the Samoa Observatory. Especially Wiechert's 1,000 kg pendulum, arguably the most advanced instrument, registered even the slightest spatial displacements due to seismic waves that moved its mass in relation to the cubic metal frame that grounded it. The pendulum's graphic unit – a fine metal needle scratching the surface layer of soot-covered paper – remained too sensitive to the microseismic noise generated by the irregular surf of the Pacific Ocean (cf. Sieberg 1906). The perpetual crashing of myriad oceanic waves provided an uneven baseline and made it difficult for Tetens to analyse the seismometrical inscriptions properly (Linke 1909, 18, 20).

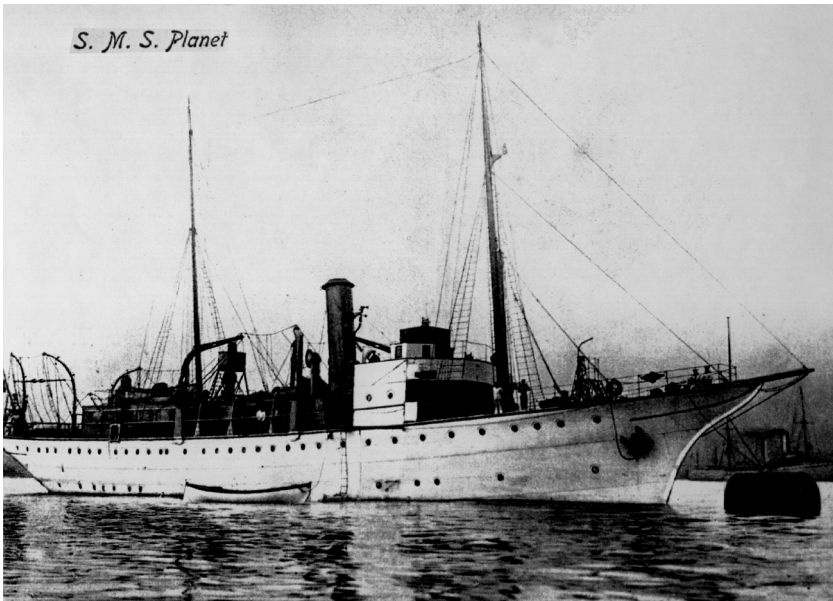
### 3. Hydrospheric waves: Capturing ethnographic and oceanic media

Although less the natural domain of architecture, the hydrosphere consistently expedited human migration and colonial expansion via floating architectural structures over the past millennia. In maritime law, ships were thus aptly defined as *territoire flottant* (floating territory) (Heller-Roazen 2009, 126–127). Whereas expeditions frequently set out to traverse the choppy waters of Earth's oceans to uncover *terra incognita*, that is, solid ground, the seascape remained an enigmatic, ever-moving transimperial zone in and of itself (Bassi 2016). Maritime space, as cultural theorist Bernard Siegert argues, is defined by 'preindustrial capitalism based on trade and primitive accumulation', cultural techniques like cartography and navigation, as well as the integration of political representation, economic exploitation, and scientific exploration (Siegert 2007, 27). Navigation materialises as a cultural technique that vies for the control of space.

The action of setting out to sea, to navigate, and thus construct maritime space, is what Siegert, building on Sophocles, calls *chorein* (Greek *chora*, neither space nor place): ‘that which makes space so that something, a thing, may appear’ (Siegert 2007, 28; Sophocles 1982, 76). ‘The *chorein* of the naval architectures is an act of setting up space, which precedes place and founds the capability-to-be-at-a-place,’ contends Siegert; ‘it is the violence of an original space seizure’ (Siegert 2007, 28). Concretising this administrative violence since the early 19th century, hydrography, that is ‘maritime charting, nautical surveying, and the proto-oceanographic collation of data on the dynamics of the marine environment’ (Burnett 2009, 188) crucially aided, as the historian Greg Dening elegantly surmises, ‘to make the globe a real world and the real world a map for the strategies of empire’ (Dening 1980, 269).

Arising from this deeply ingrained para-colonial nature of the aqueous territory, its navigation and mapping, modern oceanography, tasked with the scientific study of the oceans, from their undulating surfaces to their unmapped depths, underwent disciplinary formation only in the late 19th century (Nichols, Larsen Porter, and Williams 2003, 189; cf. Macdougall 2019). Early German contributions to this global endeavour were the Plankton Expedition (1889) under marine biologist Victor Hensen and the German Deep Sea Expedition led by zoologist Carl Chun on the SS *Valdivia* (1898–1899) (Hensen 1887; Krümmel 1879; Chun 1903). Since the mathematician Samuel Reyher’s experimental quantitative analysis of the ‘hydrography’ of the German seas in 1697, research at Christian-Albrecht University in Kiel has made significant contributions to the development of physical and biological oceanography (Krauss 1990). With access to the Baltic Sea, the northern Prussian port city of Kiel soon became a centre of modern oceanographic research in Germany.

Departing from Kiel on its maiden voyage to the South Pacific in 1906, the naval vessel *S.M.S. Planet* of the German Imperial Navy was built and commissioned in 1905 to carry out cutting-edge research in oceanography and meteorology (Reichs-Marine-Amt 1909a, ix–xi) (Fig. 6.3). Apart from the technoscientific equipment it carried, the ship’s naval architecture was specifically designed for the tropical climate of Oceania and the environmental demands of scientific labour (Deacon 1971). Rooms had to be airy, and ample space on the deck was planned as a laboratory (Reichs-Marine-Amt 1909a, xv). Three research areas were deemed particularly important for its voyage to the South Pacific in 1906/1907 (Reichs-Marine-Amt 1909a, ix). First, work in the field of oceanography



**Fig. 6.3:** *S.M.S. Planet*, survey ship of the German Imperial Navy, photograph undated (c.1906) (Wikimedia Commons, source unknown)

sought to determine the morphology of the seabed, the physicochemical properties of the sea (temperature, salinity, gas content, transparency, and colour), and the biological factors of sea life (marine nutrients, nitrogen compounds, type, quantity and distribution of plankton, and bacterial abundance of the sea) (Reichs-Marine-Amt 1909c; cf. Mills 1989). Second, in the meteorological field, particular focus was given to the exploration of the physical properties of the atmosphere. Especially the higher air layers above the water were explored with balloons and kites, which had previously only been conducted at aeronautical observatories and kite stations on land (Reichs-Marine-Amt 1909b). However, the third line of research, the stereophotogrammetric measurement of ocean waves carried out by the astronomer-geodesist Ernst Kohlschütter, nurtured a particular fascination with this paper's object of enquiry (Kohlschütter 1909).

Photogrammetry, a term coined by the Prussian architect Albrecht Meydenbauer in 1867 to describe a method for surveying elevations of architecture and landscape, deduced reliable information about physical objects and the environment via the analysis of photographic recordings (Meydenbauer 1867a, 1867b). Since Louis Daguerre presented his photographic process to a Parisian audience at a joint meeting of the French

Academy of Sciences and the Académie des Beaux-Arts in 1839, interest in utilising the light-based medium for planimetric and territorial surveys grew exponentially (cf. Doležal 1896). The French geodesist and military cartographer Aimé Laussedat concretised early efforts to extrapolate topographic measurements from photographs in the 1850s, developing a method he called *métrophotographie*, a process by which (at least) two photographs are taken from different positions along a fixed baseline to infer a triangulation network from their respective distance, direction, and the intersecting lines of sight of specific topographic features, allowing correlative measurements (Laussedat 1899; cf. Polidori 2020). Meydenbauer, known primarily for founding in 1885 the world's first photogrammetric institute, the Königlich Preußische Messbildanstalt (Royal Prussian Photogrammetric Institute), improved on Laussedat's photographic instruments and method, shifting focus increasingly from topography to architectural structures, which provided more detailed and discernible visual markers for the photogrammetric process (Meydenbauer 1912; cf. Finsterwalder 1906, 1952).

The experimental stereographic photogrammetry aboard the *S.M.S. Planet* was split into two lines of enquiry: wave captures (*Wellenaufnahmen*) and coastal captures (*Küstenaufnahmen*). The process was instrumentally facilitated by two phototheodolites and one stereo comparator for analysing the photographic plates (12 x 30 sq. cm) (Kohlschütter 1909, 136). For the survey of coastal landscapes, two standing phototheodolites were placed stern- and bowside, on either end of a 48.4 m wide baseline and about 7.8 m above the waterline, with a respective focal length of 240 mm (Reichs-Marine-Amt 1909a, xv; Pulfrich 1908, 72). To record ocean waves, the phototheodolites had to be set up on special tripods on the upper deck. Distanced 4 m from each other and 5.3 m above the waterline, the phototheodolites were calibrated towards an intermediate central pole extending beyond the ship's side as metric reference (Kohlschütter 1909, 136; Pulfrich 1908, 317) (Fig. 6.4a-b). Previously untested, the photogrammetric process at sea promised knowledge about the malleable three-dimensional waves, their shape, design, and expansion. This was of interest to both oceanography and naval architecture. The former sought data about the height, length, and speed of naturally occurring ocean waves to develop a physical theory of waves; the latter needed wave recordings to improve calculations regarding the necessary structural composition of naval vessels (Krümmel 1887; Laas 1906).

In stark contrast to its grounded implementation in surveying architectures or landscapes, the maritime environment caused various

complications for the photogrammetric process. Topographically, the constantly changing seascape made it challenging to determine fixed reference points for detailed analyses (Kohlschütter 1909, 140). The coastal landscapes of the Pacific, a complex world of islands and beaches, were too similar and lacked ‘easily recognisable characteristic natural objects’ through which the connection of adjacent pairs of plates would be possible (Kohlschütter 1909, 152). Climatically, the temperatures of the South Sea significantly impacted the chemical development and fixation of the photographic plates. Large quantities of ice were needed to process the photographic media; however, a frequent breakdown of the *Planet’s* ice machine caused massive delays in developing the plates (Kohlschütter 1909, 152). One of the phototheodolites (L) was eventually breached by water, which caused all the left photographic plates to be contaminated by a blurry veil that made the identification of visual data points impossible (Kohlschütter 1909, 151). Considering these unfortunate factors, Kohlschütter, in charge of the photogrammetry, soberly conceded defeat in his report from 1909, not without, however, emphasising the yet unreached potential for stereophotogrammetry of waves in providing proof of wave theory (Kohlschütter 1909, 153).

Secondary, if no less critical to the *Planet’s* research agenda, were the ethnographic and anthropological studies carried out offboard the naval vessel during its Pacific sojourn. The often short, four-day-long interludes on land sought to decipher the indigenous nature and culture along the *Planet’s* route in sound, image, and text. Leading these expeditions, the anthropologist-ethnologist Augustin Krämer sourced wide-ranging materials: (1) anthropological measurements and photographs, (2) phonographic recordings and collections of indigenous songs, (3) architecture, (4) naval architecture, and (5) weaving (Reichs-Marine-Amt 1909d). In his introductory remarks on the anthropological and photographic processes utilised during the voyage of the *Planet*, Krämer emphasised metrical methods and devices, such as the so-called *Galgen* (gallows) device he designed for measuring the height of human skulls. To determine phenotypes and race, Krämer deployed skin colour charts by the German internist Karl Ernst Ranke and the anthropologist-ethnologist Felix von Luschan, often sourcing ‘human material’ (*Menschenmaterial*), with the support of local British and Dutch colonial offices, from among the inmates of governate prisons (Krämer 1909b, 25, 27–28). The German ethnologist Paul Hambruch joined the expedition from the Museum of Ethnology in Hamburg to aid Krämer. He carried out somatological studies that, permeated by vile

scientific racism, documented the physiological characteristics of indigenous populations in Madagascar, Indonesia, the Bismarck Archipelago, and Micronesia (Hambruch 1909). The Austrian ethnomusicologist Erich von Hornbostel likewise contributed to the study, later deciphering the phonographic recordings of indigenous melodies produced by Krämer and gifted to the phonogram archive of the Psychological Institute of the University of Berlin upon his return (von Hornbostel 1909; Krämer 1909c; cf. Kursell 2019).

The most extensive, however, was Krämer's monographic study of the Hermit Islands, especially the isle Luf (Krämer 1909a, 75). His report includes detailed descriptions of indigenous architectural, and material vocabulary, as well as photographic and diagrammatic documentation of Luf's indigenous architectural craft. Krämer identified two distinct typologies that seem to dominate Luf's built environment: the dwelling house (*vum*) and the boathouse or man house (*vum kamán*) (Fig. 6.4c-d). The dwelling house is an elongated structure raised from the ground via a platform and sheltered by 'a strongly curved roof truss and two almost semi-circular, vertical gable surfaces ... covered with sago leaves (*lauyabi*), which are lined up on a stick (*bandi*) and interwoven' (Krämer 1909a, 75). The anthropologist seemed especially captivated by the rigorous space allocation according to the status, sex, age, and health of the occupants. Reflected in a diagrammatic plan, he locates the master of the house next to the only window, the camp for women further inward, a space for servants or boys to the side, and a camp for sick inhabitants next to the oven in the back of the house (Krämer 1909a, 77). The boathouse is much larger than the personal dwelling and is used as storage for boats and to accommodate bachelors or strangers. The boathouse is built directly on the ground using similar materials and architectural technologies. It further distinguishes itself from the dwelling house through its size and a pitched roof supported by central wooden pillars. The surroundings of the buildings are regularly weeded and swept with a broom made of coconut leaf ribs (Krämer 1909a, 80–81).

Krämer's ethnographic study of indigenous architecture on Luf includes comparisons to earlier architectural observations he recorded in the Samoan islands during his second South Sea voyage (1897–1899). These previous observations were notably more comprehensive and detailed, capturing building techniques and craft processes that are missing in this analysis (Krämer 1903, 221–242). Perhaps more important are Krämer's unusually self-aware reflections on the catastrophic impact of the colonial



decision of the population to become extinct' (Krämer 1909a, 70).<sup>3</sup> Despite this ostensible enlightenment, Krämer's anthropological practice, as outlined above, remained permeated by a distinct anti-humanism that significantly contributed to the developing discourse of 'racial hygiene' (Zimmerman 2001, 1–2, 235–237).

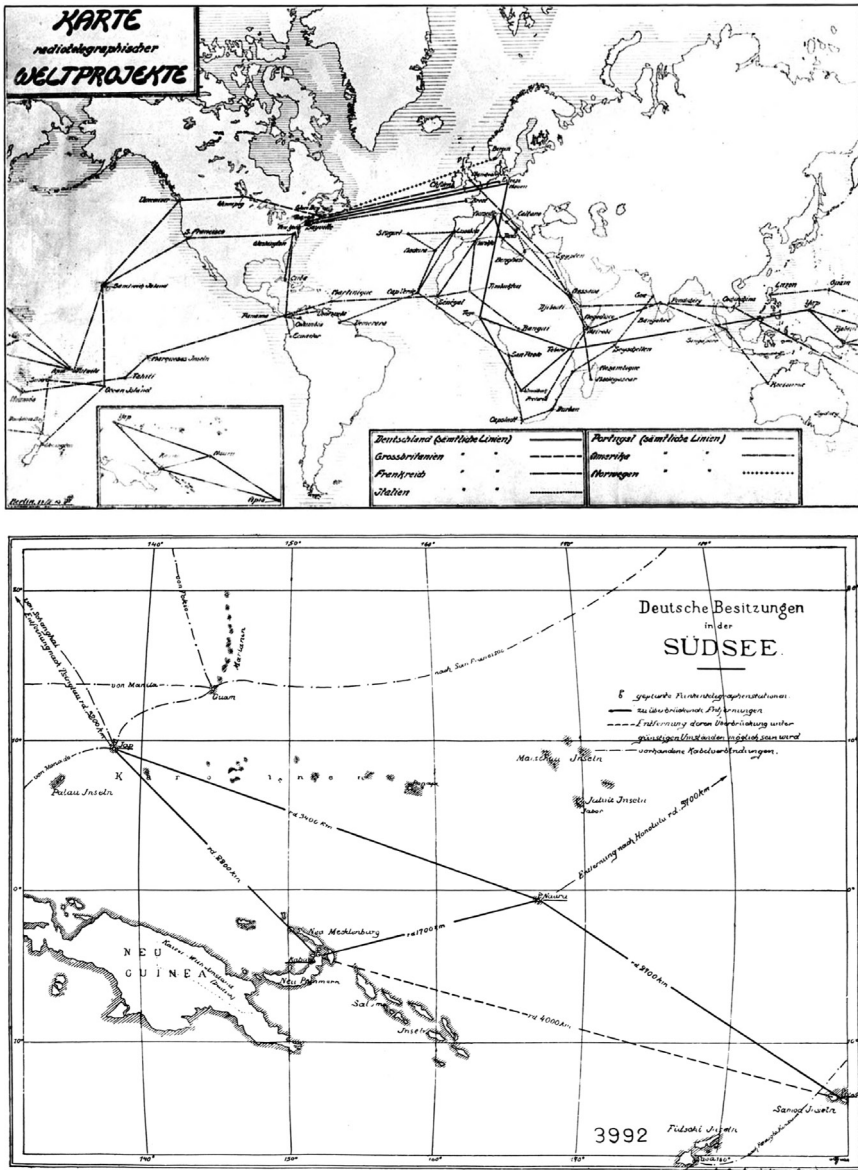
#### 4. Atmospheric waves: Radio architectures as colonial *Weltprojekt*

Naval vessels, such as the *S.M.S. Planet*, roaming the oceanic waves of the South Pacific on military or scientific research missions, often likewise acted as relay stations for a particular type of atmospheric wave. They were among several mobile 'delivery' stations on land, water, and air conceived in Germany at the time (Bredow 1914). Radio (electromagnetic) waves, invisible yet powerful like the seismic waves discussed above, played a specific role in imperial Germany's colonisation efforts across Oceania.<sup>4</sup> As unfurls below, their nature of transmission spurred network infrastructures and specific technoscientific architectures that paradigmatically punctuated the natural landscape from Apia to Yap.

Since the first telegraphic wire was strung between the Physical Institute and the Astronomical Observatory in Göttingen by Carl Friedrich Gauss and Wilhelm Weber in 1833, electric telegraphy and its growing network infrastructures profoundly fuelled the modernisation of 19th-century Germany (Johnston 2021, 1; Roscher 1911). Contemporaries, such as the German economist Karl Knies, hailed the transformational communication technology as having an impact on par with that of railway transport technology (Knies 1857, iii). Individual states and the nation instrumentalised both, argues historian John-Michel Johnston, to conceive 'planned attempts to colonise new spaces, supported by a burgeoning scientific knowledge that sought to uncover the mechanics of nature' and render 'territories and populations ... "legible" for economic exploitation' (Johnston 2021, 21; cf. Blackbourn 2006; Scott 1998). Johnston refers foremost to its wired form. The advance of wireless telegraphy would only exacerbate the colonising drive already fostered on European ground. First identified by the German physicist Heinrich Hertz in 1888, radio waves are electromagnetic waves of a particular frequency range that, as the Italian electrical engineer Guglielmo Marconi proved in 1894, could be modulated technologically to cast telegraphic messages across the planetary atmosphere as a means of long-distance

wireless communication (Hertz 1888, 1893; Marconi 1901). Next to Marconi, with whom he shared the 1909 Nobel Prize for their contributions to the development of wireless telegraphy, the German physicist and electrical engineer Ferdinand Braun made significant improvements to the former's experimental setup and implemented a major technological system for the German telegraph construction company Siemens & Halske (Braun 1901, 5–20). In 1903, the German Gesellschaft für drahtlose Telegraphie was founded by combining Braun's system with the Slaby-Arco system of the Allgemeine Electricitäts-Gesellschaft, Berlin (AEG), developed by the physicist and electrical engineer Georg Graf von Arco (technical director, Telefunken) and his former teacher, the electrical engineer Adolf Slaby (Fuchs 2004). The new 'Telefunken' system – a portmanteau based on the spark (*Funke*) that is 'the agent that drives the waves' and the distance (*Telos*) that describes their path through the atmosphere – laid the foundation for the rapid rise of German wireless technology and by extension many transimperial colonial enterprises at the turn of the 20th century (Bredow 1911, 1; cf. Thiele 2003).

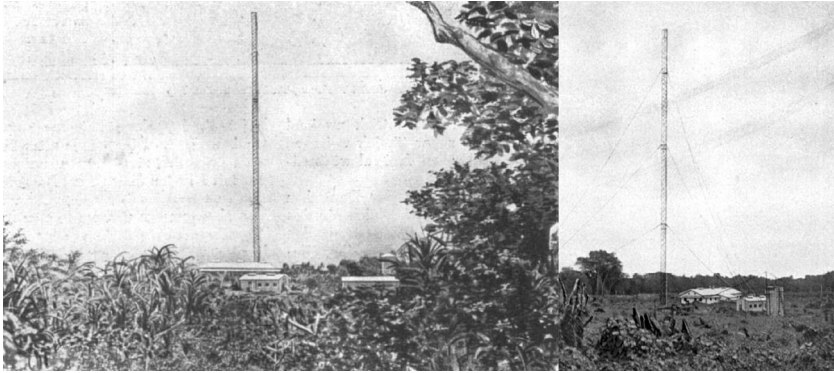
Wireless telegraphy had considerable cost, reach, and security advantages compared to wired telegraphy. Immensely cheaper than laying cables across land or sea, radio waves easily bridged both, circumventing hostile countries located between stations (Kittl 1905). Moreover, the relative immateriality of these waves made the technology invulnerable to attack, assuming the sending and receiving stations could be secured. For the widely scattered German territorial interests in the South Seas, radio waves became a modern means to connect colonial outposts otherwise cut off from one another and the distant motherland. Telefunken's South Seas project was but one piece of a radiotelegraphic world project (*radiotelegraphisches Weltprojekt*) that was pushed forward with considerable support from the German imperial government (Anonymous 1913b) (Fig. 6.5a). The latter invested substantially in the company, especially financing Telefunken's systematic radio wave range tests from its privately owned main facility in Nauen near Berlin (Anonymous 1913a, 150). This catalysed the rapid transformation of Nauen from an experimental post to Germany's central hub of wireless telegraphy, which sought to improve the empire's ability to maintain uninterrupted contact with its colonial outposts (cf. Roscher 1925). The two most critical wireless networks would eventually establish connections between Germany (via Nauen) and its territorial interests in Africa (via Kamina, Togo)<sup>5</sup> and the South Seas (via Yap).



**Fig. 6.5:** (a) Map of radiotelegraphic world projects, Gesellschaft für drahtlose Telegraphie (Telefunken) (*Telefunken Zeitung*, vol. 2, no. 12 (1913)); (b) Map of Telefunken’s radiotelegraphic South Sea Project (*Südseeprojekt*), with German possessions and planned radiotelegraphy stations in the South Pacific marked: solid lines demarcate distances to be bridged wirelessly; dashed lines denote distances that will be able to be bridged in ideal conditions; dash-dotted lines mark existing cable connections, 1912 (*Telefunken Zeitung*, vol. 1, no. 6 (1912))

Yap had been the endpoint for the sea cable of the Deutsch-Niederländische Telegraphengesellschaft (DNTG), the German Dutch Telegraphy Company AG, Cologne, since April 1905. DNTG's representative station, a two-story building with a massive iron framework and concrete walls, connected the remote West Caroline Island with the neutral cosmopolitan Shanghai and the German concession of Qingdao. The DNTG proved an interesting architectural producer, especially on Yap, where employees were housed in a residential compound complete with modern medical and technological infrastructures (cf. Jahn 2018). On 2 August 1912, the imperial government granted Telefunken and DNTG the joint concession to build and operate four large radiotelegraphic stations on Apia, Nauru, Rabaul (German New Guinea), and Yap, where DNTG's sea cable would connect them further (Anonymous 1913b, 134). Distances to be bridged were considerable: Yap–New-Guinea (2,200 km), Yap–Nauru (3,400 km), New-Guinea–Nauru (1,700 km), Nauru–Samoa (2,700 km), New-Guinea–Samoa (4,000 km) (Anonymous 1912a, 90) (Fig. 6.5b).

Once more illustrating the economic impact of wireless technology, laying sea cables would have cost an estimated 19 million marks, whereas wireless telegraphy reduced costs to 2 million marks (Thiess 1920, 51). To build and operate the Oceanic network, the Deutsche Südsee Gesellschaft für drahtlose Telegraphie A.G., Berlin (DSG), was founded by Telefunken and DNTG as a joint-stock company, endowed with 2.1 million marks in capital, further supplemented by German imperial subsidies (Anonymous 1912b, 17; Anonymous 1913b, 134). Telefunken swiftly sent engineers to Yap and Nauru to complete the first two stations by 1 December 1913. To reduce costs, ensure the availability of building materials, and expedite construction, all four network stations were conceived according to a standardised model (Fig. 6.6). The network structures consisted of a one-story station building, an adjacent powerhouse with a 60-horsepower crude oil generator, a 120-metre-high iron transmission tower with a 35 KW antenna, and the latest Telefunken system sonorously called '*tönende Löschfunken*' (sounding extinguishing spark), which improved on Braun's wireless telegraphy concerning range, operational reliability, freedom from atmospheric interference (Rein 1917, 140–157; cf. Friedewald 1999). The tower was braced on three sides by metal wires, resting on a solid concrete foundation and a ball joint isolated from the ground by suitable glass insulators. It was further grounded by a radial network of wires stretched above the ground (Anonymous 1912c, 95). This advanced technoscientific architecture mediated between the terrestrial and



**Fig. 6:** (Left) Telefunken station Yap, undated (c.1913). From: *Telefunken-Zeitung*, vol. 3, no. 17 (1919). (Right) Telefunken station Apia (Tafaigata), after its completion in August 1914. From: *Telefunken-Zeitung*, vol. 3, no. 18 (1919)

atmospheric zones, broadcasting a sense of connection, of *Heimat*, as radio waves across Oceania.

Yap emerged as the critical nodal connection between wired and wireless communication, establishing the first link in the wireless web that spread across Oceania (Anonymous 1913b, 134). The DSG station in Tafaigata, near Apia, was conceived as the outermost link in the South Pacific network (Anonymous 1913b, 134). Its construction commenced slowly, as the chosen site for the station boasted dense vegetation, which demanded deforestation (Anonymous 1914). Located approximately 10 km inland from the harbour, Telefunken engineers had to construct a field railway, complete with a locomotive, to transport the large and heavy components of machines and buildings to the site, where they would be assembled on site (Anonymous 1914). A general shortage of labourers provided another delay for the Telefunken construction manager, whose implicit racism was reflected in the construction report, citing ‘workers of all shades’ who likewise fostered complex racist antipathies towards one another (Anonymous 1914). As mentioned elsewhere, German racism followed a complex, twisted logic, explicitly favouring indigenous South Pacific islanders, whose images were circulated widely in reports. In contrast, especially Chinese labourers, who formed the vast majority of the workforce on architectural construction sites and plantations, were valued less and remained largely absent from photographic documentation (Steinmetz 2007). The telegraphy station Apia was completed in July, after which radio-telegraphic time signals and longitude determination attempts

were undertaken jointly with the Geophysical Observatory in Apia and the Telefunken stations in Yap, Nauru, and Qingdao to determine the longitude of Samoa, which had remained imprecise until then (Hirsch 1919, 44).

On 1 August 1914, the station began its public service. However, only four days after Apia started transmitting, the radio waves carried news of England declaring war on Germany – a coincidence, opined Samoa's last governor, Erich Schultz-Ewerth, rife with racial prejudice, that fuelled the superstitions of native Samoans in linking the building symbolically with war (Ullrich 1919, 72; cf. Schultz-Ewerth 1926). The shock was palpable, recalled the German physicist Abraham Esau<sup>6</sup> (stationed at Kamina, Togo) fittingly: 'even the ether froze for a few moments, and no waves shook it' (Esau 1919, 33). Telefunken engineer Richard Hirsch likewise remembered that once Apia's telegraphist received the catastrophic news at 2 am, tensions thickened as the station personnel's thoughts drifted to the British fleet in the nearby colony of Fiji. Suddenly, rumbling noises made their way from the harbour inland. Sounds suggesting heavy metal anchors being dropped from viscous warships. After moments of panic and calls to the harbour, no ships could be seen. It took a quarter of an hour before the neighbouring geophysical observatory could give the all-clear. The threatening noise was fabricated by an earthquake whose seismic waves swept across the archipelago immediately after the declaration of war (Hirsch 1919, 44).

## 5. Standing waves: Lost and new frontiers

In just a few years, Telefunken laid the foundation for a German colonial radio network whose performance outshone that of other imperial powers by far (Anonymous 1920). Apia and Nauru were the strongest telegraphy stations between Honolulu and Sydney. In the South Seas, however, Germany was far better equipped in radiotelegraphy than militarily (Hiery 1995, 154–182). On 7 August, the *S.M.S. Planet*, now active as a warship, reached Yap to assess, secure, and prepare the defence of the strategically important location (Köhler 1919, 97). On 12 August, the British cruiser *Minotaur* and the destroyer *New Castle* reached the island, fishing up and cutting the sea cable before opening fire and destroying the telegraphy station (Köhler 1919, 98). The DSG station in Rabaul, the largest city in the German South Seas, remained under construction when the war broke out, listening for enemy transmissions and operating out of temporary tent structures before yielding to the invading forces (Ullrich

1919, 73). Apia continued radio operations until 29 August, when the New Zealand Expeditionary Force landed on the Samoan island (Hirsch 1919, 48). Shortly before the invasion, Telefunken engineers rendered the telegraphic equipment unusable. Still, they refrained from toppling the transmission tower in a last attempt to retain superiority, as native Samoans considered it a symbol of German power.

