



## By Rail And Mail: Understanding The Significance of Colonial Architecture for Mass Transport and Communication in The Philippines

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### ABSTRACT

All over the world, mass transport and mass communication systems are the backbone of societal development. In the Philippines, during the turn of the century, the archipelagic landscape was challenging for the colonial government to manage. Thus, establishing efficient systems for transporting goods and people was fundamental to nation-building. Manila's first post office was established in 1783, becoming Branch No. 31 of the Spanish Postal System. During the American colonial period, city planner Daniel Burnham earmarked a choice spot near the banks of the Pasig River as the site of the Manila Central Post Office Building. On the other hand, the Ferrocarril de Manila a Dagupan was inaugurated by the Spanish colonial government in 1892. The American colonial government further expanded the railway lines. Thus, colonial transport and communications served as the fountainhead of the growth of the national economy and supported commercial agriculture and other industries. This paper seeks to understand the significance of colonial architecture in the Philippines, built specifically for mass transport and communication. This will undertake a formal and spatial study of select structures and propose rubrics to determine their significance. Ultimately, a holistic understanding of their significance is hoped to aid conservation.

## 1. Introduction

### 1.1 Importance of Transport and Communication Systems during the Colonial Period

All over the world, mass transport and mass communication systems are the backbones of societal development. The physical movement of goods, people, and information must be fast, reliable, and coordinated for a country to flourish. This, however, was different in the Philippines during the turn of the century, as the archipelagic landscape was challenging for the colonial government to manage. Information, goods, services, and funds must be sent promptly for the government to run smoothly. Thus, there was a need to unite the disparate islands through transport and communications.

With the boom of post-pandemic urban development, now more than ever, much of the built cultural heritage of the twentieth century is at risk [1]. There needs to be more appreciation of their significance, particularly as manifestations of the twentieth century's social, technological, political, and economic drivers [2].

As society progresses, there is a need to develop new building types to support this growth. They were built in response to emerging societal needs and utilized new and experimental construction technologies and materials [1]. The Darjeeling Himalayan Railway (now part of the Mountain Railways of India) is an example of a railway system listed on the UNESCO World Heritage Site for its social and economic contributions through its innovative technological advancement [3]. Particularly in Southeast Asia [2], much of this modern built heritage has already been lost, and an increasing number is in danger [1].

### *1.2. Significance of the Study*

UNESCO's World Heritage List recognizes the world's cultural and natural heritage. However, there is an imbalance in the list regarding geography, themes, and the like [4]. A majority of the list comes from Europe, while other countries like that in Southeast Asia still strive for recognition [5]. Of the inscribed built cultural heritage sites in the Philippines, one is from the pre-colonial period, and three properties are from the Spanish Colonial Period. However, there are built heritage from the succeeding periods that are also worthy of recognition and appreciation. Due to the lack thereof, these modern built heritage examples have been demolished.

Under the Heritage Law or Republic Act 10066, a Conservation Management Plan (CMP) is required for identified built heritage buildings. According to James Semple Kerr [6], *"at its simplest, a conservation plan is a document which sets out what is significant in a place and, consequently, what policies are appropriate to enable that significance to be retained in its future use and development."* Thus, the primary function of the CMP is to understand the significance of built heritage and ensure that this significance and all its elements are retained.

Likewise, Heritage Impact Assessments (HIAs) are required to analyze the possible effects of urban development on heritage sites. This allows the major stakeholders to assess the potential impact of projects, including the assessment of the cumulative effects.

Both the CMP and HIA are invaluable tools in raising awareness for the continued protection of the heritage site.

### *1.3. General Approach*

There is a need for a way to assess and compare heritage values for the formulation of principles and guidelines for conservation. This paper puts forward two (2) methodologies to evaluating modern heritage based on previous studies of which the authors were a part. The first part of this paper is from the Conservation Management Plan (CMP) of the Manila Central Post Office Building (MCPOB), wherein the significance of a single building is assessed. In the second part of the discussion, the scope of analysis broadens as a selected segment of the Philippine National Railways (PNR) is considered.

