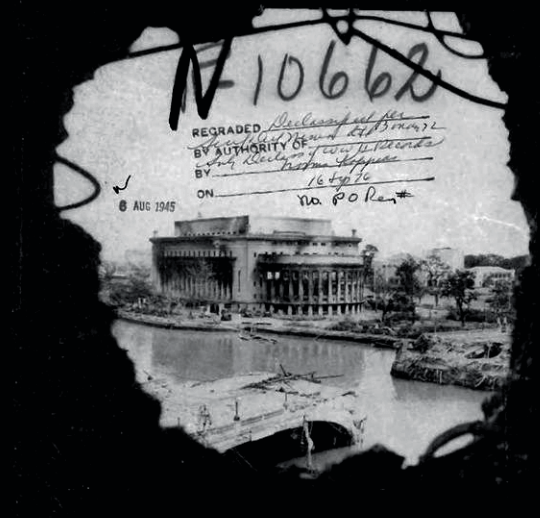

CONCRETE COLONIALISM

Architecture, Urbanism, and the US Imperial Project in the Philippines

DIANA JEAN S. MARTINEZ

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For Mom and Dad

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Preface and Acknowledgments

I write this from Anilao, Mabini, Batangas, where my extended family has gathered for a reunion. One of my clearest childhood memories was of this place, during one such reunion. I was staying at my grandparent's house. The rest of my family was still asleep. Jetlagged, I snuck out of the bedroom and onto the terrace facing the beach. My feet prickled by the terrace's pebbledash, I leaned against the rail of precast balusters, and stood mesmerized by long flashing arcs of silver-sided flying fish leaping above the moonlit surface of Balayan Bay. Hours later the smell of diesel and the sputtering of outboard motors announced the arrival of the early morning catch, as sellers prepared the palengke, just a few meters from the house, by throwing buckets of soapy water over the concrete floor.

My mother was born close to this very spot, in a one room nipa house, where they kept chickens below the main level. One of her earliest memories of her home was of poking through the pitched slatted floor so an egg caught on the bamboo's nodal ridges would continue its roll toward a collection trough—a split shaft of bamboo. Aided by remittances sent by their eldest children, my grandma and grandpa built the town's first concrete house, on a small lane that ran parallel to the beach. Three stories tall, it had the town's first toilet, "windows" of patterned breezeblock, and electric outlets. It was furnished—almost entirely—with ornately carved furniture hewn from a single narra tree felled by a typhoon on a family farm on the island of Mindoro. At family dinners, under buzzing fluorescent tubes, the Batangueño accents of one generation and the midwestern accents of another sharply pinged off the concrete walls of the sala. Though it is rarely noticed, the central character of this book lingers, perhaps only half-consciously, in the memory of every living Filipino, though it

was only introduced to the archipelago a few years after my grandparents were born, in 1909.

Throughout the writing of this book my own memories and those of my family members have mixed freely with the images, passages, and articles I have come across over the course of my research. Descriptions of cities and landscapes that I have attempted to reconstruct through reports, photos, film footage, and other archival materials are seasoned by images of grandma and grandpa Sandoval teaching in concrete schoolhouses, and with my Auntie Tinay's description of the kamote patches that sustained my dad's family during the Japanese occupation. Details of my own life are also tightly intertwined with the pages that follow. Through this work I have come to a better understanding of my family and its place in this world. My family, however, do not only provide personal touchstones; this work is complete because of their love and support. There isn't enough room to name all the aunts, uncles, and cousins that I would like to thank. Though each has been important, I am especially grateful to P. J. Dilbert, Pelang, Techie, Shy, and King for opening their home on trips back to the Philippines.

I have long insisted that this book is not written about the Philippines, but is in more significant ways a history of the United States and its marginalized history of colonialism. The importance and centrality of this story to US history, which surfaces in rarely accessed archives, was also revealed to me in deeply personal ways. It is just one of many twists of fate that my partner's great-great-grandfather served in the US Signal Corps in the Philippines. There he dutifully carried out orders to force locals to labor (unpaid) on a telegraph network. Though he saw little more in Filipinos than lazy natives, my children are now his descendants. His great-grandson, John (my father-in-law), and my mother-in-law, Judy, have been important sources of warmth and support throughout the writing of this book. They have cared for me and for their grandchildren with creativity and unflagging energy. History takes strange turns, and it is as much for them that I wrote this book as it was for the family I was born into. For their love, openness, and companionship I have not only them, but their entire family to thank—one that extends to all the Kiwi whānau that kept us safe and sane through the pandemic, especially Debbie, Peter, Rose, Chris M., Jules, Chris H., Sam, Nic, Nick, and Josephine.

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I would have never chosen this path if not for those along the way who believed I had something to contribute, including Joan Ockman, Felicity Scott, Mabel Wilson, Esra Akcan, Greig Crysler, Zoë Prillinger, and Luke Ogrydziak. I reserve a special thank you for Reinhold Martin, whose creativity and critical insights have served as a guide, and whose kindness and support I have depended on for many years.

Nothing would have been possible if my father had not modeled an intense curiosity about the world. All has been made possible by my mom's unlimited generosity and humor. And everything has been made more bearable and amusing because of my brother, who laughs, to the great puzzlement of others, at the same random things that I do. Thank you.

My greatest debt is to my partner, Owen Cornwall, who patiently listened to every half-formed idea, helping me fill each out, over breakfast, over chores, in the car, walking the kids to school, even when exhausted and busy figuring out his own ideas. You have supported this work in more ways than I can count or possibly thank you for. Thank you especially for the life we have built with Zoë and Charlie, the deepest wells of love and joy.

INTRODUCTION

The West is known by its deeds, the East by its dreams. The Anglo-Saxon lives in the concrete, the Oriental in the shadows. The American, having found a "proposition" in a field makes haste and sells all that he has and buys that field that he may dig therein and get "results." The Oriental inhales the drowsy fumes of some far off good that was, or is, or is to come—it little matters which—and is content. —GEORGE AMOS MILLER, *Interesting Manila*

In his 1906 travel guide, *Interesting Manila*, George Amos Miller attempted to familiarize his American audience with the peoples of its brand-new colonial territory by comparing the industrious American, racially defined as the "Anglo-Saxon," to the passive "Oriental," a figure whom Amos describes as enveloped in a vapor of indifference. Miller was of course not speaking of "concrete" in the material sense, but rather using the term to describe an American that invested in a *real* economy—one characterized by personal investment and quantifiable returns.[1] But by 1913, when George Hamlin Fitch wrote the travel

guide, *The Critic in the Orient*, Manila would be a city literally transformed by the material. Fitch opens his chapter on the Philippines by describing Manila's approaching horizon as a huge mass of concrete, writing that it was "now the favorite building material of the new Manila. Not only are the piles and docks made of this material," he remarked, "but all the new warehouses and business buildings as well as most of the American and foreign residences are of concrete." Fitch concluded that the material—"clean, cool, and enduring"—met "every requirement of this tropical environment."[2]

In the seven-year interval separating the publication of these two travel guides, the US colonial administration had built the government-owned Manila Hotel, the General Hospital, the first buildings of the University of the Philippines, Manila City Hall, concrete-lined reservoirs, concrete lighthouses, hundreds of cisterns both small and large, and countless other buildings and public works projects, all out of reinforced concrete. Prior to 1898, there was not a shipload of Portland cement per year that arrived to the islands. By 1913, millions of barrels had been shipped to the Philippines. What came into the Philippines as a shapeless quantity of powder and nested stacks of reinforcement, was mixed with local sand, aggregate, and water and poured into a vast number of forms and shapes, ranging from the intricate volutes, dentils, and metopes of the new government buildings to the 8′-diameter tubular sections of what US officials touted a "sewer and storm-water drainage system superior to those of any other city in the Orient!"[3] Large volumes were poured into Manila Bay's hulking modern fortifications, and thin layers covered vast swaths of earth, from the far-reaching networks of roads and bridges, to the concrete that partially surfaced the ground of the new sanitary *barrios*—the modernized foundation of the native *bahay kubo*.[4]

Originally a logician's term meaning "actual and solid"—and used in opposition to the word *abstract*—*concrete* only came to refer to the manmade material in the mid-nineteenth century.[5] The popularization of its usage mapped onto major advances in reinforced concrete construction. But how can any one material be more "actual" than any other? Modern reinforced concrete's superconcreteness lay not in its opposition to abstraction, but in its ability to narrow the gap between an abstract conception and its realization. Human endeavors, Tim Ingold argues, are "forever poised between . . . the pull of hopes and dreams and the drag of material constraint."[6] Reinforced concrete construction, in addition to a number of technological innovations introduced around the same time, significantly eased the friction between acts of design and those of construction. Indeed, modern modes of construction tend to render labor more abstract (having the converse effect of rendering the architectural *idea* or

design as more concrete than the labor that built it). Compare, for example, a hand-laid brick wall to the surface of a cast concrete wall. The dimensions of a typical brick suggest a relationship to the hand of the laborer, and by extension to a relationship to labor time. Variations in brick bonds, meanwhile, are signatures of skilled craftsmanship. By contrast, the scalelessness of concrete, along with its lack of inherent texture, obscure the presence of labor.[7] This tighter relationship between the idea and its concrete realization plays an important (if not central) role in the emergence of an American "concrete culture" that is particular to a society able to so quickly realize its "big plans."[8]

Answering both natural and manmade disasters with unparalleled strength and apparent durability, reinforced concrete enabled a sensible progress unobstructed by the prohibitions of cost and a wide variety of risks—whether meteorological, seismic, biological, political, or even moral. These benefits seemed even more pronounced in the tropical colony, for—whereas its strength and fireproofing ability pushed the cities of temperate metropoles to heights once considered too perilous—the material promised an imperviousness to an even greater variety of hazards seen as endemic to tropical climates. This was especially the case in the Philippines, where concrete's resistance to fire, earthquake, rot, microbe, termite, and typhoon shored up many of the doubts surrounding the US's first major colonial endeavor in East Asia. This was of central importance, as the US's colonization of the Philippines was often argued—either for or against—on quantifiable as opposed to ideological grounds, reflecting the US's turn away from a coherent narrative of its founding ideals of life, liberty, property, and equal protection under the laws, and toward an emphasis on quantifiable and verifiable goals—a governance informed by the application of rationalized and scientific methods to the operations of the state.[9] For example, though the Organic Act of 1902, which served as the colony's de facto constitution from 1902 to 1916, included a bill of rights, it also included as a condition of independence the requirement to conduct a census (a collection of population metrics used to generate a managerial colonial policy). Of particular relevance to this book, the census took into account not only race, marital status, and parents' birthplaces, but also included categories like "material of house," which was used as a hard measure of a native's level of "civilization," at the same time that it defined a measurable field of intervention.