Along with the telegraphy station Tafaigata, the geophysical observatory near Apia was seized by the New Zealand forces in 1914. Its current director, Gustav Angenheister, instead of laying down his work, however, opted to continue the institution's crucial geophysical labour, remaining on Upolu until 1921 (G. Angenheister 1924). Throughout the war, the observatory collected vital geophysical and atmospheric data, thereby strengthening its unique value in the global network of planetary sciences (G.G.G. Angenheister 1974). When the New Zealand-run British occupation was declared on Samoa, soldiers carried mobile telegraphy stations on their backs, courtesy of Telefunken (Hirsch 1919, 48). The private company's aspiration to construct a *Weltprojekt* was supranational and supported by the unceasing demand for its technology by other colonial empires, such as Great Britain, France, Italy, Portugal, and the United States of America (cf. Hautsch 1979). The ascent of a 'global media system', monopolised by private companies, mirrored the global economic entanglements of multinational network industries, whose technologies were likewise utilised for national empire-building projects – the root of a budding 'identity crisis' (Winseck and Pike 2007, 84–85).

The short-lived colonial project of imperial Germany across Oceania ended abruptly in 1914, its influences on the German populace and Oceanic natives lingering like standing waves oscillating in time without moving in space (Hiery 2020). Although stationary, these colonial waves would soon resurface across sociocultural and political strata of interwar Germany in tandem with a revisionist movement that resolutely nurtured colonial ambitions despite the crushing Treaty of Versailles (1919), which had derided 'Germany's failure in the field of colonial civilization' (Poeschel 1920, 87, *op. cit.* in Conrad 2012, 186; cf. Schnee 1924; Schmokel 1964). Confronted with lost frontiers, colonial desires were thus diverted from the ruins of empire to fantasising new frontiers (cf. Kundrus 2003). These imaginaria could draw on a legacy of precolonial fantasies that, as Susanne Zantop maintained, had already once prefigured the path towards a German colonial reality (Zantop 1997; Friedrichsmeyer, Lennox, and Zantop 1998). Conclusively, the following provides a glimpse into one



**Fig. 6.7:** The wireless remote power station Waszolum (Mars) in transmission with Nauen (Earth). From: *Telefunken-Zeitung*, vol., 3, no. 17 (1919), Fig. 77

fantastical frontier that no longer dillydallied on the planet's surface (or core) yet projected a wave-like extension of Germany's zone of influence across the cosmic divide.

Amid the nostalgic remembrances of wireless telegraphy stations lost during the war, the *Telefunken-Zeitung* from August 1919 featured a science-fiction narrative titled '*Hier Mars – hier Erde*' (Here Mars – Here Earth) (Frerichs 1919). Marconi, explains the author Frerichs in his preceding remarks, recently expressed the belief that it would be possible to establish a radio-telegraphic connection between Earth and Mars (or another planet) (Frerichs 1919, 84).<sup>7</sup> Thus Frerichs' short story similarly unravels – not unlike many colonial narratives – as a benevolent and fortuitous 'first contact' between the two planets: electromagnetic waves are independently cast and recorded mutually by the fictitious wireless telegraphy station Waszolium on Mars and Telefunken's genuine central station Nauen on Earth. An accompanying illustration juxtaposes the two planetary civilisations and their characteristic technoscientific network architectures exuding radio waves from the Martian point of view (Fig. 6.7). The Waszolium station appears composed of a multi-pyramidal lattice structure reminiscent of Stephen Sauvestre's design for the Parisian Eiffel Tower, complete with polyhedral antenna. In contrast, the telegraphy station Nauen, depicted atop the distant planet Earth, embodies Hermann Muthesius' design for the new main building (completed in 1920), a substantial assembly of clinker-clad rectangular volumes that create a cathedral-like cruciform floor plan (Muthesius 1919). Avoiding superfluous ornamentation, as Muthesius argued elsewhere in the issue, the technoscientific building in Nauen presents a model for the paradigmatic synthesis of modern architecture and engineering, likewise fusing modern built environments with the invisible waves of modern industrialised societies that increasingly shaped and defined them (Muthesius 1919, 33). Whether seismic, oceanic, or electromagnetic, whenever physical waves encounter material objects, at times transgressing their boundaries, an imprint of said object within the exposed waveforms materialises as a sort of fingerprint of their confrontation. A reciprocal transformation is similarly observable in the colonial and postcolonial legacies of German imperialism across Oceania.

## Notes

- <sup>1</sup> All translations are my own, unless indicated otherwise.
- <sup>2</sup> Imperial German colonies around 1900: Togoland (Togo), Kamerun (Cameroon), Deutsch-Ostafrika (German East Africa) (present-day regions of Burundi, Rwanda, Tanzania, and Mozambique), Deutsch-Südwestafrika (German Southwest Africa) (part of present-day Namibia), Deutsch-Neuguinea (German New Guinea), including Kaiser-Wilhelmsland (present-day Papua New Guinea), Deutsch-Samoa (German Samoa) (present-day Samoa). Deutsch-Kiautschou (Jiaozhou Bay concession), Chefoo, and Tsingtau (present-day Qingdao) were treaty ports, leased, as concessions, by the Qing Dynasty (all present-day China).
- <sup>3</sup> Krämer refers here to the outrageous thesis of ‘racial suicide’ brought forward by the German linguist and ethnologist Otto Dempwolff (Dempwolff 1904).
- <sup>4</sup> German entanglement with Pacific worlds materialised already during the precolonial period, picking up considerably since the 17th century. The surveys and sojourns undertaken by German apothecaries, botanists, naturalists, Jesuits, writers, and so on, often as part of other nation’s bioprospecting enterprises, and ranging from the North to the South Pacific, fostered a particular transcultural ‘image’ of the German presence in and relationship to the Pacific (cf. Berghoff, Biess, and Strasser 2019).
- <sup>5</sup> Reinhard Klein-Arendt has thoroughly discussed the major German telegraphy station Kamina (Togo), constructed by Telefunken on behalf of the imperial authorities in the African village at the considerable cost of five million mark, and carried out by the Austrian engineer Anton Baron Codelli (Klein-Arendt 2010, 2023).
- <sup>6</sup> Esau had conceived the major Telefunken station in Kamina in 1913. He would later assume the Chair of Technical Physics at the Friedrich-Schiller-Universität Jena in 1928, where his inaugural lecture *‘Die Energievorräte der Erde und ihre technische Ausnutzung’* (The Earth’s Energy Reserves and their Technical Exploitation) echoed Wiechert’s proposal for applied geophysics that married scientific expertise and technological progress towards the end of absolute environmental control (cf. Hofmann and Stutz 2003).
- <sup>7</sup> Marconi early on refuted popular news reporting of his efforts to communicate with Mars (Marconi 1907, 203). However, by 1922, Marconi conducted ‘a series of experiments on his radio equipped yacht Electra’ seeking, again, to record radio transmission from Mars (Anonymous 1922). Already in 1901, comments by Serbo-American engineer Nikola Tesla about receiving cosmic electromagnetic waves of planetary origin (Mars) in 1899 had been widely reinterpreted by newspapers as a claim of extraterrestrial communication.

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## Chapter 7

# German Colonial Building Cultures in Kaiser-Wilhelmsland and the Bismarck-Archipel

### Reconnecting a Fragmented Architectural History of Deutsch-Neuguinea

*Michael Falser*

#### 1. Introduction

The architectural history of Deutsch-Neuguinea (German New Guinea) is almost unknown until today. Many reasons for this scientific lacuna originate from very specific historical circumstances: with few decades of para-colonial German influences from trading companies, missions and exploration campaigns from the early 19th century onwards, the direct German colonial impact over this extremely isolated region lasted not even three decades from 1886 to 1914.<sup>1</sup> If a limited time span and accessibility already hindered an extensive building activity, a more relevant reason needs to be mentioned here: no other German colony (such as those four possessions in Africa or Tsingtau/Kiaoutschou in China) was confronted with so many relocations of its capitals: altogether five different places – three on mainland Kaiser-Wilhelmsland and two in the Bismarck Archipelago – were hastily installed. The first four of them (Finschhafen 1886–1891; Stephansort 1891–1892; Friedrich-Wilhelmshafen 1892–1899; Herbertshöhe 1899–1910) were soon abandoned due to reasons of tropical diseases, political tensions, local resistance, and infrastructural constraints, and the last and short-lived capital Simpsonhafen/Rabaul (1910–1914) – arguably the first site with a real potential for a successful development – had to be handed over to the invading Australian troops in the first year of the First World War (Fig. 7.1).

From this historical viewpoint, coming to terms with a critical architectural history of Deutsch-Neuguinea means contextualising its colonial building cultures in its specific conditions of geographical remoteness,

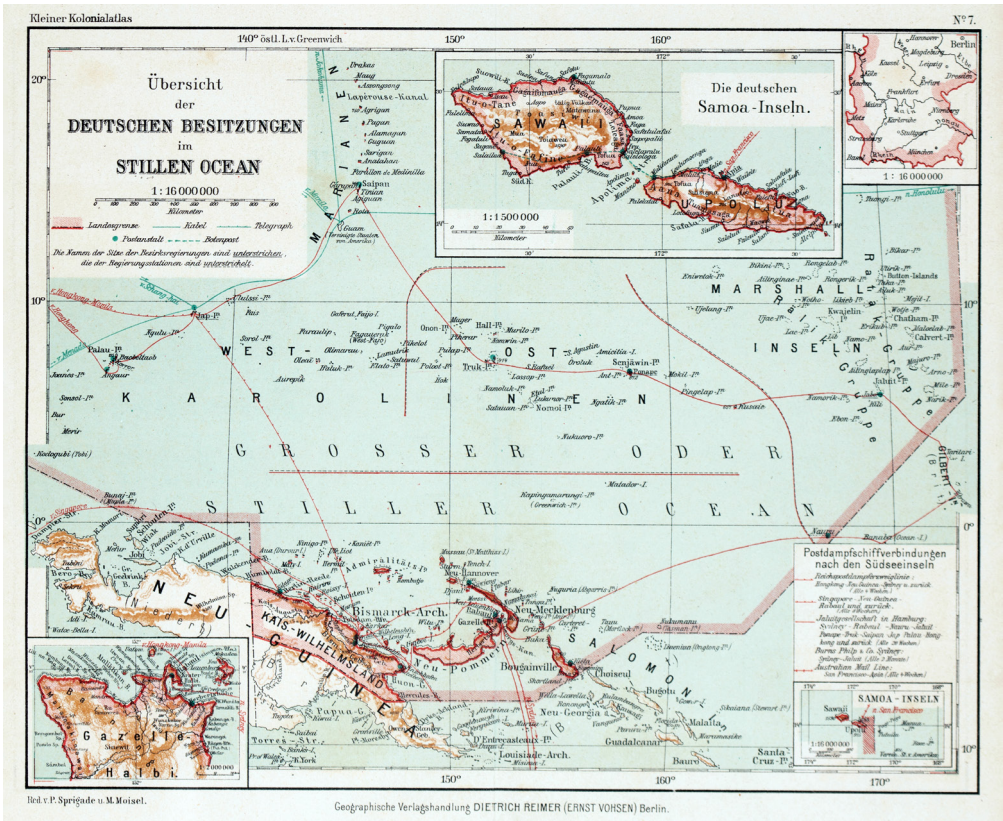


Fig. 7: 'Overview of the German Possessions in the Silent Ocean', as depicted in the *Deutscher Kolonialatlas* of 1910 (Sprigade and Moisel 1910, map no. 7)

harsh environments (tropical climate, natural hazards, and diseases) and an extreme scarcity of resources (limited availability of good building material, transport logistics, financial budget, expert cultures, and local manpower). And if just few structures were built within the colonial period itself, a research viewpoint from the present backwards is not much easier: only a little percentage has survived of this – primarily wooden – German colonial building stock after 1914, due to its limited durability (weathering, pest infestation), its further destruction during two world wars, the negligence or disinterest of the following Australian regime (from Mandated to Trust Territory from 1914 to 1975), and, finally, limited resources for building research and little budget for historic preservation in present-day Papua New Guinea did not help either. This means that only a few buildings from the German colonial period are still

standing today that can serve as a physical testimony and living study objects during field work campaigns. In other words, the visual-physical memory of this short period of New Guinea's architectural history is largely lost. Only very recent research projects – with their international conferences and conference proceedings, such as *Monuments and Sites De-colonial! Approaches to the Built Heritage of the German Colonial Era* (ICOMOS Germany together with TU Munich/Germany 2021) – try to bring back this visual and physical repertoire (Falser 2024a,b; Falser et al. 2024).

To reconnect this highly fragmented architectural history of German New Guinea, colonial time *primary sources*, back-then published in various media and circulated in their combination of written descriptions and pictorial representations sources, are all the more important and stand in the centre of this contribution. However, even this is quite a challenge as consolidated summaries of the German colonial achievements in the building sector were never published. This had more to do with the character of this *Schutzgebiet*: first, from the beginning the *Plantagenkolonie* was in the tight hands of trading companies with little interest of scientific reflections about systematic urbanist concepts or innovative architectural design nor PR-related self-representation in public journals or newspapers; and, second, when the colony came under the direct administration of the German Empire from 1899 onwards, the mere one and a half decades until the First World War left little time to build, not to speak of reporting about, a comprehensive amount of architecture. When it comes to the vast field of research literature from the 1960s until today, it is therefore not surprising how few primary sources were exploited to establish a systematic architectural history about the colonial period of Deutsch-Neuguinea.<sup>2</sup> While an overview of the pictorial memory of the period through photographs also touch urbanist and architectural sections (Gash and Whittaker 1975; Hiery 2005) and postcard collections are published (Hofmann 2016, 131–176), a critical analysis of German colonial publications with a focus on architecture was tackled only rather recently<sup>3</sup> (compare Falser 2021): in 2023, the exhibition *Deutsch-koloniale Baukulturen. Eine globale Architekturgeschichte* (German Colonial Building Cultures. A Global Architectural History) at the Zentralinstitut für Kunstgeschichte München (Germany) presented primary sources about German colonial building practices for the first time,<sup>4</sup> and the catalogue with altogether 100 case studies also covered the German possessions in Oceania (Falser 2023a).

As a consequence, the here presented study must be read as an architectural history of a second glance, a kind of puzzle game of dispersed

primary sources to detect few passages about infrastructural projects, early urbanism, and architectural buildings, and – between the lines – innovative technical solutions or construction details, choices of imported or locally available building material, or stylistic debates of German colonial architecture. In the following, this information about German colonial architecture with descriptions, sketches, plans, and photographs will be filtered from lengthy administrative annual reports, newspapers, popular exploration literature and, neglected until today, from a surprisingly rich amount of individual travel reports.<sup>5</sup> Passages of these primary sources will be quoted in their original wording and placed in direct relation to the accompanying visual data as part of a combined rhetoric.<sup>6</sup>

Finally, the German New Guinea cannot be read as an endeavour free of *Para-Colonial Influences* and *Colonial Transactions* (as this present conference proceedings call it). While the other German possessions in the South Pacific were handed over to Japan (Micronesia) and New Zealand (Samoa), the specific colonial contact zone over New Guinea was with the Dutch and, politically more relevant, British/Australian power.<sup>7</sup> And this contact zone also facilitated the final collapse and hand-over: in 1914 Australia occupied German New Guinea, 1919 governed by the Royal Commission, before the mandate for the whole region was transferred by the League of Nations on Australia for New Guinea (Gnielinski 1958). This had also consequences for the here discussed German colonial architecture as it was systematically sold and privatised.

## 2. The capitals during the administration by the Neuguinea Compagnie (1885–1899)

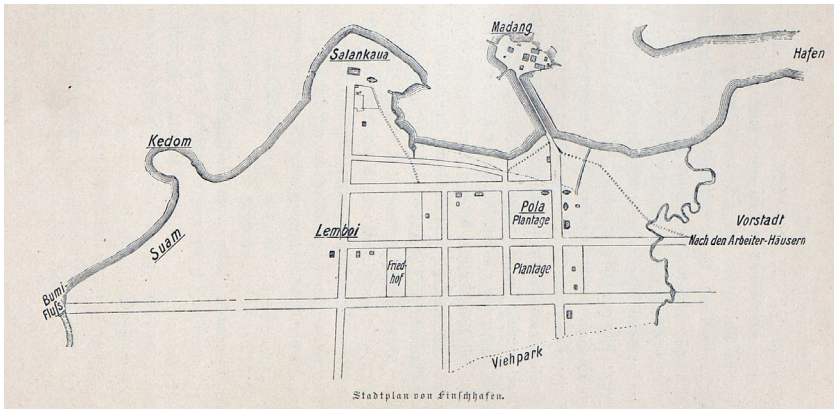
After Karl Batholomäus von Werner had surveyed Guinea's coastline in 1878 for suitable ports, the German flag was raised for mainland Kaiser-Wilhelmsland and the islands of Bismarck-Archipel in November 1884. The German-English declaration from 6 April 1886 fixed the frontiers and two *kaiserliche Schutzbriefe* from 17 May 1885 and 13 December 1886 (for the *Salomonen*) granted special protection for the Neuguinea-Kompagnie (originally founded in 1882 as Neuguinea-Konsortium in Berlin) and defined its 'practical purpose to establish and cultivate trading posts [*Handesniederlassungen*]'<sup>8</sup> with its founder Adolph von Hansemann. However, this urbanist-architectural task was far from being successful from the beginning for all the head administrators of German New Guinea to come.<sup>9</sup>

### Finschhafen (1885–1891): From adventurous start to complete disaster

Finschhafen, the chosen harbour over coral limestone terraces, borrowed its name from its discoverer in 1884, Friedrich Hermann Otto Finsch, and was founded as the capital-headquarter of the New Guinea Company in 1885. Its monthly journal, *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel*, reported about the first generations of imported pre-fab ‘Swedish houses’, which were shipped in by boat and ‘whose foundations on fifty stilts each needed to be produced through felled trees’.<sup>10</sup> The import of labour staff from the surrounding islands for the first clearing work of the dense jungle and the dramatic increase of malaria incidents<sup>11</sup> were the biggest difficulties from the start.

If it comes to the individual travel reports to reconstruct the first building efforts, samples range from early enthusiastic voices (Zöller 1891), sceptical judgements (Tappenbek 1901; Hesse-Wartegg 1902), to devastating retrospective (Kotze 1905). Probably the earliest on-site description of this first capital of Deutsch-Neuguinea has been preserved in Hugo Zöller’s personal account *Deutsch-Neuguinea und meine Ersteigung des Finisterre-Gebirges* of 1891, produced on mission in 1888/1889 for the *Kölnische Zeitung* and on his way to climb the nearby mountain range. Arriving from Cooktown of North-East Australia, his ‘first impression was one of joyful astonishment’, as he had ‘not expected such a picture of order, cleanliness, hard work and success after the descriptions [he] had heard in Australia’. Adding a rare sketch map of the small village with a simple street grid of three by four lanes (Fig. 7.2a), he then takes the reader on a happy walk from the landing jetty and harbour of bustling life on Madang peninsula over the small coral block-made dam to the garden-designed peninsula: there he found the ‘favourably situated Salaukaua cottage, residence of the *Landeshauptmann* and later of the *Regierungskommissar* [...] to [his] knowledge the most beautiful building in all of New Guinea with a refreshing sea breeze against mosquitos’ (Zöller 1891, 6/7). With this construction (Fig. 7.2b), the classic vocabulary of a colonial bungalow on an elevated platform, with a surrounding veranda and a corrugated metal roof (as a building type originally developed in British-India and then appropriated globally, compare King 1984) had also reached German New Guinea.

Finishing his tour to the hospital, workers houses, cattle park, repair workshop, stores, and cemetery, Zöller’s following premonition overshadowed his exaggerated comparison to German and colonial garden towns:



**Fig. 7.2:** (a) The plan of Finschhafen; (b) The 'Haus des Landeshauptmanns' (Zöller 1891, 41 and XXXII-1)

'If, in the background of all this magic, the pale spectre of fever did not stretch out its arms, clutching the boldest energy after fruitless resistance, Finschhafen would be counted like Baden-Baden, Buitenzorg, Petropolis or Darjeeling among those exquisite favourite places of mankind, in whose decoration nature and art have joined hands' (Zöller 1891, 8). In his chapter 'Europäerleben', Zöller commented about the next building

stage of elevated wooden houses with verandas and cheap corrugated iron roofs to collect rain water, but concluded with an astonishing vote to appropriate indigenous building techniques: 'It will be much cheaper to build equally comfortable houses in the future if we first familiarize ourselves more with the use of indigenous materials, i.e. not just beautifully cut boards made of local wood, but rough-hewn posts, bamboo, palm stalks, etc.' (Zöller 1891, 23).

How devastating the increase of malaria must have been shortly after Zöller's visit is best indicated by Kotze's eye-witness report about Finschhafen from his book *Aus Papuas Kulturmorgen. Südsee-Erinnerungen* of 1905. He criticised the harbour situation on the peninsula as 'nice on a map, but unusable for ships due to its shallow coral reefs', the 'weather as murderous', and 'the cemetery as equally frequented as the local pub, but more neglected with its strong odour of decay' (Kotze 1905, 2–4). This is how the site must have looked at the moment when Finschhafen's first *Landeshauptmann* (land governor) Georg Freiherr von Schleinitz – he had just arrived in June 1886 but lost his wife and staff through malaria – hastily left the settlement already in March 1888 and was replaced by Reinhold Kraetke (1888–1889) before Friedrich Rose ordered to abandon the first capital. Already in Deutsch-Neuguinea from 1901 (published by Ernst Tappenbeck as the first booklet of the influential *Süsserotts Kolonialbibliothek* about all German colonies) Finschhafen was only a sad episode in German colonial history in the South Pacific: all the nice expectations turned out disappointing: 'the many attracted settlers from Australia left or never came, [as] established laws and regulations were too restrictive. The city maps are carefully preserved so that no profane critic's eye can see them anymore; in Finschhafen and Hatzfeldhafen, wild boar and cassowaries promenade through the now lush forest in place of merchants and industrialists and pay little attention to Friedrich-Street and Wilhelm-Street or whatever the streets, some of which have already been given names, were otherwise called' (Tappenbeck 1901, 31). Ernst von Hesse-Wartegg's important travel account *Samoa, Bismarck-Archipel und Neuguinea* of 1902 also referred to 'infamous Finschhafen' as an abandoned site where only sad ruins survived as a metaphor for the first episode of Germany colonial trial and error game over Deutsch-Neuguinea:

Finschhafen, sad memory ! After death had raged for six years among the numerous white people, including many women and children, the station had to be abandoned because there was no one left alive to continue it! Today,

nine years later, there is not even a ruined house left of Finschhafen. The tropical jungle has once again taken possession of the sad site; the cemetery is so overgrown that it is barely recognizable, and only the cemented floor of a long-disappeared house remains, because it offered no nourishment to the roots. (Hesse-Wartegg 1902, 72)

### Stephansort (1891–1892): ‘Nothing more than a large plantation’

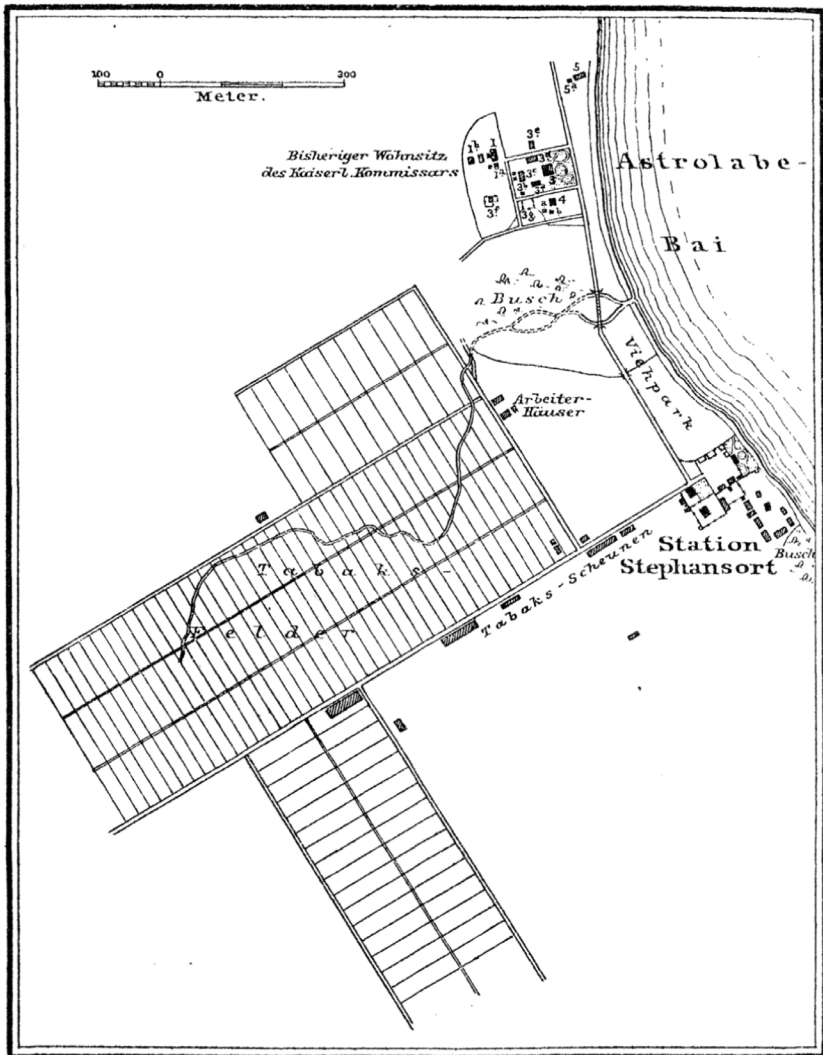
The last Europeans (except the Neudettelsauer Mission staying in close by Sattelberg) left Finschhafen in mid-March 1891 for Stephansort, which became the second, but even more short-lived capital of Deutsch-Neuguinea. In the meanwhile, the second settlement of nearby Hatzfeldhafen (founded in 1885, including the Steyler mission) had also been abandoned due to brutal local resistance in relation to forced migrant worker policies for company plantations. In Stephansort, an important harbour of commerce in the Astrolabe Bay up north of the coastline, became the seat of the Neu Guinea Compagnie’s subsidiary Astrolabe Compagnie. Its ‘purpose was to develop tobacco plantation on large scale’<sup>12</sup>.

How small was the interval between Stephansort and the second and Friedrich Wilhelms-Hafen, as the third ‘capital’, is best exemplified in the 1892 issues of the *Nachrichten* where the descriptions and the maps of Stephansort (1891–1892) and Friedrich Wilhelms-Hafen stood almost side by side. For Stephansort, the article provided a rare plan of the site in the form of a massively geometrised cultured space ‘for up to 60 tobacco fields with a connecting path [*Pfanzweg*]’, an intermediate section of the ‘four houses for the Chinese workers, two for Javanese workers, one for Singhalese workers (altogether 1085 Chinese, 757 Javanese and others from Singapore and Sumatra)’, and only a small agglomeration of more solid structures along the coastline for the administrative headquarter, houses for the administrative staff and the supervisor, a hospital for Europeans, and an isolated dysentery hospital each for Europeans and workers (Fig. 7.3a).<sup>13</sup>

This appearance of a plantation landscape rather than a capital building site was also reconfirmed in Hesse-Wartegg’s travel account:

One would be wrong, however, to expect a settlement here along German or even German colonial lines, such as a friendly little town with a market square, on which the town hall and post office stand, and with streets leading to it, where shoemakers and tailors have set up their workshops and with houses

Lageplan der Anlagen in Stephansort.



1. Gefängniß. 1a. Haus für den Polizeiunteroffizier. 1b. Gefängniß für Chinesen und Javanen. — 3. K. Kommissariat. 3a. Nebenhaus. 3b. Badehaus. 3c. Geflügelställe. 3d. Küche. 3e. Haus für die Diener. 3f. Schweinestall. 3g. Gemüsegarten. — 4. Haus für Beamte. 4a. Badehaus. 4b. Küche. — 5. Reservehaus (z. B. der Mission überlassen). 5a. Küche.

Fig. 7.3a: Plan of Stephansort (*Nachrichten* 8 (1892), 34)

or shops. There is nothing of this to be seen in Stephansort, indeed I was still looking for it when I arrived there on the ox train and was already in the centre of the town. ... There are one or two houses in each of the miles of streets, and you don't see any inhabitants in the streets at all, as they are scattered around the plantations working during the day. The whole of Stephansort is really nothing more than a large plantation, and the only urban facility is the ox-train [*Ochsenbahn*], a kind of tramway that runs through the wide, lonely, grass-covered streets. (Hesse-Wartegg 1902, 62–63)

Besides this curious technical feature of German New Guinea's first train line (Fig. 7.3b), also the built structures transcended the particular character of plantation rather than an official colonial capital architecture. No other personal account published a larger amount of the built structures of Stephansort – altogether 46 full-page photographs, 'mainly by the author' (as the sub-title has it) than *Unter Papuas. Beobachtungen und Studien über Land und Leute, Thier- und Pflanzenwelt in Kaiser-Wilhelmsland* by the medical doctor and local advisor Bernhard Hagen from 1899. Interestingly, Hagen's first photographs of the town pictured the hybrid 'pharmacy of



**Fig. 7.3b–e:** Features from Stephansort: (b) 'ox-train', (c) 'pharmacy', (d) 'administrative headquarter building of the Astrolabe-Compagnie' and (e) 'idyllic village of Bogadjim' (Hesse-Wartegg 1902, 61; Hagen 1899, pls. 6, 17, 37)

Stephansort' with its palm-leaves clad addition to a simple wooden shack (Fig. 3c), while later in the book, the massive 'Administrative headquarter building of the Astrolabe-Compagnie' (Fig. 3d) presented the best-possible building standard on the spot with a massive palm-leaf roof above an elevated veranda. Arguably as buildings of reference, comparison, or even mediation between the colonial manifestations and the local buildings cultures, materials, and forms, Hagen published a photograph of 'Dorfidyll aus Bogadjim' with a row of open and narrow houses of the indigenous population (Fig. 3e). Whether these colonial solutions were a result of the scarcity of Western building material and lack of expertise of artistic elaboration or a 'going-native strategy towards climatic adaptation' (or all together combined), was not a topic for the author.

