



## Portuguese Colonial Momentum and Political Inertia: the Macao Inner Harbour Improvement Project Deadlock (1884-1919)

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From 1884 to 1915, ten projects to update Macao harbour capacity and equipment were presented by Portuguese engineers, aiming to turn the province from a “silting backwater” serving a supporting role in regional trade into a prosperous colony of an internationally preponderant modern Empire. Portuguese central government had been striving to build the colonial edifice in old self-governing Macao since the 1850s by taking control, restructuring and expanding the urban territory. Unfortunately, the Empire’s finances didn’t match its ambition and, when it came to the Inner Harbour Improvement, project after project was denied funding until full shutdown in 1919. In this paper, studying these projects and the reasons they failed to materialize, we will discuss the paradox of turn-of-the-century Macao in which the colonial momentum, responsible for a notable urban renewal period in an initial “laissez-faire” stage, as well as the deployment of an array of progressive engineers, by being fundamentally at odds with the reality of the province’s part in regional geopolitics, later ended up stifling that same development dynamics, perhaps irreparably, by subjecting the improvement of Macao’s core infrastructure to Lisbon’s endemic political indecisions and lack of resources.

**Keywords:** colonial urban planning, Portuguese Empire, Macao Inner Harbour.

### Introduction

In October 1919, the Governor of Macao received a formal complaint from Canton concerning the ongoing work on the Inner Harbour Improvement Project, on the grounds that reclamation was being made in Chinese waters. The unusually menacing tone of this complaint, as well as advice by his Hong Kong counterpart to suspend the dredging work, led the Governor to adjourn construction until a diplomatic solution could be found. By mid-1920 it was clear that the young and politically unstable Portuguese and Chinese Republics, the latter moreover deeply troubled by its southern provinces’ separatist movements, together with the not-so-subtle British interest in the underdevelopment of Macao’s harbour, wouldn’t be able to reach an understanding regarding the Portuguese land and maritime borders, bringing the Inner Harbour Improvement Project to a most inglorious end. In 1922, work resumed on Macao’s ocean front, far from the disputed water limits, to carry out a wholly different seaport project to be run by an international company under British influence.

This swift resolution to a forty year deadlock was providential to solve Macao’s harbour accessibility problem. The wake-up call had come in 1881, with the first reports on the rise of the riverbed which was starting to prevent larger vessels to penetrate the channels leading to the Inner Harbour. At this rate, Macao would soon become inaccessible to seaborne trade, which evidently struck a chord with the Portuguese imperial pride in the settlement’s pre-Opium War reputation as the prime connecting entrepôt between China and the world. From 1884 to 1915, ten projects to update harbour capacity and equipment were presented by Portuguese engineers, either on central government special commissions or working in Macao’s Public Works Department, aiming to turn the province from a “silting backwater” serving a supporting role in regional trade into a prosperous colony of an internationally preponderant modern Empire.

Portuguese central government had been striving to build the colonial edifice in old self-governing Macao since the 1850s by overthrowing the practice of a “divided sovereignty” established between Portuguese and Chinese local authorities in the mid-sixteenth century, and by taking control, restructuring and expanding the urban territory, mostly with the help of private Chinese initiative, capital and workforce. Increasing colonial grasp, however, eventually meant that all major projects must be backed by central government. Unfortunately, the Empire’s finances didn’t match its ambition and, when it came to the Inner Harbour Improvement, project after project was denied funding until full shutdown in 1919.



In this paper, examining three of these projects and the reasons they failed to materialize, we will discuss the paradox of turn-of-the-century Macao in which the colonial momentum, responsible for a notable urban renewal period in an initial “laissez-faire” stage, as well as the deployment of an array of progressive engineers, by being fundamentally at odds with the reality of the province’s part in regional geopolitics, later ended up stifling that same development dynamics, perhaps irreparably, by subjecting the improvement of Macao’s core infrastructure to Lisbon’s endemic political indecision and lack of resources.

This discussion is part of a broader study on Portuguese overseas action and administration in 19<sup>th</sup> century and early 20<sup>th</sup> century’s so-called “age of imperialism”<sup>1</sup> and its burgeoning “world urban system”<sup>2</sup>. It focuses on the evolution of Macao’s urban landscape during this period, particularly through the analysis of government-sponsored urban interventions, with the purpose of interpreting how the city’s changing built environment both represented and conditioned the province’s economic, social and political dynamics. While in line with recent post-colonial urban studies<sup>3</sup>, the purpose of this study is, however, less to give an insight on “modernization in the colonial context”<sup>4</sup> but rather to reflect on the globalizing impact of modernization at the imperial scale, where metropolitan and overseas territories are intertwined and subjected to a similar and concomitant transformation process, stemming from the advancement and expansion of industrial science and technology.

### Colonial momentum

Captain of the Port Demétrio Cinatti’s 1881 report on how the river siltation was affecting trade<sup>5</sup> is generally considered to have been the turning point for the “port issue” in public opinion. Commissioned by the Overseas State Department, it accounted for the progression of the sedimentation phenomenon and its causes, predicting that by the 1900s the port of Macao would reach critically low water levels and probably face shutdown. He recommended the implementation of a moderate-scale dredging programme designed to open up sea and river channels liberating access to the piers and existing docks. To accommodate the silt product from the dredging works, he proposed that it be put to use in a new reclamation scheme in the northern part of the peninsula, narrowing the riverbed, consequently improving river flow and reducing sedimentation, while simultaneously creating new land for agriculture.