Reinforced concrete construction was still a new technology at the time of the outbreak of the Spanish-American War. It was, however, at precisely this time that US producers and promoters of Portland cement began to associate the material with the construction of an era of American greatness—a "Concrete Age," as announced by the title of an early twentieth-century trade

publication. Classifying "ages" according to material (e.g., the Stone, Bronze, and Iron Ages) was a practice formalized and popularized in the mid nineteenth century.[10] In view of a past now so systematically defined in terms of its materiality (and the technological advantages that those materials afforded), Americans began to see themselves in the grandiose terms of an epochal and civilizational history—not only using, but identifying with, concrete's durability and strength, and equating it with their own promising and vigorous future. Thus, it was not only that, as Michael Adas has argued, "advocates of U.S. expansion have . . . consistently assumed that the adoption of American technologies (and material culture more broadly) also entailed the incorporation of American values, ways of thinking, and modes of organizing everything from factory workers to political systems,"[11] but rather that material culture and "American values, ways of thinking" were coextensive, converging around the various agencies and consequences of reinforced concrete construction.

This is not to say that the introduction of reinforced concrete was an unimpeded process from conception to execution. This book contains several accounts of failure, the causes of which include inexperience with the still experimental material, faulty design, poor workmanship, labor conflict, native resistance, incorrect admixture ratios,[12] natural disaster, and ballistic forces in times of war. Concrete, as it turns out, is also not as durable as it was initially believed to be: Lucia Allais and Forrest Meggers point out that the failure of all modern reinforced concrete through carbonation was calculated in 1968 to take about 100 years, putting structures built at the turn of the century on the brink of structural failure.[13] That is to say, this book does not even account for the most destructive consequences of concrete colonialism, some of which are yet to be seen.

Today, concrete is the most commonly used building material in the world. Why, then, focus on the US colonial project in the Philippines? Why not British India, where—a few years before the first shipment of cement arrived in the Philippines—Major E. R. B. Stokes-Robert built a reinforced concrete bridge over a small river in 1901, or where plain (unreinforced) concrete blocks had been used in harbor works since the 1870s?[14] Why not Egypt, where the Hennebique central office built impressive railway bridges starting as early as 1903, or Algeria, where Hennebique opened an agency in 1893?[15] Or French Indochina, which—since the early twentieth century—produced far more Portland cement than the Philippines ever did? Or Brazil, which along with a newly independent India embraced concrete modernism as part of "a powerful tool in the process (and project) of decolonization"?[16] Why not the former Soviet Union, which immediately conjures images of both heroic

concrete infrastructures and dismal *Khrushchyovkas*? Or China, which has used as much cement in two years as the United States did in the course of the entire twentieth century?[17] Why not Angola, Nigeria, or the Sudan, all of which are major targets of China's ambitious African development strategies? And why not the United States itself?

Though these sites are not the focus of my book, their stories are intertwined with this one. Concrete colonialism is a story that unfolds, though in different ways, across the globe, as pieces of a puzzle with both historical and emerging complementarities. Concrete colonialism in the Philippines, however, offers a unique vantage point from which to view how this concrete world came into being. Most crucially, nowhere else (in terms of its early history at the beginning of the twentieth century) was reinforced concrete used as pervasively as it was in the Philippines, where its use was adopted as colonial policy. Whereas by at least 1906 reinforced concrete construction was the nearly exclusive mode of construction for government-built architectural and infrastructural projects in the Philippines, reinforced concrete buildings were, outside of the Philippines, relatively rare in colonial territories, especially the regions today referred to as East, Southeast, and South Asia, until the 1920s. Exceptions included experimental pedestrian bridges in Japan (1903–1904), several multistory commercial structures in Guangzhou (ca. 1905), the Kunstkring in the garden city of Menteng in Indonesia (1914), and the aforementioned projects in India. In British and French colonies colonial architecture—including the grand opera houses of Indochina and Lutyens' Delhi—were built using traditional stone and brick masonry. One of the first large-scale specifications of reinforced concrete construction in a colonial territory outside of the Philippines was, in fact, a project deeply influenced by Daniel Burnham's work in the Philippines—the hill station of Dalat, whose master plan was drawn up by Ernest Hébrard in 1923. Though a zoning plan for Dalat by Paul Champoundry, which also specified the use of reinforced concrete, was completed in 1906 (i.e., after the publication of Burnham's Manila and Baguio plans), major construction using the material did not occur until after the publication of Hébrard's plan.[18] This book then considers the significance of the early and nearly exclusive use of reinforced concrete technology in the US colony, and reveals, as I aim to demonstrate, important aspects of how the United States developed as a global hegemonic power—at the very moment of the US's meteoric rise.

What was invoked in official documents and public speeches as a durable and scalable means of developing the United States' first far eastern colony was also, at the end of the nineteenth century, understood as a means of reinvigorating and stabilizing the retarded growth of the US economy through

the continuous reinvestment of surplus capital in an expanding set of foreign territories spread across the globe.[19] In the colony, these investments took the form of public works projects—roads, sewer systems, water works, irrigation systems, and government buildings, which were themselves designed to attract more international capital. This process, which generally aligns with what we might today call economic development, is not usually associated with colonial sovereignty, but with *indirect* neocolonial arrangements of power. What the story of concrete in the Philippines allows me to do, then, is to frame what is usually presented as the end of empire as, rather, the beginning of an imperial reconstruction.[20] Relatedly, this allows me to present a counternarrative to those that valorize the technology's adoption as a "tool in the process of decolonization." By contrast, I argue that concrete construction in the Philippines spans periods of colonial and national building, which are here presented as phases of a continuous imperial expansion choreographed by former imperial powers—a story obscured by liberatory narratives of the postcolonial nation-state.

What Is Concrete Colonialism?

What is concrete colonialism? And what distinguishes it from other types (in a rapidly expanding academic typology) of colonialisms? My contention is that concrete colonialism is distinct from but related to many other forms of colonialism including but not limited to extractive, settler, penal, internal, plantation, legal, trade, and missionary colonialisms.[21] To understand its particularities requires an address of two basic questions, namely, what is concrete? and what is colonialism? Separately these terms might seem overdetermined, but a close examination of each reveals a specific and unfolding relationship that produces historically and materially specific effects. A basic definition of colonialism is of an arrangement in which one population exerts control over another, usually for the purposes of extracting resources and hoarding wealth (a definition that does not necessarily entail colonial sovereignty). Colonialism, however, was never assembled in quite the same way. As a term, *colonialism* is too often used as shorthand when referring to complex relationships between humans, land, resources, materials, and their respective agencies. As such it is common to make claims that colonialism itself *acts* or explains certain historical conditions. My contention is that the term *colonialism* does not itself explain anything. Rather, it is a constantly evolving set of conditions that itself has to be explained. This same rule applies to other master terms like *capitalism*.

Karl Marx himself did not describe the mill as the outcome of "capitalism" but, rather, as productive of a specific type of capitalism. In a similar way, *concrete colonialism* describes concrete as productive of a specific type of colonialism—in this case an apparently durable form that outlasts a legally defined colonial sovereignty.[22]

The architecture historian Sigfried Giedion provides a very good answer to the question "What is concrete?," describing it as an "aggregate body" made "from slender iron rods, cement, sand, and gravel," which combines "the properties of these almost worthless materials . . . [to] increase their separate capacities many times over."[23] Generally speaking, the five ("almost worthless") component materials can be divided into two categories: those that are locally sourced and processed and those that are industrially produced. The former category includes sand, aggregate, and water, while the latter consists of steel reinforcement and Portland cement (which are themselves made from a diverse set of raw materials). Forms of labor are embedded within each component—aggregate has to mined and crushed, sand has to be sourced and sifted, and water has to be made relatively clean. Reinforcing steel and Portland cement, meanwhile, combined the work of machines with the manual labor of miners, truck drivers, kiln operators, metal benders, engineers, designers, and managers.

Reinforced concrete is itself not a commodity, but is rather made up of a number of different commodities. Unlike "soft" or "non-durable" goods (e.g., textiles, tea, coffee, salt, coal, and oil), Portland cement and reinforcing steel were not metabolized, worn, or consumed as such. When unmolded to reveal its final form, reinforced concrete acts in near contradistinction to its exportable, tradable components. After passing through a brief liquid state, the admixture forms into a solid, strong, heavy (and at times seemingly indestructible) mass. During the settlement of the American frontier, timber construction was susceptible to both destruction by fire and the rising price of lumber (as the lumber industry realized the finitude of US forests). Reinforced concrete provided permanence at a fraction of the cost of any other durable material. In the tropics, concrete replaced locally available materials like bamboo and nipa, organic matter yielded from a tropical environment that by virtue of its interminable cycles of renewal and decay prevented primitive accumulation. Concrete, then, not only significantly and substantially shaped the nature of the US colonial project; it also allowed the United States to achieve an ambitious colonial goal—to reshape and reform what it viewed as tropical conditions that were inherently hostile to capitalism. These tangible, visible reforms of the

environment (inclusive of the people who inhabited it) became the ideological basis of an American *civilizing mission*—allowing US colonizers to overcome the internal contradictions of a colonizing power that held "liberty" and "self-determination" as foundational values. Portland cement, then, was not just a durable good; it was the commodification and expansion of durability itself.