#### Friedrich-Wilhelms-Hafen (1892–1899) and the Colonial Exhibition in Berlin 1896

In the short entry 'Stationen im Schutzgebiet', the *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel* of 1892 introduced Friedrich-Wilhelm-Hafen. Officially declared the new (third) capital of Deutsch-Neuguinea, the site was, contrary to Stephansort as a plantation station, newly created as a seat of the *Landesverwaltung*, even if the Neu Guinea Compagnie kept the legal representation.<sup>14</sup> Now planned on the Schering peninsula and divided into the section of the central harbour with the landing jetty, commercial and administrative structures (stores, storage, hotel, habitations), while the *Stationsleiter*, the *Zentralverwaltung* of the Neu Guinea Compagnie, the villa of the state representative and, finally the separate saw mill (relocated from Finschhafen), were loosely grouped around it (Fig. 7.4a). Again, a technical highlight was the 'Feldeisenbahn of 500ms length', together with a 'sweet water source pipeline'<sup>15</sup>. The new Landeshauptmann Schmiele arrived in January 1893 and commissioned additional buildings, but, as the *Nachrichten* reported already in 1893, new cases of 'sickness of the few white craftsmen and difficulties for the acquisition of building materials slowed down the process'.<sup>16</sup>

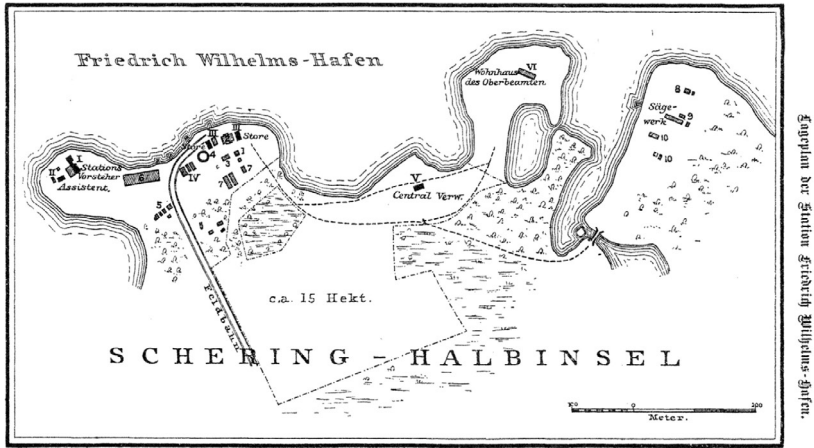
Various individual travel reports, comments, and illustrations again conveyed a prosperous and tranquil setting. The busy jetty was pictured in Alexander Pflüger's *Smaragdinseln der Südsee. Reiseindrücke und Plaudereien* of 1901 (Pflüger 1901, 203) and in Albert Daiber's *Eine Australien- und Südseefahrt* of 1902 (Daiber 1902, 278–279) while an almost romantic photograph of the new 'hospital for Europeans [Europäerkrankenhaus]'

in Carl Leidecker's revisionist memories *Im Lande des Paradiesvogels* of 1916 (Fig. 7.4b) was accompanied with an almost poem-like appraisal of 'peaceful Friedrich-Wilhelmshafen' in co-habitation with the indigenous population:

Friedrich-Wilhelmshafen in the peace of the dawning morning. On Beliao, Rargetta and the small cutter island, the slender palm trees reached up into the pure azure and flirted with their image, which laughed at them from the shining mirror of the sea. A flock of white cockatoos screeched along the edge of the jungle, whose giant trees overshadowed the western edge of the bay. Delicate smoke curled up from the grey papua huts, a grass-green parrot fluttered up, and over between Siar and Rargetta, a slender canoe with a large, square mat sail moved lazily across the water. The quiet peace of the pure nature of God. (Leidecker 1916, 101)

Parallel to these positive comments about the overall setting, the architectural debate about the ways and means of useful, functional, and physically adequate architecture continued also with a view on Friedrich-Wilhelmshafen. A good example here is Ernst Tappenbeck's small review series about 'Die Stationen in Kaiser-Wilhelmsland' in the *Deutsche Kolonialzeitung* of 1894. After praising the useful harbour and criticising the 'short-sighted choice' of Friedrich-Wilhelmshafen with its – again – 'dubious reputation of bad health conditions', Tappenbeck added an interesting section about the applied colonial architecture on the spot. After his critique about the imported prefabricated 'Hamburger Wohnhäuser', which were badly adapted with higher pylons but too narrow verandas, he weighed up the options between corrugated sheet or palm tree roof covering:

One often hears cries about corrugated iron roofs, but this is only due to the fact that the shortcomings are not remedied by a false ceiling [*Zwischendecke*] in wood or as suspended canvas. The recently more popular *Altap* [palm] roofs, which have found their way through Sumatra tobacco plantations on Sumatra, offer a pleasant temperature even without a false ceiling, but must be inferior in durability in buildings that are built for a number of years, and in addition, the water tanks, which are not missing in any house to catch every drop of rain that falls on it, show the advantages of the corrugated iron roof, which are of particular value in Friedrich-Wilhelmshafen, as fresh water sources can only be found further away.



I. Stationsvorsteher-Haus. — II. Assistenten-Haus. — III. u. IV. Stores. — V. Centralverwaltung. — VI. Wohnhaus des Oberbeamten. — 1. Wohnhaus. — 2. Lagerhaus. — 3. Assistentenhaus. — 4. Kohlenlager, an dessen Stelle ein großes Lagerhaus erbaut wird. — 5. Platz des im Bau begriffenen Hauses für Fremde. — 6. Lagerstuppen. — 7. Wohnhäuser. — 8. Wohnhaus des Leiters der Reparaturwerkstätte. — 9. Reparaturwerkstätte mit Sägewerk. — 10. Wohnhaus für Beamte.



Fig. 7.4a-b: (a) Plan of 'Friedrich-Wilhelms-Hafen'; (b) 'European Hospital and the Hansemann Mountain behind' (*Nachrichten* 8 (1992), 23; Leidecker 1916, 100–101)

Then Tappenbeck explored the recent import of cardboard roofing [*Dachpappe*], but ridiculed the poor results used in the then nicknamed 'Hotel of leaky cardboard [*Hotel zur undichten Pappe*]' (Tappenbeck 1894, 66).

What was introduced here as a discussion about adequate buildings cultures in the colonial tropics between local and imported construction materials, forms, and techniques found its equivalence in the inverted



**Fig. 7.4c:** 'Exhibition of the Astrolabe-Compagnie', *Colonial Exhibition of Berlin 1896* (Meinecke 1897, 57)

German colonial debate about the protection of indigenous building traditions against the very threat of imported colonial architecture.<sup>17</sup> During these debates about the dos and don'ts of colonial and/or indigenous architecture in German New Guinea, a test version of both was on ephemeral display in the *Deutsche Kolonialausstellung* in Berlin of 1896 (Meinecke 1897): in the *Deutsche Kolonialzeitung*, Otto Finsch, ethnographer, discoverer, and name giver of the first capital of Finschhafen, explained his organised 'full-scale replicas of various indigenous houses built with their authentic, natural roof covering of the Atap palm leaves' from Kaiser-Wilhelmsland (Finsch 1896, 204), while the *Neu-Guinea Compagnie* explained its own architectural presence at the 1896 Colonial Exhibition in their *Nachrichten* in the same year: next to the above-mentioned 'picturesque New Guinea village called Tarawai' as a hybrid collage of indigenous architectural features from Finschhafen, Berlinhafen, Friedrich-Wilhelmshafen, and the Gazelle Peninsula (see below), the *Kolonialhalle* featured, in its interior, the colonial achievements through a 1:10-scaled model of the 'Feldbahn' at Friedrich-Wilhelmshafen and instructive 1:20-scaled models and pictures of tobacco plantation architecture of the Astrolabe Compagnie in Stephansort (Fig. 7.4c).

Irony of the moment: while the latter colonial models were authenticated through 'Atap roofing like in the colonies', the hired indigenous stage actors for the displayed full-scaled open-air houses and boats of the New Guinea Village were forced to sleep in the neighbouring flat-roofed *tembe* house village from German East Africa, with their 'roof cardboard cladding as [supposed] protection against the sun glow of the summery dog days' over Berlin.<sup>18</sup>

As unhealthy the temporary shelters for the indigenous inhabitants may have been during the *Berlin Colonial Exhibition* of 1896, the colonial structures in German New Guinea did not prove much better in their protection against the tropical requirements. In his travel account of 1902 Hesse-Wartegg remembered his stay: 'While the harbour facilities [were] excellent and justified the most beautiful expectations, the biggest survivor of Friedrich-Wilhelmshafen [was], of course, the fever. Every European who arrived here was seized by malaria, and the mortality rate among whites and people of colour was downright frightening' (Hesse-Wartegg 1902, 49). This dramatic downward spiral brought the end of the reign of the Neuguinea Compagnie in April 1899, and its final replacement through the direct administration through the German Reich on the spot.

### 3. The capitals under the administration through the Deutsche Reich (1899–1914)

The newly installed governor Rudolf von Benningsen (he came from German East Africa) was busy cleaning up the messy situation in Deutsch-Neuguinea and sorting out the additional challenges with the new possessions of Micronesian islands. The first action was the move of the government from the unhealthy coast of Kaiser-Wilhelmsland to the Bismarck-Archipel and the installation of the new (fourth) capital of Herbertshöhe at the Blanche Bay on Neupommern. After two years, he was judged unsuitable by the Kolonialabteilung in Berlin and replaced by Albert Hahl. Previously *Kaiserlicher Richter* from 1896 onwards and since 1899 vice-governor for the Micronesian possessions on the island of Ponape, Hahl officially became governor of Deutsch-Neuguinea in 1902, introduced a new governmental system with indigenous administrative officers, established new stations all over the archipelago (Käwieng 1900; Namatanai 1904; Kieta 1905; Eitapé 1906; Morobe 1909–1910; Manus 1911; Angorum 1913) and was a highly engaged capital planner with an ambitious architectural programme.

## Herberthöhe (1899–1910): Half-mundane and picturesque, but impractical

Herberthöhe was a new settlement with large plantations at the external Blanche Bay to the north of the Gazellenhalbinsel at the place of an indigenous village called Kokopo. From 1890 to 1899 it was already seat of the administration for the Bismarck-Archipel, before it became the official new capital. As the main obstacle from the beginning, the overall territory was already in the firm hands of a whole series of plantation companies (and disputatious settlers), which were already indicated on a site map being published in the catalogue of the above-mentioned 1896 Colonial Exhibition (Fig. 7.5a). Maximilian Krieger, Hahl's predecessor as Imperial Lawyer and author of the voluminous *Neu-Guinea* (Krieger 1899a), published a short overview 'Über die Handelsunternehmungen in unseren Südseekolonien' in the *Deutsche Kolonialzeitung* in 1899, and listed 'cotton and coconut plantations after [German] Samoan pattern ... eleven alone in and around Herberthöhe'<sup>19</sup>.

From a town- or better cultured-space-planning point of view comparable to Stephansort (compare Fig. 7.3a), also German New Guinea's fourth capital was 'not really an urban centre' (Hesse-Wartegg 1902, 99), but only a remaining infilled space to the strict infrastructural logic to the cultural landscape *Hinterland* with connection paths and a 'Feldbahn' into the plantations with their own segregated clusters of workers' houses. Zooming into the village structure itself with a map from the *Mitteilungen aus den deutschen Schutzgebieten* of 1908 (Danckelmann 1908), one could see Herberthöhe with its small centre around the landing jetty, inconveniently squeezed into Queen Emma's luxurious Gunantambu property with its own office building and jetty, and the indigenous village of Kokopo to the west, and, to the east, the large boat harbour of the Neu-Guinea-Kompagnie and the property of the Catholic *Mission vom Heiligen Herzen Jesu* of V[W]unapope with its impressive (colonial-time and later newly built) church. When it came to the built structures themselves, the impressive leap forward in architectural and even stylistic quality of the buildings was also noted in German entertaining media. In *Kolonie und Heimat – Unabhängige koloniale Wochenzeitschrift* and *Organ des Frauenbundes der Deutschen Kolonialgesellschaft* of 1907, the picture essay 'Aus unsern Südsee-Kolonien' published the well-balanced two-story 'Gouvernements-Gebäude' with its elegant verandas and stepped roofs against the hilly background. However, even more curious in its gesture and as a source of revisionist rhetoric, Wilhelm Wendland pictured himself

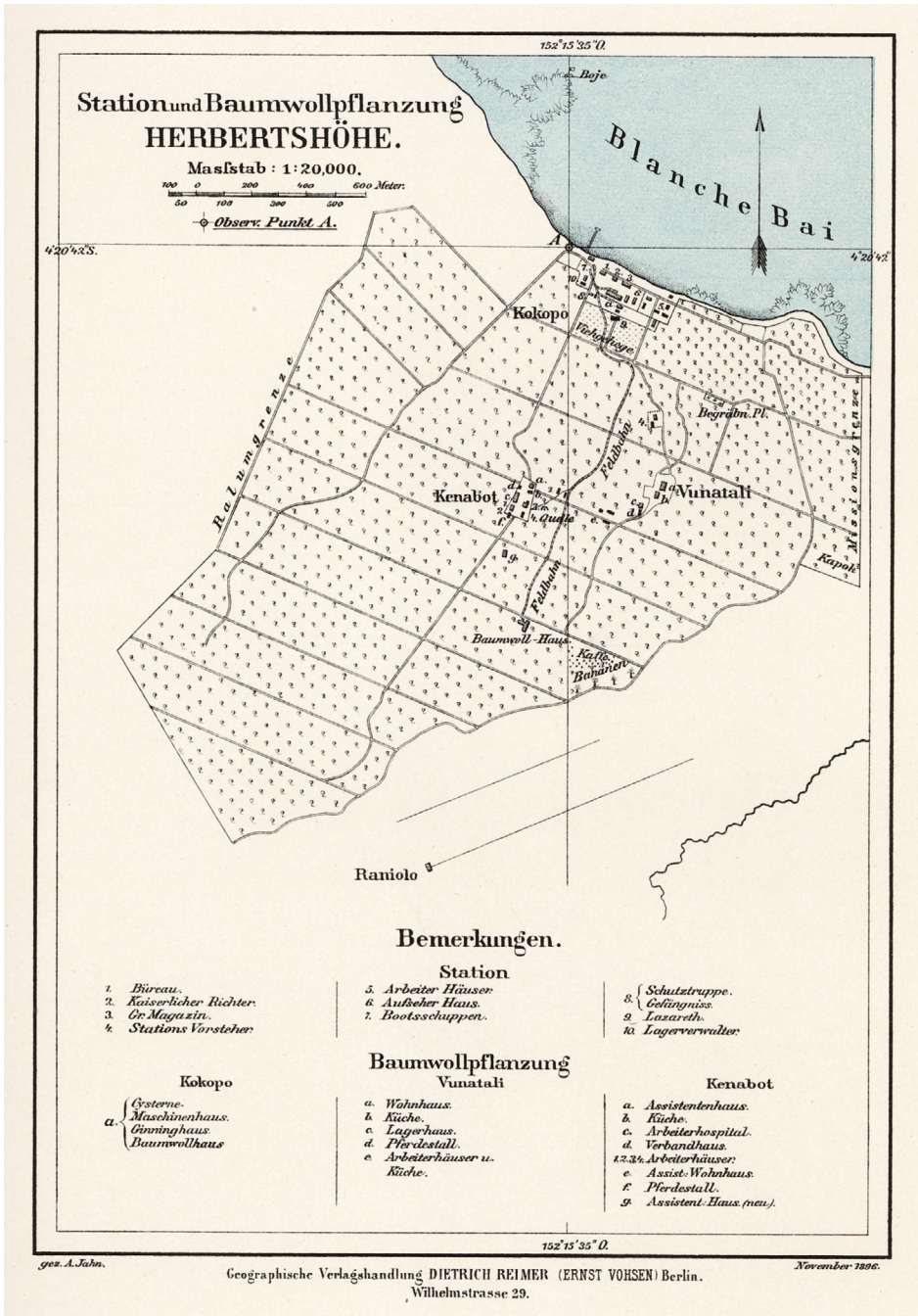


Fig. 7.5a: Plan of Herbertshöhe (Meinecke 1897, 192–193)



Dr. med. Wilhelm Wendland, Herbertshöhe 1906

**Fig. 7.5b:** ‘Doctor Wilhelm Wendland, Herbertshöhe 1906’ (Wendland 1937, 160–1)

in his biographical retrospective *Im Wunderland der Papua. Ein deutscher Kolonialarzt erlebt die Südsee* as government doctor (*Regierungsarzt*) in Herbertshöhe in 1906 (Fig. 7.5b): against the racist foreground depiction with himself in white uniform and seated in a carriage, and his standing local servant with naked upper body to hold the horse, the background is the civil servants’ houses to the left and, to the right, the picturesque Fürst Bismarck Hotel, arguably the most prominent hotel in the South Pacific at this time (Wendland 1939, 160–161; compare Weyhmann 1917, 24–25).<sup>20</sup>

At this time in 1906, governor Hahl was, as Wendland remembers in his memoirs, already busy with finding a more suitable spot for his ‘purposefully far-sighted plans’:

The colony owes much of its upswing in the following period to his insight and energy. The governor immediately tackled a number of necessary tasks. Land surveyors, road builders and technicians were hired, a government school was planned with workshops to train natives as craftsmen, a quarantine station and other facilities were to be built, residential buildings had to be constructed for the new officials; but there was no room for all this in Kokopo. All the land there was in the hands of the New Guinea Company and the Forsayth Company,

and both did not want to give up the necessary land, or only at a very high price. Relocation to Simpsonhafen ... easier land acquisition from the natives and future centre of shipping traffic in the protected area. (Wendland 1939, 162)

### Rabaul (1910–1914): Alfred Hahl's colonial *Idealstadt* and a fateful vision of global connectivity

At the end of rising media coverage about the initiated (and last) change of the capital of Deutsch-Neuguinea from Herbertshöhe to Simpsonhafen (Rabaul),<sup>21</sup> the final move was summarised in the article 'Von Herbertshöhe nach Simpsonhafen' in the *Deutsche Kolonialzeitung* in April 1910 and accompanied with a simple sketch map to explain 'the safe and protected position of Simpsonhafen in comparison to Herbertshöhe'.<sup>22</sup> Starting with a series of disadvantages of Herbertshöhe (too open, steep, and unprotected coastline against the strong monsoon, heavy swell of water against the bay, difficult landing for and discharging of boats, repeatedly destroyed landing piers), the article highlighted the proactive consequences of the Norddeutsche Lloyd to build a new jetty in the safer bay of Simpsonhafen, the following move of other companies to 'the emerging new harbour' due to cheaper land prices, and the pulling effect for the official side:

The governorate had no choice but to follow suit. The governor of this vast protectorate must be able to reach all points where his presence is necessary using the best means of transportation and must therefore necessarily sit in the centre. In Herbertshöhe it had also become too narrow for the governorate and its natural need to expand. For example, there was no space left in Herbertshöhe for undertakings such as the botanical garden, the government school, etc., so that these facilities had to be set up in Simpsonhafen from the very beginning, before the governorate and its governor had even moved there. Simpsonhafen is a sheltered harbour, very spacious and has a healthy foreshore exposed to the fresh breeze. Malaria does occur, but under the favourable conditions it can be countered and the pathogens can certainly be completely eradicated. The governorate has secured 110 hectares of land here, North German Lloyd a little more than half as much, the HERNSHEIM company about the same area, and there are still 3 square kilometres available, to which the treasury has reserved the first rights. The distance from the landing stage to the governor's house is 2700 meters. In the meantime, as has been officially reported, the governorate has been relocated. May it be granted to Dr. Hahl to work here for many more

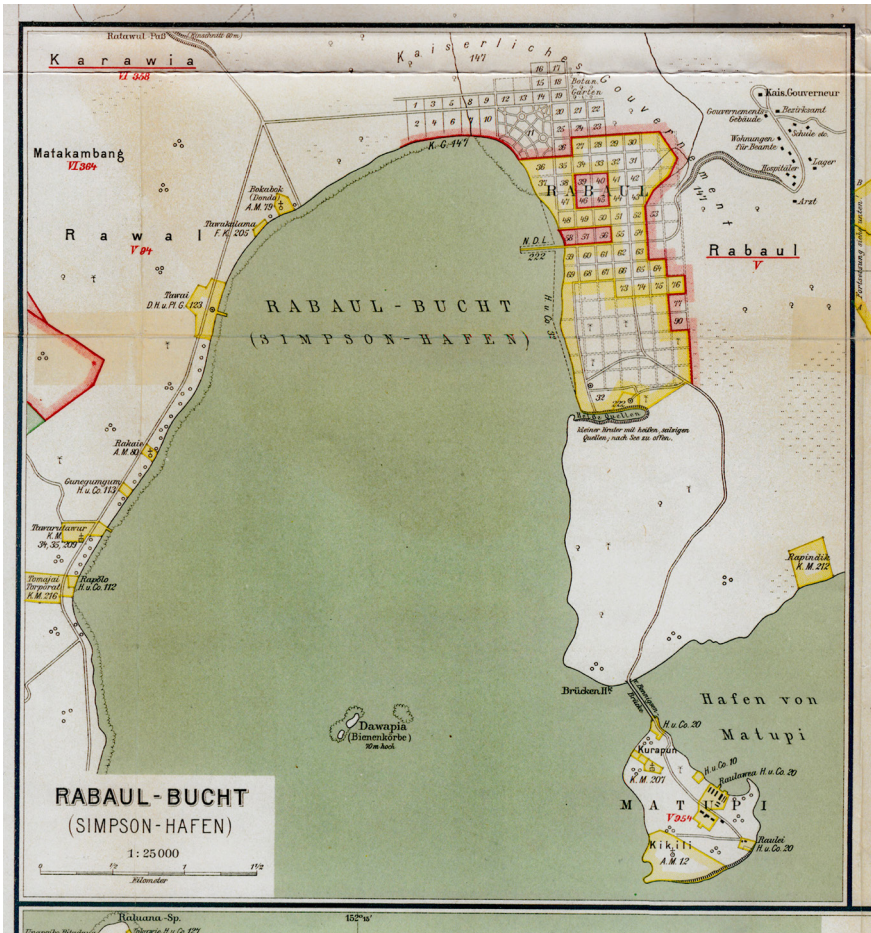
years for the benefit of the protectorate, at whose head he has been since 1902. Experts predict that pleasant surprises are in store for us with regard to New Guinea and that a return on investment in the ventures there can be expected in the shortest possible time.

The attached sketch map from the *Deutsche Kolonialzeitung* of 1910 needs to be complemented with a unique set of plans of ‘the northern part of Gazelle peninsula’, which was published in the scientific series *Mitteilungen aus den deutschen Schutzgebieten* in 1908:<sup>23</sup> Zooming in from the overall peninsula into the surroundings with Herberthöhe (see quoted plan above), the third section provided an early visionary plan of ‘Rabaul-Bucht (Simpson-Hafen)’ in 1:25,000 scale with the preliminary conceptual grid of the streets and building plots of the new capital along the western shoreline of the bay, and the adjacent government hill to the east with the indications of the various buildings (Fig. 7.6).<sup>24</sup>

Interestingly, a series of foreign travel accounts reported rather favourably about Herberthöhe and Rabaul (for example, Pullen-Burry 1909; Mackellar 1912). As an authentic, however with its release date of 1937 much belated and nostalgic primary source about this final capital planning, the much-praised Alfred Hahl himself wrote his autobiography *Gouverneursjahre in Neuguinea* and explained the early years around 1900:

Major firms were already anxious to secure suitable blocks of land in this fast-growing port. The extensive plain round the bay, picturesquely ringed by the steep peaks of the extinct volcanoes Kambiu and Balataman (Mother and North Daughter) and their connecting ridges, had to be surveyed and an appropriate town plan prepared. There was provision for a business section near the life-giving wharf; residential sections; a special quarter for the Chinese and another for the Melanesians; and as a background, enclosing and animating the scene, there were to be public parks. Surveyor [Rudolf] Schmitt [from Hesse] drafted the plan with meticulous care. A large block of land in the business quarter was allocated to the *Norddeutscher Lloyd*. All other land was made the property of the Government and made available on long-term leases subject to certain conditions. (Hahl quoted in Sack and Clark 1980, 115)

A botanical garden was conceived towards the northern edge of the city by Paul Preuss, the creator and director of the Botanical Garden in Viktoria (German Cameroon), and crop and decorative plants were tested in the following years. A government school was already planned



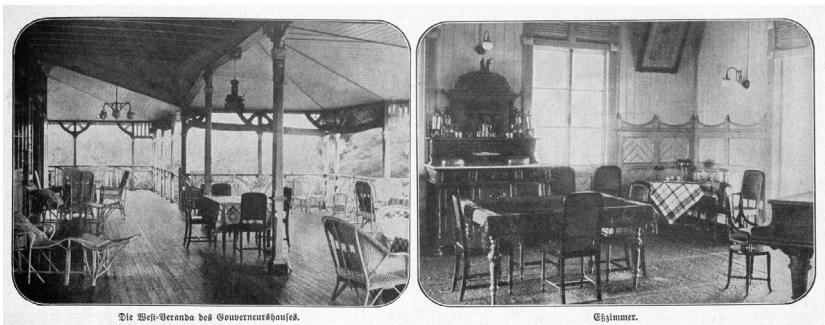
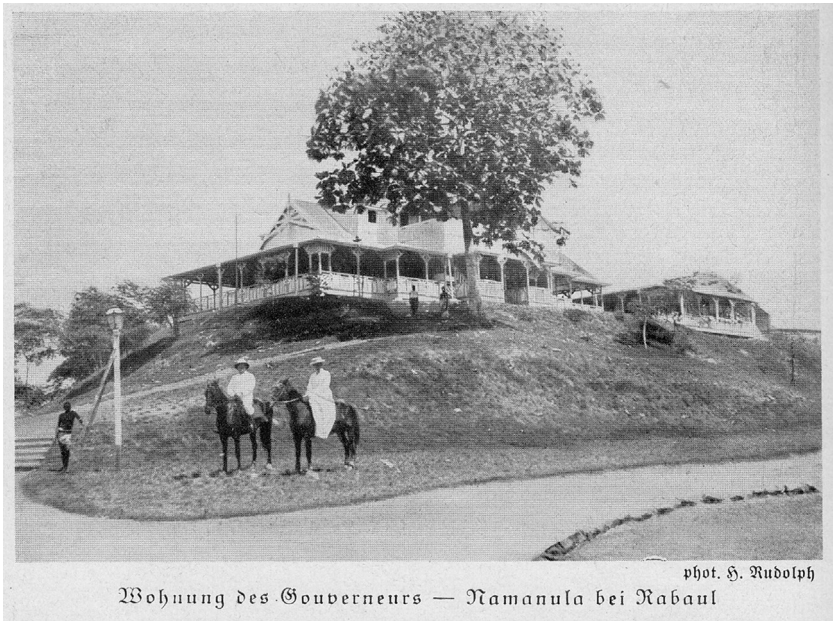
**Fig. 7.6:** ‘Rabaul-Bucht (Simpson-Hafen)’ from *Mitteilungen aus den deutschen Schutzgebieten* (Mitteilungen 1908, n.p.)

in 1906, the Bezirksamt, Bezirksgericht and Lagerverwaltung followed, and once the official move to Rabaul was decreed in Berlin in 1910, a *Europäerkrankenhaus*, *Beamtenhäuser*, two schools, a women’s hospital (funded by the women’s section of the Deutsche Kolonialgesellschaft) and a *Handwerkerschule für Eingeborene* followed on government hill. In a special insight into the German life on the spot, Hahl remembered:

Social life had retained its pleasant character both in Rabaul and in the remoter areas. Hospitality was given and received on a generous scale. The old German customs were kept up on social occasions and when festivals were celebrated.

On Christmas Eve a tree decked with candles stood on a gift-laden table in every home. A casuarina did duty for a fir tree. In early December 1911 a second daughter was born to us and named Carola Namanula. The coming of this baby at Christmas time was the occasion of particularly joyous Christmas Eve celebrations in our home. (Hahl quoted in Sack and Clark 1980, 142)

The latter comment on his daughter's second name grants a particular insight into the private (built) environment of colonial governance, as



**Fig. 7.7:** (a) 'Wohnung des Gouverneurs, Namanula bei Rabaul' (Hahl 1936, pl. 8); (b) 'West-Veranda des Gouverneurs-hauses – Esszimmer' (*Kolonie und Heimat*, 1913–1914)

‘Namanula’ referred to Hahl’s own governor’s villa on the very hilltop of Rabaul – a site that he himself had pictured in his 1936 booklet *Deutsch-Neuguinea* to defend the ‘Germany’s successes in the field of colonial civilization’ (Hahl 1936, 100) against the Allies’ ‘Schuldfrage’ (as Hahl’s colleague Heinrich Schnee named it in his own pamphlet of 1924) of the German Empire’s failure to colonise. The published picture showed Hahl with his wife in colonial white attire sitting on their horses (again, with a dark-skinned indigenous servant with naked upper body; compare Wendland 1939 above) with the elegant villa on the hill behind (Fig. 7.7a). An even more intimate and rare perspective of ‘female protected space’ was published by Hahl’s wife herself (no personal name was mentioned) in 1913–1914, and therefore just a few months before the end of the German colonial project: under the title ‘Ein deutsche Gouverneursheim’ in the women’s journal *Kolonie und Heimat*, and with pictures from the entire family, the garden, the ‘Arbeits- und Gesellschaftszimmer’, and from the inner dining room and the shaded veranda towards the outside colonial world (Fig. 7.7b), she stylised the particular feminine part of bringing ‘the German way and cosiness into the tropics’ (n.a. 1913–1914, 3; compare Rigotti in Falser 2023a) – an endeavour that had, as we have seen with the five capital changes from Finschhafen to Rabaul, de facto caused so many urbanist-architectural failures and human victims on both the indigenous and German sides.