Cinatti’s report, later picked up by the Macanese press in a sort of nationalistic campaign for the improvement of harbour conditions, had come in the wake of several contacts made by Governor Joaquim José da Graça to the Minister of Overseas Territories regarding this issue. As early as 1879, Graça was writing to Lisbon suggesting that part of the province’s contribution for the imperial common fund should remain in Macao to be reinvested in harbour improvement:

This could be the beginning of a broader scale commercial and industrial development. The commercial movement in 1880 was roughly of twenty-four million *patacas*, and this year it will most probably be even bigger, judging from the last five months. The Inner Harbour is obstructed in such a way that the steamboats docked at the piers get stuck in the mud, even those that barely demand 6 feet of water. Now, cleaning up the harbour can bring two great advantages: facilitating navigation and expanding the territory. There is a bay in the river that can and must be reclaimed, for this conquered land may become excellent farmland which could result in a considerable improvement in public revenue should it be rented.<sup>6</sup>

By this time, work was almost completed in the latest ongoing riverfront reclamation project. With permission granted in 1877 and promoted under a concession contract by a group of mainland Chinese entrepreneurs fronted by a Macanese businessman, it also had been justified on claims of it improving public prosperity by creating new ground on which to build commercial and industrial structures, as well as public health, by eliminating an insalubrious siltation point, and even the river flow, by realigning the pier wall, thus giving the riverfront a more regular profile<sup>7</sup>.

As such, this 1880s pressing for an Inner Harbour Improvement Project promoted by the Portuguese Government and backed by Chinese and Macanese entrepreneurs cannot be understood outside of a colonial momentum that had been manifesting itself since the 1850s, namely in the reshaping and expanding of the urban riverfront.

Indeed, much of the post-Opium War Government reforms had had a strong land use management component, aiming at establishing Portuguese sovereignty over the Macao peninsula. Indeed, the territorial sovereignty issue as well as the blatant Chinese disinterest in the definition of any land or maritime borders would be paramount throughout the second half of the nineteenth century, particularly affecting harbour works.

The “divided sovereignty” system established since Portuguese settlement in 1557, by which both administrations coexisted and established jurisdictions each over their own subjects and affairs, became, particularly in the face of the foundation of the British Hong Kong colony, a source of violently conflicting points of view: to the Viceroy of Canton, delegate of the Qing administration in the Guangzhou province, Macao was a leased territory with no territorial waters, in which land use and construction policies remained Chinese prerogatives; to the metropolitan Portuguese Government, it needed to be more than that.



Following the 1848 eviction of the Viceroy's delegates and customs, and particularly after a great fire destroyed most of the Bazaar, Macao's most prominent Chinese district, in 1856, city ground was ready to be restructured in the colonial mold. Lacking in financial resources, however, Portuguese administration found in the prominent and well-respected local Fujian and Guangdong-born businessman, whose fortunes had thrived due to the gambling and commodity concessions system as well as coolie trade, strong allies in its urban reconstruction and expansion plan. Through consecutive reclamation projects, planned and controlled by the Portuguese Government, namely by its Public Works Department created in 1869, and thanks to Chinese capital, the Inner Harbour transformed in a period of 30 years from a muddy backyard into a (mostly) uniform city façade, welcoming vessels in brand new piers along a main avenue bordered by elegant archways (Figure 1).

As Governor Graça puts it, the 1880s in Macao were a time of prosperity and confidence. In his view, the time had come for the colony to reclaim its rightful place in the international trade routes, by making the harbour accessible, not only to the Canton and Hong Kong steamboats and other small coastal navigation, but also to the larger modern ships. Updating port capacity and facilities, improving its accessibility, and possibly gaining considerable reclaimed construction land in the same process was definitely befitting Macao's growing colonial ambition.



Figure 1: *Inner Harbour circa 1880*. Cecília Jorge and Rogério Beltrão Coelho. *Álbum Macau: Memória da Cidade* (Macao: Livros do Oriente, 2005).

## The Inner Harbour Improvement Projects

### 1. The 1884 Adolfo Loureiro Project

The silting river presented the most obvious obstacle to this project. The predicted scale of the dredging works alone meant that, this time, local Chinese capital would not be enough to see it through. Metropolitan Government backing and financing, as well engineering, was essential, at the same time legitimizing it in the eyes of the Qing administration.

At Governor Graça's request, the Overseas State Department sent Portuguese Engineer Adolfo Loureiro in a seven month mission to Macao to study harbour conditions, from which he drew his 1884 "Preliminary study for the improvement of Macao Harbour"<sup>8</sup> (Figure 2). In it, the author makes a comprehensive study of the Pearl River Delta geography, tides and weather, coming to the same conclusion as Cinatti that a permanent solution would only come from the general redirection of the conflicting currents that were causing the silt to accumulate in the city's western coast, which meant realigning the river banks well beyond the Macao peninsula. Extensive dredging would follow, using the extracted silt directly to form new reclaimed land.

Figure 3 zooms-in on the reclamation area in the northern part of the peninsula, as it presents itself in Loureiro's "Preliminary study" plan. Traditionally, Macao's border was set at the northern outpost of Portas do Cerco ("doors of the rampart"), situated at the end of a narrow isthmus connecting the peninsula to the mainland. In his effort to comprehensively work on correcting the river flow, Loureiro proposed to go beyond this point and reclaim a vast area to the north in order to create a smoothly curved river bank designed to accelerate the current.

Loureiro proposed to stabilize this reclaimed land through a series of dams connecting the old and new banks. One of these would connect the isthmus to Ilha Verde ("green island"), separating the area destined for farmland to the north of the bay, from the area destined for urbanization and docks to the south. The northern area of the peninsula had long been occupied by floodplains used as rice fields, and its riverside by the Patane shipyards. Loureiro's plan was to maintain that important industry, upgrading it to a new dock complex which could also serve as refuge in the event of a typhoon. This complex would be completed with the construction of an industrial and working-class district, connected to the city by the extension of the riverside avenue up to "Portas do Cerco" road.