The story of concrete, however, begins long before the site of emplacement, and ends long after it. Concrete aggregates a number of raw materials, forms of labor, and industrial processes. Its site of production, then, is divided between limestone and iron ore quarries, rebar and Portland cement factories, the railways and oceans that it moves across, its site of emplacement, and the site of its eventual disposal. Thus, though reinforced concrete's structural performance and its overall durability revolutionized building construction in the metropole, it was the transportability of its components that allowed that same revolution to happen almost simultaneously in Europe's and the United States' tropical colonies. It is the material's multi-sitedness—its sites of extraction, processing, and production, and the global circulation of its component parts—that renders it of particular importance to processes of colonization. In this book I not only analyze concrete, but I also use it as a lens that allows one to view—within a single epistemic frame—a multiplicity of classed and racialized subjects—including the American steel benders, Vietnamese Portland cement laborers, dispossessed Indigenous Americans, and the native Filipino laborer—as subject to the same set of evolving and interconnected imperial practices.[24]

The Imperial Debate

In the immediate aftermath of the Spanish-American War representatives of both the United States and Spain met in Paris to hammer out the conditions of a peace agreement. The resulting Treaty of Paris included securing national sovereignty for Cuba and transferring possession of the Philippine Islands, Puerto Rico, and Guam to the United States. Though the treaty was signed within days in the Spanish Cortes, the US Senate took weeks to ratify the settlement. The main sticking point was that the acquisition of the Philippines (at a cost of $20 million) would mean—beyond the shadow of a doubt—that the United States was an imperial power. This "condition" of victory thus brought the nation face to face with a particularly vexing internal contradiction. As with any treaty verification, its passage required a two-thirds majority vote

in the Senate. Senators deliberated: Was colonization not anathema to the foundational principle of American democracy, that of self-determination? Or had the United States grown so great that empire was an inevitable responsibility? Senator George Hoar from Massachusetts argued, "(t)his Treaty will make us a vulgar, commonplace empire, controlling subject races and vassal states, in which one class must forever rule and other classes must forever obey." Hoar's fellow Republican senator from Massachusetts, Henry Cabot Lodge, countered by warning that, if the Treaty of Paris was rejected, the people of the United States would be deemed "incapable of taking rank as one of the greatest world powers." Here, the widely celebrated ideological (abolitionist) and material (industrialist) motivations for the Civil War came into direct confrontation. Cabot Lodge was hardly a disinterested party. The descendent of two prominent Boston Brahmin families (with fortunes built on international commerce), the Philippines represented—especially for him—an open door to a commercial theater in which the United States had long struggled to gain a foothold. On February 6, 1899, the Treaty of Paris was ratified in the Senate by a margin of just one vote.

Shortly thereafter, the United States found itself in a familiar place—in a violent war of aggression against an indigenous population. This time, though, US troops were sent some seven thousand miles away from what had been assumed to be the country's western terminus. A day before the ratification vote, leaders of the First Philippine Republic declared war against the United States, which they viewed as a continuation of their struggle for independence, and as a response to what they viewed as a betrayal. Filipinos had fought alongside the United States in the Battle of Manila Bay, under the impression that the revolutionary republic was waging a battle of liberation and not of conquest. The pro- versus anti-imperial debate that began on the Senate floor intensified as news of both mounting casualties and atrocities committed against the native population reached domestic shores. The capture in 1901 of Emilio Aguinaldo, the leader of the First Philippine Republic, did not end the war, as US military leaders had believed it would. Though the Philippine "insurgency" (as the United States referred to it) was declared over in 1902, hostilities between the United States and various of the archipelago's militant groups (some closely affiliated, and others more loosely, with the First Philippine Republic), continued well beyond that date, in a conflict that suffered a higher casualty rate than the US Civil War.[25]

Though resistance to US occupation was never extinguished, by 1906—the year that Miller published his *Guide to the Philippines*—even the most fer-

vent anti-imperialists began to accept annexation as a fait accompli, and were drawn into a debate over what to do with the archipelago and its peoples.[26] For example, William Jennings Bryan—perhaps one of the most active and vocal members of the American Anti-Imperialists League—appealed for the establishment of a "stable form of government" in the islands, followed by a policy that would "protect the Philippines from outside interference while they work out their destiny." This was a policy that, as pro-imperial spokesmen pointed out, mirrored the substance of their own program.[27] In fact, most of the "anti-imperialists" favored the overseas expansion of the "American economic system"—which, in actual terms, meant the expansion of its markets, its systems of labor, and the development of material resources. These were imperatives that required a massive constructive undertaking that included the construction of forts (to protect the archipelago from "outside interference"), ports (to handle increased commercial traffic), civic structures (to house a "stable government"), schools (to educate a labor force), and transportation infrastructure (to move material resources from source to port).

Stripped of its ideological armatures, the dispute between "anti-imperialists" and "imperialists" revealed its underlying immateriality. What *Concrete Colonialism* examines, then, is the very material that the "imperial debate" obscures.

The belief that the expansion of a US economic system was not a form of colonization is how someone like Andrew Carnegie (whose main objection to colonialism was a racist fear of Filipino invasion) could adamantly claim to be anti-imperialist, even as his corporation profited from and played a central role in the construction of what is now recognized as a global US empire. Carnegie assumed that "colonization" was a new endeavor for the United States when, in truth, the United States had been a colonizing power from its inception.[28] Frederick Jackson Turner articulated this at the World's Columbian Exposition of 1893, held in Chicago, in his famous speech, "The Significance of the Frontier in American History," which opens with the declaration that "up to our own day American history has been in large degree the history of the *colonization* of the Great West."[29] In the aftermath of the Spanish-American War, Turner further developed his thesis writing that the US's colonial policy was always "hidden under the phraseology of 'interstate migration' and 'territorial organization.'"[30] In other words—though not expressed as a conscious pursuit within the United States Constitution—colonization was a central feature of the American imperial constitution. Obstructing the conception of the United States as a colonizing power, however, was the fact that what were long held as the US's founding events—the signing of the Declara-

tion of Independence, the framing of the Constitution, and the War of 1812—were motivated by, or at least framed as, a casting off of the yoke of empire. However, as Turner argues, American colonial policy can be found in the US's continuous history of expansion. This is a history that recognizes "interstate migration" as a subterfuge for settler colonialism, and that acknowledges that "territorial organization" was in fact a technique of colonial land acquisition. These were techniques that allowed white settlers to not only live on the land, but to change it, to make use of it for their own purposes, driven by what was presented as a moral imperative to render land more economically productive than any yet settled in human history. I both pick up where Turner left off—by focusing on the rapidly evolving forms and techniques of colonial dominance at the precise moment the United States pushes past its assumed continental edges—and part ways with Turner at the point that his methodology is used to construct a positivist account of US empire. That is to say, our paths diverge at the juncture where his "frontier thesis" was presented as the font of American "meaning."

Dozens of historians have wrestled with the persistent amnesia surrounding the US's colonization of the Philippines. Despite a voluminous and growing literature addressing this history, new versions are repeatedly received as a surprise. This is largely because it continues to appear as an aberration to the dominant narratives of US history. Recent heroic attempts to make sense of the colonization of the Philippines *within* US history have invoked the "hidden" history of the Philippines as the most outstanding "proof" of "formal" US empire, defined as those territories that have fallen under the legal jurisdiction of the United States. In this version of the story, US colonialism "ends" (at least partially) on account of "empire-killing technologies," which allowed the United States to "wean" itself from its colonies by replacing raw materials unavailable on the US mainland on which it depended—including rubber, nitrates, silk, and sisal—with chemically synthetic versions. According to this history, large chunks of the US empire dissolve into a map of atomized points—a globally distributed archipelago of military bases—that the author presents as the "last" of US empire's overseas territories.[31] While US military empire is certainly one persistent aspect of concrete colonialism, this book also attempts to address a number of durable colonial forms by turning toward concrete colonialism's sensible and durable presence.[32] It is through a description of this evidence that this book makes its most ambitious and general appeal, by asserting that both empire and colonialism persist—in concrete forms—despite claims of its conclusion.

Concrete Colonialism contributes to a literature that challenges the historical separation between colonialism and "postcolonial" forms of exploitation by adding new material dimension to the argument that as Naoko Shibusawa put it, "empire, racial capitalism, and modernity are intertwined, rather than separate categories."[33] Extending key aspects of Cedric Robinson's concept of racial capitalism, Shibusawa emphasizes that capitalism is a "rupture in the long world history of empire." Reinforced concrete, I argue, plays a particular and specific role in this rupture, one that registers particularly acute and legible effects in the US colony.