#### 4. Epilogue: The end of *Deutsch-Neuguinea* and the Australian sell of its architectural properties

Arguably no other published primary source summarised the rapid rise and fall of Rabaul in a more personal, however biased account than the above-mentioned governmental doctor Wilhelm Wendland in his revisionist memoirs *Im Wunderland der Papuas. Ein deutscher Kolonialarzt erlebt die Südsee* of 1939. As we shall see in this epilogue, his formulated hopes of German Rabaul’s relevance for global trade and communication were – ironically – one of the reasons for the Germans in Rabaul to accept the military capture by the Australians in 1914. And architecture played a major role in this connection.

Comparable to Hahl’s romantic memories, also Wendland’s text is based on the classical colonial civilisational trope for Germany’s cultivation of almost empty land, especially for his last chapter ‘Rabaul und seine

zukünftige Bedeutung im Weltverkehr' ('Rabaul and its future relevance for global transport'):

Where not so long ago, on the shores of the quiet bay of Simpson Harbour, bush and jungle had stood in lonely desolation, only occasionally enlivened by a few Kanaka women who met on the stand to exchange their products, a small, pretty town with lively traffic had blossomed in the last ten years before the World War: Rabaul, the capital of the protectorate, with the seat of the governor. (Wendland 1939, 206)

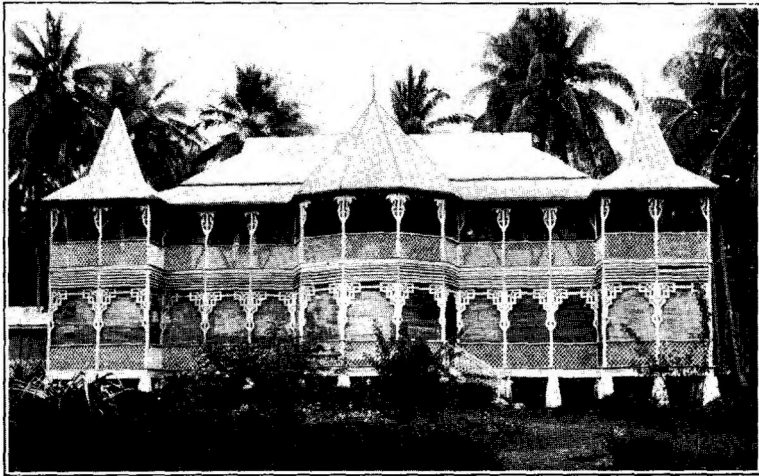
He then continued to sum up the urbanist-architectural achievements, including landing jetty, post, custom and district offices, firms, stores, a bank, and a hotel, even an 'ice factory and the colony's first cinema, the German Club with fresh beer', the segregated settlements for the Chinese, Malays, and Japanese, the hospitals, and the botanical garden, and the above-mentioned Namanula government hill. Wendland's infrastructural vision for Rabaul's connectivity to global traffic, trade, and communication is interesting to quote here, as 'firm with steamers and sailing ships bring the products of plantations and factories to Europe', and 'the harbours of the German protectorate, primarily Rabaul and Madang, were located on the world route between East Asia and Australia ... on the route via Suez or Panama equidistant from Hamburg, so that the later world route via Panama, Samoa, *Neupommern* and the Dutch Indies were certainly within the realm of possibility' (Wendland 1939, 209). Additionally, a dense network of new roads (the first automobile arrived 1911) and a telephone line connected the peninsula, as telegraph stations on Jap (1910), Nauru (1912), and in close by Bitapaka (1914) guaranteed global communication. As a consequence, Wendland followed, 'culture penetrated more and more into the *Schutzgebiet* ..., the cosy German home' was established in the South Sea, as 'more and more women arrived, medical personnel, schools and missions were installed', and 'the feared climate of malaria-prone New Guinea had lost its horror'. An 'unbiased comparison with the cultural values of British and Dutch New Guinea was favourable' for Deutsch-Neuguinea: '32264 ha of land were in cultivation and 1130 white people had settles in Kaiser-Wilhelmsland and Bismarck-Archipel' ... and he concluded: 'Despite initial failures, German industriousness and entrepreneurial spirit had finally won the day in this hard-to-reach country. Now the time was not far off to reap the fruits of this labour. Then came the war!' (Wendland 1939, 211–215).

In his next chapter, 'Der Krieg in der Kolonie', Wendland then narrated the global chain reaction of the First World War scenario over Rabaul through metaphorical images of architecture, urban planning, and infrastructure: when the message of the assassination of the Austrian heir to the throne in Sarajevo (and the joint German–Austrian declaration of war) reached Rabaul by mail steamer, the 45m-high telegraph station in Bitapaka had just been finished. However, with Great Britain and Japan entering the First World War, Rabaul was not prepared for self-defence and the government was moved to nearby Toma village on 6 August and the telegraph was hastily dismantled by employees of the Telefunken enterprise when the allied Australian navy landed in Rabaul harbour on 11 September 1914 and took Bitapaka, former Friedrich-Wilhelmshöhe and Kokopo. Now, with neither world news, telegraph communication to the German possessions of Samoa, Nauru, or Jap nor the badly missed East Asia Squadron from the German navy base town Tsingtau (today: Qingdao) in China (it never came for help), the few German citizens experienced the last moments of their country's colonial endeavour in Rabaul's prestigious German Club – ironically just on the wooden veranda, the architectural pars pro toto feature of colonial power from the very first beginning (compare Finschhafen Fig.2b, Stephansort Fig. 3d, Friedrich-Wilhelmshafen Fig. 4b, Herbetshöhe Fig. 5b):

Most of the Germans in Rabaul ... gathered at the Club in Rabaul and were eagerly awaiting what was to come. It was 7 o'clock in the evening when some English officers came up the stairs to the veranda where we were sitting. They politely asked for permission to sit down. To refuse them this request did not seem expedient, and would probably have been useless. Our conversations faltered and the officers also remained silent. A thousand questions burned in our hearts. We had been cut off from the world for weeks without news. Our fate depended on the military events in Europe. Perhaps we would find out something now. We asked about the European theatre of war. 'I can tell you exactly', replied one of the officers, 'the French are on the Rhine, the Russians in front of Küstrin.' A sultry pause ensued. 'I can't believe that, it's impossible,' said our spokesman, and everyone felt that there was no point in asking any more questions. (Wendland 1939, 224)

As Wendland remembered in his last chapter, 'New Guinea under Australian occupation', the British flag was hoisted on Sunday, 13 September 1914 in the centre of Rabaul, Germany, capitulated on the 17th in Toma under

KOKOPO HOTEL, GUEST HOUSE—FRONT VIEW.



4. KOKOPO HOTEL.

Description of Property.

Situated at Kokopo on the main Rabaul-Kokopo-road, 19 miles from

Fig. 7.8: Sell catalogue of German properties, 1925 (Commonwealth of Australia 1925)

governor Eduard Haber. However, as regards the German architectural building stock, this was not the end of the story. In the course of Australia's occupation of whole German New Guinea in 1914, the Royal Commission on Late German New Guinea was founded in 1919, the League of Nations granted New Guinea to Australia as mandated territory in 1920, and the actions, or in this context better 'transactions' of formerly German colonial architecture, entered its final stage: 'the sale of expropriated properties in the territories of New Guinea and Papua' started (Commonwealth of Australia 1925) and sites like the famous 'Kokopo Hotel' went under the hammer (Fig. 7.8, compare the same building in Fig. 5b).

## Notes

- <sup>1</sup> Until 1914, the 'Deutsche Besitzungen im Stillen Ozean' (see Fig. 7.1) additionally comprised of the Marianas with Saipan/Garapan, the 'West- und Ost-Karolinen' with Palau and Jap in the west and Ponape in the east (today Micronesia), the Marshall-Islands with Jabor and Nauru, and the 'Salomon-Inseln' with Bougainville.
- <sup>2</sup> While the *Südsee* impact was also conceptualised within the larger global impact of German colonialism including Africa and Tsingtau/China (for example, Moses 1977; Knoll and Gann 1987; Knoll and Hiery 2010), early overview studies about the German colonial rule over New Guinea started in the 1960s (Souter 1963; Firth 1972; Hempenstall 1978; Firth 1983; Sack 1985; Latukefu 1988) and continue into the 1990s (Hiery 1995a; Hiery and MacKenzie 1997). Critical investigations into the colonial-time publications about the region with references to reports and articles in German newspapers list few entries about architectural information (Sack and Clark 1979; Sack 1980; Scheps and Liedtke 1992), and the translation of Albert Hahl's 'Gouverneur in New Guinea' is useful here (Sack and Clark 1980, compare Biskup 1968/1969, Sack 1990; for the moment of international, primarily British-Australian, conflict of the First World War over the region of German New Guinea and the impact over the last German capital of Rabaul, see Hiery 1995b, 45–115). More recently, the colonial period over Oceania (Mückler 2012) and feminine voices in a primarily masculine colonial *Südsee* world were analysed (Loosen 2014; compare Rigotti 2023). The most useful overviews into the German colonial period are without a doubt written by the German historian Hermann Hiery. In his useful overview of the 'German administration of Neu Guinea 1884–1914' in *Die deutsche Südsee 1884–1914. Ein Handbuch*, Hiery already hinted at the 'unrealistic and unenforceable planning from far-away Berlin and finally catastrophic implementation on the spot' (Hiery 2001, 276–311, here 284; more recently with few more architectural data in Hiery 2020, 34–36).
- <sup>3</sup> The research project *German Colonial Architecture as a Global Project around 1900 and as a Transcultural Heritage Today* was started in 2020, directed by Michael Falser and funded by the German Research Foundation (DFG); see further information in the introduction of this edited volume.
- <sup>4</sup> For the exhibition details, see <https://www.zikg.eu/aktuelles/veranstaltungen/2023/ausstellung-deutsch-koloniale-baukulturen> (accessed 16 June 2024).
- <sup>5</sup> Much had been recently digitised through the *Digitale Sammlung Deutscher Kolonialismus* at the Goethe Universität Frankfurt/Main in collaboration with the Bremen University (<https://sammlung.gen.uni-frankfurt.de/kolonialbibliothek/nav/index/all>, accessed 4 June 2024).
- <sup>6</sup> The most relevant newspapers are the *Deutsche Kolonialzeitung*, *Deutsches Kolonialblatt* or *Kolonie und Heimat* while official and systematic reports about the German colonial building activities can be filtered from the *Nachrichten über Kaiser Wilhelms-Land und den Bismarck-Archipel* of the *Neu Guinea Campagne zu Berlin* from 1886 to 1898, and from 1896/1897 to 1913 from the *Die deutschen Schutzgebiete in Afrika und der Südsee. Amtliche Jahresberichte*, edited by the *Reichs-Kolonialamt*, with the sections *Allgemeine Jahresberichte aus Deutsch-Neuguinea, von den Salomons-, Karolinen-, Palau- und Marianen-Inseln* (for the English translations compare Sack and Clark 1979). Most relevant encyclopaedic entries comprise the detailed summary 'Die Schutzgebiet in der Südsee' in the two-volume compendium *Das deutsche Kolonialreich*, edited by Hans Meyer in 1910 (Sievers 1910) and the short paragraphs in the belated *Deutsches Kolonial-Lexikon* of 1920, edited by Heinrich Schnee (himself involved in the fate of the *German Südsee*, see below), about Finschhafen (Schnee 1920, I, 626), Stephansort (Schnee 1920, III, 405–406), Friedrich-Wilhelmshafen (Schnee 1920, I, 666), Herberthöhe (Schnee 1920, II, 57), and Rabaul (Schnee 1920, III, 123). Few instructions to *Neu-Guinea* exist (Tappenbeck 1901) and the most relevant coffee-table picture book was *Eine Reise durch die deutschen Kolonien*, vol. V on 'Südsee', edited by the illustrated journal 'Kolonie und Heimat' (1911). Ethnographic studies about the local building cultures in the region (for example, by Richard Parkinson's *Dreißig Jahre in der Südsee* from 1907) rarely touch upon colonial architecture. While individual travel accounts are numerous (for example, Pflüger 1901; Daiber 1902; Hesse-Wartegg 1902; Wegener 1903; Kotze 1905; Vogel-Hamburg 1911) and late-colonial treaties are useful (Grapow 1916; Leidecker 1916; Weyhmann 1917), personal administrative accounts range from Bernhard

Hagen's *Unter den Papuas* (Hagen 1899) all the way to retrospective accounts from colonial governors (the most important one is *Gouverneursjahre in Neuguinea* by Albert Hahl (Hahl 1936/1937; compare Sack and Clark 1980) and revisionist memories, such as Wilhelm Wendland's *Im Wunderland der Papuas* (Wendland 1939).

- 7 The Netherlands Indies Government laid claim to West New Guinea already in 1848 in the name of the Sultan of Tidore, and the British protectorate over British New Guinea was proclaimed at Port Moresby in 1884, officially installed 1888, then finally transferred to the new Commonwealth of Australia by 1906 in the Papua Act. In 1908 John Murray (arguably the counterpart of Albert Hahl on the German side, see below) was appointed Lieutenant-Governor of Papua, and in 1910 the Dutch–German boundary commission travelled 600 miles up the Sepik to set the frontier line towards the west. As the (post)colonial German–Australian entanglements over Australia had been discussed elsewhere (see Eckstein and Hurley 2020) the field of architecture, settler migration, labour force import, transport logistics for buildings materials for and travel routes to German New Guinea via Australia was not yet on the radar. The latter ones concerned not only German traders and politicians and Australian settlers, but also Australian visitors who left important published notes about the architectural status Germany's capital building work, such as Pullen-Burry's *In a German Colony, or Four Weeks in New Britain* from 1909 (Pullen-Burry 1909) or Mackellar's *Scented Isles and Coral Gardens* of 1912 (Mackellar 1912).
- 8 *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel* 1 (1885), 1, 2–3, compare Neu Guinea Compagnie 1885, § 11. As the *Instruction für den Landeshauptmann* of 1885 had it, the task for 'opening up [Aufschließung] and cultivation [Nutzbarmachung]' of the *Schutzgebiet* was added with the 'exploration of unknown territory through scientific expeditions, and Christian missionary activities' (Neu Guinea Compagnie 1885, § 11).
- 9 The heads of the administration of DNG were as follows (Hiery 2001, 281): Gustav von Oertzen on Matupi, 1884–1887; in Finschhafen: Georg Freiherr von Schleinitz (1886–1888), Reinhold Kraetke (1888–1889), Friedrich Rose (1889–1891); in Stephansort: Friedrich Rose (1891–1892); in Friedrich-Wilhelmshafen: Georg Schmiele (1892–1895), Hugo Rüdiger (1895–1896), Curt von Hagen (1896–1897), Albert Hahl (Stefansort 1897), Hugo Skopnik (1897–1899); in Herberthöhe: Rudolf von Benningsen (1899–1902) and Albert Hahl (1901–1902); in Rabaul: Albert Hahl (1902–1914/1915), Eduard Haber (1914–1915, then executive governor in Berlin 1915–1920).
- 10 'Aus Finschhafen', *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel*, 2 (1886) 2, 80.
- 11 'Über die Stationen in Kaiser-Wilhelms-Land', *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel*, 3 (1886) 3, 80–83.
- 12 'Astrolabe-Compagnie', *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel*, 7 (1891), 18–21. As a plantation company its major conceptual impetus stood in a direct relation to the system of German colonial 'Plantagenwirtschaft' on a global scale, as investigated by Richard Hindorf, who, as a the pioneering agricultural scientist in the German colonies, transferred his experiences for the Deutsch-Ostafrikanische Gesellschaft in a series of short articles in the *Deutsche Kolonialzeitung* of 1890 to the 'Vorschläge für die praktische Kolonisation im Schutzgebiet der Neu Guinea-Compagnie' (Hindorf 1890).
- 13 'Astrolabe-Compagnie' and 'Stephansort', *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel*, 8 (1892) 1, 30–33, 33–39.
- 14 A report about the divided competences between the Reich and the Compagnie in: 'Koloniale Rundschau (Neu Guinea)', *Deutsche Kolonialzeitung* 5 (1892), 7, 99–100; and 'Schutzgebiet der Neu-Guinea-Compagnie', *Deutsche Kolonialzeitung* 1 (6 January 1894), 13.
- 15 'Stationen im Schutzgebiet', *Nachrichten über Kaiser-Wilhelms-Land und dem Bismarck-Archipel*, 8 (1892), 21–22.
- 16 'Stationen – Friedrich Wilhelmshafen', *Nachrichten über Kaiser Wilhelms-Land und den Bismarck-Archipel* 9 (1893), 18–21.
- 17 Compare analyses like 'Wohnungen in den Tropen' (Baltzer 1911) with guidebooks like *Der Kolonist der Tropen als Häuser-, Wege- und Brückenbauer* (Pauli 1911). Interestingly, the author Carl Pauli signed his preface with 'Herbertshöhe, Bismarckarchipel, Dezember 1903' and called himself

- 'ehem. Vermessungsbeamter und Wegebauer beim Kaiserlichen Gouvernement von Deutsch-Neu-Guinea' (Pauli 1911, preface); see Falser 2023a, 38–41, 42–45. While papers like 'Häuser und Hütten in der deutschen Südsee' (Rummel 1910) helped fostering the German knowledge about indigenous traditional architecture, the German medical doctor and leader of the famous *Hamburger Südsee-Expedition*, Augustin Krämer called 'Ban corrugated iron and pants!' in his article 'Palau als Naturschutzpark' in 1914 (Krämer 1914) and therefore reformulated a message by his wife, the ethnographer-artist Elisabeth Krämer-Bannow in her contribution about 'Heimatschutz in deutschen Kolonien' (Krämer-Bannow 1913).
- <sup>18</sup> 'Die Neu-Guinea Compagnie auf der deutschen Kolonial-Ausstellung in Berlin 1896', *Nachrichten* 12 (1896), 70–86.
- <sup>19</sup> 'Recently, eleven trading settlements have been established at Herbertshöhe, which have already yielded their first small copra harvest. Apart from the New Guinea Company, the following companies and trading firms are active in the Bismarck Archipelago: on Mioko the Deutsche Handels- und Plantagen-Gesellschaft der Südsee, on Matupi the company HERNSHEIM & CO., of Hamburg, on the Gazelle Peninsula the companies E. E. Forsayth, on the Gazelle Peninsula the companies E. E. Forsayth in Ralum and O. Mouton at Kiningunan, on the Solomon Islands the companies Mac Donald and Tindal. Forsayth owns a coconut palm and cotton plantation of 600–700 ha in Ralum, Mouton one of 400 ha. The former company also has cotton plantations of 70 ha at the trading stations it founded cotton plantations of 70 ha' (Krieger 1899, 278; compare Vogel-Hamburg 1911, 16). The most famous plantations in nearby Mioko and Ralum were owned by 'Queen Emma', the glamorous-shady businesswoman of Samoan descent and wife of the German ex-administrator Peter Kolbe.
- <sup>20</sup> About the feature of the colonial-picturesque in a comparative perspective across the various European empires, compare Falser 2023b.
- <sup>21</sup> 'Simpson-Hafen Regierungssitz', *Deutsche Kolonialzeitung* 1 (1908), 10–11 (here, even a tunnel from the northern side of Gazelle Peninsula to Rabaul was mentioned; 'Kaiserliches Bezirksamt Rabaul', *Koloniale Zeitschrift* 10 (1909), 23, 449; 'Verwaltungsänderungen in Neuguinea', *Deutsche Kolonialzeitung* 26 (1909), 48, 804; 'Herbertshöhe – der aufgegebene Gouvernementssitz von Neu-Guinea', *Kolonie und Heimat* 3 (1909–1910), 15, 2.
- <sup>22</sup> 'Von Herbertshöhe nach Simpsonhafen (mit Kartenskizze)', *Deutsche Kolonialzeitung* 15 (9 April 1910), 241–243.
- <sup>23</sup> The set of three plans 'Der nördliche Teil der Gazelle-Halbinsel' (overall map, scale 1:100000), 'Das Küstengebiet um Herbertshöhe' (1:50000), and 'Rabaul-Bucht (Simpson-Hafen)' (1:25000) was, as the legend had it, 'based on the survey of Wilhelm Wernicke u. S.M.S. Möwe, drawn by F. Bischoff, under the direction of M. Moisel' (Mitteilungen 1908, maps 2a/b).
- <sup>24</sup> Within its existence of a short decade until the surrender in 1914 to the Australians, the astonishing amount of de facto built structures can be identified in the 'Development Plan of Rabaul' in 1:5,000 scale, created in 1913 by the Survey Department of the Imperial Government of German New Guinea: The 'Behauungsplan von Rabaul 1:5000, bearbeitet vom Vermessungsamt des Kaiserlichen Gouvernements nach eigenen Aufnahmen im Juni 1913' is today digitised in the 'Images, Maps & Artefacts' collection of the Australian National Library, TROVE catalogue nla.obj-2339798325.

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PART III

**FROM INTER-COLONIAL  
ENCOUNTER TO  
POST-COLONIAL  
BUILDING PRACTICES**



## Chapter 8

# Burns Philp's Encounters across Colonial Borders

### Buildings for Export and Commerce in the South Pacific

*Paul Walker and Amanda Achmadi*

#### 1. Conceptual preliminaries

A lasting legacy of 19th-century colonialism in the Asia Pacific is the fragmented historiography of the region's colonial built environment. Boundaries established by European colonisation continue to govern the production of historical studies as these generally adopt geographical frameworks corresponding to the nation-states that emerged from particular colonial empires. Overlooked by this paradigm is the region's intricate interconnectivity in the late colonial era. The industrialisation of agricultural production and the emergence of international commercial shipping routes opened up territories while facilitating fluid movement of goods, labour, capital, and ideas. Crossing colonial boundaries, regional networks developed by commercial entities instigated intercolonial dynamics within the Asia Pacific region. They left built traces in the form of buildings for trade, travel, and export-oriented agriculture.

This paper seeks to bring into view the architectural settings of one such commercial entity and the cross-cultural encounters they entailed. It will focus on the architectural infrastructure that accompanied the inter-regional operations of the Australian firm Burns Philp, touching in particular on its engagement with large-scale agricultural production and commerce in different Asia Pacific colonies, with a focus on the South Pacific. These include copra estates and chains of trade depots in the South Pacific colonial territories of Germany, Britain, and France. Burns Philp not only enabled industrialisation of agricultural production in this region; their trade operations were also intertwined with the early development of infrastructure for urban commerce and tourism.

## 2. Burns Philp's inter-colonial geography<sup>1</sup>

The Australian trading company Burns Philp was active from the 1870s until the 1990s. It was at its peak in the interwar period (Walker and Achmadi 2022). Its most celebrated architectural artefact is its headquarters building, constructed in Bridge Street in central Sydney from 1899 to 1901 (Fig. 8.1). It is an elegant building designed by the architects Arthur and George McCredie in a Romanesque style influenced by the American commercial architecture that was fashionable in Sydney in the last decade of the 19th century (Boyd 2012; Orth 1975). The building is listed on the New South Wales State Heritage Inventory for its architectural, historic, aesthetic, social and scientific significance (New South Wales State Heritage Inventory, n.d.). But while its Sydney headquarters is Burns Philp's most conspicuous investment in architecture, the firm was responsible for a wide range of buildings that supported its activities in commodity trading and retailing, commercial agriculture, and tourism throughout Australia, the Pacific, and reaching in the interwar period into the Dutch East Indies.

A few grand buildings scattered across this broad geography remain. In Townsville in northern Queensland, there is an earlier building for the firm, also designed by the McCredie brothers. There is also a notable building for Burns Philp in Cairns. In Port Moresby in Papua New Guinea, the former Burns Philp department store building is still an important landmark. So too are the Burns Philp buildings in Suva, Fiji, and in Samoa's capital of Apia. Strikingly alike, the Suva and Apia buildings are both by the Sydney architect John Brogan (Butler-Bowden and Pickett 2012).

All of these Burns Philp buildings are acknowledged for their architectural or urban significance, the Australian examples enjoying state and municipal heritage protection, and those in the cities of the South Pacific recognition as tourist and urban landmarks. But the Burns Philp operations required a much wider range of structures and premises than these buildings with their urban aspirations, even if these aspirations were often modest. Burns Philp's involvement in pastoralism in North Queensland and plantation agriculture in the Pacific, trading and shipping, and the tourism operations the firm developed on the back of its steam-ship network were all supported by jetties, warehouses, sheds, houses for managers, and more modest accommodation for workers.

There are two historiographic challenges in considering such buildings and understanding their significance. First, architectural histories of colonialism have focused on the production in Australia and in the



**Fig. 8.1:** Burns Philp headquarters building, Sydney (Burns Philp 1903, 13)

broader Asia-Pacific of buildings that can be readily related to a canon of European and American models, and that therefore elevate to primacy building types that directly reproduced metropolitan prototypes: churches, institutions, government buildings, and – more generally – those that are overtly public-fronting. This emphasis in architectural histories

disregards the invention within colonial contexts of buildings that were unprecedented in the metropolitan homelands of European imperial expansion, especially those that were invented to accommodate industrial-scale colonial agriculture and extraction, and the transportation and export facilities associated with this. Second, boundaries established by European colonisation continue to govern the production of historical studies of post-colonial Asia-Pacific as these generally adopt geographical frameworks corresponding to the nation-states that emerged from particular colonial empires. This overlooks the intricate interconnectivity between territories and locations in the Asia-Pacific region that had evolved by the late 19th century and that continued into the 20th.

Turning to the case of Burns Philp, the first of these prejudicial historiographic framings can be seen in how the Burns Philp headquarters building in Sydney is reported consistently as an Australian example of the American Romanesque, even as an example that it is purported demonstrates Henry Hobson Richardson's direct influence. The second – a restrictive geographic focus – can perhaps be seen in a conspicuous absence in commentary on the building. The Burns Philp headquarters lobby has a fascinating acknowledgement of the Burns Philp organisation's geographical spread and ambition in the form of a roll of honour listing all the places where it operated at the time of the First World War (Fig. 8.2). Heritage commentaries on the building consistently overlook this.

The Burns Philp roll of honour lists all the employees of the company who served in military roles during the First World War, their names incised into mottled marble panels and gilded, the panels being framed by further stone work with heavily figured green marble panels below. Those who were killed in action, wounded, or who died of illness are indicated. The lists are organised according to the location of the Burns Philp enterprise where each person worked. While it would be unwise to read too much into the rather random order of these places – no doubt a reflection in part of the stone mason's struggle in fitting them all together – they nevertheless collectively paint a geographical picture of the Burns Philp enterprise and its reach throughout Australia, to New Zealand and the tropical South Pacific, Asia, and finally to the metropolis itself: London. This is a geography organised neither by colony nor country, and that reflects not a national or colonial identity but an organisational one. It was a geography in which the small Gulf of Carpentaria town of Normanton had the same standing as Australia's commercial capital of Melbourne; the Tongan capital of Nukualofa the same as that of London; Dutch and German



Fig. 8.2: Honour Roll panels (undated), Burns Philp head office building, Sydney (Paul Walker)

controlled locales (Java; Apia) the same as those in the British Empire. It was also a geography that extended from the company's head office, itself not explicitly identified with Sydney on the inscribed marble slabs, and that was bound together by the B. P. & Co. Fleet, whose workers also apparently had no geographical home in the Burns Philp world, or who perhaps only mattered when moving between one Burns Philp node and another.

The rest of this paper will examine the built traces of Burns Philp's operation in South Pacific, in particular its expansion into the former territories of Germany following the end of the First World War. After the war, Burns Philp's geography would change. While its pursuit of commercial opportunity before 1914 took it to German and Dutch controlled territories, it nevertheless preferred to operate in locations where British or Australian authority was in control: the firm understood the commercial law that pertained in these jurisdictions, and it knew how to lobby the Australian government and the British colonial office for its own commercial benefit. Opportunities in New Guinea arising out of Germany's defeat in the war and the decision in 1919 to vest governance of the former German New Guinea in Australia as a League of Nations Mandate led to substantial expansion by Burns Philp. This was in line with James Burns's belief that Australia and Britain – and New Zealand – should control the South Pacific. But, at the same time, Burns Philp continued to grow its presence in the Dutch East Indies.