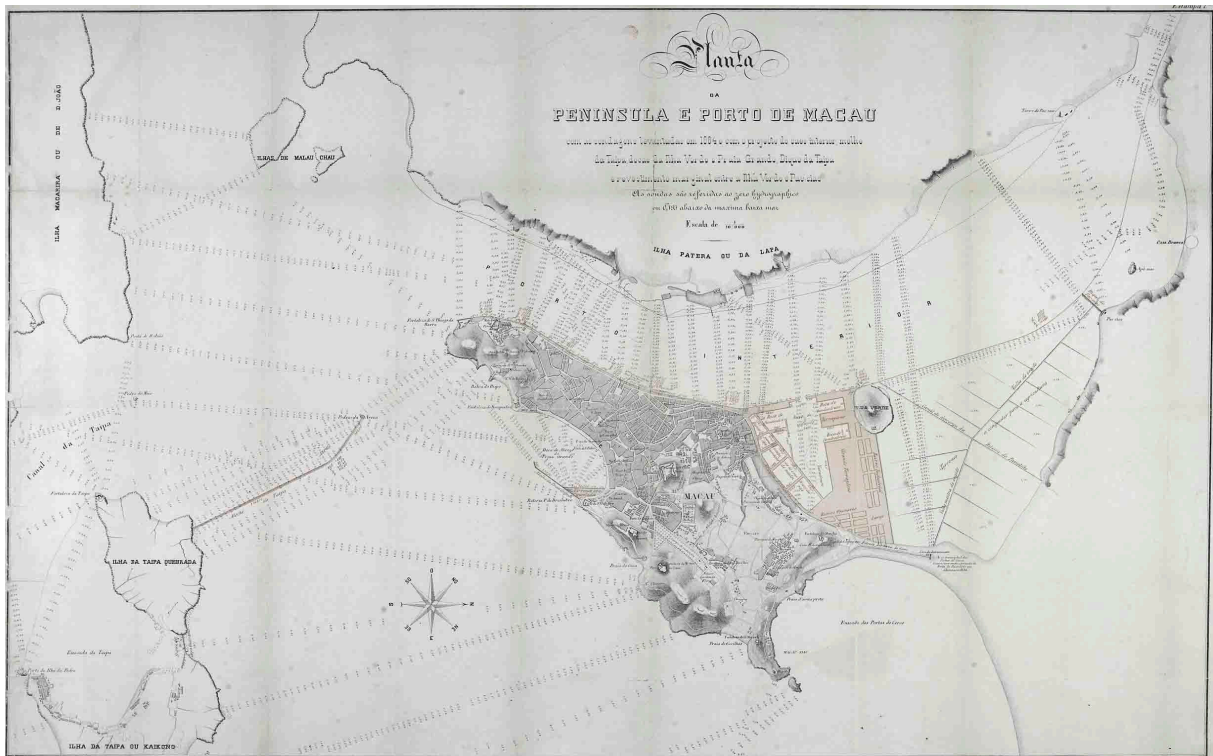


Figure 2: *Planta da Península e Porto de Macau*. Adolfo Ferreira de Loureiro, *O porto de Macau. Ante-projecto para o seu melhoramento*. Coimbra: Imprensa da Universidade, 1884.

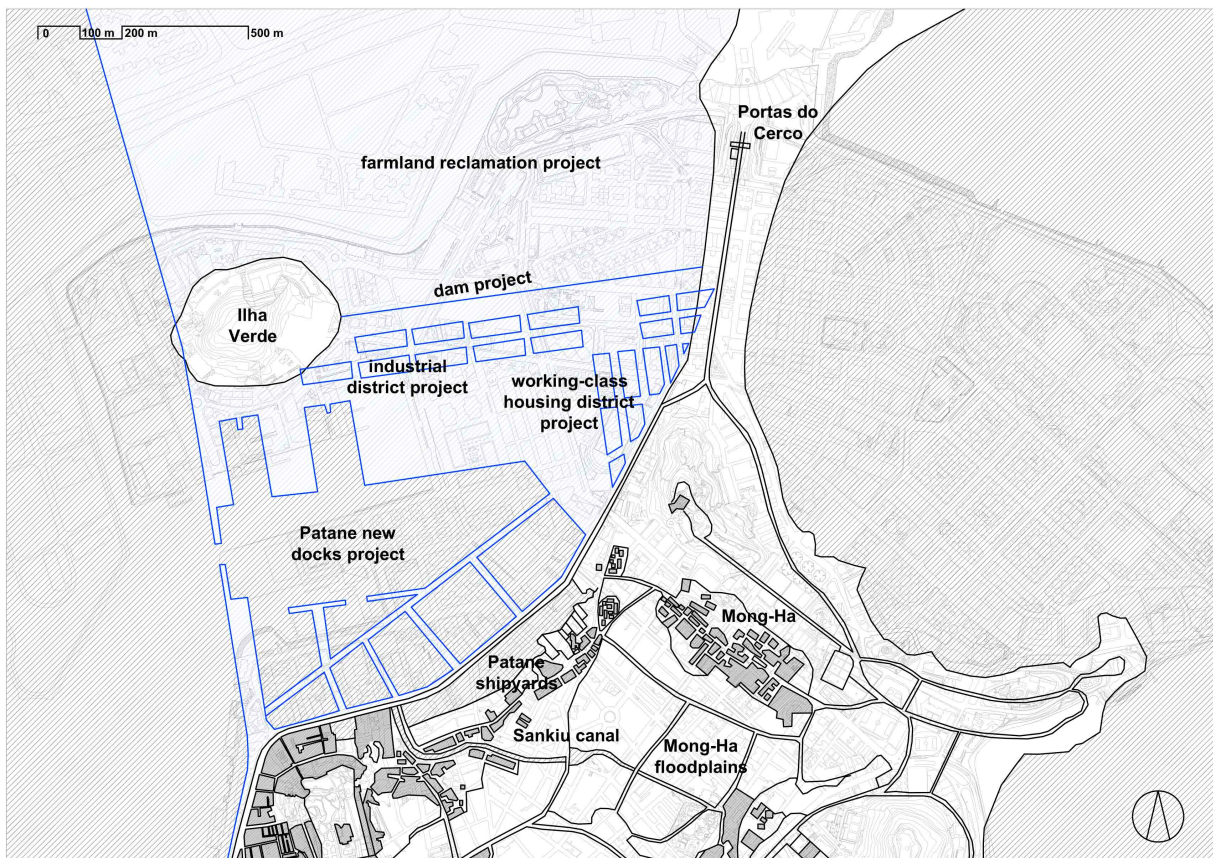


Figure 3: Zoom-in reinterpretation of Loureiro's 1884 "Preliminary study" plan (Figure 2), superimposed on Macao's 2015 cadastral map. Black: the Macao peninsula in the 1880s. Blue: Loureiro's project.