A central distinction between precapitalist empire and *modern* empire is, Shibusawa contends, a "reversal of the relationship between political and economic actors. While economic actors served at the pleasure of the political leadership in the pre-capitalist era, the political system serves capitalists in the capitalist era."[34] Indeed, in the Philippines, the ranks of the colonial administration were packed with captains of industry and the leading men of business, like William Cameron Forbes (a central figure in this book). During Forbes's inaugural address as the third governor-general of the Philippines in 1909, he made clear his intention to avoid "the *unprofitable* consideration and discussion of the future political status of the Islands,"[35] because, he stated plainly, "What is needed here is capital."[36] The speech that followed focused on a detailed plan to execute an ambitious archipelago-wide program of capital-intensive infrastructural projects. These projects—all of which, Forbes insisted, should be built out of reinforced concrete—took advantage of the "assistance of outside capital" but were also planned in order to "better attract accumulations of wealth already made in other countries."[37] On this benefit of colonialism to capitalism Forbes was candid, as he was about the tropics' ability to yield products unattainable in temperate zones (coffee, chocolate, sugar). He failed to explain, however, the primary advantage of colonialism to capitalism: the expropriation of labor at a cost less than the value that the workers produced, and, more crucially, at a cost that was generally less than could be secured in the United States. Directing native attention away from this global inequality, Forbes emphasized the projected benefits of industrial development, which would bring, he argued, prosperity to the islands in the form of higher wages, better houses, and generally improved living conditions. A modern system of wage labor—sometimes presented as part of a campaign to globally vanquish the dehumanizing practice of chattel slavery (Forbes was descended from a proud line of Brahmin abolitionists and made it his special duty to see to the

elimination of enslavement practices amongst the native populations)[38]—was, as I aim to demonstrate, just one of the ways that racial capitalism was modernized by US colonizers in the Philippines.

To clarify, though by the eighteenth century chattel slavery already served regional and global capitalisms, by that time increasingly large and increasingly organized slave rebellions and the threat of Black revolution had rendered slavery an untenable system. Formal emancipation, however, did not abolish racial capitalism; rather, as Cedric Robinson argued, "metropolitan capital changed its tune," reforming and reconstructing the system by replacing slavery, or the "unwaged proletariat" with various forms of labor, or "waged slavery," namely, "coolie labor, peonage, sharecropping, tenant-farming, forced-labor, penal labor, and modern peasantry."[39] Robinson presents these forms of labor as part of a capitalism that he describes as "an anarchic globalism of modern capitalist production and exchange," and against what Marx "imagined as . . . a geometric whole whose elementary and often hidden characteristics (price, value, accumulation, and profit) could be discovered with arithmetic means and certainty." It is Marx's commitment to theoretical elegance that, Robinson argues, leads him to consign categories of difference (gender, race, culture) to the dustbin, as such "unimportant . . . proportion(s) of wage labor" that they were tossed, along with "slave labor and peasants, into the imagined abyss signified by precapitalist, noncapitalist, and primitive accumulation."[40] *Concrete Colonialism* takes up Robinson's corrective by not only demonstrating how race served as an important element in the development of and justification for the colony's extensive penal and corvée labor program, where convicts and other colonial subjects were forced to work on an extensive program of public works projects, but also the development of a far more extensive modern exploitative system of wage labor that in both direct and indirect ways is shaped by concrete. Concrete, for example, was a medium through which colonists hoped for (and actually achieved) the multiplication of value extracted from racialized labor by eliminating traditional modes of building such that the routine labor required by those structures could be repurposed toward the construction of infrastructural projects; by decreasing the time it took to move products from sites of production to sites of export through the construction of concrete infrastructures; and through the development of native bodies themselves—the goal that subtended the bogus science of "race development" addressed in most detail in the chapter "The 'Master Material' and the 'Master Race.'" Whether the benefits of concrete construction were real, reified, imagined, or exaggerated, the use of concrete drew racialized subjects ever more tightly into the material circuitry of US empire.

Notes on Method and Archive

This book, in the main, considers two major archival "sources"—various forms of "technical literature," on the one hand, and a "collection" of concrete artifacts, on the other. The "technical literature" includes colonial and government reports, self-interested industry periodicals (such as *Building Age*, *The Concrete Age*, *Engineering World*, etc.), and sometimes ambitious (though likewise self-interested) histories like *The Romance of Cement* and *History of the Portland Cement Industry in the United States*.[41] These volumes often included lofty claims of concrete or Portland cement's imperial agency, as is the case with the following excerpt from *The Romance of Cement*, published by the Edison Portland Cement Co. in 1926:

> To England we yield the palm for discovering the secret of cement making; and to Ancient Rome, for structural grandeur. But credit for the latest and most engrossing chapter in the Romance of Cement belongs by good right to America. Prophesy the future of industry and you will unfold the future of cement, for day by day cement is becoming more important—actually indispensable—in the progress of this nation. It is the means to ends of which only the great modern engineer, architect, and builder may dare dream. But it is more—it is the end in itself, for in its rugged durability, it is as permanent as anything we know. Every day will reveal new uses for Portland cement; every generation will leave its mark—in cement; every new generation will scan the history and add its own chapter—that is the Eternal Romance of Cement.[42]

More consequential than these imperious claims, however, was the fact that this technical literature was filled with articles on new methods of construction, advertisements for new products, standard coefficients, mix ratios, safety factors, and labor requirements. In short, this literature provided a sort of how-to manual for building empire. The use, usefulness, and effects of new products, new methods, and new materials is seen throughout the reports of the Army Corps of Engineers and the War Department, as well as—and most importantly for this book—the *Quarterly Bulletin, Bureau of Public Works* (later the *Bulletin*), which carefully documented virtually every project executed by the Philippines' Bureau of Public Works (BPW) between 1913 and 1931.[43] It is in this literature that we can perhaps most clearly observe the presentation of the "how" as the "why" of empire. My argument, then, that the material's very properties shaped the policies and practices of US colonialism, is in some ways a straightforward reflection of the assertions made on the behalf of concrete

itself—a material that promised (if it did not deliver) what had up until that point seemed a contradiction: a permanent future, expediently built. Simply put: *Empire made easy*.

Much of this "archive" cannot be found in the Philippines, a problem recognized in 1961 by one E. Victor Niemeyer, of the defunct United States Information Agency, who observed that "the bulk of the source materials for a major portion of Philippine history (i.e., the US colonial period) is outside the country in widely scattered archives and libraries." It is in, for example, the National Archives, the University of Michigan, Houghton Library at Harvard, the St. Louis Public Library, and the Newberry Library in Chicago—where much of the archival material for this book was sourced.[44] And it is for precisely this reason that Ateneo de Manila University established the American Historical Collection of Filipiniana. Beyond a collection of unique material artifacts, the documents contained in that collection are mostly duplicates of what one may find in the United States (and the serials and documents included therein are often less complete than their US counterparts). The displacement of this archive is why concrete serves as a particularly valuable resource and framework. The collection of architectural objects that I analyze in this book are fragments of a history that remain in plain sight—as half-ruined relics, as outdated infrastructure, or as preserved or renovated monuments that (while found in a place called the Philippines) are, I argue, better understood as part of a larger imperial network. I have used the archive of "widely scattered" documents, on the one hand, to render the concrete colony more vivid for the reader, and, on the other, to restore a history to these fragments, many of which remain present throughout the archipelago available for rereading, reassessment, and reinterpretation.

The Filipino voices that are highlighted in this book are mostly those of the native elite (familiar names like Manuel Quezon, Isabelo de los Reyes, Sergio Osmeña, et al.). Native criticism of the projects addressed in this book, which can be found in *El Renascimiento* and *La Vanguardia* (both deeply critical of the US colonial regime and reflecting, on the whole, the point of view of metropolitan colonial subjects), is not typically focused on the architectural objects themselves, but rather on exploitative practices like corvée labor, and more generally on poor pay and labor conditions. In general, objections to concrete projects themselves (especially very large ones like dams and irrigation projects) were and are more common among rural and agrarian populations (who more directly suffer their negative effects, and whose objections were left mostly unrecorded) than they were among the growing urban proletariat.[45] Though the most organized of these objections were recorded, far more were

simply suppressed, poorly documented, or not recorded at all. That there is little recorded evidence of native objection to infrastructural projects themselves has to do with the fact that Filipinos living in cities and towns desired (for the same reasons that anyone else would desire) the sanitary improvements, education, and infrastructural services promised (and sometimes delivered) by the colonial regime. Indeed, many of the concrete projects were designed as a means of building trust and consensus among the urban and mostly lowland colonial population. Just as native criticisms of concrete colonialism (or the lack of them) cannot simply be taken at face value, neither can any other archival source be treated as straightforwardly reliable. Like many before me, I must contend with my dependence on a set of deeply compromised sources—a colonial archive that should never be treated as plainly legible. I thus treat my archive not as a site of "discovery" but as one that requires interpretive labor in the interest of attempting, as Walter Benjamin famously implored, to "brush history against the grain."[46]

Territorial Remediations

This book presents territory not only as land enclosed by a geopolitical border, but as a medium—one that can be shaped, fortified, strengthened, or otherwise modified. As such, though territory can never be reconquered (by the same power) in the strictly geometric or cartographic sense, a region's resources and qualities (inclusive of its people) can be reorganized in order to render that territory more productive, or more suitable to present needs—a phenomenon that William Cronon described as "changes *in* the land."[47] Whereas the close of the frontier may have motivated a psychic need for an imperial dive into the Pacific, it was the continuous development and redevelopment of the resources and *qualities* of the American interior that produced the range of constantly evolving colonial techniques and policies that are the primary interest of this book. Thus, though the frontier was a closed historical chapter—a chapter in fact "destined" for closure—a history of territory as a medium allows us to not only place the Philippines within a cartographically mappable history of territorial expansion, but also to propose a *colonialism of permanent expansion*. The frontier is thus re-presented here, not as a horizon that "closed" at the end of the nineteenth century, but as a constant and continuous material reconfigurability.[48]

Within this framework, the annexation of the Philippines appears not (as it was sometimes regarded by anti-imperialists at the time) as a scandalous and singular event—an aberrant, albeit limited, flirtation with "formal empire."