Considering that architectural scholarship hitherto offers us little material to use, this project has the challenge of finding evidence that throws light on the company's full range of buildings and geographic engagements. There is an extensive Burns Philp archive, held at the Noel Butlin Archives Centre at the Australian National University, but this is mostly devoted to its trading operations, and only incidentally refers to the buildings and infrastructure these entailed. There are also histories of shipping between Australia and Asia and tourism that refer to Burns Philp. We have called extensively on three books written in the 1980s by historians Ken Buckley and Kris Klugman that, based closely on the firm's archive, trace its commercial trajectory. The Burns Philp archive does include some visual records, including a few drawings of buildings commissioned and/or built by the firm, with several of these by the architect John Brogan, whose own archive is held at the State Library of New South Wales. He was commissioned by the firm to design and build plantation facilities, staff accommodation, and warehouses, but also some of the largest and most urban buildings accompanying Burns Philp's operations in the South Pacific.<sup>2</sup> The Burns Philp archive also includes publications the firm produced to promote its shipping schedules and its tourism operations. There are also several photographic albums from the early decades of the 20th century, apparently assembled by Burns Philp personnel sent from Sydney to inspect its far-flung operations. These albums include images of what are clearly Burns Philp facilities – many of anonymous design – but they also include photographs that were probably intended as stock images for its tourism brochures, photographs that document the living conditions of Burns Philp staff, and some whose status is not yet clear. Some of these photographs are now held in the Macleay Collection, Chau Chak Wing Museum, University of Sydney. From these various sources, we have sought to understand Burns Philp's presence across the Pacific region and reflect on how this was informed by interconnectivity and movement across multiple colonial territories.

### 3. Burns Philp in the Pacific before the First World War

The inter-colonial operations of Burns Philp and other comparable entities such as the Dutch KPM (Koninklijke Paketvaart Maatschappij – Royal Packet Navigation Company), the German Norddeutscher Lloyd line, and the New Zealand Union Steam Ship Company (USSCo) across Asia Pacific, complicate the territorial marking of colonialism in the region

(Fig. 8.3) (Steel 2011). Despite the consolidation of multiple European colonial territories in Asia Pacific by the late 19th century, flows of goods, information, labour, and capital – fuelled by the growth of international trade in agricultural products from the region – depended on the border crossing operations and movements of these intercolonial agencies and shipping networks. Considering their crucial role in distributing mail, cargo, information, and people across the region, their operations and commercial impetus complicate the geography of colonialism in Asia Pacific. They reveal, instead, the interconnectivity in the manoeuvres of expanding European imperialism in the region.

Burns Philp's ambition to operate across this politically fragmented Pacific region was bold from the start. Pioneering and building up commerce and a shipping network connecting Northern Queensland, New Guinea, and the western part of the South Pacific was the main focus of their early operations. Two decades before the start of the First World War, Burns Philp had already established extensive trade and shipping relations with most of the European colonial territories in the region. By the early 1890s they had acquired premises across Papua and the South Pacific. A branch was established at Port Moresby in 1890, but the company's vessels called there from at least 1883, and a Burns Philp steamer service between Thursday Island and Port Moresby – subsidised by the British authorities in New Guinea – started in 1886, the first of many such arrangements. A store at Samarai at the eastern-most tip of British-controlled New Guinea was purchased in 1891. Burns Philp had a presence in the New Hebrides through its investment in the Australasian New Hebrides Company, which established a store at Vila c.1890 (the Australasian New Hebrides Company was subsequently absorbed by Burns Philp in 1897 – in the Burns Philp archive there are photographs of the Australasian New Hebrides Company facilities at Vila, with the name changed on the photograph to Burns Philp). Burns Philp established premises at Daru in New Guinea in 1894, closed the following year; Herbertshoe in German-controlled New Britain in 1899; and Merauke in Dutch New Guinea, in 1902, also closing after just a year of operation. The expansion of the company into the central Pacific was marked by the opening of a branch in Nukualofa in Tonga, an independent island nation nominally under British protection, in 1899 (Buckley and Klugman 1981, 52–85). The importance of the South Pacific to Burns Philp is apparent in the choice of an image of the Rubiana Lagoon in the Solomon Islands for the cover of the company's 1903 publication, *All About Burns Philp* (Fig. 8.4).

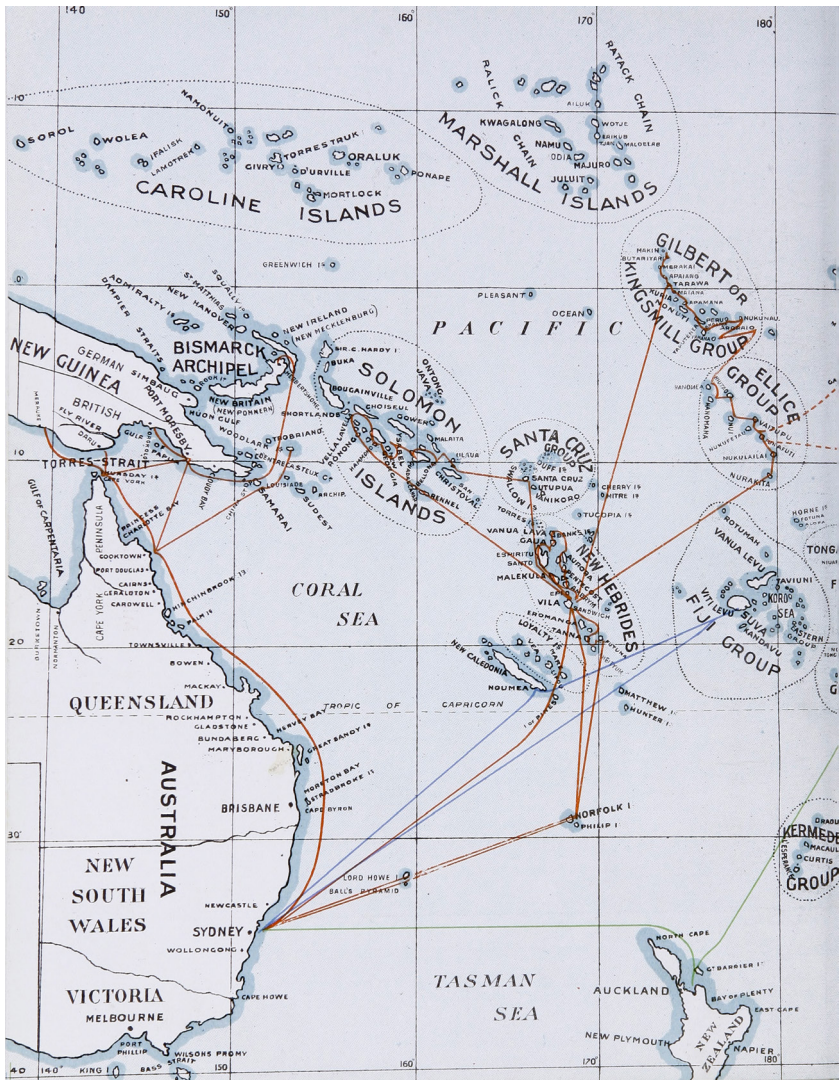


Fig. 8.3: Burns Philp's shipping routes to New Guinea and the South Pacific (Burns Philp 1903, 88)

The German expansion in the western Pacific occurs at the same time as Burns Philp's. German traders J C Godeffroy und Sohn and the Hensheim brothers were active in the Bismarck Archipelago from the mid-1870s (Gurau 1949, 76). Anxious because its nascent sugar industry depended on imported labour from the Solomon Islands and elsewhere in the western Pacific, Queensland unsuccessfully sought to annex the



**Fig. 8.4:** Company profile, showcasing the South Pacific on its cover, Rubiana Lagoon, Solomon Islands (Burns Philp 1903, cover illustration)

eastern half of New Guinea in 1883 (the west had been claimed by the Dutch from much earlier in the century). Germany and Britain then both annexed portions of eastern New Guinea in November 1884. In 1886, they established further areas of control: Britain over the Gilbert and Ellice Islands, and Germany over the Marshalls, Bougainville, Choiseul, and several other groups and individual islands (Bennett 2000, 69).

Burns Philp bought two steamships in 1896, larger than the vessels it had hitherto chartered from other operators, encouraging it to expand services in the western Pacific. One of these, the *Titus*, was purchased from the German New Guinea Co. The *Titus* enabled Burns Philp to add German New Guinea to its services to the New Hebrides the following year. Another steamship purchased in 1898, twice the size of the *Titus*, allowed the company to start services to the Gilbert and Ellice Islands, where the Sydney trading firm of On Chong and Co had been established since the 1880s (Buckley and Klugman 1981, 71–80). From 1902 there was an Australian government contract for a mail run to these island groups. From the Gilbert and Ellice Islands, Burns Philp then extended to the Marshall Islands, part of the Imperial German Pacific Protectorate. The German trading company Jaluit Gesellschaft, based at Jaluit in the Marshalls, objected to the presence of Burns Philp and On Chong, but in 1906–1907 the three companies agreed to pay uniform prices for copra in the Gilbert, Ellice, and Marshall Islands. In 1910, Burns Philp established a coal and water depot at Jaluit to service its steamers, and a branch office at Butaritari in the Gilberts in 1913 (Buckley and Klugman 1986, 5–7). Elsewhere in the German territories in the Pacific, Burns Philp established a depot at Apia in Samoa in 1911, and a full branch there in 1913 (Buckley and Klugman 1981, 262).

Burns Philp sometimes collaborated with rival shipping companies in the Pacific, and sometimes aggressively competed. The German Norddeutscher Lloyd shipping company (NDL) occupied the whole ground floor of Burns Philp's Sydney headquarter building prior to the start of the war (Buckley and Klugman 1983, figure 1 facing 140). NDL had started operations in the Pacific with monthly services between Germany and Australia in 1886 (Buckley and Klugman 1981, 54). Burns Philp had first engaged in an arrangement with NDL in 1901 to split earnings from trade on the two companies' vessels between Sydney and New Britain; Burns Philp's agreement with them was voided in 1904 when NDL started a service from Japan to Australia via China and New Guinea, and its steamers started calling at Samarai (Buckley and Klugman 1981, 142, 152). At about the same time as the NDL understanding, Burns Philp also entered arrangements with a plantation company in German-controlled New Britain, EE Forsayth and Co, to act as its agents in Sydney while they acted as its agents in New Britain (Buckley and Klugman 1981, 84). From 1912, the firm also managed Choiseul Plantations Ltd in German-controlled Bougainville (Buckley and Klugman 1983, 9).

Regarding Dutch interests, Burns Philp shared the critical Thursday Island – Java – Singapore routes with the Dutch shipping company KPM, ensuring linkages between the South Pacific and Southeast Asia's commercial interests and markets. KPM appointed Burns Philp its agents at Thursday Island in the far north of Queensland when it started a service calling there in 1902; Burns Philp then proposed to KPM that they share services between Thursday Island and the Dutch East Indies, with Burns Philp's first services to Singapore in 1902 being one result. Until 1905, the company's Singapore service – consolidated with a long-term contract to supply frozen meat to the Singapore Cold Storage Co. Ltd – went via a route including the Moluccas and Celebes, but then this was rationalised into a Sydney–Brisbane–Thursday Island–Darwin–Surabaya–Semarang–Batavia–Singapore sequence (Buckley and Klugman 1981, 85–86).

Compared with the buildings it had constructed in Sydney, Townsville, and Cairns, the buildings that Burns Philp owned in the western Pacific before the First World War were modest and utilitarian. We take here as an example its buildings at Samarai. This, an island in the far east of 'British' New Guinea, was one of Burns Philp's most important Pacific locations, but its premises there were at first quite modest.

Burns Philp established a permanent trading presence at Samarai in 1891 when it bought out a small store that was already established, and while at first this struggled, gold discoveries at Woodlark Island and at the Mambare River in 1895–1896 attracted Australian diggers to the area. Serving these made Burns Philp's Samarai operation profitable. A young Englishman who worked at the Samarai store (Fig. 8.5) in 1897 described it as follows:

The store resembled three ordinary country stores joined together. ... The stock included groceries and liquors – all groceries being tinned, even the butter, cheese, flour, and sugar – together with drapery, ship-chandlery, including oils and paints ... whilst the hardware store consisted of two elements – the articles kept for natives and those for miners. The first line of importance for the natives was tomahawks. These are of good quality. ... Next came knives of Sheffield manufacture. ... Beads ... are another line of regular trade. ... Tobacco was another line, and matches. ... For the miners we stocked mattocks, picks, and shovels. (Buckley and Klugman 1981, 89–90)<sup>3</sup>

Samarai became an important staging post for shipping routes between Queensland coastal ports and those that Burns Philp served in the western



**Fig. 8.5:** Burns Philp store, Samarai, 'British' New Guinea (Macleay Collection, Chau Chak Wing Museum, University of Sydney, HP84.60.939)

Pacific, particularly in the Solomon Islands and the Gilbert Islands (now Kiribati). An undated photograph in a Burns Philp album – most likely from the 1890s – depicts a substantial Burns Philp jetty at Samarai. As the copra industry boomed in the years just before the First World War, the profits Burns Philp made at Samarai increased (in 1903–1904, retail sales at Samarai were better than at the considerably larger Port Moresby store), and in 1908 the decision was made to build a new store there (Buckley and Klugman 1981, 132, 203). A new store at Port Moresby followed in 1912: 'This structure, which had a distinctive tower, was the most impressive building in the town until the 1960s' (Buckley and Klugman 1981, 243).

#### 4. The impact and aftermath of war

The First World War had a major impact on Burns Philp, both short and long term. This was felt mainly in relation to its connections with and opportunities in what had been German New Guinea. The war had wider impacts as well: the firm's tourist traffic stopped, trade in copra declined, shipping schedules were revised, and subsidies from the Australian government for servicing of mail routes were reduced. A Burns Philp ship was seized by the German authorities at Jaluit in the Marshall Islands

on 24 August 1914, but released a month later when a Japanese squadron arrived. Burns Philp also had problems with cargo, for instance through an embargo on the export from Australia of flour and wheat except to Britain, which curtailed its trade in these commodities with Java and Singapore (Buckley and Klugman 1983, 13–14). And certainly, those carved memorial tablets at Burns Philp's Sydney headquarters are a testament to the human cost of the war to Burns Philp personnel.

But the effects of the war were not all negative for the firm. As the war began, Germany did not have a major military presence in the territories it claimed in the Pacific. A New Zealand force occupied Apia with no resistance on 29 August, just 25 days after the declaration of war, the first German territory to be taken (McLintock 1966). The Australian occupation of Rabaul – the administrative centre of German New Guinea – followed in September. The Australian government appealed to Burns Philp to support the occupation of German New Guinea by shipping goods to Rabaul, which they did with a first Burns Philp vessel arriving in October. Burns Philp effectively had a monopoly on shipping to Rabaul subsequently; German companies there were able to keep operating and did not want to work with Japanese traders, and KPM also chose to stay out of the former German territory. While obliged to use Burns Philp shipping services to Australia, the German commercial concerns in Rabaul sought to do business with other German companies with operations in Sydney, until the Australian government stopped the practice at the end of 1915. Burns Philp then obtained their agencies (Buckley and Klugman 1983, 35–37). As the war proceeded, Burns Philp was able to expand its network of branches, including the establishment of its first in New Zealand in 1915. The firm also extended its dominance in the copra trade, much of which was diverted to the United States instead of Europe due to difficulties in securing shipping to Britain. Burns Philp established a subsidiary based in Fiji to facilitate the shipment of copra to San Francisco, which in 1920 was established as a separate entity, Burns Philp (South Sea) Company Limited (Buckley and Klugman 1983, 2, 108).

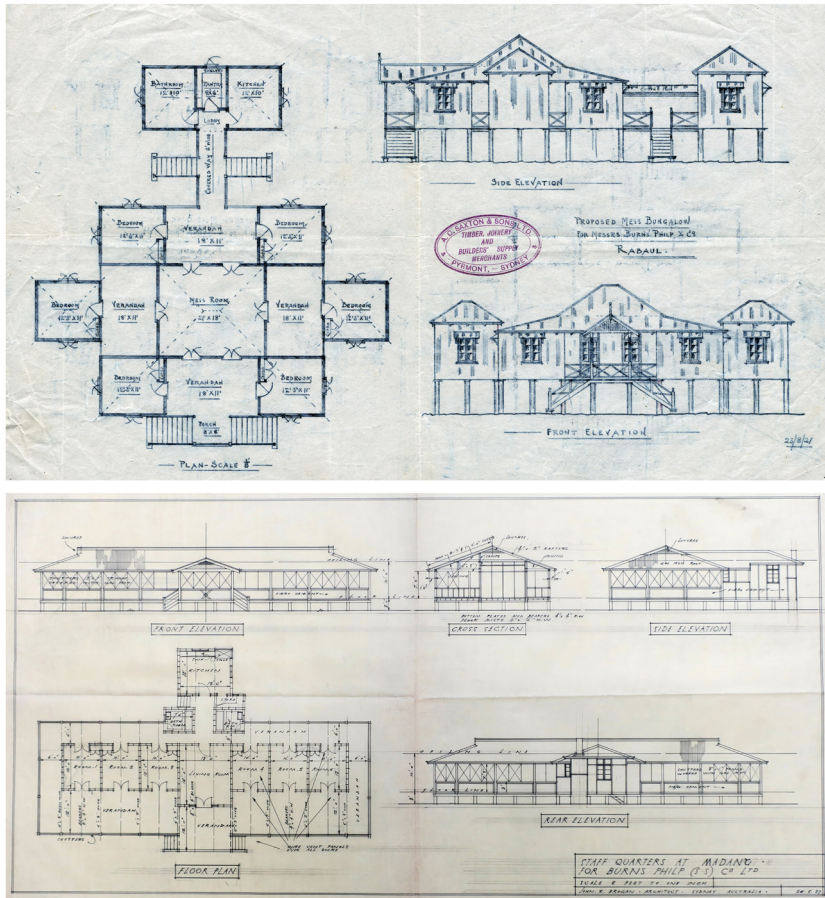
With the end of the First World War in sight, Burns Philp actively argued for the expansion of Australian power across the region. In 1913, James Burns had already foreseen a role for Australia and the other British 'dominions' in the governance of a vast British Empire. In the 1914 memorandum by Burns entitled 'Australia in the Pacific', he proposed that 'Australia should assert its right to ownership not only of German New Guinea, the Bismark Archipelago and the Marshall and Caroline Islands,

but also the British Solomons and Gilbert and Ellice Islands' (Buckley and Klugman 1983, 4–5, 26–27; see also Bennett 2000, 69). In particular, the company was interested in German New Guinea and the Bismarck Archipelago, due to the fact that copra production was much further developed in these areas and supported by a more robust infrastructure when compared to any other colony in the region (Buckley and Klugman 1983, 9). In considering the disposition of German-owned assets post-war, Burns Philp initially proposed that they be expropriated and vested in an Anglo-Australian company established to manage them. However, when Australia was given a League of Nations mandate in 1919 to govern the former German New Guinea, the Australian authorities instead established a board to dispose of the assets, with one view being that Australian ex-service men should have preferential rights of purchase (Buckley and Klugman 1983, 84–91). The board took its time to sell the property through several rounds of tenders, the process being completed in 1927. Burns Philp originally expected to acquire a large part of the plantations put up for sale, but they underestimated the prices for which they would sell. Through their bids they acquired just one plantation, but they also bought town properties in Rabaul, Madang, and Kavieng (Buckley and Klugman 1983, 179, 188; cf. Fig. 7.8. in the chapter by Falser in this volume).

The post-war years saw considerable investment by Burns Philp in new buildings for its Pacific operations:

By 1914, beside the Sydney and London offices, there were twenty-three branches – thirteen in Australia, three in the Solomons, two in Papua, two in Java, and one each in the New Hebrides, Tonga and Samoa – plus a subsidiary company in Fiji and a depot in the Gilberts. ... In physical terms, all the buildings which the company possessed in 1890 (wooden and iron structures) were replaced in the following twenty years, with the exception of the store at Normanton [on the Gulf of Carpentaria in northern Queensland]. That building remained in use, fossilised in a stagnant community. (Buckley and Klugman 1981, 273)

From 1928 until the Second World War, most – perhaps all – of Burns Philp buildings in the Pacific were completed to the designs of the Sydney architect John Brogan (1904–1987) (Butler-Bowden and Pickett 2012, 108). Brogan was first employed by Burns Philp when he had been registered as an architect for only a year and had set out on his own business. He was just 25. Anna Brogan's BArch thesis on her grandfather suggests that James Burns – son of Burns Philp's founder and then chairman and managing



**Fig. 8.6:** (a) Architectural drawings of proposed mess bungalow for Messrs Burns Philp and Co, Rabaul (1921) (ANU Archives, Noel Butlin Archives Centre, University Archives and Pacific Research Archives, Burns Philp Misc. Printed Material; Z385); (b) John Brogan, Madang staff quarters for Burns Philp, 1937 (Mitchell Library, State Library of New South Wales. Courtesy copyright holder)

director of the firm – was actually interested in Brogan as a match for one of his daughters (Brogan 1994, 113). Whatever the motivations for employing him, Brogan appears to have risen to the challenges that the Burns Philp projects in the Pacific represented, and he worked for the firm until the Second World War, with the last known work by Brogan for the firm being minor additions and renovations to their buildings in the post-Second World War years, and two model plantation houses dating from 1959 and 1960.

Burns Philp was particularly active in building in the towns of formerly German New Guinea. There are drawings in the Noel Butlin Archive at the Australian National University of premises to support the company's operations in Rabaul, dated from 1921 and 1923 – a bungalow, a mess bungalow, and officers' quarters, all apparently elevated timber structures (Fig. 8.6a). In 1932 due to growth in activity on New Guinea's gold fields, Burns Philp upgraded sub-branches at Salamaua, Madang, and Kavieng to full branches, and it constructed a new wharf at Rabaul. In 1934, it built refrigeration plants at Lae and Madang (Buckley and Klugman 1983, 264–265). From Brogan's archive at the State Library of NSW there are projects for buildings in Madang and Kokopo (Fig. 8.6b). The Madang drawings are dated 1937, and with them there is a blueprint setting out all the interior wall-cladding sheets of his design for Burns Philp's Madang staff quarters. This blueprint – dated 12 January 1938 – bears the name of the Sydney firm A C Saxton & Sons; Saxton's ink stamp is also on the otherwise anonymous Rabaul drawings from 1921 to 1923 indicating that their involvement in Burns Philp projects apparently precedes Brogan's work. A C Saxton & Sons, Limited, were suppliers of 'ready to erect' bungalows, portable buildings, and timber mouldings and joinery.<sup>4</sup> Two other drawings from Saxton in the Brogan archive, from 1937, document the timber joists and plates for the floors – with all elements completely dimensioned – for the Burns Philp manager's residence that Brogan had designed for Faisi in the Solomon Islands.

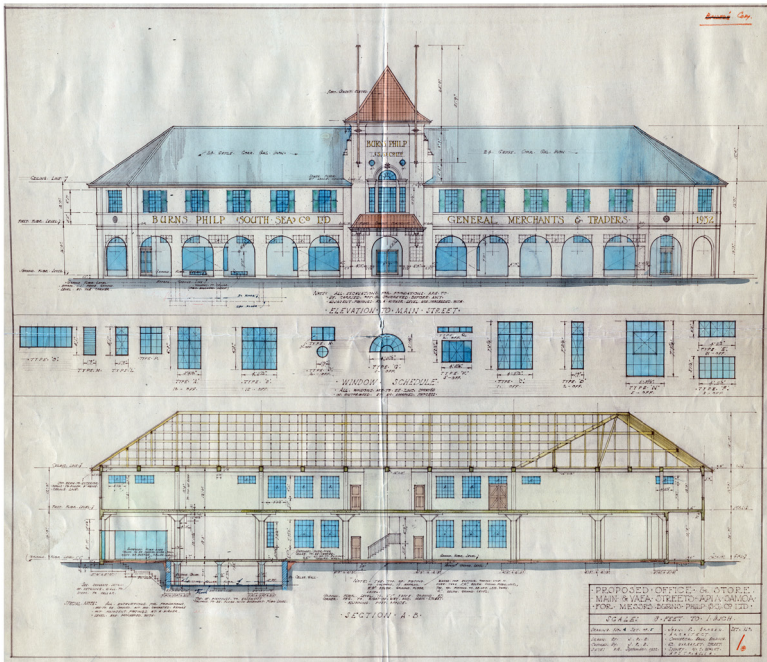
## 5. Burns Philp's typologies

In John Brogan's drawings for Burns Philp at the State Library of New South Wales, two kinds of buildings prevail. First, there are relatively modest structures such as those for Madang and Kokopo already discussed: timber-framed buildings for small Burns Philp retail and warehouse depots, storage facilities for copra, or for staff residential quarters. In scale and construction, these projects are akin to the houses on which Brogan's practice at the beginning of his independent career had focused. They appear to lend themselves to being prefabricated, or at least pre-cut, though there is only evidence for a few such projects (discussed above) that this was in fact the case. These small projects within Brogan's oeuvre are spread from northern Australia to various islands in the Pacific: Darwin; Norfolk Island; Lautoka and Penang in Fiji; Gizo,

Faisi, and at the Marovo Lagoon in the Solomon Islands; Vila and Santo in the New Hebrides; Nukualofa in Tonga; and the locations in what had been German New Guinea. It is unclear how complete a record this is of work of this kind that Brogan may have undertaken for the firm, but as the drawing sets for these projects are mostly incomplete it seems likely that the record as a whole is also incomplete and that there could have been many other such buildings.

The second kind of buildings in the Brogan collection are more ambitious urban buildings: hotels, a cinema, and a retail store for Port Moresby, and especially the Burns Philp (South Sea) buildings in Suva (Fig. 8.7a) and Apia (Fig. 8.7b). While quite large, the Port Moresby projects are still constructionally modest, frame buildings. However, the Suva and Apia buildings are different. Designed respectively in 1929 and 1932, and completed in the early 1930s, the Suva and Apia projects represent a change in the business model of Burns Philp in these locations that in the late 1920s shifted to focus on the retail trade (Buckley and Klugman 1983, 142). Both the Suva and Apia buildings feature ground floor arcades, centrally expressed towers – in the Suva case on a key urban street corner. The architectural language of both is one of permanence. As at least some of the more modest Brogan projects involved prefabrication, so too did these larger projects: both buildings were of reinforced concrete to resist cyclones, with the reinforcing cages and mats assembled in Sydney and exported to obviate welding on site (Brogan 1994, 114). The Suva building included the first passenger lift in that city (Brogan 1994, 116–129).

The Suva and Apia buildings by Brogan have an uncanny likeness to another building occupied by Burns Philp: the *Nederlandse Spaarbank* building in Surabaya in Java. This was designed by the architect Fritz Joseph Pinédo. Burns Philp took offices there in 1931 (Walker and Achmadi 2019, 177). The firm operated a major shipping service from the east coast of Australia to Singapore, which called at Surabaya, Samarang, and Batavia in Java, then part of the Dutch East Indies. Burns Philp's route to Singapore via Java serviced both tourists and trade in commodities: flour, wheat, and meat in one direction; coffee, sugar, tobacco, and especially kapok in the other (Walker and Achmadi 2022, 213–214). Like Brogan's buildings for Burns Philp in Suva and Apia, the Surabaya building has a prominent tower with an expressive pointed roof and arcades, and appears to have a smooth monolithic finish – concrete or plaster render. Perhaps the coincidence in appearance between these buildings in the South Pacific and Southeast Asia is not so remarkable – they are after all in a language



**Fig. 8.7:** (a) Burns Philp Suva, photographed in 1968 (ANU Archives, Noel Butlin Archives Centre, University Archives and Pacific Research Archives, Z385 Box 521); (b) Architectural drawings of the proposed office and store, Main and Vaea Streets, Apia, Samoa for Messrs Burns Philp (SS) Co Ltd by John Brogan, 1932 (ANU Archives, Noel Butlin Archives Centre, University Archives and Pacific Research Archives, Burns Philp Misc. Printed Material, Z385)

of contemporary commercial architecture becoming global at the period. But photographs of the Nederlandse Spaarbank building appear in the Burns Philp archive alongside others that raise further questions.

The albums of photographs in the Burns Philp archives include many of modest buildings at the company's locations throughout the Pacific that may have been built to the designs of John Brogan but that do not appear among his drawings: Niue (photograph dated 1931), Makambo (1934), Timbara (1938), Tulagi, Tarawa, Butaritari, Apamana, Nauru (all undated), and so on. Like the small buildings that can be attributed to Brogan, these feature simple framed structures, with verandahs and simple gabled or hipped roofs. Among these photographs of Burns Philp facilities are also those of local vernacular buildings, most likely taken to illustrate Burns Philp's tourist brochures and its publications *Picturesque Travel* (published irregularly from 1911 to 1925) and *BP Magazine* (1928–1942) (Walker and Achmadi 2019, 160). But some of the extant Burns Philp photographs, especially those that appear to be of earlier provenance, show buildings being used for the company's purposes that may themselves be of vernacular or hybrid provenance (Fig. 8.8a-c). In particular, several Burns Philp photographs now at the Macleay Collection are of houses for plantation managers in New Guinea and the Solomon Islands that have these qualities. These houses feature verandahs sheltering wide spaces furnished for living, rather than simply shading the building's walls. Decorated with local indigenous artefacts, they speak to cultural hybridity.

Burns Philp's intercolonial operations were from the start entwined with commercial exchanges such as those that existed between the pioneers of Australia's sugar industry in the 1860s and 1870s and the much more established sugar industry of central Java. The firm was also involved in the pearl shell industry in northern Australia and the Aru Islands of eastern Indonesia (Martínez and Vickers 2015; Griggs 2011; Battersby 2007). While both of these industries entailed interactions among cosmopolitan managerial cohorts they also involved migrant labour. Not only did Australia's sugar industry, for example, use indentured labour from the islands of the western Pacific, it also imported labour from Southeast Asia. We surmise that such exchanges of capital, information, and labour had consequences for buildings for these industries: not only were expertise with sugar farming and labour imported into Queensland, but so were the culturally hybrid buildings found in central Java's plantations. These utilised local forms and craft skills with indigenous materials such as bamboo and natural fibre in the construction of residential villas or homesteads for the European



**Fig. 8.8:** (a) Copra processing, Berande Plantation, in Makira-Ulawa Province, Solomon Islands (Macleay Collection, Chau Chak Wing Museum, University of Sydney, HP84.60.152); (b) Plantation House associated with Burns Philp operation in the Pacific region, possibly located in Papua New Guinea or Solomon Islands (Macleay Collection, Chau Chak Wing Museum, University of Sydney, HP84.60.1409); (c) Verandah of plantation-style house featuring Solomon Islands' cultural artefacts, including canoe prow ornaments, and Javanese wooden chair, in Pacific region, possibly Solomon Islands (Macleay Collection, Chau Chak Wing Museum, University of Sydney, HP84.60.149)

planters and plantation administrators. Imported into Australian sugar plantations, these in turn may have influenced wider building practices. In the pioneering years of colonial plantation industries in Southeast Asia and northern Queensland, contract migrant labourers themselves often built their own habitations, also embodying the transplantation of different styles of buildings to which the migrants were accustomed.