This project represented a somewhat moderate ambition for Portuguese Macao. Its aim was mainly to ameliorate the existing harbour in order to maintain, or at best slightly ameliorate, its trade dynamics. Nonetheless, it was deemed as too ambitious, too expensive, and out of touch with the province's needs. In 1886, trying to tackle the problem, Governor Firmino José da Costa appointed a special committee to study Loureiro's proposals and come up with a prioritised construction plan. Co-written by Captain of the Port Costa e Silva and Public Works Director Horta e Costa, the 1887 committee report endeavoured to tone down the "port issue":

It is undeniable that the silting problem goes back many years, having become more sensitive lately, not due to its aggravation, but because light has been shed on its effects. All the plans and ancient accounts of the province agree that the Inner Harbour was never very deep, even if it allowed entrance to ships with a larger capacity than those that access it today. In 1871, when large scale emigration [coolie trade] was done from Macao, statistics showed that 120 seagoing vessels entered the port. The movement was extraordinary then. In 1885, the same statistics show the entrance of merely 62 ships. At that time, there was great interest in coming here. Today there isn't, but we cannot truthfully claim that this decline is due to the silting of the river.<sup>9</sup>

The Viceroy of Canton, who had met Loureiro's demands to extend his study of the river tides onto Chinese waters with a contemptuous silence, must have manifested his disaccord regarding the projected reclamation, as the committee reported that this could not be carried out, "as it clearly affected land that didn't belong to Portugal"<sup>10</sup>. Nevertheless, the prescribed solution reprised Loureiro's idea of dredging an access channel to the Inner Harbour, using the resulting silt to construct a smaller scale docks project.

However, and apart from the 1884 concession to a group of Chinese businessmen for the construction of a single dock according to Loureiro's plan (Lam-mau dock in Figure 4), political decision dragged on. In 1889, Public Works Director Borges Cabral was still insisting on this minimum programme, appealing to the immediate acquisition of a dredger, as a sign of commitment from the Government to the success of the improvement plan:

Various attempts have been made by private initiative to undertake, partially and according to each other's convenience, parts of the reclamation works, which have not been authorized as they didn't follow Mr. Loureiro's plan. This shows how easily, when construction starts and demonstrates its value, private capitals will flow, easing the Government of its initial burden. I should add that not only the Macanese population, but the Chinese as well, accustomed as they are to the freedom that generally presides over public works in Hong Kong, regret the slow and disrupt progress of a plan on which depends the commercial and industrial development of the city and, as consequence, the well-being of its inhabitants.<sup>11</sup>

The first official steps for implementing the 1887 commission's plan were taken by Governor Custódio Miguel Borja in 1890. A firm believer in the autonomy of local government, ten days after taking office he approved the project for the Ilha Verde dam (Figure 4), ordering construction to start immediately<sup>12</sup>. In his December 1890 report, Borges Cabral summed up the general belief that the Governor's arrival would be a turning point in the Inner Harbour Improvement deadlock:

Unless we are eluded by blind optimism, we see in the commencement of these works the greatest indisputable step do give our colony a new impulse of prosperity, now with no fear of disruption. Once the Ilha Verde dam is completed, with the use of the dredged mud, vast reclamation land will necessarily follow broadening our dominions solely with the arms of peace and work.<sup>13</sup>

In Mai 1891, however, the Minister of Overseas Territories issued a direct telegraphed order to Governor Borja to stop any further work until a general improvement plan could be approved.<sup>14</sup>

## 2. The 1897 Abreu Nunes Project

The "port issue" was only picked up again in 1897 by Governor Rodrigues Galhardo and Director of Public Works Abreu Nunes, author of a revised Inner Harbour Improvement Project. As we can see in Figure 4, Abreu Nunes's propositions were still largely based in Loureiro's main ideas. The major difference lies in the greatly reduced extension of the projected farmland to the north, which Nunes limited by a new dam aligned with the Portas do Cerco border, reflecting the underlying political tensions:

The committee has chosen not to extend the new piers towards the north of Ilha Verde, having received instructions not to project any construction pertaining to the Chinese coastline. Although it shares Adolfo Loureiro's opinion that until Pac-seac the coast is still Portuguese, the fact remains that it is currently being occupied by the Chinese. It is only natural, then, that the Government would wish to maintain the status-quo.<sup>15</sup>

Another six years elapsed in discussions about which dredger to acquire and hesitations on where to start dredging, until the arrival in Macao of Governor Guedes Rebelo, a clear partisan of the Loureiro/Nunes global solution. By summer 1903, hope was rising again in public opinion that this time the Improvement Project enterprise would actually commence, which seemed to be confirmed by the Governor's dispatch to the Overseas State Department, on September 25<sup>th</sup>, of a fully updated version of the 1897 Abreu Nunes Project, to serve as the basis for an international public bid. Rebelo's governorship, however, ended abruptly after barely one year in Macao. His successor, Queirós Montenegro, decided to take a step back, considering that the approved plan would "commit the Government to immediate expenses with no guarantee of results"<sup>16</sup>. The new Governor preferred to spare the Public Works' small but sure annual budget... and buy a new dredger.