Rather, this history is one that traces a set of colonial practices with origins in the reorganization of what was assumed to be already "settled" land. Accordingly, this book is an attempt to trace heterogeneous, ad hoc, and constantly shifting colonial methods that nevertheless share a common material basis. The object of *Concrete Colonialism* is thus not the United States or the Philippines as such, but rather the continuously organized and reorganized material relationships between and within them. Indeed, as this book argues, the colonial experiments conducted in the Philippines played a central role in structuring the US's relationship to the rest of the world—a complex and constantly renegotiated relationship between the US's expanding interior and its increasingly fictional exterior. My intention is to highlight the pivotal role that the colonization of the Philippines played in the formation of this twisted, shifting, and global American topos.[49]

This history, then, is not conceived of as a contribution to "global history," defined as a practice driven by the representative inclusion of every corner of the globe. Rather, it critically situates the Philippines within the transformative processes of globalization through which the United States establishes its global hegemony. This process, I contend, begins with the development of the land. This was a process accelerated in the Philippines by two key factors: the first being the colony's absence of protracting democratic processes (seen by many reformers during the Progressive Era as inhibiting the pace of progress), and the second being the use of reinforced concrete. For, whereas heroic feats of US engineering like the Erie Canal predate the widespread use of modern Portland cement and steel reinforcement, the Panama Canal—a project many magnitudes larger and more legibly global in its scope—would not have been possible without modern reinforced concrete technology. It was around the time of the Panama Canal's construction (beginning in 1904) that we see an explosion of reinforced concrete projects in the Philippines, especially after the establishment, in 1905, of the Philippines' Bureau of Public Works. Though the canals, culverts, dams, standpipes, highways, schools, piers, customs houses, markets, and monuments executed under that Bureau's auspices lacked the singular spectacularity of the Panama Canal, collectively these projects remade the Philippines. By accelerating intra-island transport, interisland connections, and international traffic, they helped to orient the archipelago's resources toward an international market. Though this massive construction project, conceived of at the scale of the entire colony, closely resembles neocolonial strategies of economic development, they were deployed in the Philippines as colonial techniques. This is, in part, why the US colonization of the Philippines is both easy to marginalize and difficult to historically contextualize. This

history, seemingly out of sync, bridges the gap between the nineteenth-century expansion of the French and British Empires and the neocolonial practices of "development" associated with the post–World War II era, aiming to expose these historically separated narratives as continuous.

Concrete, Architecture History, and an Expansive Disciplinarity

Though this is an interdisciplinary study, and aims to speak to a broad audience, I am trained as an architect and as an architecture historian, and I teach architecture history. It is not only because of this, however, that I write from the perspective that I do. I believe that architecture history offers a unique lens through which to view and analyze the US colonial project in the Philippines. This view, however, is sometimes obscured by the deeply coded knowledge that circulates within limited circles of expertise. The sources that I analyze often require a familiarity with building materials, architectural traditions, and with the standards and conventions of architectural representation. These documents often belong to a class of knowledge never intended to be accessible to the lay reader, and yet they contain within them knowledge of historical consequence. Translating and contextualizing these plans, artifacts, and other sources reveals heretofore understudied aspects of US empire and something about how power within it worked.

In addition to this, the US colonial project is one that not only involved architects and engineers, but one in which those figures took on powerful positions within the colonial government. Indeed, that knowledge of the US colonial project in the Philippines is relatively widespread within the field of American *architecture* history is by virtue of the fact that one of its main protagonists, Daniel Burnham, prepared a pair of grandiose master plans for the archipelago—one for the capital city of Manila and another for Baguio, a brand-new summer capital in the mountain province of Benguet. The effect of this particular inroad into the annals of architectural history, however, is that the story of US colonialism has been embedded as a single chapter (or, more often, as a surprising footnote) in monographs dedicated to one man's heroized career. Burnham's prominence in the secondary literature belies both the limited nature of his direct involvement in the project and the large cast of characters that played more significant roles in shaping the US's colonial project in the Philippines. Thus, though Burnham—the widely acknowledged father of American urban planning—serves as an important figure and historical touchstone in and for this book, neither his biography nor his famous plans

serve as its central object. Rather, I treat Burnham as a subject formed within this particular historical milieu.

I do not, however, as this assertion might suggest, treat Burnham as a mere symptom of history. This story is not one that can be understood by diligently tracing the contours of blandly predictable predeterminations, technological or otherwise. Though Burnham is not the focus of this study (it is indeed here in the introduction that he receives the most sustained attention) he was and will be portrayed as an important historical agent—one who possessed particular sensitivity to the materials, techniques, and conditions of his time. Toward those ends, what is most important to know about Burnham—an opinion broadly shared by his most vehement critics, his most steadfast boosters, and by his most thorough biographers—is that Burnham was not an architect as conventionally understood. Only a few drawings in his actual hand survive, and those that do survive show no evidence of remarkable artistic talent. To the extent that his work is ever appreciated on an aesthetic register, those aspects are fully attributed to the preternatural artistic talents of his prematurely deceased partner, John Wellborn Root, or to the various Beaux Arts–trained protégés that succeeded him. For his part, Burnham was—especially in his own time—regarded first and foremost as an effective administrator and businessman. Frank Lloyd Wright eulogized him as an "enthusiastic promoter of great constructive enterprises . . . a great man," but by no measure "a creative architect."[50] Indeed, his impact on the profession of architecture is best characterized by his full embrace of "bigness, organization, delegation, and intense commercialism"—a sworn devotion to "big business" that his self-proclaimed rival, Louis Sullivan, regarded as toxic to an architectural *vocation* that supposedly operated on an unassailable and autonomous plane of "culture."[51] Indeed, Burnham's office is widely acknowledged as the US's first corporate architecture firm. Even in this capacity, however, Burnham's historical role is both mischaracterized and underestimated. His contributions relative to the architecture (i.e., the organization) of the American corporation itself is more important to understand than the significant role he may have played in the production of American corporate architecture (i.e., corporate buildings themselves), though I treat these two architectures not only as closely related, but in fact as *structurally* and *materially fused*.[52]

It is, of course, no stretch to think of Burnham and concrete together. Much of the work that is credited to him was built in part or in whole of reinforced concrete. Despite this, if Burnham is associated with any material, it is usually with the airbrushed plaster staff that fleshed out the steel skeletons of the World's Columbian Exposition, a historic feat with which his name will be

forever bound. Burnham's association with this ephemeral material was usually invoked to identify the architect with an artless and crassly modern reproducibility, and to substantiate criticisms that characterized his work as flimsy simulations of "real" architecture—"a mode of architecture" that Lewis Mumford sneered "was little but veneer."[53] Most of Burnham's work, however—superficial or not—was (relatively) permanent, built as it was in whole or in large part out of reinforced concrete. While concrete acted similarly to plaster in many ways—in its plasticity, the portability of its components, its ease of use, and its managerial requirements—it was its opposite in one critical respect: Whereas plaster staff is unable to withstand tests of weather exceeding a number of months, reinforced concrete rivals the strength and permanence of stone. Therefore, it mattered little that Louis Sullivan considered Burnham little more than an "expert salesman . . . of the materials of decay."[54] The architecture that he built after the exposition endured. That is to say, the most significant difference separating Burnham's Dream City from the "real" cities of Manila, Chicago, and Washington, DC, was—at least initially—merely a material one. And so it is to concrete that this book turns. Concrete, in short, allows me to address a far more ambitious, empire-wide project than the ones laid out in Burnham's famous "big plans"; it allows me to address the elasticity of the colonial project and to chart concrete's relationships and interactions with a highly mobile set of contingencies, including rapidly evolving technologies, the spread of disease, a global labor movement, and the rise of internationalism.

Academics trained in a variety of disciplines have written about the history and social, cultural, and political effects of reinforced concrete at the grandest of scales. The environmental historian Vaclav Smil, for example, argues that cement and steel (the industrially produced components of concrete) are two of the four "material pillars of modern civilization,"[55] while anthropologists like Eli Elinoff have claimed it as the first element of the Anthropocene.[56] Taking a finer-grained approach, the historian Amy Slaton examines concrete's global effects at the crossroads of science, technology, and industrial labor. What these historians present as a world-changing, indeed epochal, technology, has so far appeared only as a minor character in books on the US colonization of the Philippines, including Warwick Anderson's *Colonial Pathologies*, Paul A. Kramer's *The Blood of Government*, David Brody's *Visualizing American Empire,* Rebecca Tinio McKenna's *American Imperial Pastoral*, and Peter W. Stanley's *A Nation in the Making* (pathbreaking works that have deeply influenced my own). The near absence of a consideration of concrete in these books is surprising considering that, after 1905, virtually all permanent buildings executed by the US colonial government were built out of it.

Another book that has significantly influenced this one is Benedict Anderson's *Imagined Communities* (a book that towers both within and in some ways over Philippine and Fil-Am Studies). Most directly, this book contends with the figure of the nation as an outcome of print capitalism. I do not oppose that argument here, but instead offer some ways to think through how daily contact with this modern material works in ways different from and alongside the world that print capitalism made. More significantly *Imagined Communities* has served as a model for constructing a narrative that traverses an interconnected history of modernity though an examination of particular places and the effects of media on and within it. Different media, however, render different effects. Examining the US colonial project in the Philippines through the use of what was both believed to be—and actually was—an environmentally transformative material allows me to link what Immanuel Wallerstein calls the "world system" to a sensible and grounded reality by permitting me to tell specific stories that reveal something about the nature of US empire as such.