The use of prefabrication apparent in Burns Philp's buildings for its Pacific locations in the 1920s and 1930s suggests that conventional building in such locations was difficult: another, earlier answer to this difficulty could have been the use of local vernacular building skills, or the skills of otherwise transplanted workers. In images such as those in figure 8.8 we believe there are indications of hybrid architectural outcomes that support this view. But work remains to be done to elucidate this further (Achmadi, Burns, and Walker 2023).

## 6. Conclusion

Burns Philp started out in the north of Queensland, and though headquartered in Sydney from the time it was incorporated as a company in 1883, even as it expanded to operate nation-wide and regionally, until the middle of the 20th century its profit base remained strongly tied to its northern beginnings. These beginnings exposed Burns Philp to the innovative practices of Australian pastoralism; the adaptation of tropical and sub-tropical agriculture to Australian labour conditions (in the case of sugar, via grim experiments in the use of imported indentured labour); and to markets in exotic commodities such as pearl shell, which entailed skilled labour, investment, and expertise from as far away as Japan.

Growing from this complex base until the 1930s, the Burns Philp company established a network of facilities and operations across Australia, the Pacific, and Southeast Asia. At its peak, in the decades that followed the end of the First World War, this network supported Burns Philp's commercial activities administered from 13 branches across Australia, operations in the Solomon Islands, Papua, Java, the New Hebrides, Tonga, Samoa, Fiji, the Gilbert Islands, and New Zealand, as well as the principal company offices in Sydney and London. This was symptomatic of a wider regional phenomenon whereby the industrialisation of agricultural production and the emergence of international commercial shipping routes opened up territories and facilitated the fluid movement of goods, labour, capital, and ideas.

While the company preferred to work in locations controlled directly or indirectly by British authority, this was for the pragmatic reason of familiarity with British law and commercial practices. While James Burns, one of the firm's founders had a strong belief that it was the destiny of Australia and Britain to control the South Pacific, motivated by the prospect of profit, when opportunity beckoned the company crossed colonial boundaries to develop operations in territories in the Pacific and Southeast Asia controlled by the Netherlands and Germany. The company's expansion into the western Pacific during the 1880s and 1890s coincided with Germany's territorial claims there, and German success in establishing copra plantations in New Guinea and Bougainville in the decade before the First World War made these places attractive for Burns Philp's trade and shipping endeavours. These, however, were frustrated by Germany's own traders and shipping companies operating in the region.

Burns Philp responded as changes in colonial governance arrangements after the First World War presented new opportunities, especially in the former German New Guinea but also – through the formation of Burn Philp (South Sea) – in the central Pacific. It expanded its trade, shipping, and retail activities accordingly, and constructed buildings for these purposes. More mindful of Asia and the Pacific than if it had grown from the start in the neo-Britains of Australia's southern colonies, it developed its commercial networks to encompass commodities trading, retailing, shipping, and tourism. Sometimes through collaboration with various rival companies, and often through competition, these had global ambitions and reach.

Architectural history has rarely been written around entities such as Burns Philp. Examining its operations brings to light buildings that enabled the export-oriented, industrial-scale of agricultural production found across European colonies in Southeast Asia, Australia, and the Pacific. Again, we are not used to considering the colonial experiences of these places together. But the sugar factories of Java, the woolsheds of Australia, and the copra stores of the tropical Pacific and Southeast Asia tell a similar story of late colonialism as a kind of commodity-modernism that linked the various modes of colonialism found across Asia-Pacific, including Australasia's settler socio-economies. This belies postcolonial Asia Pacific's nationalist architectural histories in which buildings of the late 19th century have been revered as repositories of particularly national architectural virtues; in fact, they tell stories of connection and interdependency as well as invention.

## Notes

- <sup>1</sup> This paper develops one that we have previously published in *Fabrications*.
- <sup>2</sup> The SLNSW Brogan holdings are listed at <https://collection.sl.nsw.gov.au/record/YzOg8Pvg>, accessed 20 December 2021. Our thanks go to Associate Professor Paul Hogben of the University of New South Wales for his generous help in photographing the Brogan drawings in the Mitchell Library, and for making Anna Kate Brogan's thesis on her grandfather available.
- <sup>3</sup> In this passage, Buckley and Klugman quoted an article from *The Ironmonger* (27 August, 1898).
- <sup>4</sup> In the State Library of NSW are held two catalogues of their products: 'Catalogue of mouldings and joinery', Pyrmont: A.C. Saxton & Sons, 1925; 'The "Simplex" buildings: the Moran patent: catalogue of designs', Pyrmont: A.C. Saxton & Sons, 1920. Two more are held in the Caroline Simpson Collection of Museums of History NSW: 'Saxton homes: modern, comfortable yet inexpensive', Pyrmont: A.C. Saxton & Sons, 1910[?]; and 'Illustrated catalogue of manufactured woodwork', Pyrmont: A.C. Saxton & Sons, 1924.

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## Chapter 9

# Architectural Influence within Missionary Areas

## The Steyl Mission Architecture during the German and the Australian Colonial Periods in New Guinea (1896–1914–1945)

*Paul B. Steffen*

### 1. Introduction

This article tries to present the different phases of the development of the typical mixed building styles of the Steyl Catholic Mission<sup>1</sup> in the colonial context of the German New Guinea and the Australian Mandated Territory of New Guinea. The Steyl or Society of the Divine Word (SVD) mission territory covered the North-western part of the New Guinea Island, which during the German colonial control was called Kaiser-Wilhelmsland. To distinguish it from the Bismarck Archipelago Islands of present-day New Britain, New Ireland, and the Admiralty Islands, it is also referred to as Mainland New Guinea. Two Protestant Mission Societies arrived prior to the Steyl Mission: the Lutheran Neuendettelsau Mission from Bavaria in 1886 and the Rhenish Mission from Wuppertal-Barmen in 1887. These missions spread out in the Eastern region and in the central part of mainland New Guinea around Madang, leaving the Western part up to the border of Dutch New Guinea for the Catholic mission when arriving in 1896.

The mission stations, as institutions, were conceived as a missionary-built facility with buildings such as a church, a rectory, or a residence, the Sisters' convent, and the mission school, often associated with a boarding school, a clinic with a ward for ambulatory care, or a mission hospital. Then there were gardens taken care of by the station staff with their native workers, livestock, and agriculture, and the well-known mission plantations of New Guinea. Thus, the staff of the mission station would typically have an area of several hectares under their control. The mission station under the leadership of the foreign missionaries was also called the main station, being distinct from an outstation where no missionary resides permanently and a local catechist is in charge. The main station, located

in New Guinea, was not under the control of the local people, unlike the settlements of the native population. It was rather a new venue or area created by the missionaries, in which the locals did not determine the regulations for coexistence to be followed. The ‘mission station’, according to Ingie Hovland in her study *Mission Station Christianity* in South Africa, is ‘a strategy of building up and residing at permanent, physical settlements on African landscape’ (Hovland 2013; cf. Brown 2018). Missionaries, which meant priests, did alike in Mainland New Guinea and worldwide.

Architectural styles and features of the buildings of the missions are a fascinating field of study, as they developed over time in ambivalent contact zones and were highly dependent on the availability of material and tools, transport facilities, and work labour, and the changing relationships between the missionaries and the local populations, as well as the changing political regimes of the wider territory.

Similar as the houses of the local population, the roofs were covered with locally available reeds or with palm leaves. This often resulted in a hybrid of European and local architectural style. Since boards and beams could be produced mechanically in the mission’s own sawmill from 1906 onward, a more distinctly European style of mission buildings, with a certain adaptation to the tropical climate, was developed and dominated in the 1930s. Nevertheless, many mission buildings, such as chapels, schools, and living quarters were still made predominantly with local materials. In the 1930s, the architecture of churches in the larger stations was more focused towards European buildings, and also more adapted to the local conditions with regard to the climate. However, because of frequent earthquakes throughout New Guinea, there was one big difference between European churches, houses, and other buildings: the use of only wood for construction.

The Steyl New Guinea Mission spread out under colonial administration in 1896 to 1945, from the coastal area, between Madang and westward, up to Dutch New Guinea. Up to the 1930s, most of the interior of New Guinea was not under colonial control, so it is clear that each mission was depending on permissions, rules, and support of the colonial administration. The purchase of land was only possible when the colonial government allowed buying it from the local people. But the colonial administration had no direct influence on the building styles of the missions. The high cost to import building materials was soon diminished by the use of local materials and even by adopting in part local building styles during the initial years of the mission. A certain hybrid style was born in those years. Therefore, it is clear that the change of the colonial

system did hardly influence the way that missionary territory was created by the Steyl Mission (Steffen 1995, 2023).

## 2. The mission buildings in the missionary area of the Steyl Mission in Colonial New Guinea

German New Guinea from 1896 to 1914

The Steyl Mission Society accepted the offer of the Roman Propaganda Fide to take over the missionary work in the north-eastern part of New Guinea, which the Germans called Kaiser-Wilhelmsland. In August 1896 the first SVD missionaries arrived at the headquarters of the colonial administration at Friedrich-Wilhelmshafen, now Madang, in German New Guinea. The SVD missionaries settled on the small offshore island of Tumleo, 275 nautical miles up the coast towards the border of Dutch New Guinea (Fig. 9.1). The SVDs had brought with them a prefabricated house from Steyl, which they erected as their first permanent living space on Tumleo. Further stations were started in nearby coastal areas. Nine years later, in 1905, the leader of the mission, Prefect Apostolic Fr. Eberhard Limbrock, established a station at Alexishafen near Madang. At the end of 1905, a sawmill was installed there, and the needed wood building material could be produced by the mission for the mission buildings along the northern coast between Madang and the border of Dutch New Guinea.

Nevertheless, many mission buildings were still using traditional building materials, as done by the local people. Using local material saved time and money, but it lasted only for a couple of years. In all mission stations was the need for living quarters for the missionaries, a kitchen, a chapel, a school, and a convent for the Sisters. Economic activities like workshops, livestock, chicken farming, gardening, and a modest coconut plantation were started at the stations. The main station or the headquarters of the mission was first on Tumleo and from 1909 at Alexishafen, which had up to 12 different workshops, large gardens, and a large plantation. The huge number of employed local workers required their own houses. There were also houses for several schools, for female and male boarding students. Before its destruction by American Airforce in 1943, Alexishafen counted more than 100 buildings.

The huge mission headquarters at Alexishafen in the 1930s no longer followed the hybrid style of the first decades of the mission but was

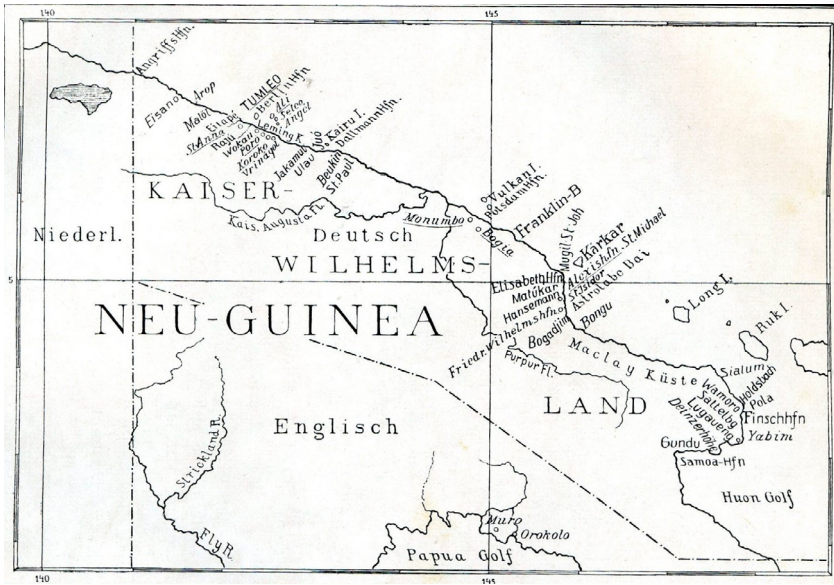


Fig. 9.1: The Steyler New Guinea Mission during the German colonial period (map from the *Steyler Missionsbote*, June 1907, 1)

strongly guided by the concept of European builders. The fact that those buildings were erected in a tropical country had only a relatively small influence on the dominant ideas of having large mission buildings like the central residence houses for the priests and Brothers, for the Sisters, and even for the workers of the Cathedral at Alexishafen.

In March of 1901, the SVD missionaries came from Tumléo Island to build a new station on the neighbouring Ali Island. Two smaller neighbouring islands, Seleo and Angel, belonged to the new Ali mission. The first erected mission chapel was built before 1905 by Brother Gottfried Laubach. Brother Clarentius Petry (1882–1917) took a photo of it after his arrival in New Guinea in 1905. The *Steyler Missionsbote* put it in March 1907 on its cover page (Fig. 9.2a). It showed a building in European architectural style made out of local material. The walls were made by split bamboo and the roof by palm leaves. The side walls had windows for air circulation and light to fill the inner room. The entrance door was on the front side. This first chapel had no tower or spire (German: *Dachreiter*) on the roof. The Sisters' Convent on Ali Island is a good example of such a building of the early years made of easily available local building materials (Fig. 9.2b). The Sisters' house was erected on wooden posts like the local houses.



**Fig. 9.2:** (a): 'First chapel on Ali Island, 1906. Photo by Br. Clarentius Petry' (pictured on the cover page of *Steyler Missionsbote*, March 1907); (b) First Sisters' Convent on Ali Island, 1906 (Steyler Archives)

The movement of air under the house and the smoke from a fire were intended to drive mosquitoes away. A fresh breeze under the house was also helpful to avoid getting too hot or sticky in the house. The house walls made of palm branches helped the airflow. A hand-woven roof covered the building. Such a building made of local material would last for nearly seven years before being replaced by a new one. But if a Brother builder was available and finances were permitting then a more stable house that would last for decades was built. Both types of mission buildings, unlike the local houses, had an entrance door, windows, and a veranda.

Yuo (Juo) was an offshore island opposite the mainland station of Boikin, situated in what is today the East Sepik Province of Papua New Guinea. Boards and beams of the Yuo church were handmade. The roof was made of coconut or sago palm branches. The architectural construction of the Yuo church was basically European, but all its materials, except for the tin-covered spire (the ridge turret) were local materials.<sup>2</sup> The previous, the very first chapel on Ali Island, did not have such a spire. The spire of this mission church gives the building a special appearance as a place of worship and marked it as a sacred building – a veritable 'Jungle Cathedral' as it was called in the *Steyler Missionsbote* (Fig. 9.3). The Spirit House of the New Guineans (cf Fig. 9.5) also had a special and outstanding appearance marking its sacredness. The difference between a chapel or church and the Spirit house was such that the Spirit house was a place for secret rituals only, to be performed by men, while women and children were forbidden to enter. Men were using the Spirit houses also for great festive meals for themselves. The Christian church from its beginning was a place for the Christian community where men, women, and children would meet to celebrate the common liturgy and the sacraments as the



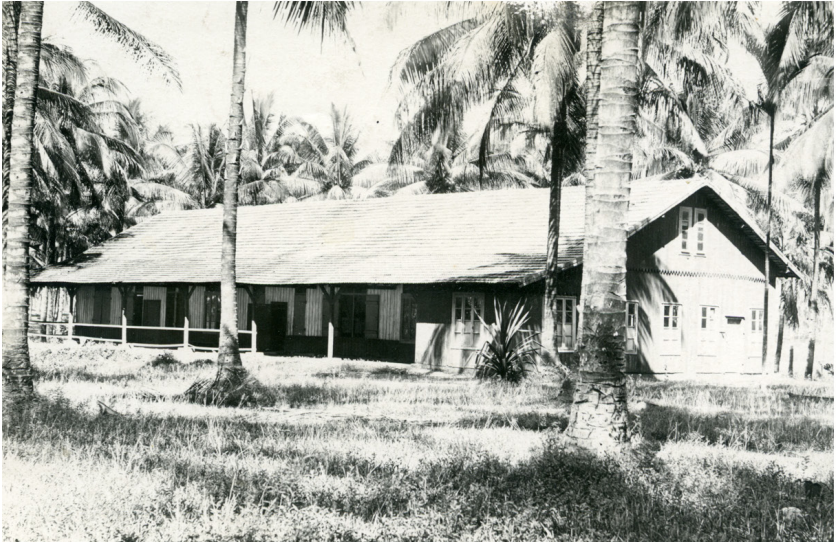
Südsee: P. Jérômes Urwaldkathedrale auf der Insel Juo, Apost. Vikariat Mittelneuguinea

**Fig. 9.3:** 'Urwaldkathedrale' (Jungle Cathedral) of the Catholic mission on Juo Island, Apostolic Vicariate *Mittelneuguinea* (*Steyler Missionsbote* 59:1 (1931), 6)

people of God. The church also allowed non-Christians and those who wanted to become Christians to join the celebration of the Christian community.

As we can see on this photo, all the buildings close to the seashore were built on sand. Even if they are well built on sandy ground, any earthquake or heavy storm could cause their collapse, as happened in 1931 with the coastal Sapara station, founded in 1926 near the shore, where an earthquake was causing a tidal wave or tsunami destroying all mission buildings and causing the death of many local people.<sup>3</sup>

Fr. Emil Jerome (1876–1938) came to New Guinea in 1903 and was involved in founding the mission on Juo in 1908. For many years he worked on Yuo and the neighbouring islands of Kairiru, Muschu, Walis, and Karesau, which belonged to his parish. During this time, Yuo received the new church in 1930. Bro. Hyginus (Johann Nössemes, 1879–1932) built this island church with the help of his local co-workers. From 1909 until his death on 28 January 1932, Bro. Hyginus, a skilled carpenter, worked as the master builder of the mission in New Guinea. Numerous churches, schools, homes for the missionaries, students, and workers, as well as



**Fig. 9.4:** (a) Sisters' house at coastal Malol Station 1912; (b) Mission Hospital with pharmacy at Alexishafen 1910 (Steyler Archives)

necessary station buildings for the economic enterprises of the mission, were built by him during his 23-year mission.

This Sisters' house in Malol was erected on stilts with a veranda on the living level, about three metres above the ground; the palm-leaf-covered roof over the living house still has an empty space protecting the sleeping and living areas from the heat. The palm-leaf-covered hut in the background of the photo was probably the kitchen house (Fig. 9.4a). The style

of the church building was based on the outside similar to many European churches, having a high nave and two lateral lower aisles. Even a recognisable apse, that is, an altar room, being visible from the outside in the church building itself and the windows, which were not present in the houses of the local population, were striking, allowing a certain amount of ventilation. On the hipped roof, which was made of locally available material, was sitting a small ridge turret, which Franciscan churches had in the Middle Ages. A separate church tower was therefore not necessary. For the European observer, this wooden building was clearly recognisable as a place of worship. However, it differed considerably from the form of buildings used by the native population of New Guinea for their Spirit houses.

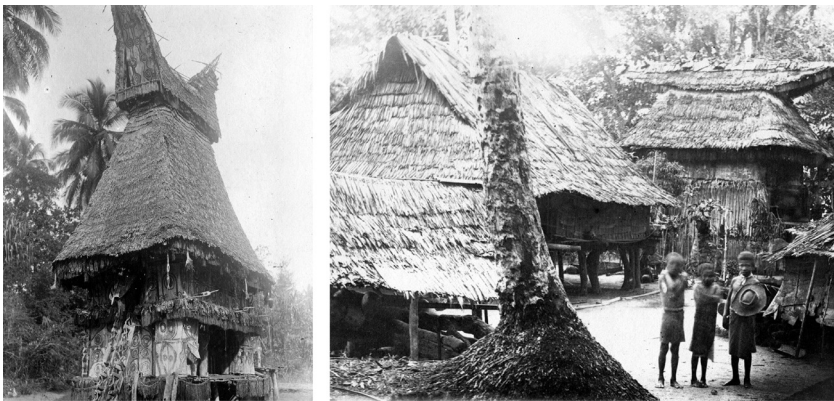
The mission hospital at Alexishafen was a wooden building with an iron or copper roof and with glass windows (Fig. 9.4b). Also covered by the roof of the hospital, there was a walking space outside the building for the patients, the staff, and visitors. The hospital was a flat building, having in the front a double glass window under its roof, indicating a usable attic space.

### Architecture by New Guineans in the Colonial Contact Zone

Spirit houses along the northern coast and in its hinterland were always masterpieces of indigenous architecture. The photo of the Spirit House at Varapu was taken in about 1911 (Fig. 9.5a). It stood on poles with its main room. The walls were covered by painted wooden boards on the outside. Only initiated men had access to enter this sacred room. For women and children, it was strictly forbidden to enter. As it was typical of ghost houses on the north coast, the ghost house at Varapu also had a very high double roof. On coastal and offshore islands all buildings were erected on wooden posts to cool the house and to protect it against mosquitoes (Fig. 9.5b). All material was hand-made, using coconut and sago palm to weave the walls and for the roof to protect the dwellers from tropical rain and heat. On the left side of the photo, a lower building also on poles can be seen but without walls, which can serve as a storage or sitting place. The house next to it was built on higher poles and has walls; it was the den for all family members. On the right side was the Spirit house of the village. It was characterised by its special artistic double roof structure,

which extends beyond the other houses of the village. Fr. Karl Boehm, missionary on Manam Island in 1932, described the local village houses as follows:

We ride across the bush to take a close look at a group of houses. They are all rectangular huts, resting on poles about one meter high. A gabled roof made of woven coconut leaves protects against wind, rain and sun. These houses are not guaranteed to last for many years, but the bush and the edge of the sea always provide free building materials to mend the huts and build new ones. On average, the interior of the house is divided into two parts; both rooms are separated from each other by thin bamboo: a sleeping chamber, into which one can only crawl through a hole into the fox den, and the 'better room', which also serves as a kitchen. A cooker and oven are, of course, superfluous pieces. A charcoal fire burns on the raw slats of the floor, roasting and cooking their meagre meals of taro and yams, sweet potato and breadfruit, fish, rats and other critters. If the average heat of thirty degrees in the shade drops a few lines on rainy days, then everything crouches around the fire; more than one fell asleep and woke up with severe burns. The smoke is not carefully channelled through chimneys but where it finds a hole in the roof, it disappears. Otherwise, it stays inside. People feel very comfortable in such a smokehouse. The whole room under the house is the official home of the pigs, dogs and cats and other animals that feel at home with each other.<sup>4</sup>



**Fig. 9.5:** (a) Spirit House at Varapu near Sissano, c.1911; (b) Local House and Spirit House on Ali Island 1903 (Steyler Archives)

### 3. Under Australian Military Administration from 1914 to 1921 and the Australian Mandated Territory of New Guinea from 1921 to 1944

The change of colonial rulers and their different ways of administration meant for the predominantly German SVD missionaries a difficult job of adapting to the new conditions. German, as school language, was now out and English was necessary to communicate with the Australian military and later with the civil administration officers.

New German and Austrian missionaries were not allowed to come to New Guinea; only missionaries from the allied countries could legally enter the country. Home leave for recuperation and health treatment in Europe would be impossible; it meant not being able to return to New Guinea. In those years the SVD community in Sydney, Australia, served as a place for recuperation and health treatment. In 1926 the first US-American priest arrived in New Guinea and served Bishop Franz Wolf as a secretary, primarily with correspondence and personal contact with the Australian officers in Madang and Rabaul. The SVD missionaries of German and Austrian citizenship were told that they would have to leave New Guinea by 1927. The SVD mission, however, was able to continue only if the SVD Superiors could replace them with missionaries from allied or neutral nations. After Germany was permitted to join the League of Nations in 1927, Australia changed this rule and allowed all missionaries to stay, and also new missionaries from Germany and Austria could again come to New Guinea.

From 1927 to 1939, many new missionaries, especially from German-speaking countries, arrived in New Guinea. During this phase, one could observe that in 1930 a new period of constructing churches, schools, convents and missionary residences started at major stations, such as Alexishafen and Wewak, and even houses on previously established or newly founded mission stations along the coast and inland.

In 1926, Alexishafen was larger than nearby Madang, where the colonial administration for the whole district resided. Wewak was just a mission station. Only when the government administration was transferred in 1934 from Aitape to Wewak did this locality gain more significance. The Japanese military made Wewak during the years of 1943 and 1944 their largest airbase.

From 1936, Kairiru Island was the new residence and headquarter of the Vicariate of Central New Guinea. The catechist school was transferred in 1937 from the opposite mainland station Boikin-Marange to the nearby

offshore island of Kairiru. Only the many newly arrived missionary Brothers as trained carpenters, smiths, and so forth made possible the enormous building programmes of the 1930s. Alexishafen, the headquarters of East New Guinea, experienced under the German Bishop Franz Wolf the construction of a wooden cathedral, the largest of its kind in the Pacific. The Brothers and their local assistants worked from 1932 to 1939 on its construction.

The church building was constructed by using ironwood (tropical hardwood) on a cement foundation. Timber buildings were considered the appropriate form of construction in New Guinea because of the constant danger of earthquakes. To protect the wood, the exterior was covered with sheet iron, because of its dark colour.<sup>5</sup>

The St. Michael Central Station at Alexishafen, founded in 1905, had its own sawmill since the end of 1905, where local labourers worked under the direction of a missionary Brother. The necessary wood was procured by cutting trees in the nearby primeval forest and processed into beams and boards in their own sawmill. The sawmill also supplied the timber for many buildings of the Catholic mission, especially the huge number of beams and boards for the construction of the ambitious building project for the first Vicar Apostolic and the Bishop of East New Guinea, who came from Essen-Borbeck. The construction time stretched over years, and it was the main building project not only of the Catholic mission, but for the whole mandated territory of New Guinea. The builders were SVD Brothers being master builders, carpenters, and joiners, completing the wooden buildings from 1932 to 1939 (Fig. 9.6). The cathedral was the work of Brothers Cornelius Wiedl, Florian Leissing, Alois Wanta, Elpidius Malcharek, Fabian Schroer, Sylvester Scherm, Modestus Rasche, and their New Guinea co-workers. Bishop Wolf's nephews, being architects in their homeland, did draw up the plans.

The wooden cathedral was 52 metres long and 27 metres wide with confessional chapels. Two towers reached a height of 25 metres. The floor was specially decorated with patterned tiles of stone. The structure was made by using beams and boards from the mission's sawmill. The wooden walls and roofing were protected from tropical rain and bad weather by sheet metal, because of the dark appearance of the cathedral. The foundation was made of concrete.

It was the largest church not only in Papua New Guinea but in all of Oceania. Although the wood and the sand for the cement came from the country, the cathedral was a product of building plans and construction

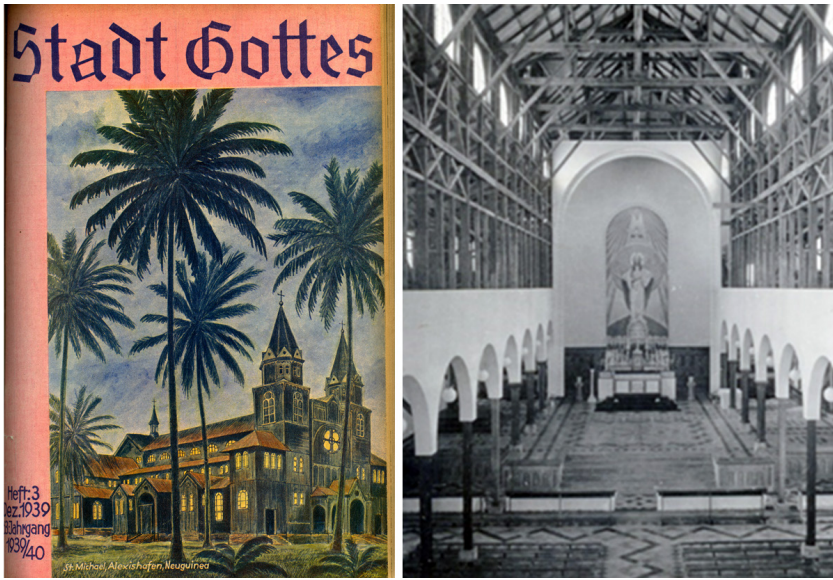


**Fig. 9.6:** St Michael Cathedral at Alexishafen 1938 before completion in 1939 (Steyler Archives)

methods by non-indigenous species. However, local semi-skilled workers were significantly involved in the construction as assistants to the European Brothers. Fr. Josef Hiller SVD (1905–1939), who had painted the apse of the cathedral, died of malaria at the age of 34 on 25 May 1939, shortly before the cathedral was consecrated.

The opening of the cathedral at Alexishafen was celebrated on 28 June 1939, the silver jubilee of Bishop Wolf's consecration, and attended by the Catholic bishops of Papua and New Guinea as well as the faithful from all over the vicariate, and the government representatives (Fig. 9.7a). Now the liturgy could unfold in full on the wide sanctuary. In particular, solemn pontifical masses could be celebrated on the most important holidays of the church year, such as Christmas and Easter, together with the numerous missionary staff working in the central station, the students and workers of the commercial enterprises, and also the Catholic population belonging to the wide station district. Holy Mass could also be celebrated at 12 side altars at the same time (Fig. 9.7b). Sadly enough, on 3 September 1943, American bombers totally destroyed the cathedral with only a few cement blocks to remain.