The background, methodology, data and analysis, and the statement of significance specific to each heritage site will be presented separately in this paper. This paper will not include the policies and recommendations of both studies, rather it focuses on the methodologies that were employed in each study. Finally, the last part will show what was learned and provide recommendations from both examples.

## **2. Manila Central Post Office Building**

### *2.1. Background*

Commissioned by the Philippine Postal Corporation (PhilPost) in 2018, the Conservation Management Plan was undertaken by MNL Solutions, Inc. This was envisioned to aid in preparing plans, studies, materials testing protocols, and conservation policies. At the end of the conservation process, PhilPost hoped that a restored MCPOB would be instrumental in rejuvenating its workforce. However, these plans were derailed in 2023 when a massive fire damaged the building. The building is currently in the early stages of conservation.

### *2.2. Historical Background*

Manila's first post office was established on 31 October 1783 by Governor-General José Vargas Basco [7], and the Manila Post Office became Branch No. 31 of the Spanish Postal System [8]. The first Manila Post Office was located in Calle Escolta, Binondo, the business district at that time.

As part of the Burnham Plan to redevelop Manila as a prime colonial outpost of the American regime, the Neoclassical building of the Manila Post Office, located near the banks of the Pasig River, was designed by Filipino architect Juan M. Arellano and saw completion in 1930 [9].

On 13 April 1987, the Bureau of Posts was renamed the Postal Service Office (PSO) and placed its administration under the Department of Transportation and Communications (DOTC). In 1992, PSO was transformed into a Government-Owned and Controlled Corporation (GOCC), and renamed as the Philippine Postal Corporation or PhilPost [10].

The advent of e-mail, electronic messaging, and social media affected the volume of mail in the country, and mail began to consist of bills, private and public legal notices, and government announcements [11]. Thus, in late 2019, PhilPost spearheaded initiatives to revive the waning art of letter writing among the Filipino youth, hoping this would allow for the growth of meaningful and cherished relations that modern technology fails to fully achieve or offer to the contemporary Filipino youth [12].

### *2.3. Methodology*

The present CMP works within the framework developed within the Burra Charter (ICOMOS Australia). This is rooted in the investigation of the property that will ultimately lead to the statement of its significance and the elements and components that comprise this.

Thus, various issues concerning the significance were examined. The analysis included a thorough Conditions Assessment (CA), historical analysis, formal and spatial analysis, socio-cultural analysis, and a comparative analysis. The latter compared the building to (a) post office buildings in the United States, (b) colonial post office buildings in Southeast Asia, and (c) other Neoclassical buildings of the period [13].

The documentation carried out by the MNL Solutions team from October and November of 2019 reflects the conditions from this particular period. However, it is essential to note that the Team could not access the original plans of the MCPOB, as well as concrete data on pre-war and post-WWII modifications, photographs, and descriptions. Due to this, it is assumed that most of the present building and its elements and components date from 1931 to the 1980s, when the postal system was still heavily used. However, it is difficult to ascertain the periods of many of these elements and components, and many of the assumptions were based on material, technology, and style.

## 2.4. Data and Analysis

### 2.4.1. Location and Setting

During the early American colonial period in the Philippines, American planner Daniel Burnham created a Plan for Manila based on the tenets of the City Beautiful Movement. In it, he specified the site of the MCPOB on the Pasig River's South bank at the end of Padre Burgos Drive. Plaza Lawton is at the front of the property, where Magallanes Drive extends toward and widens right in front of the MCPOB to form the "plaza." Pasig River is located toward the property's rear and includes a formal embankment for deliveries and dispatch by water.

The most notable rectification of the original design was done by adding a ramp for vehicles parallel to the portion of Magallanes Drive passing in front of the Post Office Building. This answered a then-current need to provide infrastructure for being dropped off by motor vehicles, given that the number of cars in Manila was on the rise then. The ramp split the grand flight of steps leading to the main entrance into two parts, creating the illusion that the MCPOB has a basement.