### 3. The 1908-1912 Castel-Branco Project

By summer 1905, the Overseas State Department had decided to send in a third party.

General Castel-Branco arrived in Macao in January 1907, serving as Overseas Public Works Inspector, in the last months of Montenegro's governorship, as new Public Works Director Miranda Guedes was starting out. Castel-Branco had a general commission to devise a General Improvement Plan for Macao, with contents ranging from potable water supply to the sewage and waste disposal systems, as well as other topics related to public hygiene and sanitation. The Inner Harbour Improvement Project was set to be the pinnacle of this would-be grand city-modernization plan.

Due to persistent health issues, however, it was only in 1912 that Castel-Branco managed to publish his own ideas concerning the port, even if Guedes and other State Department engineers had been successively commissioned to reinterpret his research in several reports since 1908.

In Figure 5 we can see that Castel-Branco's project started from Loureiro's plan, to which he added a new transformative ambition by placing the Macao railway central station in the heart of the new housing and industrial district. According to the author, only this triad of interconnected improvements would manage to change the face (and fate) of Macao: the harbour, the Macao-Canton railway, and the urban sanitation plan:

Strict obedience to this plan [he wrote] is indispensable and urgent to correct the incoherence and disorientation in the development of the city, which has already birthed much evil, threatening to give rise to severe hygienic, economic and social inconveniences. Thus will the Republic prove that our race can fructify and advance the colonies which, in current times, is of primary importance for the integrity and future prosperity of the Portuguese Motherland.<sup>17</sup>

Yet again, none of these would ever be. By April 1911, new Governor Melo Machado had already expressed his doubts about the "overly ambitious" Castel-Branco project, preferring to go ahead with a "more modest" deal he was about to break with a British dredging company. The Improvement Project was once again put on hold.

Dredging started in June 1911, putting Qing local delegates, already on edge about looming republican uprisings, on full nationalistic mode. In July, the Viceroy of Canton started raining down protests printed in the local press, stating that Portugal had no right to territorial waters and that its true purpose harbour development was surreptitiously to annex more land in the islands around the Macao peninsula. The breakout of local uprisings in October, however, probably led to a quieting down of the political contestation, as dredging seems to have proceeded as scheduled.

Governor José Carlos da Maia, arriving in June 1914, endeavored once more to take up the Castel-Branco Project, with the support of Public Works Director Faria e Maia, launching the first Patane reclamations in September 1915. One year later, however, Governor Maia was exonerated and ordered back to Lisbon, under the accusation of abuse of power. Budget was drastically cut by the metropolitan government, which led the work to a full stop in April 1917.

The very last effort to relaunch the Inner Harbour Improvement Project would be attempted by Macao-born Minister of Colonies João Tamagnini in Mai 1918, by separating the harbour from general Public Works management, and putting Vice-Admiral and hydrograph engineer Hugo Carvalho de Lacerda at the helm of the newly created Committee for the Improvement of Macao Harbours. Partisan of a revised Castel-Branco project, Lacerda would easily gather the support of new Governor Artur Tamagnini, the Minister's brother, to resume the reclamation work, until the full shutdown of October 1919.

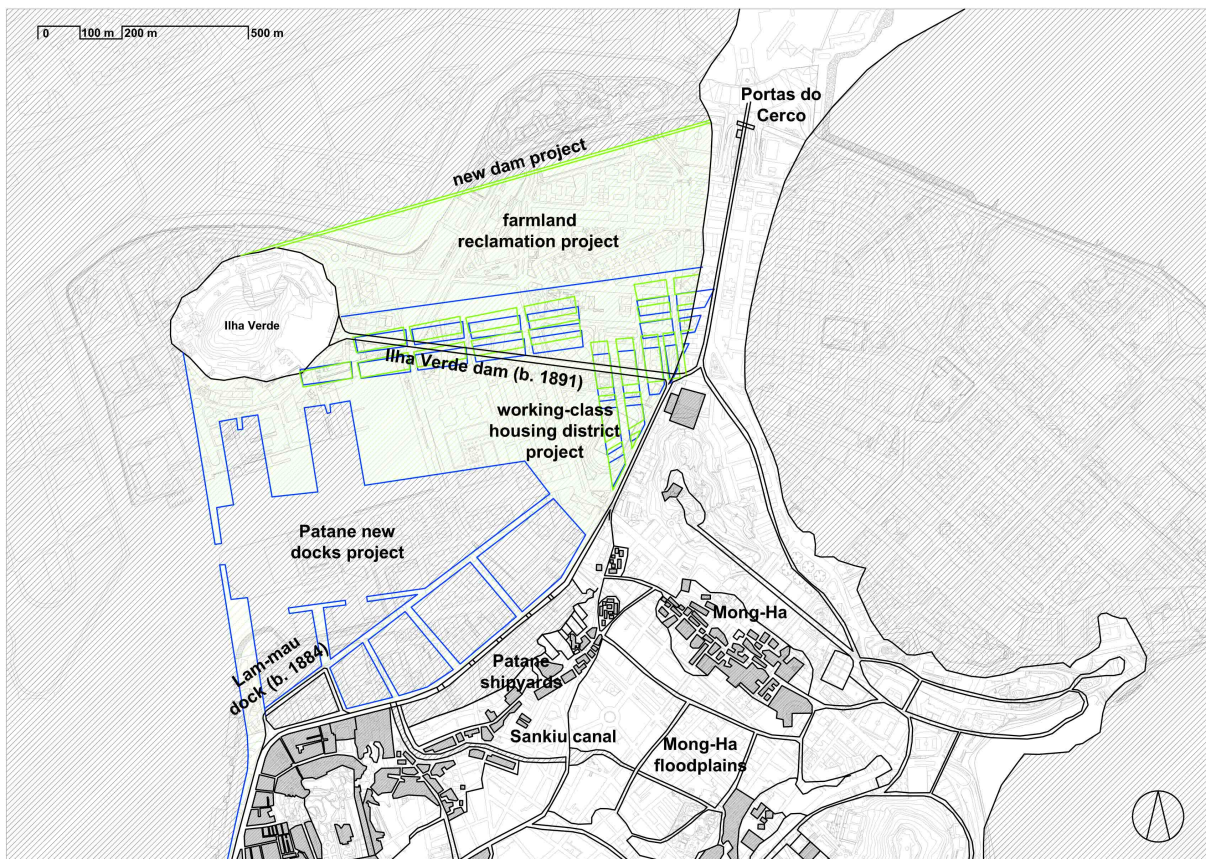


Figure 4: Zoom-in reinterpretation of Abreu Nunes' 1897 plan, superimposed on Macao's 2015 cadastral map. Black: the Macao peninsula in the 1890s. Blue: Loureiro's 1884 project. Green: Nunes' 1897 propositions.