Though I situate this study of the Philippines within a history of the "world system," it is very likely that this book will be relegated to a disciplinarily ossified geographical "area." As Vicente Rafael and Rey Chow have argued, by privileging the nation-state as the elementary unit of analysis, "areas" are conceived "as if they were the natural—or at least, historically necessary—formations for the containment of differences within and between cultures."[57] The study of "areas," Rafael extends, is not only the legacy of Orientalist discourse, but more significantly has been integrated into institutional cultures (like those of universities)—that silo work produced within these areas into the delimited categories of a liberal pluralism, in turn precluding the possibility of scholarly relevance beyond the nation or area addressed.[58] Indeed, a historical grasp of a globalized system of architectural production remains elusive because most histories that address an architectural periphery are presented and represented as totems of national or regional difference.[59] The history of reinforced concrete architecture pushes against this tendency, as in many cases this architecture is better understood in terms of its similarity with structures built across the globe rather than in terms of its differences from them. Taking seriously this serialization and global ubiquity challenges both the persistent re-inscription of isolatable national and regional frames, enabling me to describe the global entanglements that are the very nature of materiality.[60]

Though many other thinkers engaged with material have informed this book in one way or another, none brought me to materiality as a "method." Over the course of my academic training I have accepted Bruno Latour's insight that materials matter or "act" in complex networks of people and things, and subscribe

to Marx's argument that all aspects and institutions of human society are the outgrowth of material conditions. Though this is the ontological ground on which this book rests, I arrived at this subject matter (or matter as a subject) through my home discipline of architecture history in which a focus on building material is a long-established convention. This "approach," which can be traced at least as far back as John Ruskin's *The Stones of Venice* (1850), Gottfried Semper's *Der Stil* (1861–63), and Banister Fletcher's *The Influence of Material on Architecture* (1897), emerged in the wake of the Industrial Revolution—when industrially produced materials began to radically transform the building trades. This body of literature expanded when architecture historians—many of whom either heroized or worked closely with a European Avant-Garde—positively advocated for the use of industrial materials. These histories included Sigfried Giedion's *Bauen in Frankreich, Bauen in Eisen, Bauen in Eisenbeton* (1928), Peter Collins's *Concrete* (1959), and Reyner Banham's *A Concrete Atlantis* (1986), to name only a few of the most significant examples.

None of the books mentioned above would have much to say about the architecture or infrastructure I write about in this book. Though Banham and Giedion look at infrastructure, warehouses, and grain silos, that is, structures not usually considered architecture, I do not treat this "non-architecture" as they do, as unwittingly produced source material for true modernist form. Those structures I address that *are* considered architecture, meanwhile, would typically be seen as examples of a substandard and/or retrograde academicism. In some respects, this book has more in common with histories written by those considered foundational figures in American architectural history, including Lewis Mumford, Montgomery Schuyler, Carl Condit, and Henry-Russel Hitchcock, who—when compared with their European counterparts—were forced to reckon with the unity of industrial and architectural production and were (save for Hitchcock) less bothered by the American tendency toward historicism. However, as is the case with the aforementioned European historians, architecture generally constitutes the *end* of their investigations. This was certainly the case with Schuyler and Mumford, who not only identified the Beaux Arts style as a mindless reflection and a soulless reaction to the "imperial" forces of industrialization, but also aimed to resolve historical conflict by championing the "organic" architecture of Louis Sullivan and Frank Lloyd Wright, which they argued was—by virtue of its sponsorship of craft traditions—inherently more "democratic." This history makes no such endorsements. Rather, I recognize that because both Sullivan and Wright made abundant use of industrial materials, in addition to the fact that they themselves

worked with and for multinational corporations, they too are a part of the same imperial history.

This is not to say that architecture historians have not themselves consciously attempted to turn away from their own hagiographic tendencies. Particularly relevant to this work were attempts to expand architectural history scholarship to include the "history of building practice" more broadly, which the British historian of (mostly) British architecture John Summerson described (upon the founding of the Construction History Group and its journal *Construction History*), as "involv(ing) the total process of getting a building up on site, including everything from the recruitment of labour, selection of materials, transport of materials and equipment on the site, down to the supply of drawing materials for the office, the method of payment to builder and architect and so on and so on."[61] Summerson explained this foray into "building practice" by referring to an editorial in the first volume of the *Builder*, published in 1842, where the editor, Joseph Hansom, considering the *Builder's* potential readership "lists all the people who, he believes, ought to be interested and who form what he calls the 'building class'" ultimately listing "no fewer than 102 types of readers,"[62] each of which is involved with building, brokering, designing, expediting, and trading things somehow related to the building industry. In short, what Hansom illustrates is what Latour called a "network." Perhaps even more significantly, Summerson notes that what impressed him most about Hansom's list "was the tremendous ramification of the 'building world' and its unique relationship to society." I mention this to, on the one hand, declare my sympathy with architectural scholarship that defines as its object the description of the built world's "relationship to society" and on the other to state that what may at times seem a methodological "detour" from the conventions of architecture history has on various occasions and for a variety of reasons entered the mainstreams of architectural discourse. Methodologically speaking then, this book makes no claims to originality or radicality. The central contribution of this book with respect to architectural history is my insertion of the Philippines as an important node within the history of global architectural practice, and by extension to provide a historical context for the global professional practice that all architects engage with today.

Recent contributions to architectural histories of concrete contextualize, as this work does, architecture within both particular and global historical frameworks, aiming to demonstrate architecture's interactions between social, economic, political, institutional, and cultural formations. This includes Adrian Forty's *Concrete and Culture* (2012), a wide-ranging global history of concrete

and its cultural effects; Michael Kubo, Chris Grimley, and Mark Pasnik's *Heroic: Concrete Architecture and the New Boston* (2015), an analysis of Brutalist architecture in Boston, set in the historical and political context of President Lyndon Johnson's New Society; and Martino Stierli and Vladimir Kulić's *Toward a Concrete Utopia: Architecture in Yugoslavia* (2018), an exhibition catalogue containing scholarly essays that highlight the pivotal role that concrete played in partially realizing an architectural techno-modernism that embodied Yugoslavia's "third way" approach to development.

Though this book has benefitted in significant ways from this scholarship, it sets itself apart from those architecture histories not only because I address a part of the world that is almost never addressed in mainstream architectural histories, but also because none of the architecture I write about is likely to be admitted into an architectural history "canon." This is the precise reason I am interested in the material castoffs of a supposedly more august architecture history. I take as my task (after Walter Benjamin) the recovery of these "historical leftovers" as evidence of repressed histories, and as histories of the repressed. It is, in other words, because these objects are forgotten, left out, and left to ruin that I seek to reunite them with history as a whole.

Organization of Chapters

Concrete Colonialism unfolds over ten short, thematic chapters that are arranged in a loose, sometimes discontinuous, and often-times overlapping chronology that pulls the reader forward in time. Together, these chapters neither present a coherent story nor attempt to offer a comprehensive account. Rather, I have structured this book as a collection of episodic reflections that demonstrate the proliferation of possibilities enabled by concrete—a set of stories and agendas that, though diverse, are nevertheless bound together by a single (hybrid) material. None of these chapters follow a straight line. For example, though I may address a particular agency because it was invoked to fulfill a particular imperative, I follow not only when those objectives are achieved, but also address failures, detours, contingencies, unforeseen effects and short- and long-term consequences that are also a part of each story.

The first chapter, "'The Master Material' and the 'Master Race,'" situates the reader within the broader historical context of the rapid expansion of reinforced concrete construction across the globe, particularly focusing on a topic that recurs throughout the book: namely, that of race and racial capitalism. In this chapter I examine how a material that is perceived and in fact possesses the ability to radically transform the environment is viewed as a tool with which

to develop race (understood to be shaped by environmental pressures). Each subsequent chapter is dedicated to a quality and/or agency of concrete, namely stability, salubrity, reproducibility, scalability, liquidity, artifice, plasticity, and strength. This heuristic allows me to account for the heterogeneous agencies of concrete, and to relatedly highlight how a specific quality is invoked with respect to the American colonial regime's shifting imperatives.

The history of *Concrete Colonialism* opens not in Manila, but in Chicago, where Daniel Burnham and John Root first experiment with the "floating raft foundation"—the central character of the second chapter, "Stability." This technology, among others, allowed the young firm not only to build the world's first skyscrapers in a remediated muddy morass, but also enabled the settlement of Chicago's particularly difficult geological conditions—thus opening up the possibility of settling almost any land, anywhere.[63] This history of the changing land is introduced to dislodge the image of the westward moving line of the frontier, in order to turn toward a colonial practice rooted in the environmental transformation of the American interior. The chapter reassesses Burnham's World's Columbian Exposition in environmental terms, shifting focus away from its plan and toward the changing quality of the ground, the unassuming site of what Root calls a "material revolution." The chapter closes with the arrival, in 1903, of the floating raft in Manila (two years before Burnham's own arrival to the archipelago) where it was used to buoy the government-owned Insular Ice and Cold Storage Plant within Manila's unstable deltaic silt. The construction of this building is prioritized on account of a widely held belief that American ice and food stores were necessary to stabilize the Anglo-American body against the deleterious effects of the tropics. I conclude this chapter by considering "stabilization" in a broader sense, by arguing that the aim of colonial rule as laid out especially by William Cameron Forbes was to answer to, in his words, the "demands of capital" by providing and maintaining a stable government and environment.

Focusing on the years during and immediately after the Philippine-American War, chapter 3, "Salubrity," examines the use of concrete in colonial sanitation projects. I compare two different approaches to sanitation: The first is Manila's modern and "comprehensive" sewer system; the second is an essentially "self-help" housing scheme for Manila's native urban poor called the "sanitary barrio." This chapter both situates this housing scheme within a longer history of what Friedrich Engels called the "housing question" and demonstrates how a supposedly universal scientific knowledge was differentially applied based on race and class, thereby taking to task the common argument that one of the failures of modernism was an unwillingness to accommodate native culture.

The story of the sanitary barrio demonstrates how a valorization of vernacular forms, native construction, and "cultural preferences" were co-opted toward colonial purposes—in this case being used to justify lower standards of sanitation for a colonial subject population.