In total, today's Post Office compound has five (5) significant buildings from three different periods, namely:

- Postmaster General's Residence (possibly ca. 1910)
- Manila Central Post Office Building (1931, 1946)
- Annex building by Toledo (1950s)
- Current LTO building, possibly by Ilustre (1950s)
- Postal Bank by Ilustre (late 1950s)



Figure 1. The Manila Central Post Office Building [13]



**Figure 2.** The existing Site Development Plan of the PHLPPost Complex is bounded by the Pasig River on the Northwest, Jones Bridge on the West, Magallanes Drive on the South, and McArthur Bridge on the East. The existing buildings inside the property are listed as follows: (1) Manila Central Post Office Building; (2) Annex Building 1; (3) Annex Building 2; (4) Postal Bank Building; (5) Old Property Building; (6) Guard House; (7) Generator Room; (8) Health Services Building; (9) Driver's Quarters; (10) Gas Station; (11) MMDA Pumping Station; (12) Security Headquarters; (13) Fire House; (14) Flag Pole [13]

#### 2.4.2. Juan Arellano

The MCPOB was designed by Juan Arellano, a product of the pensionado system, who studied at the Pennsylvania Academy of the Fine Arts and then at the Drexel Institute of Art in Philadelphia. Arellano studied architecture and was trained in the Beaux Arts style.

Arellano's earlier training in Manila was as a painter under Fabian dela Rosa. As his works in oil on canvas suggest, he was a keen observer of various landscapes. This sensitivity to the setting probably aided him in visualizing the relationship of the MCPOB with other exterior elements, such as his Jones Bridge design.

#### 2.4.3. Formal and Spatial Analysis

The MCPOB comprises a rectangular block with two smaller lunettes abutting the narrower ends. This is set upon a raised dais and accessed in front by a flight of stairs. The building facade is symmetrical, and the formal composition is centralized.

The building employs a neoclassical temple-style facade, with Ionic dodeca-prostyle in antis. The rest of the building follows the neoclassical block composition, with classical patterns repeated at various levels. The fourteen Ionic columns on the facade are set upon an octagonal base and spaced evenly on the front portico. Instead of supporting a pediment, the entablature juts out slightly from the facade. The narrow windows on top of the entablature are aligned with the gaps between the columns, giving the gaps the illusion of continuity.

The lunettes at the sides do not have the same treatment as the front, although the lines of the fenestrations have managed to keep the same scale and massing as the front of the building. This same awareness of scale and massing can be observed at the back of the building. Although the rear lacks

the formality and grandeur of the front facade, it maintains similar lines, thereby contributing to the overall unity of the composition of the building.

The loggia floor is inlaid granolithic in ochre, sienna, and dark brown tones. This was probably redone after the war because the style is reminiscent of Streamline Moderne rather than Neoclassicism. The loggia's depth seems shallow compared to the scale of the columns, but it provides a transition area from within to without.

#### 2.4.4. Comparative Analysis: Neoclassical Buildings

To contextually analyze the aesthetic value and pedigree of the MCPOB as a Neoclassical building, the team sought to establish connections with other neoclassical buildings. Since there were no similar local buildings, Arellano would have taken inspiration from U.S. Neoclassical architecture, which was prevalent during the 18th and 19th centuries. Aside from iconic examples, the team also examined buildings built around the same period.

Through this, we observed that although the MCPOB resembles the Altes Museum in Berlin and the Farley Building in New York, the building is far from a carbon copy. The semi-circular additions at both ends of the rectangular mass are a large part of the building's character.






