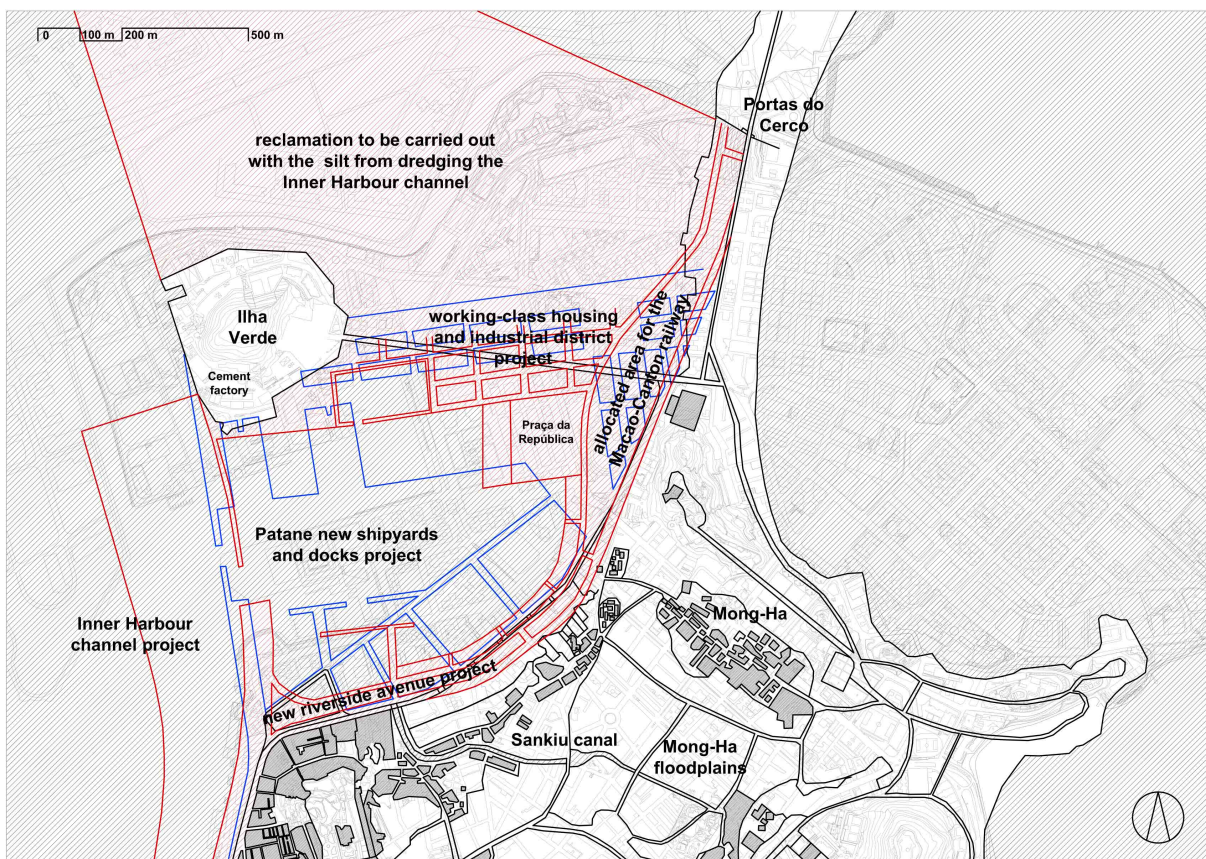


Figure 5: Zoom-in reinterpretation of Castel-Branco's 1912 plan, superimposed on Macao's 2015 cadastral map. Black: the Macao peninsula in the 1900s. Blue: Loureiro's 1884 project. Red: Castel-Branco's 1912 propositions.



## Conclusion

Macao was the door through which the truth of Christianity was introduced to the Far East and the light of European science was able to radiate over this ignorant and backward portion of mankind. The germs of European Civilization, brought at the beginning to these faraway countries with the help of Portuguese trade have started to fructify abundantly. And Macao, from where the first impulse was given to this great social transformation, should it languish away little by little until complete annihilation? Surely not. Its geographical position, its numerous Chinese population and their capital, the peace, quietness and security that we enjoy, are fertile elements that could regenerate Macao and make it prosper through commerce and industry, if they are seized and directed by an administration that, forgetting the old routine, would find in the true principles of science its guiding rules.<sup>18</sup>

In our account of the Macao Inner Harbour Improvement Project forty year deadlock, we painted a picture of political inertia as a set of complex hesitations and indecisions dragging through the years. Both local and metropolitan, engaging in regional politics, but also in financial, political and social issues, it all unfolded in the global context of imperial Europe's geopolitical game of trade route domination.

Following the second half of the nineteenth century Portuguese colonial momentum, a great deal of this inertia, affecting the outcome of the Harbour as well as other grand-scale projects, was probably coming from a grave discrepancy between the positivist imagining of the colony of Macao in an equally imagined gloriously ancient Empire, as described above by the Macanese Mayor in 1883, and both realities in the context of Portuguese possessions' role in the global political and commercial networks.