The building of a larger residence for the missionaries at Alexishafen was another outstanding project in the 1930s. In 1937, the missionary Sisters received a new large convent to accommodate the nearly 18 community



**Fig. 9.7:** St. Michael Central Station at Alexishafen in 1939. (a) The new church featured on the cover of the German-language *Stadt Gottes* (*Stadt Gottes*, 63 (1939/1940), vol. 3, title page); (b) The interior of the cathedral at Alexishafen (*Steyler Missionsbote* 67, January 1940, 10)

members and Sisters attending retreats or receiving health treatment at Alexishafen hospital. The whole complex of Alexishafen numbered more than 100 buildings; among them were first of all the hospital, various schools, approximately 12 workshops for various trades such as ship-building and repairing the wharf, a bakery, a cooking house, a smithy, a carpentry, a brick-making workshop, a butchery, and buildings needed for the farms and plantations. Sadly, all buildings, including the cathedral, were, as already mentioned above, destroyed on 3 September 1934 by American bombers during the Pacific War.

Brother Eugene Frank (1900–1935) came to New Guinea from the USA in 1929. In 1934, Bishop Wolf sent him to the newly developed mission at Mount Hagen to assist the mission leader, American Fr. William Ross, in building up the mission. By the end of 1934, Eugene had built the first chapel and a dwelling house at Mogeï near Mount Hagen. In 1934, the distance from the coast to the highlands still required a 14-day walk. In 1935, the first small aircraft came into use. This meant that all buildings had to be constructed by using only local accessible materials, as for instance seen at the chapel in the Western Highlands. The extensive thatched roof rests on handmade wooden poles. The wooden cross attached to the roof



Father Ross and Mike Leahy at Mogeï Chapel built by Brother Eugene



**Fig. 9.8:** (a) Mogeï Chapel in 1935 at Mount Hagen, Western Highland Province, built by Bro. Eugene Frank ('Mogeï Chapel built by Brother Eugene', *The Little Missionary*, XXVIII, November 1942, N. 3, 65); (b) Sisters's House at Alexishafen in 1937 (SVD photo archives Rome)

identifies the building as a place of worship. Boards and beams were handmade. The roof was made of reed material from the Highlands. The chapel was not only used for church services, but also for faith instruction. The photo, taken in 1940 in front of the Mogeï Chapel, built by Bro. Eugene, shows the station leader, Fr. Ross, with the Australian prospector Mike

Leahy, who was his great friend and supporter of the mission (Fig. 9.8a). The Australian Leahy brothers were the first explorers of the Highlands to search for gold. Since they were of Irish Catholic origin, they encouraged Fr. Ross to settle at Mount Hagen and supported him during the difficult start-up of the mission.

The first primitive houses, chapels, and schools were built with local materials. The walls were covered by leaves or flat bamboo poles, filling the space between the beams, as can be seen on the Sisters' convent on Ali Island. The difference from the local houses is the presence of windows and doors. Similar to the people's houses, the roofs were covered with locally available reeds or with palm leaves. This resulted in a hybrid of a European and a local architectural style. Since boards and beams could be produced mechanically in the mission's own sawmill from 1906 onward, a distinctly European style of mission buildings, with a certain adaptation to the tropical climate, was developed. In the tropical, malaria-infested coastal stations, the houses, like those of the natives, were built on stilts, so that a better breeze could keep the mosquitoes away and there was also more cooling in the house. The hybrid style of the first years was common because there was not always building material from the sawmill available and the local material was easier to organise, which kept the price of the building much lower. The three-floor living quarters of the Sisters' house at Alexishafen in 1937 (Fig. 9.8b) did not have any veranda, but there was an integrated house chapel with a ridge turret and spire that marks the building as the living quarters or convent of a religious community. The windows on the ground and first floor had an additional upper window, a novelty in a New Guinea building. The seashore was only a few metres away from the building. Not too far from the building was a laundry and a huge kitchen where all the meals for the SVD and the Sisters' communities were prepared every day. The living quarters of the male and female missionaries were intentionally a ten minutes' walk away from each other.

#### 4. Conclusion

This contribution aimed to show the architectural influence within missionary areas, across colonial regimes, and the use of local resources, generating hybrids, raptures, and continuities.

The Steyl Mission was in its origin a German Mission Society, which from its beginning was intercultural and by its members became increasingly international. The majority of all male and female missionaries from 1896 to 1945 were from German-speaking countries in Europe. German was their language, even if they had other mother tongues. This German cultural background influenced the way the mission was organised and carried out. This is also seen within its mission architecture of those years. During the years of German colonial occupation, the mission was depending on the public postal service, administered by the German authorities, being also responsible for the security of the early missionaries against tribal attacks from the local people. Purchasing land from local people needed the approval of the colonial authorities. Thus, the mission depended on a good relationship with the colonial administrators. During the administration of the German Protectorate by the New Guinea Company, the Catholic mission of the Sacred Heart Missionaries in the Bismarck Archipelago and the Steyl Mission in Kaiser-Wilhelmsland had a difficult and problematic relationship with this commercial company. This changed when the German Reich took over the administration in 1899. Especially under Governor Albert Hahl the Catholic missions could increase a better relationship with the German colonial administration. Governor Hahl and the Steyl New Guinea mission leader Eberhard Limbrock maintained cooperation to promote the economic, educational, and health situation in German New Guinea.

Architecture within the mission during this period was guided by a pragmatic attitude. A prefabricated house, built in Steyl, Netherlands, was the first permanent living space of the missionaries. Buildings in a later phase had to use material locally available of trees being cut in nearby forests. Roofs and walls were made the local way with palm leaves, however, the square format of the living houses with a veranda and windows followed a model of building houses as in the middle of Europe. Houses built on stilts, on the other hand, followed the Melanesian architectural style.

The period of Australian Military administration (1914–1921) did not have much influence on the building style of the Steyl Mission, except that now all material was ordered from Sydney because material and financial supplies from Europe were blocked. Even in the years of the Australian Mandated Territory of New Guinea (1921–1945), the predominantly German missionaries, with many Brothers who were builders within the mission, continued the German architectural influence on mission buildings. From 1928, new missionaries from German-speaking countries were again allowed to enter New Guinea. With the help of Brother builders, the two Apostolic Vicars of

East and Central New Guinea, could start a great building era. The climax was the building of the large wooden cathedral at Alexishafen.

The building style in all periods reveals a certain continuity and therefore an independence in the missionary architecture of the Steyl Mission.

## Notes

- <sup>1</sup> The 'Steyl Mission' refers to the Mission of the Divine Word Missionaries (Societas Verbi Divini – SVD), a Catholic Mission Society founded in 1875 in the Dutch village of Steyl, nowadays a part of the town of Venlo. Photos in this article are from *SVD Mission* magazines and the SVD Generalate Photo Archive in Rome are used with permission of the Society of the Divine Word, Rome.
- <sup>2</sup> 'Kirche in You', *Steyler Missionsbote* 59(1) (Oktober 1931): 6.
- <sup>3</sup> Cf. Engelmund van Baar: 'Traurige Weihnacht. Sapara, Neuguinea', *Steyler Missionsbote* 58(8) (1931): 179.
- <sup>4</sup> Karl Boehm, (1932) 'Zur Nebenstation', *Steyler Missionsbote* 59(7): 177–178.
- <sup>5</sup> 'St. Michael, Alexishafen, Neuguinea', *Stadt Gottes* 69(3) (1939).

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## Chapter 10

# Australian Architects in Melanesia

## Culture as Resource in the Late-Colonial Development of Papua New Guinea and New Caledonia (1950s–1970s)

*Peter Scriver, Amit Srivastava, and Louis Lagarde*

### 1. Introduction

Australian engagement in the modernising building worlds of the South Pacific over the second half of the 20th century reflected a variety of different opportunities, motivations, and approaches. While resource extraction industries such as mining and lumber were major economic drivers, transfers to the region of industrialised building materials, systems, and technologies were some of the more substantive collateral exchanges in the opposite direction that arose from such developments. Building skills training and architectural education would be other softer forms of technology transfer, capacity building, and resource development centred on the human capital concerned. Importantly, however, knowledge exchanges in these para-colonial contexts of development were not only multi-lateral in their implications and ultimate impact, but cultural as well as technical in nature. For example, it was the bush up-bringing experienced as the son of an Australian mining-surveyor in late-colonial Papua New Guinea (PNG) that Glen Murcutt, a future doyen of contemporary Australian architecture, would later recognise as fundamental to his formation as a responsive regionalist (Drew 1994). And a similarly immersive other-cultural childhood as the son of an Australian missionary living in the idyllic vernacular villages of New Ireland was the classroom for Newell Platten, a quiet South Australian champion of sensitively designed and environmentally integrated social housing and urban design (Platten 2016).

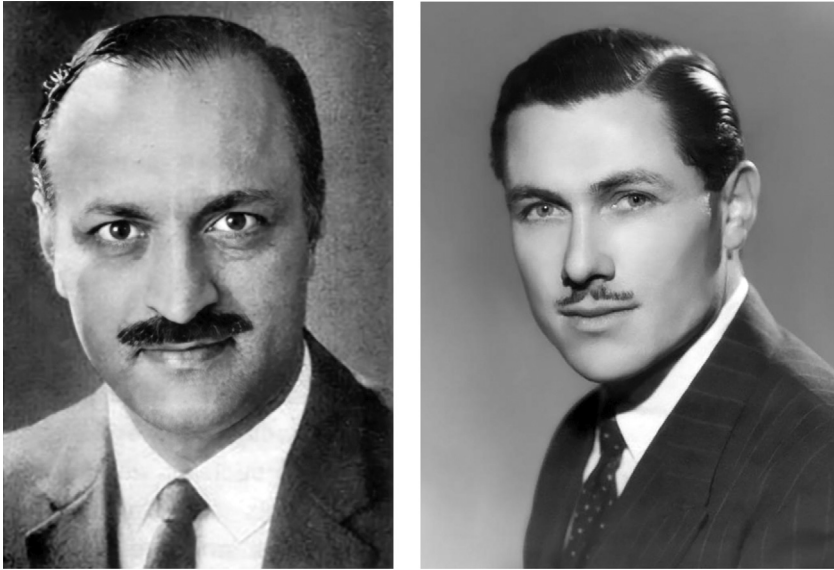
The diverse and seemingly contrasting modes of architectural engagement undertaken in Melanesia in the 1960s and 1970s by Australia-based architects Balwant Saini and Douglas Snelling offer two further cases of

cultural knowledge resourcing and exchange through architecture that are worthy of more detailed discussion. Both clearly transcended the fundamental ambivalence that had coloured Australia's political and cultural engagement with its Pacific neighbours throughout most of its modern history and, arguably, ever since its own ignominious colonial beginnings in the late 18th century. However, comparison of their case histories reveals a deeper schism in Australia's own cultural identity and sense of place in its region that was becoming increasingly apparent with the rapid growth and change in Australian society itself in the second half of the 20th century.

On the one hand, despite the strategic geographic position of the island continent on the southern flank of the Asia Pacific region, most Australians still tended to see that they stood apart from this region as a cultural geography, if not above it. Long free of its original penal colonial status (1788–1868), the mature settler-colonial society had, as of 1926, become a self-governing Dominion of the emerging British Commonwealth (est. 1931). Two generations later, in the era of progressive decolonisation and new nation-building across the Asia-Pacific region, in which the young Australian nation was simultaneously experiencing a new tide of migration in the aftermath of the Second World War, this increasingly multi-cultural though still overwhelmingly European society was secure in its own self-perception as a 'local franchisee of the Western brand' (Wallis and Wesley 2016). But even as early as 1901, when Britain's five previously independent Australian colonies had agreed to federate, the new Commonwealth of Australia had begun to assume more direct responsibility for the administration of British colonial territories in its immediate Melanesian region along with their mutual political and commercial interests. Growing German presence in the region prior to the First World War and subsequent Japanese imperial expansion culminating in the Second World War had heightened the anxiety and sense of vulnerability of the young nation to the ambitions of competing colonial powers. Moreover, with the advent of the Cold War after 1945, consciousness of Australia's geopolitical position as a frontline state of the ostensible 'free world' would serve to redouble a para-colonial sense of responsibility to maintain social and economic stability in the region. Such agency would be exercised through development programmes administered directly under Australian government initiatives, as well as multi-lateral international aid schemes such as The Colombo Plan, the

British Commonwealth supported framework for technical cooperation in which Australia played a leading role (Oakman 2010).

On the other hand, historical and cultural alignment with Western values and prejudices also predisposed those who were curious to look upon the South Pacific as a focus of allure and fascination with the cultural ‘other’, rather than fear. In ‘Ornament und Verbrechen’ (first published in French as ‘Ornament et Crime’ in 1913), for example, the Austrian architect Adolf Loos was intrigued with the indigenous cultural practices of tattooing still observed in German colonial Papua, albeit distantly as a foil for the nascent theory of modern architectural aesthetics that the polemical Viennese architect was then striving to articulate.<sup>1</sup> However, critical and aesthetic appreciation of such cultural alterity had progressed considerably by the inter-war years with the engagement of another generation of Western aesthetes and social enquirers escaping the excess and violence of the previous war who were drawn to these still relatively isolated island societies as worlds apart through which Western values and their impact on cultural norms and practices could be questioned. Such empathetic efforts to frame these putatively idyllic island cultures as a ‘paradise’ for the exploration of individual freedoms and hedonistic pleasure were also a stimulus for touristic engagement and development, which was to escalate exponentially over the century that followed (Vickers 2012; Scriver and Srivastava 2019). Particularly influential was American anthropologist Margaret Mead, whose seminal ethnographic work had begun in Samoa in 1925, later extending to New Guinea in 1929, and subsequently to Bali in 1936. But Mead’s travels and cultural fascination with the region had been preceded by Australian artists such as Margaret Preston and Ian Fairweather among the cosmopolitan coterie of other painters, sculptors, ethno-musicologists, and writers of various Western metropolitan origins who had been drawn to the South Pacific and Southeast Asia ever since Paul Gauguin had led the way in the 1890s (Bail 2009; Butel 2018).<sup>2</sup> More popular adoptions of Pacific cultural motifs and their ethos were also emerging by the 1930s on the US West Coast. In post-prohibition era California, the establishment of new bars and licensed restaurants contributed to a rapidly growing decorative trend that conflated the various island cultures of the vast Pacific region under what would come to be called ‘Tiki Culture’, and Hollywood was quick to join the trend with the ‘South Seas’ genre of movies (Kirsten 2015; Brawley and Dixon 2012). After the Second World War, as commercial air travel began to become more commonplace and affordable, these popular



**Fig. 10.1:** (a) Balwant Saini (Saini 1968); (b) Douglas Snelling (Jackson Papers, SLSNSW Archive)

interests increased, first through the cultural fantasy of the South Pacific as an exotic destination, popular in particular with nostalgic US and Australian and New Zealand Army Corps (ANZAC) veterans of the Pacific War, and then later through genuine interest in the cultural variety of the region, its arts, and its architecture (Lagarde 2016). Not limited to the Melanesian archipelago, this cultural turn reflected a more general awakening of Australian awareness and interest in the Asia-Pacific as more than just the increasingly significant source of labour and materials for economic extraction it had become over the preceding half century, but of new cultural tastes and values that would begin to complicate and partially redefine Australian material culture in the latter half of the 20th century.<sup>3</sup>

Combinations of these stances and approaches to the region characterise the engagements of the two Australian architects that we will examine more closely in this chapter, despite their very different clientele and the widely diverging nature of the commissions they undertook for them (Fig. 10.1a-b). In the first section we discuss the work of Melbourne-based architectural consultant and educator Balwant Saini, who first travelled to Papua New Guinea in 1963. Over the next two decades, Saini continued to engage with several development initiatives aimed at improving the local building industry and educational institutions, as well as initiating

local architectural training. In the second section, we will discuss the peculiar conditions that led to the engagement of Sydney-based architect and illustrator Douglas Snelling to design a range of built and unbuilt projects in New Caledonia, Fiji, and Vanuatu in the later 1960s and early 1970s. Notwithstanding recent and growing interest in the work and agency of both of these architects, published literature about them is still limited. The following accounts are therefore based substantially on our readings of the architects' own design work and publications, unpublished documents from both public and private archives, as well as interviews conducted by the authors with relevant participants.

## 2. Balwant Saini in Papua New Guinea

When Balwant Saini first arrived in 1963, Papua New Guinea was effectively still a colonial territory. Of the four nations that comprise the Melanesian region, Australia has had the most direct interaction with what now constitutes Papua New Guinea. Even before Federation, Australia was concerned about the establishment of German New Guinea on the north-eastern quarter of the island starting in 1884,<sup>4</sup> and Queensland encouraged British colonial annexation of the southern coast (Gordon 1945). Indeed, it has been argued that Germany's arrival in what is now Papua New Guinea 'marked the start of Australian foreign policy' (Wallis and Wesley 2016, 27). Soon after Federation in 1901 an expansionist Australian nationalism saw British New Guinea placed under the authority of the Commonwealth of Australia in 1902, with Australia finally establishing full administrative control in 1906, following the Papua Act of 1905. In 1914, at the start of the First World War, Australia captured German New Guinea under a military expedition, and this was formalised in 1919 with the Treaty of Versailles when the territories were assigned to Australia as a League of Nations mandate. Following a short presence of the Japanese during the Second World War, the territories returned to full Australian control and were merged to become the Territory of Papua and New Guinea in 1949 maintained as a United Nations Trust Territory until establishment of self-governance in 1972, and subsequent independence in 1975 (Hunt 2017; Waiko 2007) (Fig. 10.2).

Throughout the 1950s, Australia opted for a policy of gradualism towards development in Papua New Guinea, owing to security concerns over the advance of Communism following the establishment of the



**Fig. 10.2:** Officials discussing United Nations trust territories including Nauru and New Guinea, administered by Australia, and Western Samoa, administered by New Zealand., 31 January 1956 (UN Photo UN7487304)

Peoples Republic of China (PRC), the war in Korea, and closer to home the ongoing Malayan Emergency (1948–1960). But the global attitude was changing in favour of decolonisation and following criticism that there was no valid distinction between trusteeship and colonial rule international pressure increased to improve economic conditions and develop an educated elite to aid decolonisation (Leifer 1963). Following the 1962 tour of the United Nations Visiting Mission and endorsement of the Foot Mission Report at the meeting of the Trusteeship Council, Australia was given an ultimatum to organise elections for a representative parliament by the start of 1964. The Australian Prime Minister Robert Menzies was sensitive to Australia's relationship with its South East Asian neighbours and did not wish to be seen as a colonialist nation, but the Minister for Territories Mr. Paul Hasluck maintained that political advancement needed to be intimately connected to economic capabilities (Hasluck 1962). Consequently, beginning in 1963, Canberra got involved in a series of projects to assess and support economic development in the region, including that of the building industry.

In 1963, the Commonwealth Department of Works in Canberra approached Balwant Singh Saini, a young architectural academic at the University of Melbourne, with the offer of a year-long research fellowship to assess current building practices in Papua New Guinea and introduce new efficiencies for the development of a building industry.

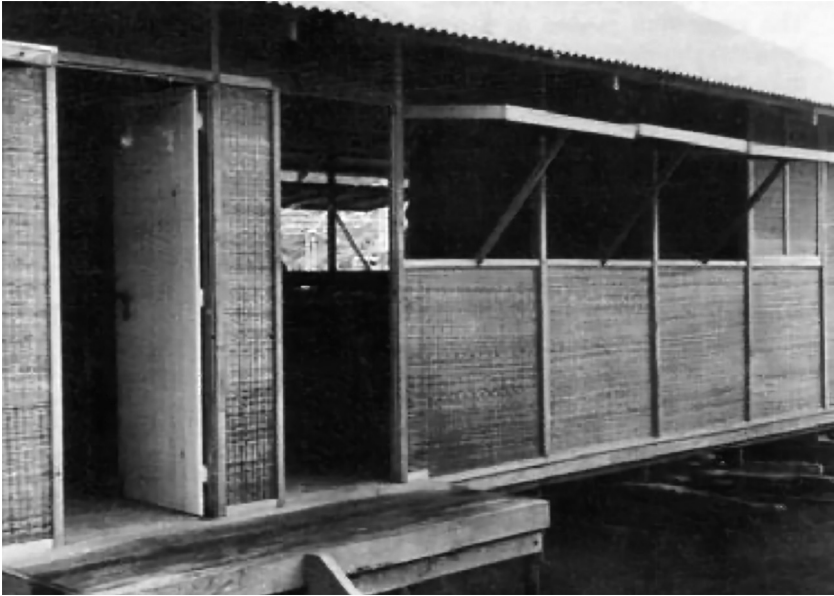
The assignment required Saini to record how local inhabitants built traditional structures, and to help set up small-scale industries that used local resources of labour and available technology to produce cheap building materials.<sup>5</sup> During his 12-month stay, Saini travelled out of Port Moresby to several regional areas, starting with Minj, located in the Wahgi Valley between Mount Hagen and Mount Wilhelm, using it as a base for trips into the highlands. He also spent time in the Sepik River region travelling west to Maprik, and all the way to the western border regions near Vanimo. Upon his return to Australia, Saini submitted a report to the government and over the next three years continued with his doctoral research at the University of Melbourne, now using Papua New Guinea as his laboratory. During this period, he published several articles outlining the challenges of the building industry in the region (Saini 1965a, 1965b, 1966a, 1966b, 1966c, 1967a, 1967b).

The biggest challenges included technical training for tradesmen and manufacturing of durable low-cost building materials. Saini clarified that there were some excellent programmes for training prisoners to build their own buildings at corrective institutions, and certain religious missions were doing good work in the regions, but there was not much in the way of formal training (Saini 1965a, 21).<sup>6</sup> As such, construction work was scattered and contractors, the majority of whom were expatriates, worked without skilled labour or sound technical advice. With fewer than 40 architects practicing in Papua New Guinea, the primary agent for development was the government, and the works were carried out by the Commonwealth Department of Works and Administration Department of Public Works. New educational facilities were a major focus of demand and the accelerated programme for primary school construction had tried adopting a phased process whereby skeleton steel-framed structures were provided with a watertight roof, and the flooring and storage were only added at a later stage when funds were available (Saini 1966b, 46). Such an approach had eventually proven to be expensive and inconvenient, and there was growing need to look for comprehensive local solutions. The argument was further illustrated by a project for a small laboratory to be built at Mount Wilhelm in the central highlands that Saini was commissioned to design for the New Guinea Unit of the Australian National University. Building materials and prefabricated components from Australia were shipped out to Madang, one of PNG's four ports, from where they had to be flown inland to Kelsugul at the base of Mount Wilhelm. From there they then had to be carried up the mountain by local

highlanders, with due care not to damage the panels. But, even after all of these transport and delivery challenges had been successfully tackled, further expert technical know-how proved necessary to assemble the prefabricated components, so a Yugoslav carpenter working with the fabricators in Melbourne ultimately had to be flown in to complete the task (Saini 1965c).<sup>7</sup>

In subsequent publications, Saini promoted the use of local building materials, but also recommended novel techniques to increase durability and preservation of these ‘bush materials’. Through his research on traditional building details and types, such as the *Haus Tamberan* of the Sepik River region, Saini had learned about local materials such as ‘bush-pole frames; roof thatch from pandanus, sago leaves, and kunai; and wall mats from sago palm mid-rib, pit-pit, and bamboo’ (Saini 1966a, 21). These materials were not only abundantly available and easy to procure for construction and repair, but were also appropriate for local conditions due to their proven capacity to withstand earthquakes or create opportunities for ventilation. But there were still issues concerning insects and fungi and fire resistance that challenged the efficacy of these organic materials. Working with overseas research organisations, Saini suggested the use of chemical preservatives such as copper–chrome–arsenic complexes applied using a range of methods, including drip treatment, dip diffusion, and sap replacement to provide protection. He also discussed small-scale manufacture of building boards using organic materials like grasses, reeds, coconut husk and wood wastes. One of the most interesting prospects was developing blocks of soil or crushed coral with cement, lime, or bitumen as a stabilising agent using a hand-operated pressurising machine (Saini 1966b, 44). Blocks made with this process by inmates of a corrective institution near Port Moresby displayed good compression strength of 1,400 psi. In conducting his research and developing these solutions, Saini also drew upon the work and experience of others involved in similar developmentalist projects across Asia and the Pacific, as well as Africa and South America. A closer look at Saini’s own origins and career trajectory offers further insight into the nature and extent of that global professional network<sup>8</sup> (Fig. 10.3).

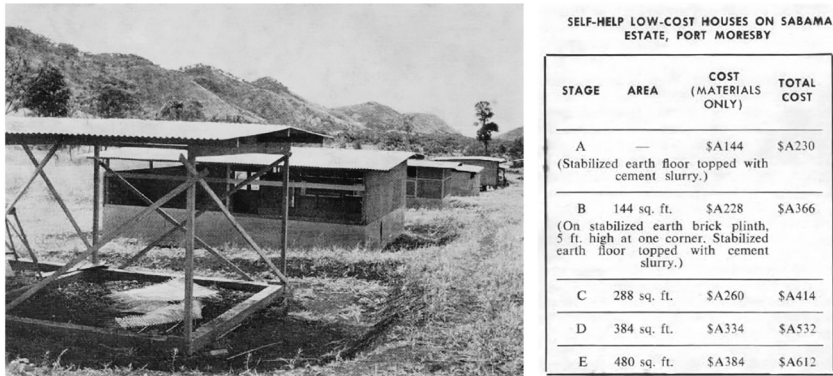
Balwant Saini was born and raised in British India, completing his undergraduate education at Punjab University in newly Independent India immediately following the traumatic partition of the Indian sub-continent in 1947. Saini then travelled to Australia where he had been admitted to the University of Melbourne to study Civil Engineering.



**Fig. 10.3:** Incorporating bush materials and local craft in modern buildings: Woven Sago leaves used for walls (Saini 1966a)

Finding Architecture more attractive, however, Saini ultimately completed his postgraduate studies in the latter discipline in 1954. Among the first of a small tide of international students from Asia as well as newly arrived European migrants who were attracted to the Melbourne University School of Architecture in the post-war decades, Saini's student peers included future leaders of the architectural profession in post-colonial Asia, as well as emerging consulting experts and academics like himself (Scriver and Srivastava 2011). Saini's classmate Amos Rapoport, a Polish-Jewish migrant newly arrived in Australia via Shanghai, would later have broad inter-disciplinary impact on thinking about built environment and culture.<sup>9</sup> Saini's own evolving architectural thought and career would reflect many other fortuitous encounters as well.

During the final year of his studies, Saini returned to India to complete the required practical training experience of his programme, having found a placement in Le Corbusier's project office in Chandigarh. There he worked closely with Pierre Jeanneret on the High Court building and so came to know Maxwell Fry and Jane Drew. Such experience was undoubtedly noted when Saini was later recruited back to the University of Melbourne, in 1960, to join the academic staff and contribute to the



**Fig. 10.4a-b:** Understanding architecture as a system: Sabama self-help housing scheme (Saini 1967b)

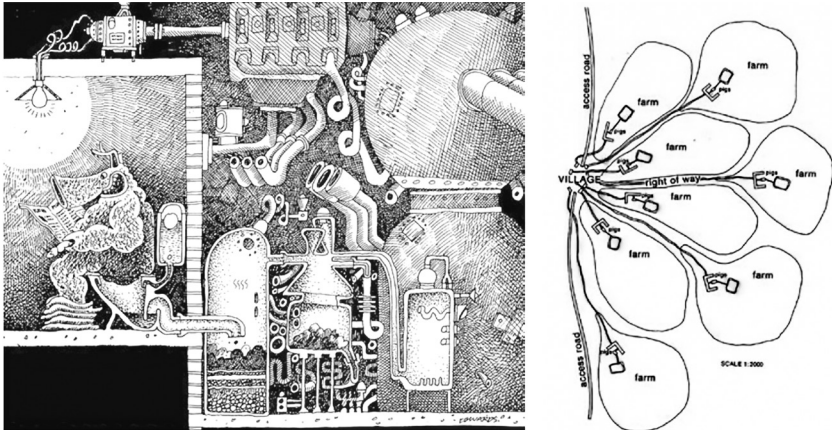
teaching of the growing body of Asian students on campus, many of whom were now supported by the Colombo Plan scholarship scheme (Scriver and Srivastava 2011). Professor Brian Lewis, the charismatic Head of the Architecture School, had been particularly welcoming to this new international student cohort having lived and worked previously in British Malaya. Under Lewis's leadership the school had also worked to evolve and develop a curriculum that would be more suited to the future professional challenges and circumstances of its Asian graduates. This included a new postgraduate program in Tropical Architecture launched in 1962. The need for such a programme had already been argued almost a decade earlier when, following the Conference on Tropical Architecture organised at University College London in 1953 (Jackson 2013),<sup>10</sup> a tropical diploma course was established at the Architectural Association in London by Otto Koenigsberger, in collaboration initially with Drew and Fry following their respective experiences in India.<sup>11</sup> Saini's own Indian experience equipped him well to develop Melbourne's programme and his fortuitous sojourn in Papua New Guinea the following year would reinforce his conviction in a comprehensive and context-specific approach to architecture as environmental design. Saini's subsequent research publications foregrounded the climatic challenges of building in the tropics, replete with references to the work of Drew and Fry in West Africa and other architects in Mexico to argue for a climate-based understanding of the architectural needs and hurdles of Papua New Guinea (Saini 1968)<sup>12</sup> (Fig. 10.4a-b).