			<b>White House, 1800</b> James Hoban
			<b>Altes Museum, 1823</b> Karl Friedrich Schinkel
			<b>New York Central Post Office Building, 1912</b> McKim, Mead, and White
			<b>Havana Capitol, 1929</b> Eugenio Rayneri Piedra
			<b>Manila Central Post Office Building, 1931</b> Juan Arellano
			<b>Butler Library, 1931</b> McKim, Mead, and White
			<b>Federal Trade Commission Building, 1938</b> Edward H. Bennett

Figure 3. Comparative analysis of similar forms and spaces [13]

#### 2.4.5. Comparative Analysis: United States Postal Offices

One point of inquiry was whether the building conformed to any set U.S. Postal System standards. However, the U.S. Department of Posts only mainstreamed standards after 1948 [14]. "The

United States Post Offices,” a design manual published that year, sets out specific information on how post office buildings were perceived, designed, classified, and typed.

Although the MCPOB does not explicitly conform to the standards set by “The United States Post Offices,” it imbibes the narrative and consciousness of American colonial architecture. Moreover, the placement of the MCPOB conforms to the recommendation that the post office be situated near a river or a train line.

#### *2.4.6. Comparative Analysis: Colonial Post Offices in Southeast Asia*

Like the Philippines, much of Southeast Asia was under colonial rule, and the post office was a government establishment that was a common denominator within the region.

For this study, a visual survey of colonial post offices in Southeast Asia was done to understand the MCPOB within the context of the region. Although the MCPOB was built later than other examples, it is essential to note that the Philippines has the most extended postal history in the area. Additionally, the MCPOB is the only one of its scale entirely devoted to the postal service, whereas others shared the building with other government offices.

### *2.5. Statement of Significance*

#### *2.5.1. Architectural/Aesthetic Significance*

The Central Post Office Building represents an original contribution to the panorama of the Philippines' neoclassical and beaux arts architecture. Its most striking feature—a pair of massive semicircular colonnades flanking a central rectangular volume—is unparalleled in scale and composition in the country. The MCPOB is thus part of the neoclassical tradition adopted for government buildings in the United States. It was also produced when the City Beautiful movement was in full swing in the US, contributing mainly to how Daniel Burnham carefully specified the location of the building.

#### *2.5.2. Technological Significance*

The MCPOB represented progress, showcasing advances in building construction and postal technology. The building was built at a time when the use of concrete in the Philippines had reached a considerable amount of mastery. This proved a wise decision, given that most of its concrete pre-war parts remain. The reconstruction of the building used its slabs and walls—all made of reinforced concrete. The ground floor slabs still have portions with glass blocks—the use of which can be traced to many buildings in the Continental United States. Its use provides light to the basement level of the Post Office Building.

Function was at the core of the MCPOB's design and development. New technological innovations were integrated into the building, and the sorting room is only one part of the system. Spaces in the ground and basement levels are relevant because they contribute to the operations of the sorting room. These spaces constituted the machinery of the postal system and, in time, were modified and fitted out with more modern equipment for sorting and conveying.

The Post Office was also home to new communications technologies—the telephone and telegraph. These linked Manila with the rest of the archipelago and the whole world. In addition, the MCPOB was also the home of the Postal Bank, which was once the largest center for money remittances to and from Manila. Thus, the Post Office Building was a technological hub for communications innovations that significantly impacted the public it served.

### *2.5.3. Social Significance*

The postal service significantly impacted society by facilitating long-distance communication before wired or digital means became available. The building became a hub in the capital of an archipelagic nation where many who live, work, and study have families in other provinces. To many who grew up in the 1930s to the 1960s, the “Post Office” meant “that big building in Lawton.” People recognized it not only because of its scale and location but also because most people, at one point, would have had to go there and transact—especially to leave (into the hands of able and trustworthy employees of the postal service) the most personal of thoughts written on folded paper and sealed in an envelope. Aside from mail and parcels, this included money transfers, telegraph, and telephone services. It is where a lot of the nostalgia was not created but transmitted, making it an essential part of the lives of many Filipinos.

### *2.5.4. Use / Functional Significance*

This is the most compromised of the values associated with the building. Its use had always governed the building, but this use has also been diminished, given the technological advances in communications and logistics in the past years. Thus, it figures mainly in the timeline of the advancement of communications technology, the postal service, and, to a limited extent, banking and finance and its consequent decline.