"Reproducibility," chapter 4, opens with Daniel Burnham's arrival to the Philippines in 1905 and with the construction of the first architectural projects associated with his Philippine plans. These projects, namely the Manila Hotel and the Army and Navy Club, were built with the express purpose of attracting foreign capital to the Philippines. They were central to what William Cameron Forbes (governor-general under Theodore Roosevelt) described as a "material approach" to colonial governance, which amounted to the programmatic pursuit of an expanded economic reproduction. Relatedly, this chapter also addresses one of the most controversial agencies of concrete construction—its facilitation of the architectural replica. In bringing Forbes's "material approach" and architectural reproducibility together, I aim to describe a relationship between economic reproduction and technological reproducibility as such. In this chapter, I introduce William E. Parsons, who was hand-picked by Daniel Burnham to serve as the executor of his Philippine plans. Parsons introduces standardized plans for schools, prisons, and open-air markets, though he avoids replication for monumental civic programs. Despite this, economic constraints eventually give way to the fully replicated monument in the form of dozens of identical provincial capitol buildings, copies that sow doubt over the supposedly ideological motivations of the US colonial project.

Chapter 5, "Scalability," shifts focus away from the urban context to an archipelago-wide project to develop the colonial interior. Through a brief address of big projects and big things this impressionistic chapter attempts to capture a project conceived and executed at the scale of the archipelago itself. Here I focus on the construction and maintenance of roads, dams, and irrigation systems, which are built using a combination of imported industrial machinery and large masses of often unpaid (prison and corvée) labor. In conjunction with the port works these projects enabled the movement of mineral, forest, and agricultural resources out of the Philippines. This chapter spans both a wider geographical area and a longer period of time than the others, covering vast, open-ended initiatives that consolidate the colony's social, cultural, and economic integration into an interconnected world system.

The short chapter 6, "Liquidity," focuses on the regional production of Portland cement, and on the role its production plays in the material development of the region as such. Here, I explain why Portland cement was not successfully produced in the Philippines until 1922, which is surprising considering that

virtually all public buildings have been constructed out of reinforced concrete since 1905. Though Portland cement was not produced in significant amounts in the Philippines until after 1922, it is between 1905 and 1922 that the Philippines becomes a leader in concrete research, sharing its findings with regional producers in the interest of improving the quality of the regional product. In this capacity, the United States played an important and early role in the materialization of regional economic ties, providing an important precedent for intervention into and administration of economically defined "areas" more commonly associated with the development politics of the postwar era. This chapter functions as an interlude to mark a historical shift in the US's approach to the Philippines from a more explicitly colonial project to a nation-building project—a shift initiated by changes introduced by the first Democratic administration to take power since the beginning of the US colonial period. Though the architecture—especially in the following two chapters—is presented as ideologically distinct from those buildings built by the regime of Republican president William Howard Taft, it is materially continuous with those buildings and with the larger project.

Chapter 7, "Artifice," examines how an architectural cult of materiality interacted with the politics of nation building in the Philippines where new stakes for material expression emerge in the wake of Woodrow Wilson's election, the growing importance of liberal internationalism, and, relatedly, the 1916 passage of the Jones Law—the first formal promise made by the United States to grant the Philippines political independence in the form of national sovereignty. Architecture produced during this transitional period reflected a new remit to represent the United States as a moral example—not only for its soon-to-be former colonial subjects, but also for a community of nations increasingly wary of imperial expansion. Under these conditions, concrete's prosaic appearance became a liability. Ralph Harrington Doane, the last American consulting architect to serve the Insular Government, referred to concrete as an industrially produced "bastard material," unsuitable for a monument. Unable to source stone slabs, Doane develops a concrete using a local marble aggregate, aiming to remediate concrete's characterless industrial appearance. Doane presents this reformed material as a rich prefiguration of national sovereignty. The actually superficial narrative of national recognition presented in this chapter should, however, not be mistaken as part of a liberating project of "decolonization" or decolonial thinking (terms that were not used at the time).[64] Instead, what I present is a description of how formal and political decolonization (mostly associated with the post–World War II decolonizations of Asia and Africa) was a process shaped by former imperial powers in pursuit of their own interests.

"Plasticity" addresses, as "Artifice" does, concrete's ability to take on the appearance of something other than itself. However, whereas chapter 7 examines concrete's ability to take on the appearance of another material, chapter 8 turns toward how this material is called on to transcend materiality as such. It does so, here, in order to take on an ideological form. Focusing on a process and period of "Filipinization" (a Wilson-era transitional colonial policy that embraced Philippine national culture and native elite political control), I examine how architects during this period turned to sculpture as a medium through which they explored and developed a "native" canon, here used in the art-historical sense of a system of ideal proportions. Specifically, I look at how a Filipino native elite took on a project of self-racialization outlined for them by former imperial powers as a strictly delimited arena of political agency. The thematization of the native body—which, I argue, lies at the historical origins of the ethno-state—is illustrated mainly through the life and career of the architect Juan Arellano, alongside the origins of one of his most important commissions: the Philippine Legislative Building. This was a project designed and built just after the United States made its first formal promise to grant the Philippines its national sovereignty, and the building's heavily loaded decorative program was intended to provide an exemplary image of how postcolonial nations would fit into an imagined new world order—one in which cultural and ethnic identity served as the symbolic currency of Wilsonian internationalist politics.

The American colonial period in the Philippines both begins and ends with war. "Strength" examines US military installations in the Philippines and covers projects built both at the beginning of the US colonial period and at the time of its only apparent conclusion—during the lead-up to World War II, when the archipelago became a conspicuous target for an expanding Japanese empire. Over the course of this chapter, I present the military buildup of the Philippines as the beginning of a transformation of American territory from one largely thought of as a contiguous land mass to a globally distributed, militarized archipelago. This chapter ends with the near total destruction of most of the concrete architecture and infrastructure addressed throughout the book. The colonial city that once stood as concrete proof of colonialism's benefits was revealed in the aftermath of war to be a dangerous geopolitical gamble from the outset.

Picking up in the immediate aftermath of Manila's destruction in World War II, I conclude in chapter 10 with a short chapter dedicated to "Reconstruction," placing Manila's rehabilitation in the context of other US histories of reconstruction. This was an effort that preceded the Marshall Plan, a development project otherwise considered unprecedented, but which finds its immediate

precursor in the Philippine Rehabilitation Act—a pledge to rebuild all that had been destroyed in World War II only if it accepted various compromises to Philippine sovereignty, including trade terms greatly beneficial to the United States and the right to build and maintain military bases on the archipelago. Here, I present not the conclusion of concrete colonialism, but rather the possibility of its perpetuity.

Notes

INTRODUCTION

1. It is interesting to note that Amos Miller writes this passage not in praise of the Anglo-Saxon, but as a criticism. In describing Manila as a "dream city," he engages in a sort of Orientalist fantasy outside of capitalist time. To this effect, Miller wrote:

> Here is a land where men are not measured by results, where life is not contained in the abundance of things that a man possesses, where something besides balance sheets and bedrock chances are the final goal, if indeed, it has any destination. And the old east is rich in that one commodity in which the new West is utterly and hopelessly bankrupt. We [the author here occupies the voice of the Filipino] are millionaires in *time*. We may not be long on houses and lands and every new day does not lay at our feet the opportunity of a lifetime to get in on the ground floor, but we have time and to spare; and with all their progress and power and pomp, the kings of commerce are miserable paupers pitiably begging, as they rush along, for a morsel of time in which to stop and live. (Miller, *Interesting Manila*, 51)

2. Fitch, *Critic in the Orient*, 49.

3. Forbes, *Philippine Islands*, vol. 1, 395.

4. The nipa hut is a vernacular building type made of bamboo and nipa fronds.

5. Roman concrete was called *opus caementicium*. In its noun form, concrete is a more literal usage of the Latin root word *concretus*—the perfect passive participle of the verb *concrescere*, which means "to grow together." It is therefore a precise description for a material that is the outcome of a series of physical and chemical processes in which an admixture of water, stone, sand, and gravel are mixed into a slurry activated by cement, the ingredient that enables the mixture to grow together as a monolith. The scholarship on the history of Roman concrete is vast and spans a number of disciplines. See, for example, Malacrino, *Constructing the Ancient World*, and Oleson, *Building for Eternity*

6. Ingold, *Making*, 74.

7. There are, of course, notable exceptions. The effacement of concrete's characterless smoothness becomes a preoccupation of Brutalist architects who begin to experiment

with board-formed and bush-hammered concrete. See, for example, Kubo, Grimley, and Pasnik, *Heroic*, and Banham, *New Brutalism*.

8. I refer here, of course, to the oft-quoted speech delivered by Daniel Burnham, in which he famously said "Make no little plans, they have no magic to stir men's blood." Burnham, quoted in "Stirred by Burnham," *Chicago Record-Herald*, October 15, 1910.

9. Michel Foucault argues that, beginning in the early seventeenth century, the sovereign must know not only laws, but more crucially those elements that constitute the state—specifically, a reality or knowledge of the state that was called "statistics," which is a set of technical knowledges that describes the reality of the state itself. Foucault, *Security*, 273–74.

10. The "Three-age System" was formalized in 1836 by the Danish antiquarian, Christian Jürgensen Thomsen. Heizer, "Background of Thomsen's Three-age System."

11. Adas, *Machines as the Measure of Men*, 12.

12. Faulty concrete is difficult to perceive with the human eye. Contractors can reduce costs by drastically reducing the amount of reinforcement and/or the amount of Portland cement in a concrete admixture, rendering the material dangerously weaker. The catastrophic destruction seen following the 2010 earthquake in Haiti and the 2023 earthquake in Giazantep, Turkey, was, in this way, not just willfully negligent, but intentional. On the connection between faulty concrete engineering and "natural disaster," see Muir-Wood, *Cure for Catastrophe*, ch. 5, "Risk Made Concrete."