As Adolfo Loureiro himself pointed out in 1895, after the First Opium War Macao had been reduced to an intermediary outpost between the interoceanic routes coming to Hong Kong and the West Pearl River Delta provinces. Nothing more, but also nothing less. Loureiro's view was that, if Portuguese imperial ambition tried to "regenerate Macao" to make it emerge from its said "languishing state", this was bound to upset not only the British but especially China: "They would start to look at us with their usual wariness, and maybe take away the advantages they grant to our harbour, as the true Chinese harbour that it is."<sup>19</sup> The key was to embrace this role and grow from it, not try to change it.

However, in the late nineteenth century Imperial Europe's intellectual and political circles, it was commonly acknowledged that imperial powers had the duty, at home and abroad, to commit to modern enterprises like improved and connected harbours, or grand urban sanitation schemes to push forward the imagined industrial city. This impulse of nationalistic progress and modernization mostly sprang from the early-century "material improvements" philosophy promoted by French economists like Michel Chevalier<sup>20</sup>, who claimed that the "true principles of science" provided unequivocal "guiding rules" for the betterment of humanity or, in this case, for the urban and social regeneration of the city, which was earnestly perceived as a civilizing mission.

This philosophy would indeed lead to important interventions in Macao, as in other metropolitan and overseas cities. Overall, though, the Portuguese Empire's meager means meant that improvement projects concerning other than the prioritized African and Indian provinces, more often than not ended up at the bottom of Public Works Departments' drawers. As engineer Lisboa Lima ironically mentioned about Timor in his 1913 report on the general lack of progress in the modernization of Portuguese imperial ports: "The State's initiative here has been little more than nothing. Any change in the betterment of the colony is of private initiative, perhaps due to the fact that Timor still isn't connected to the world, and therefore to Lisbon, by the telegraph."<sup>21</sup> Maybe "a little more distance" to the overbearing metropolis would have gone a long way in keeping the 1850s colonial momentum going in Macao, allowing perhaps for a more locally consensual Harbour Improvement solution to be found.

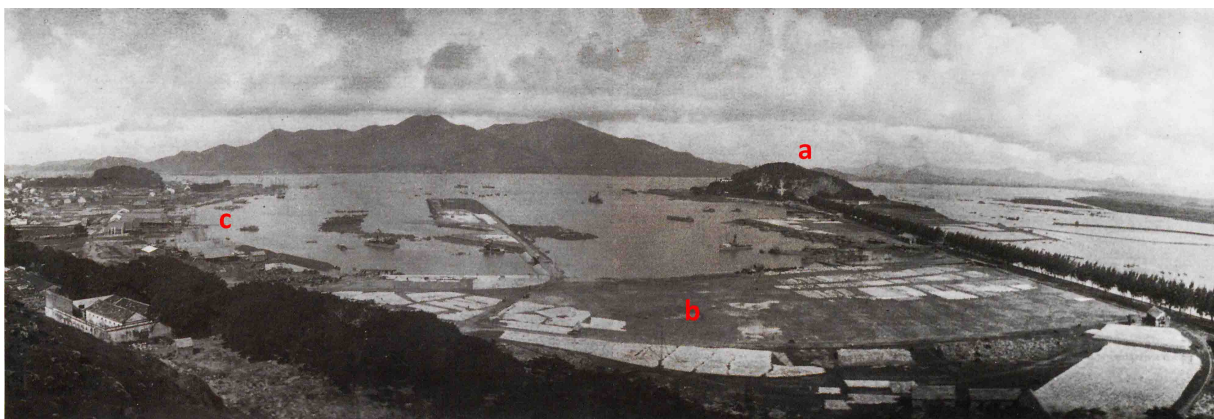


Figure 6: *Ilha Verde* circa 1920. Cecília Jorge and Rogério Beltrão Coelho. *Álbum Macau: Sítios, Gentes e Vivências* (Macao: Livros do Oriente, 1991): a. *Ilha Verde* and its 1891 dam; b. Reclamation conducted on Patane bay until 1919; c. Patane shipyards, same as they were in the 1880s.





## Disclosure Statement

No potential conflict of interest was reported by the author.

## Notes on contributor

Regina Campinho is a PhD candidate on “Heritage of Portuguese Influence” at Coimbra University, Portugal, with the research topic “Macao 1850-1950: Portuguese city at the decline of the empire”, in cooperation with the Architecture Schools of Nancy, France, and Porto, Portugal. Her research, funded by Lorraine University, France, Macao Foundation, China, and by the French and Portuguese Councils of University Presidents, focuses on Portuguese urban history in the nineteenth and twentieth centuries’ European imperial context. Graduate of the Architecture School of Porto, she holds a post-graduate degree in Architectural and Urban Heritage from Centre des Hautes Études de Chaillot, Paris.

## Endnotes

<sup>1</sup> Andrew Porter, *European Imperialism 1860-1914*. (London: Palgrave Macmillan, 1994).

<sup>2</sup> Anthony D. King, *Urbanism, Colonialism and the World-Economy. Cultural and Spatial Foundations of the World Urban System*. (London: Routledge, 1991).

<sup>3</sup> For comparative urban studies in a colonial context see the seminal works edited by Robert Ross and Gerard J. Telkamp, *Colonial cities: essays on urbanism in a colonial context*. (Dordrecht: Martinus Nijhoff Publishers, 1985) and Nezar Alsayyad, *Forms of dominance: on the architecture and urbanism of the colonial enterprise*. (Aldershot: Avebury, 1992). For monographic studies on the same post-colonial historiographic model see Brenda S. A. Yeoh, *Contesting Space in Colonial Singapore: Power Relations in the Urban Built Environment*. (Singapore: Singapore University Press, 2003), William J. Glover, *Making Lahore Modern. Constructing and Imagining a Colonial City* (Minneapolis: University of Minnesota Press, 2008) and Prashant Kidambi, *The Making of an Indian Metropolis: Colonial Governance and Public Culture in Bombay, 1890-1920*. (London: Routledge, 2016).