By the end of the 1960s, having completed his PhD, Saini had also further developed the curriculum and the ambitions of the Tropical Architecture programme at Melbourne.

Australian architects needed to develop a more holistic approach to designing in the tropics, he argued, not just for those consulting in the 'developing world of the tropics, in Asia, Africa, Latin America, and the Pacific' but for those designing buildings for tropical Australia itself. To that end, he even proposed the establishment of a new school of architecture in Townsville, Queensland, that could address that demand more directly (Saini 1968, 667). As he saw it, the design and building challenges of tropical Australia resided primarily in the problem of non-resident architects trained in non-tropical regions of the country specifying materials and design details that performed poorly in tropical environments. His criticism extended to architectural education in general and the inability of architects to understand their responsibilities in the developing world:

The reluctance of architects to take complete control of the built environment in the tropical areas probably stems from their preoccupation with the task of designing and constructing individual structures. The idea of tackling broader problems of environmental planning and design seems to rarely appeal to them. In the tropics where scope for such an approach to individual buildings is limited the architects are not even aware of their potential role and the extent to which their profession can contribute towards the execution of the developmental programme. ... In a developing country such as the territory, housing does not mean simply building of residential units on a few available sites; it means tackling a problem which is part of the whole framework of utilities, transportation, schools, recreation, finance, materials, production, training and all of the other essentials of rural life and urban formation. (Saini 1968, 664–665)

Saini's involvement with Papua New Guinea continued to grow and evolve through the early 1970s when he was invited to be the first Head of the School of Architecture at the recently established University of Technology (Institute of Higher Technical Education) at Lae. A parallel opportunity to take a new position at the University of Queensland resulted in Saini choosing to move to Brisbane instead. However, he remained closely associated with the architectural education programme in Lae and continued to visit Papua New Guinea regularly after the new school was established in 1971, having nominated one of his former Melbourne colleagues, Neville Quarry, to take up the headship in his place. The government evidently valued



**Fig. 10.5:** (a) 'Piggy Poo Power' digester; (b) Design for remote communities on Nissan Island, Bougainville (1972) (Saini and Chan 1975)

Saini's architectural counsel as well. In 1973, Chief Minister Michael Somare commissioned Saini to draft a white paper to inform government policy on 'Urban Housing in Papua New Guinea' (Saini 1973). And, in 1975, the year that PNG gained full independence from Australia's para-colonial administration, the newly elected government invited him to chair the panel of judges for an international architectural competition for the design of a new Parliament building. Saini was still clearly held in high esteem.

In the same year, Saini worked with the environmental engineer George Chan to develop a master plan for Nissan Island in Bougainville, the eastern-most province of PNG (Saini and Chan, 1975). Chan had been working for the South Pacific Commission in New Caledonia since 1964, and then at the University of Papua New Guinea since 1972. The Bougainville Provincial Government had invited them to produce an ecologically focused development plan that would allow for self-reliance and sustained growth of such remote island communities, through decentralisation of economic activity, in line with the PNG government's eight-point improvement plan. The masterplan was based on the Integrated Farming System (IFS) developed by George Chan, which proposed clusters of eight families supported by a self-reliant 1-hectare farmland. Aside from a town centre that provided communal facilities for the island, there was limited building intervention, developing farm communities around a digester that decomposed organic matter. The digester helped recycle human and animal waste, employing only solar power and using the natural gas produced for cooking, lighting, water heating, and refrigeration. The system

also allowed for better water supply, general sanitation, and production of animal feed and new gardening and pisciculture practices (Fig. 10.5a-b).

In the years that followed, now as the Head of the Department of Architecture at the University of Queensland, Saini continued to persuade the Australian Government to engage actively in solving the housing problems of Asia and the Pacific. He spoke of the emerging crisis in Calcutta, Jakarta, Manila, and Dakar, claiming Australia needs to help its 'near neighbours – Indonesia, Bangladesh, Pakistan' as well as Sub-Saharan Africa, arguing for a Self-Help Approach to development (Saini 1978). His reports and works on Papua New Guinea had already been appreciated by the UNESCO, and following his involvement in the seminal 1976 UN conference on Human Settlements, he started working more directly as an expert consultant for UNESCO itself, continuing well into the 1980s to produce development solutions and design prototypes for educational facilities that were disseminated across both Asia and the Pacific.<sup>13</sup>

### 3. Douglas Snelling in New Caledonia

In the inter-war years, even as the intellectual and artistic avant-garde were redefining the South Pacific as a paradise of other worldly sensorial and cultural enrichment, there were others in Australia who travelled there seeking riches of a more material nature. Possibly the most well-known story is of an 18-year-old Errol Flynn who sailed for Papua New Guinea in 1926 to find his fortune at the Morobe Goldfields (Moore 1975).<sup>14</sup> By 1933, Flynn had managed to be cast as the lead on the Australian film *In the Wake of the Bounty* about the 1789 mutiny near Tonga, which eventually launched his acting career and brought him to Hollywood in 1935. This coincided with the rise of 'tiki culture' in California, and through the popularity of Errol Flynn found references to popular culture and lifestyle back home in Australia (Kirsten 2015; Brawley and Dixon 2012). Only two years later, a 21-year-old New Zealander, Douglas Snelling, arrived in America to work as an illustrator and commercial artist in Hollywood (Jackson 2018).<sup>15</sup> As Snelling scholar Davina Jackson has noted, the future architect's early career sketching publicity portraits of film stars enabled contact with an array of celebrities including Errol Flynn (on the set of *The Adventures of Robin Hood*). Snelling clearly admired Flynn and their physical similarity eventually prompted him to emulate Flynn, reflecting the actor's tastes and mannerisms. When Snelling returned to New Zealand, he brought stories

of Hollywood glamour laced with Pacific cultural references to be shared across various print and radio media (Jackson 2018).<sup>16</sup>

With the start of the Second World War, Snelling could not return to Los Angeles and instead got 'stuck' in Sydney. Following the war, he started working on murals and interior projects, eventually designing furniture that by 1947 would become famous nationally as the Snelling Line. Through his furniture design, Snelling gained further interest in the work of modernist designers, and decided to return to Los Angeles, this time to start a career in architecture. His first job was with Douglas Honnold, who after having worked as a set designer for Metro-Goldwyn-Mayer Pictures, had started working on leisure and hospitality projects in a style that would come to be known as Coffee Shop Modern (or Googie). It was through Honnold and his wife Elizabeth that Snelling met architect John Lautner and spent much time visiting works by other famous modernist designers in California, including a visit to Frank Lloyd Wright's Taliesin West. Returning to Sydney a year later, in 1948, he started working towards professional registration with the Royal Australian Institute of Architects (RAIA) and met the young émigré Austrian architect Harry Seidler, the zealous new champion of functionalist modernism in Australia who had just arrived from his studies at Harvard under Gropius. Although Snelling would take another five years to secure his registration, he succeeded in gaining much popularity in the process by liberally embellishing the truth about his experiences in architecture during his time in California. A key tactic was to hire the city's leading architectural photographer, Max Dupain, from 1951 onward, to photograph his relatively small residential commissions, and this worked wonders for his publicity.<sup>17</sup> In contrast to International Style modernist practitioners like Seidler, Snelling adopted a warmer Scandinavian-inspired form of modern architecture as he had witnessed in California and soon attracted a stream of wealthy clients. Through his wife Nancy, he was also introduced to the wealthy Woolworths executive Sir Theo Kelly and received the commission to design what would be Sydney's largest house at the time, at 24a Victoria Road, Bellevue Hill.<sup>18</sup> Snelling's Wright-inspired design for Kelly's house, rendered in sandstone and timber, won the 'House of the Year' award from the Australian magazine *Architecture and Arts* in 1955, claiming his place as the architect of choice of the Sydney elite.

In 1958, Snelling was listed alongside Sydney practitioners Peter Muller, Sydney Ancher, Neville Gruzman, Harry Seidler and Theodore Fry, as part of a list celebrating the top 20 Australian housing projects

since the Second World War.<sup>19</sup> By the early 1960s many of these same practitioners would come to be regarded as exemplars of an emerging ‘Sydney School’ (Dunphy 1962; Boyd 1965).<sup>20</sup> Architectural critics Milo Dunphy and Robin Boyd recognised this trend as standing in opposition to the International Style inspired modern architecture of Melbourne-based practitioners. They further attributed the distinct style, which was characterised by its materiality and focus on nature, to the peculiar topography of the Sydney Basin. But beyond stylistic distinctions, these works were also an outcome of an emerging intellectual network that more and more consciously looked towards Asia and the Pacific Rim for inspiration, questioning though not necessarily breaking away completely from received American and European influences (Scriver 2009). Over the next decade Snelling inadvertently became an integral part of this trend, reflecting the emerging interests and effects of the so-called Sydney School in his own designs without directly mimicking the work of his peers. Snelling’s influences were particularly hard to trace considering his unorthodox arrival into architectural practice, but the broader impact of Asian influences on the thinking of the Sydney practitioners and an overt opposition to international style modernism was undeniable.<sup>21</sup> The decade also saw the development of more affordable international air travel and the associated rise of tourism in Asia, which provided greater patronage and support for this architectural approach within the Sydney elite, transforming the local material culture (Fig. 10.6a).

Snelling’s connection with Pacific and Asian cultures was renewed when he took an extensive trip in 1964, travelling with his second wife and newborn son through New Caledonia and Fiji to Hawaii, and then tracing the Pacific Rim back to Australia via Japan, Hong Kong and Cambodia.<sup>22</sup> Soon after his return from this trip Snelling started work on two substantial residential projects on the picturesque Sydney harbour shoreline, in both of which the influences of Pacific architecture and culture were plainly evident. The first was a house designed for Arthur F. Little at Clareville Beach (3 Riverview Road, Clareville), which was called Yoorami House. The second was another residential project for Sir Theo Kelly at Vaucluse (22d, Vaucluse Road, Vaucluse) completed in 1967, which came to be known colloquially as the Tahiti House. As Davina Jackson has noted ‘both *Yoorami* and *Tahiti* feature exotic roofs in Asia-Melanesia vernacular style ... *Yoorami* is topped with cedar shingles, while *Tahiti*’s hat was made of imported gravel-coated malthoid panels, with a vertical projection inspired by Vanuatu’s “haus tambarans” (village meeting house

for men’ (Jackson 2018, 78). Jackson justifies Snelling’s ease with such cultural appropriation, noting that growing up in New Zealand as a child he would have been exposed to narratives of Maori connections to Hawaii and Polynesia, something his Australian counterparts were not privy to. Snelling’s direct exposure to ‘tiki culture’ in California in the 1930s and his own history as a publicist further helped him to understand and exploit the potential of this exotic imagery for his elite clientele (Fig. 10.6b).



**Fig. 10.6:** (a) Yoorami House, Sydney (1965): Arthur F Little House at Clareville; (b) Tahiti House, Sydney (1967): House for Sir Theo Kelly at Vaucluse (Jackson Papers, SLSNSW Archive)

Soon after completing these two major residential projects in Sydney, Snelling was to further develop his increasingly distinctive pan-Pacific modernist idiom in another pair of large residential commissions, this time in New Caledonia. The opportunity arose when Snelling had a chance to return there, in 1967, in the company of his former client Sir Theo Kelly and a group of '24 mates' aboard a flying boat, as guests of the advertising tycoon Ken Landell-Jones.<sup>23</sup> The French 'overseas territory' of New Caledonia was then undergoing a major economic and social transition, and promotional trips of this sort between Sydney and Noumea were then favoured as a tactic to boost Australian business awareness and engagement in local and regional development (Defrance 2019).

Originally a penal colony of France, the New Caledonian archipelago had progressively transformed in the first part of the 20th century into a colonial economy underpinned by nickel-mining and farming. Following the end of the penal forced labour system, in 1897, indentured labourers from Asia (Japanese, 'Tonkinese', that is, Vietnamese and 'Javanese', that is, Indonesian) had come under contracts to work in the New Caledonian mining industry. This significantly increased the multicultural – and heavily segregated – nature of the society, which now comprised the indigenous Kanaks, descendants of free settlers and convicts, French members of the colonial administration, and the various communities of migrant Asian workers (Lagarde 2021). Local architecture in the first half of the 20th century was still greatly influenced by French colonial style, and private housing by the creole bungalow, until the arrival of some European entrepreneurs/architects in the interwar period, who introduced the use of concrete and a new Art Deco-influenced aesthetic.

During the Second World War, American involvement in New Caledonia was a major boost to development. From 1942 to 1946, more than a million US soldiers set foot on the archipelago, a dozen airstrips were built, as well as hospitals, hangars, warehouses and so forth, and the COMSOPAC (South Pacific US Military Headquarters) was established in the capital city of Noumea. The use of new materials such as Marston mats, and ready-made warehouses such as Quonset huts, greatly impressed local populations and perhaps broadened their horizons in relation to architectural/engineering solutions. The post-war era became synonymous with the booming of nickel mining, thrusting the archipelago's economy forward from 1966 to 1975 (Defrance 2019). This intense new development phase in the archipelago was also spurred by substantial new financial investment by France in each of its colonial possessions across the South Pacific (French Polynesia,

New Caledonia and New Hebrides/Vanuatu). By the 1960s, the French Pacific was almost all that remained of France's once vast colonial empire, with French Indochina and most of its African colonies having gained independence from 1954 to 1958, and Algeria in 1962 after a bitter war. French interest in the Pacific was further heightened in the geopolitical context of the Cold War. Determined to pursue nuclear weapon research to obtain a '*force de dissuasion nucléaire*' (nuclear deterrent capability) of its own, France had established CEP (Centre d'expérimentations de la Polynésie) in 1963, a nuclear testing facility in French Polynesia (Meltz and Vrignon 2022). Over the following decade, therefore, development in the French Pacific became a particularly significant and sensitive issue for the ministry of French overseas territories and – albeit more secretly – for the French Government itself. The establishment of a Noumea-Paris air-route in 1953 (thanks to the Second World War-built Tontouta airstrip) had also allowed for better training of local youth, who were now able to travel directly to France for tertiary education. Local architects Jacques Rampal and Gabriel Cayrol, for example, both trained professionally in Europe and were able to bring back the latest architectural trends to the practices that each established upon their return<sup>24</sup> (Fig. 10.7).

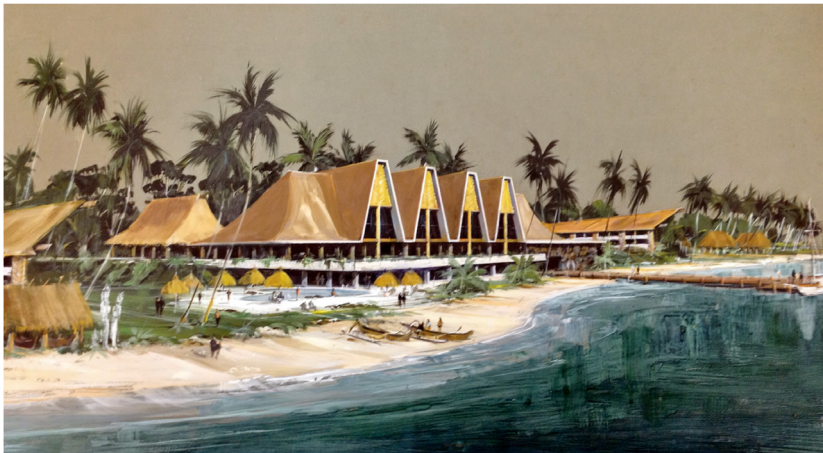
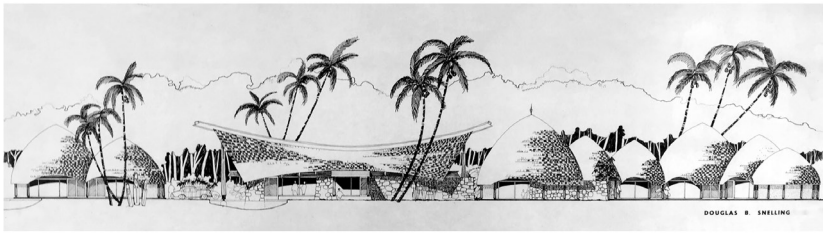
It is in this increasingly cosmopolitan context of social and economic development in New Caledonia in the late 1960s, with a booming construction sector dominated by the internationalist aesthetics of mid-century modernist architecture, that Douglas Snelling was commissioned to design a number of projects for the Noumea elite. These included a small-scale two-storey shopping mall known as Bettina Arcade, built in Noumea city centre in 1968–1969, an unbuilt residential design for the Kuter family (1968), and another two houses that were designed and built in that same year for local business leaders, Louis and Jean Nawa. The Nawa brothers were exemplars of the success story of the evolving colonial society. They were the sons of a Japanese indentured labourer, Kiichiro Nawa, from Gifu province in central Honshū, who had arrived in New Caledonia in 1900. The brothers had started humbly, with little grocery stores, but had eventually acquired major land plots and subsequently specialised in housing development, furniture import and retail for the local bourgeois clientele. Furthermore, the Nawa family was one of the very few Japanese families in New Caledonia who escaped destruction during the Second World War. In most cases, Japanese men were taken by the US armed forces and dispatched to POW camps in Australia. After the conflict they were sent back to Japan without any possibility to reunite with their wives



**Fig. 10.7:** International modernism in New Caledonia: Furniture shop for Jean Nawa by Gabriel Cayrol, c.1965 (Noumea City Museum)

and children on their Pacific island homeland (Tsuda 2006).<sup>25</sup> It is quite clear that what caught the attention of the Nawa brothers was the passion for architecture and more specifically for modernism that was palpable in Snelling's projects. During their business career, they had also commissioned Gabriel Cayrol for many projects, including their city centre retail shop and landmark – a vibrant, clear-cut white building emulating the works of Richard Neutra, which stood directly opposite Snelling's Bettina Arcade (Fig. 10.7).

But, while attuned to his clients' progressive expectations, Snelling also clearly intended to bring a more conspicuously regionalist vein of modernism to Melanesia, if not an outright return to 'Tiki culture', in the private residences that the Nawa family commissioned him to design: the Louis Nawa House, rue Michelet & cote de l'Amiral Halsey, Noumea, 1968–1969; and the Jean Nawa House (Bettina Paradise), Mont Mou foothills, Païta, 1968–1969. Jean Nawa's Australia-born wife Betty had also evidently been a factor in the development of these designs. As a fluent English speaker she had been the link between the architect and his clients since Snelling had first met the two brothers on his 1967 trip to Noumea.<sup>26</sup> She



**Fig. 10.8:** (a) Bettina Paradise – Mont Mou (1969): House for Jean Nawa in New Caledonia; (b) Unbuilt scheme for Erakor Villa, Vanuatu (1970); (c) Unbuilt scheme for Likuri Lei Resort, Fiji (1970–1972) (Jackson Papers, SLSNSW Archive)

also assisted in negotiating the more distinctively ‘pan-Pacific’ qualities and details of their modern residences, infused as these also were with Snelling’s ‘Sydney School’ sensibility for local topography, materials, and climate. In Jean and Betty Nawa’s residence at Mont Mou, for instance, the wood shingles and gable roofs clearly emulate large collective houses found in the Sepik region of Papua New Guinea and other islands of Southeast Asia, shapes that Snelling would further explore and export in resort developments in the New Hebrides and Fiji (Fig. 10.8a-c). The overall dramatic shape of the Bettina Paradise residence also echoes the traditional Japanese *Torii* portico, acting as a discrete reminder of the origins of the Nawa family. This symbol would later be used again in the construction of Bernard (son of Louis) Nawa’s residence in Noumea (architects Gabriel and Jean-Gabriel Cayrol).

By 1970 Snelling had developed a new passion for designing tropical style resorts and residential compounds for European and American developers in the Pacific. He would often convince expatriate entrepreneurs to draw schemes for local sites. That year he developed designs for two tourist resorts in Vila, New Hebrides (Vanuatu) called the Erakor Lagoon Development and the Tassiriki Park Estate.<sup>27</sup> Further afield in Fiji, he designed a 216-room Polynesian style resort on Likuri Island near Nadi. Beyond the design of thematic resorts that obviously celebrated local architectural references, Snelling also took up other residential and commercial projects in the region. In Vila, New Hebrides (Vanuatu) he designed a family residential compound that included a series of thatched hut-like structures for each family subunit and a central communal pavilion that mimicked a traditional swooped roof form. He returned a couple of years later in 1972 to design an International Market Place and other commercial developments along Queens Road in Nadi, Fiji. Unfortunately, with family health concerns at home, Snelling effectively withdrew from practice and most of these projects remained unbuilt. Still, his interest in the Pacific region saw him return to Hawaii to help his ailing wife recover over the next few years, eventually moving there on a more permanent basis after her death in 1976.

#### 4. Conclusion: Cultural entanglements and bilateral exchange

Balwant Saini and Douglas Snelling were seemingly worlds apart between practical and systemic issues on one hand, and the stylistic and hedonistic concerns, on the other, of the clients that they respectively served. Nevertheless, their architectural engagements with Melanesia can still be compared in terms of the agency these projects performed as vectors of bilateral exchanges and influences between what we might regard today as the global ‘North’ and ‘South’ (albeit in an absurd inversion of the actual geography of the equation in the case of Australia!). It is also evident that both Saini and Snelling converged in their curiosity and respect for the multiple forms and functions of the region’s architectures and building cultures. Each in their own way they too were contributing to a substantive shift in the balance and flows of knowledge about ‘appropriate’ design principles and values, which, by the end of the century, would be more universally embraced with the turn to ‘sustainability’ as an over-arching criterion and value for architects and environmental designers of all descriptions today.

Balwant Saini had initially been deputed from Australia to colonial Papua and New Guinea as a seemingly ideal agent of the ‘developmentalist’ approach to modernisation, as a cosmopolitan product himself of the para-colonial system of international technical aid and training. But, arguably, the greatest impact of Saini’s years of intermittent engagement with and learning from the building cultures and environmental design challenges of Papua New Guinea and the wider Melanesian region was how these informed his institution-building and educational agency back in Australia itself. In Melbourne, and later at the University of Queensland, he developed new curricula and research programmes that re-framed the problem of designing appropriate buildings and settlements for a large geographic portion of the sun-drenched island continent. Foregrounding the cultural dynamics as well as the technical challenges of a holistic systems approach to environmental design, he created space not only for the study of ‘tropical’ and other manifest regionalisms in Australian architecture, but for serious scholarship and research on the architectures of Australia’s aboriginal peoples and cultures as well (Goat 2025).

Similarly, Douglas Snelling’s initial agency was seemingly superficial and appropriative in propagating a ‘Tiki’ version of the Pacific in Australian popular culture and design. However, his career-long engagement with the region was comparable to Saini’s, in the end, in terms of the bilateral

impact of that exchange. In Snelling's later projects in Sydney as well as the Pacific, practising now with the fuller confidence and respect he was due as a fully registered architect, we see a comprehensive synthesis of his multi-faceted design talents and insights emerging more distinctively in the work. Returning to the fast-changing Pacific of the 1960s and 1970s with his various built and projected schemes for New Caledonia, Vanuatu, and Fiji, the mature Snelling offered clients such as Jean and Betty Nawa an original and compelling contribution toward the ideal of a contemporary Pan-Pacific architecture. But his work had also gained in sophistication and actual sensibility for regional topography, climate, light, and lifestyle from his immediate prior contributions to the emerging Pacific ethos of the Sydney School. Finding the Pacific within such an intimately grounded and situated approach to contemporary architectural design for Australia arguably empowered the further 'Pacific' work that followed with a deeper authenticity.

As Saini, Snelling, and an increasing number of other Australian architects were becoming more and more deeply engaged in the greater Pacific region and thereby transcending the ostensible periphery of the more bounded world-view of their colonial past, questions of Australia's own cultural identity(ies) and sense of place were becoming increasingly tangled, and its architecture was becoming richer for it.

## Notes

- <sup>1</sup> Loos contrasted the tattooing practices of 'the Papuan' with the physical body image of modern Europeans who would be regarded as either criminal or degenerate if they so tattooed themselves. See Loos 1913.
- <sup>2</sup> Margaret Preston was in New Caledonia and New Hebrides/Vanuatu in 1923 and then in Bali in 1925, while Ian Fairweather was in Bali in 1933.
- <sup>3</sup> For the architecture of Australia's para-colonial commercial and industrial relationship with the Asia-Pacific region, see Achmadi, Walker, and Speechley 2024. Intersections with Asia in Australian architectural practice and culture since the 1950s were explored in Amit Srivastava and Cole Roskam (2019) 'Fusion of Horizons: Australian Architects in Asia 1950s-80s', exhibition at Tin Sheds Gallery, Sydney, Australia, 11 July 11 to 7 September. See also Amit Srivastava, Cole Roskam, Peter Scriver, and Anna Dearnley (forthcoming) 'Beyond "Sydney School": Australian Architects and Asia, 1950s-1980s', *Architectural Theory Review* 30(1).
- <sup>4</sup> *Kolonialverein* of 1882 and the Society for German Colonization (*Gesellschaft für Deutsche Kolonisation*) founded in 1884.
- <sup>5</sup> Saini, Balwant (2022) Interview by Peter Scriver and Amit Srivastava, 4 April.
- <sup>6</sup> Saini later recounted that he was impressed by German mission hospitals and their attention to local practices in improving design for patient care. Interview Saini, (2022).
- <sup>7</sup> Further details from Interview Saini (2022).
- <sup>8</sup> Beyond relevant career and personal details gleaned from Balwant Singh Saini's formal publications cited elsewhere in the text, the present account draws on a sustained correspondence

and series of interviews and unpublished personal recollections shared with the authors since 2013. Saini's agency in establishing and extending a 'tropical' discourse in Australian architectural historiography has, very recently, begun to attract wider scholarly interest. For further insight into the context and content of Saini's doctoral research in PNG, in the 1960s, see Goad 2025. For the para-colonial networks and milieu of developmentalist efforts by Australian governmental agencies to export architectural aid, in which Saini was initially engaged, see Musgrave 2025.

<sup>9</sup> Saini, Balwant, 'I Remember: People, Places and Events', unpublished manuscript.

<sup>10</sup> See also Jackson and Holland 2016.

<sup>11</sup> Informally, a course of sorts had already been in existence for some time. As Balwant Saini recalls: 'When Drew and Fry worked in Ghana during WWII, they realised how important it was to develop new ways to solve local building problems that were quite different from those in Europe. After their return, they set up an informal school of tropical architecture in their London office. When the pressure became too much, they moved it to the Architectural Association in London and asked Otto Königsberger to run it.' Balwant Saini, e-mail communication with the authors, 14 March 2023.

<sup>12</sup> Saini further referred to the works of Doxiadis, Abrams, Ortego, and Alcock for their approach to tropical areas. Examples of developmentalist projects addressing tropical issues included school designs utilising UNESCO anthropometric data on local children; two-storey developments in regional schools to battle climatic issues; SABAMA Housing project as a Sites & Services approach; and a 1966 Mining Housing project with AV Jennings.

<sup>13</sup> Balwant Saini prepared designs for 'Prototype Education Facilities in Asia and the Pacific', for UNESCO/AGFUND in June/July 1985.

<sup>14</sup> For other biographical details also see Flynn 1961.

<sup>15</sup> This biography is based on research material also directly available and accessed by the authors at the State Library NSW. 'SERIES 01: Davina Jackson Thesis and Research Notes on Douglas Snelling and Modernism, including Photographs, Architectural Plans and Objects, ca. 1916–2007', Call No. MLMSS 8801, Textual Records, State Library of New South Wales, Sydney, Australia (hereafter cited as Jackson Papers, SLSNSW Archive).

<sup>16</sup> Note that in 1939 Snelling was hired by Warner Bros. New Zealand office and did write-ups and advertisement for 60 films released in 1939. He often used these print and radio media outlet to talk about his own Hollywood experiences.

<sup>17</sup> 'Dupain, Max. Architectural Photographs, 1939–1988', Call No. PXD1013, Graphic Materials, State Library of New South Wales, Sydney, Australia.

<sup>18</sup> 'Douglas B. Snelling: Architectural Drawings 1965–1972', Call No. PXD778, Graphic Materials, State Library of New South Wales, Sydney, Australia.

<sup>19</sup> Jackson Papers, SLSNSW Archive.

<sup>20</sup> The term was initially coined by Neil Clerehan; see Clerehan 1961.

<sup>21</sup> See particularly Snelling's scathing review of the Sydney Opera House competition that outlines the two approaches in opposition. Jackson Papers, SLSNSW Archive.

<sup>22</sup> Cambodia was a country Snelling would develop a long relationship with, returning several times over the following years, and even acting as its honorary consul in Sydney.

<sup>23</sup> *Daily Telegraph*, 24 February 1967.

<sup>24</sup> Rampal worked for Le Corbusier for several months at the end of his degree, and Cayrol was a graduate of the Ecole Spéciale d'Architecture in Paris. See Taylor and Conner 2014.

<sup>25</sup> The fact that Kichiro Nawa already had two sons fighting for the Free French in 1940 probably helped.

<sup>26</sup> Nawa, Louis Kaziwo (2020). Interview by Louis Lagarde. M. Nawa provided details such as Jean Nawa meeting his wife Betty Kilby in Sydney in 1940 while working there as a shoemaker. He remembered specifically asking Snelling for two overlapping freshwater basins for Japanese carps. He added that the architect came to Noumea three times to oversee construction of the Admiral Halsey St. house.

<sup>27</sup> One of the possible links between Douglas Snelling and the New Hebrides is a New Caledonian connection. The Kuter and Nawa families had financial interests and joint affairs in the Condominium, and Louis Nawa recalls his brother Jean suggesting development projects in 1968–1969 to the Sydney-based architect. Interview Nawa 2020.

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