13. Allais and Meggers, "Concrete Is One Hundred Years Old," 75–89.

14. Cox, "Use of Concrete in India" 24–35; Tappin, "Early Use of Reinforced Concrete."

15. On Hennebique's expansion into the Maghreb, see Frapier and Vaillant, "Organization of the Hennebique Firm," and Lambert, "Bridges as Ambassadors," 66–73. Hennebique's "official" recognition by colonial authorities in Algeria, Lambert argues, was more important than the relationship it forged with railway companies and industrialists working in protectorates (like Tunisia and Egypt, where it opened offices in 1898) where it was relatively easy to win over engineers working with railway companies and industrialists who were unencumbered by the "narrow and puerile administrative formalism" typical of both cosmopolitan France and its directly ruled colonies, then governed by the conservative Département des Ponts et Chaussées. In the Philippines no such conflict existed as the government directly supported the use of reinforced concrete from the beginning—in direct support of railway companies and other industrialists. Indeed, though Egypt was not a formal colony of Britain, William Cameron Forbes saw Britain's indirect rule over Egypt as a strong model for the US colonial project in the Philippines, where he was governor-general from 1909 to 1913. See the correspondence between Forbes and Charles W. Eliot, then president of Harvard University, and President William Howard Taft in "W. Cameron Forbes Letters Comparing Egypt and the Philippine Islands, 1909-1910," MS Am 2765, Houghton Library, Harvard University.

16. Stierli and Pieris, *Project of Independence*, 10. For early reinforced concrete construction in China, see Han and Wang, "Transplantation and Adaptation," and Zheng and Campbell, "Reinforced Concrete in Modern Shanghai."

17. Between 2012 and 2014, China emplaced more than ~4.7 billion tons, a greater amount than the US did cumulatively throughout the entire twentieth century (approx. 4.6 billion tons). Smil, *Numbers Don't Lie*, 285.

18. Jennings, *Imperial Heights.* See also Wright, *Politics of Design*. For more on the planning of Baguio see McKenna, *American Imperial Pastoral*.

19. As detailed, for example, in Sklar, *Corporate Reconstruction*, 84 n58.

20. On the relationship between "reconstruction" and US empire, see Ekbladh, *Great American Mission*.

21. Shoemaker, "Typology of Colonialism." See also, Shibusawa, "'U.S. Empire' and Racial Capitalist Modernity."

22. The general outlines of this argument are laid out in Latour, *Reassembling the Social*.

23. Giedion, *Building in France*.

24. On the necessity of "narrating connection" in the construction of US imperial histories, see Kramer, "Power and Connection."

25. Moro and indigenous resistance have been constant from Spanish colonial times until today. As Enseng Ho argues, Moro resistance has long been shaped by far-reaching cosmopolitan Islamic Hadrami networks. See Ho, "Empire Through Diasporic Eyes."

26. Though transformed, this is a struggle that continues to this day—for example, in the secessionist movements of the historically Muslim south, and in the highlands where indigenous groups continue to struggle against large-scale dam building. On the Muslim struggle, see, for example, Ho, "Empire Through Diasporic Eyes." And on the latter see Davis, "Palm Politics."

27. Williams, *Tragedy of American Diplomacy*, 46.

28. For Andrew Carnegie's "anti-imperial" position, see Carnegie, "Distant Possessions."

29. Turner, "Significance of the Frontier," 31.

30. Turner, "Middle West," 795.

31. Immerwahr, *How to Hide an Empire*.

32. My use of "clusters of historical details" is largely inspired by the work of Rafael, *White Love*, 4.

33. Shibusawa, "'U.S. Empire' and Racial Capitalist Modernity," 858.

34. Shibusawa, "'U.S. Empire' and Racial Capitalist Modernity," 876.

35. Forbes, *Inauguration Address*, 19.

36. Forbes, *Inauguration Address*, 10.

37. Forbes, *Inauguration Address*, 11.

38. On eliminating the scandal of slavery in the Philippines, see Salman, *Embarrassment of Slavery*.

39. Robinson. *Black Marxism*, 164.

40. Robinson, *Black Marxism*, xlix.

41. See Edison Portland Cement Co., *Romance of Cement*, and Lesley, *History of the Portland Cement Industry in the United States*.

42. Edison Portland Cement Co., *Romance of Cement*.

43. The *Quarterly Bulletin, Bureau of Public Works* became an annual publication between 1921 and1931, when it was published under the title *Bulletin, Bureau of Public Works*.

44. Niemeyer, "American Historical Collection of Filipiniana."

45. An example, addressed briefly in chapter 5, is when farmers sued the *Tabacalera* (tobacco company) during the construction of the Tarlac Canal. Today an indigenous-led anti-dam movement represents the most forceful opposition to concrete colonialism as such. See Delina, "Indigenous Environmental Defenders."

46. Benjamin, "On the Concept of History," 389–401.

47. Cronon, *Changes in the Land*.

48. Megan Black offers a compelling and thorough account of the reassessment of US territory as material through the imperial institutional history of the Bureau of the Interior in her book *The Global Interior*.

49. I refer here not only to what William Rankin describes as a major shift in geographical representation, but to a *material* reordering of space that encompasses not only the kind of military engagements that went hand in hand with wartime map-making, but also encompassing economic changes that elude geopolitical representation. See Rankin, *After the Map*.

50. Wright, "Daniel Hudson Burnham," 184.

51. Louis Sullivan intended this characterization of Burnham as a harsh indictment of Burnham's debased architectural practice. See Sullivan, *Autobiography of an Idea*, 285–7.

52. Michael Osman offers a particularly clear illustration of this fusion of managerialism and architecture in "Managerial Aesthetics of Concrete."

53. Mumford, *Sticks and Stones*, 124.

54. Sullivan, *Autobiography of an Idea*, 325.

55. Smil, *How the World Really Works*.

56. Elinoff and Kali, *Social Properties of Concrete*.

57. Chow, "Politics and Pedagogy."

58. Rafael, "Cultures of Area Studies," 91–111.

59. Scholarship on the architecture of the Philippines, such as Winand W. Klassen's *Architecture in the Philippines*, Gerard Lico's more recently published heroic textbook, *Arkitekturang Filipino*, and Ian Morley's multiple volumes on urban planning in the Philippines, including *American Colonisation and the City Beautiful, Cities and Nationhood,* and *Remodelling to Prepare for Independence*, are rarely considered relevant outside of the Philippines or at most Southeast Asia. The limited reception of this work is in part a symptom of a nationalist and regionalist discourse that in significant part took shape in the period and under the conditions examined in this book. The work of Abidin Kusno (on Indonesia), Lawrence Chua (on Thailand), and Gwendolyn Wright (on French Indochina) has reached a wider readership, as have edited volumes collected under the regionalist heading of "Southeast Asia," including Jiat-Hwee Chang and Imran bin Tajudeen's *Southeast Asia's Modern Architecture*. Lai Chee-Kien addresses this issue in his article "Beyond Colonial and National Frameworks." This book attempts to historicize the "national frame" such that it can be understood within a broader history in which it took shape.

60. Barad, *Meeting the Universe Halfway*.

61. Summerson "What Is the History of Construction?"

62. Summerson "What Is the History of Construction?"

63. As Adrian Forty points out, François Coignet realized this as one of concrete's potentials, writing in 1861 that "whatever can be done in Paris . . . can be done in every land." Quoted in Forty, *Concrete and Culture,* 97.

64. The term *decolonization* introduced in the 1930s and popularized in the 1960s was, Raymond Betts argues, "seldom restricted in application to a particular political activity or a neatly defined era . . . and was interpreted to be both a calculated process of military engagement and diplomatic negotiation between the two contending parties: colonial and anticolonial." Betts, "Decolonization," 23–38.

CHAPTER 1. THE "MASTER MATERIAL" AND THE "MASTER RACE"

1. Witt, "Why Concrete Is the Master Building Material," 159–61. After returning to the United States from the Philippines, Witt became an industry expert on Portland cement, holding academic positions at the University of Pittsburgh and a variety of research positions, including the directorship of the Portland Cement Association in Chicago. He wrote *Portland Cement Technology* in 1947, and an updated edition in 1966, perhaps the most comprehensive book on the subject. Both editions were widely used academic and industry references.

2. The recommendation in full on "Masonry Constructure" reads:

> In a tropical climate costly structures put up with granite, marble, or other building stones, in the manner of public buildings in Europe and America, would be out of place. Flat walls, simply built of concrete (with steel reinforcing rods to resist earthquakes), and depending for their effect upon beautiful proportions rather than upon costly materials, are from all points of view most desirable for Manila. The old Spanish buildings with their relatively small openings, their wide-arched arcades, and large wall spaces of flate whitewash, possess endless charm, and as types of good architecture for tropical service, could hardly be improved upon. (Burnham and Anderson, "Report on Improvement of Manila," 635)

3. United States Geological Survey, *San Francisco Earthquake and Fire*.

4. Estes, *Earthquake Proof Construction*, *32–34*.

5. Estes, *Earthquake Proof Construction*, *34*.

6. Mabry, "Regulation, Industry Structure, and Competitiveness."

7. "Cement Tariff in the Philippines," 338.

8. Stocking, cited in Vitalis, *White World Order*, 46. See Stocking, *Race, Culture, and Evolution*, 112, 121. For other historical perspectives on development, see, for example, Engerman, *Staging Growth*. On the endurance of the Darwinian connection see Mazrui, "From Darwin to Current Theories."

9. Hall, "Point of View Towards Primitive Races."

10. The word *altruism* was used liberally, especially by US colonial officials. See, for example, Shuster, "Our Philippine Policies."

11. Black, *Global Interior*.

12. Blakeslee, "Introduction," 3.

13. Blakeslee, "Introduction," 3.

14. Odum, "Standards of Measurement."