<sup>4</sup> Glover, *Making Lahore Modern*.

<sup>5</sup> Copy of letter n°10 from the Captain of the Port to the Macao Government Secretary-General, July 22<sup>nd</sup> 1881. AHU-ACL-SEMU-DGU-3R-002, Cx.0001, Overseas Historical Archive, Lisbon, Portugal.

<sup>6</sup> Letter n°121 from the Governor of Macao Joaquim José da Graça to the Minister of Overseas Territories, June 15<sup>th</sup> 1881. AHU-ACL-SEMU-DGU-3R-002, Cx.0001, Overseas Historical Archive, Lisbon, Portugal.

<sup>7</sup> Regina Campinho, “Modernizing Macao, the old-fashion way: Macanese and Chinese entrepreneurship in the colonial city”, *Proceedings of the Fifth International Conference of the European Architectural History Network* (Tallinn: [pending publication] 2018).

<sup>8</sup> Adolfo Ferreira de Loureiro, *O porto de Macau. Ante-projecto para o seu melhoramento* (Coimbra: Imprensa da Universidade, 1884).

<sup>9</sup> *Boletim da Província de Macau e Timor*, suplemento ao n°6, 16 de Fevereiro de 1887, 47-51.

<sup>10</sup> *Ibid*.

<sup>11</sup> *Boletim da Província de Macau e Timor*, suplemento ao n°48, 3 de Dezembro de 1889, 369-376.

<sup>12</sup> *Boletim da Província de Macau e Timor*, n°44, 30 de Outubro de 1890, 370.

<sup>13</sup> “Relatório da comissão nomeada pela portaria provincial n°157 para os estudos dos trabalhos de melhoramento do porto”, *Boletim Oficial do Governo da Província de Macau e Timor*, suplemento ao n°2, 12 de Janeiro de 1891, 11-13.

<sup>14</sup> Note from the 3rd Office Chief of the Overseas State Department to the Minister, confirming instructions sent to the Governor of Macao by telegram, May 22<sup>nd</sup> 1891. AHU-ACL-SEMU-DGU-3R-002, Cx.0001, Overseas Historical Archive, Lisbon, Portugal.

<sup>15</sup> “Relatório da comissão nomeada por portaria provincial n°84 de 4 de Julho último [1897] para estudar os melhoramentos indispensáveis a fazer na rada e porto de Macau”. 451-1H-SEMU-DGU-mç. Overseas Historical Archive, Lisbon, Portugal.

<sup>16</sup> Letter n°212 from the Governor of Macao Martinho Pinto de Queirós Montenegro to the Minister of Overseas Territories, August 26<sup>th</sup> 1904. 451-1H-SEMU-DGU-mç. Overseas Historical Archive, Lisbon, Portugal.

<sup>17</sup> José Emilio de Sant’Ana da Cunha Castel-Branco, *Projecto das obras a executar no Porto de Macau. Memória descritiva e justificativa precedida duma resenha histórica e seguida dum projecto de caderno de encargos e mais documentos para a execução das obras por empreitada* (Lisboa: Imprensa Nacional, 1913).

<sup>18</sup> “Discurso lido pelo Exmo. Sr. Presidente do Leal Senado da Câmara de Macau, D. C. Pacheco, por ocasião da entrega da chave desta cidade ao Exmo. Sr. Governador da província Tomás de Sousa Rosa”, *Boletim da Província de Macau e Timor*, n°17, 28 de Abril de 1883, 164-166.

<sup>19</sup> Adolfo Ferreira de Loureiro, *Macau e o seu porto. Conferência feita na Sociedade de Geografia na sessão de 4 de Novembro de 1895* (Lisboa: Imprensa Nacional, 1896).

<sup>20</sup> Michel Chevalier, *Des intérêts matériels en France. Travaux publics : routes, canaux, chemins de fer* (Paris : Charles Gosselin et W. Coquebert, 1838).

<sup>21</sup> Alfredo Augusto Lisboa de Lima, “Portos comerciais portugueses e projecto das obras do Porto de Macau. Conferência realizada na Associação dos Engenheiros na sessão ordinária de 20 de Fevereiro de 1913”, *Revista de Obras Públicas e Minas*, 517/518, 3-45 (Lisboa: Associação dos Engenheiros Cívicos Portugueses, 1913).



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Figure 1: Cecília Jorge and Rogério Beltrão Coelho. *Álbum Macau: Memória da Cidade* (Macau: Livros do Oriente, 2005).

Figure 2: Biblioteca Nacional de Portugal, Biblioteca Nacional Digital [cc-247-r], <http://purl.pt/17239> (Accessed October 6, 2016.)

Figure 3: Plan information collected from Loureiro's plan in Adolfo Ferreira de Loureiro, *O porto de Macau. Ante-projecto para o seu melhoramento* (Coimbra: Imprensa da Universidade, 1884).

Figure 4: Plan information collected from Abreu Nunes' plan in "Relatório da comissão nomeada por portaria provincial nº84 de 4 de Julho último [1897] para estudar os melhoramentos indispensáveis a fazer na rada e porto de Macau". 451-1H-SEMU-DGU-mç. Overseas Historical Archive, Lisbon, Portugal.

Figure 5: Plan information collected from Castel-Branco's plan in José Emílio de Sant'Ana da Cunha Castel-Branco, *Projecto das obras a executar no Porto de Macau. Memória descritiva e justificativa precedida duma resenha histórica e seguida dum projecto de caderno de encargos e mais documentos para a execução das obras por empreitada* (Lisboa: Imprensa Nacional, 1913).

Figure 6: Cecília Jorge and Rogério Beltrão Coelho. *Álbum Macau: Sítios, Gentes e Vivências* (Macau: Livros do Oriente, 1991).