Today, what remains of the original services offered by the then-Bureau of Posts revolve around mail and parcels. Several other non-postal services, from a combination of government agencies and private corporations, are now housed in the building. The physical effect of this on the building is that most spaces in the upper and lower ground floors, including its mezzanines, are empty, with many of these either unused or transformed into ad hoc storage spaces.

### *2.5.5. Historical and Archaeological Significance*

From the 17th up to the mid-20th century, the site of the Manila Central Post Office complex has a history that contributed to the development of the Filipino nation.

Being the former (and longest) location of the Parian de Sangleyes, it contributed to the colony's economy for almost two centuries. The site was the center of Chinese trade and production in Manila in the 17th and 18th centuries until it was relocated following the British occupation of the city. At the height of the Manila-Acapulco trade, the location was the hub of Chinese traders and artisans who produced ivory sculptures, furniture, and jewelry. This history makes the MCPOB complex, with the Liwasang Bonifacio, among the most fertile archaeological sites in the country.

It was also the southern end of the 17th-century Puente Grande. This was later reconstructed as the Puente de España in the second half of the 19th century. In the last quarter of the 19th century, it was transformed into Manila's largest cigar factory—the Fabrica del Fortin—which employed 8,000 cigarreras. During this period, Philippine-made cigars held their place worldwide next to the most prized of Cuban habanos and were one of the drivers of the Philippine economy.

With the site's conversion into the MCPOB under the Americans in the early 1900s, it soon became a national hub for communications, making the 20th-century Manila Central Post Office an essential node in nation-building.

### *2.5.6. Statement of Significance*

The Manila Central Post Office Building is one of the last buildings in the government complex envisioned in the Burnham Plan of 1905 that still retains the original use for which it was built. Of all those built before the destruction of the city in 1945, it is the grandest in scale and location,

with aesthetics that are unparalleled in the country's panorama of neoclassical buildings of the American colonial period. It stands as the centerpiece of the city in the midst of replanning using the tenets of the City Beautiful Movement.

But apart from being just a beautiful building, it was planned for efficiency - from its riverine setting to its architectural program. All this contributed significantly to its success in function and with the public - as it became the nerve center of much of the communications of Manila until the 1960s. The building linked Manila to the rest of the archipelago and the world. Thus, the building and its site significantly shape the Philippines' economic history through trade and communications.

### 3. Philippine National Railways

#### 3.1. Background

The Philippines' Department of Transportation's current thrust is to maintain and expand viable, efficient, and dependable transportation systems for national recovery and economic progress. The North2 South Commuter Railway Project (N2SCR) was envisioned in line with this. This commuter railway service connects Metro Manila with its adjacent northern and southern suburban areas. It is deemed a vital mass transit backbone for the outward growth of Metro Manila.

However, the N2SCR Project traces and transects the historic Philippine National Railway (PNR) route in the north and south lines. With its dramatic impact on the heritage values of the route and its component stations, the University of Santo Tomas Graduate School Center for Conservation of Cultural Property and Environment in the Tropics (USTGS-CCCPET) was tasked to undertake a Heritage Impact Assessment (HIA) to strike the critical balance of heritage conservation and infrastructure development. This HIA covers the stations from Malolos to Clark in the North and stations Solis to Calamba in the South.

#### 3.2. Approach

To properly assess the data of the PNR, a framework for analysis that holistically examined all the tangible and intangible elements in their proper context was developed.

To do this, a review of current international standards was done. Existing train routes inscribed as UNESCO World Heritage Sites were also examined, focusing on both (1) UNESCO standards for managing World Heritage Sites and (2) ICOMOS guidelines for interpreting and managing railway systems. This allowed us to gauge (1) whether the route in question satisfies the minimum criteria for railway routes as cultural landscapes and (2) how a heritage assessment benefits from a landscape approach even in cases where routes are incomplete.

The theoretical framework helped the team choose the best approach for analysis [15]. It was ascertained that the evaluation of railways exists on three different levels: (a) as a route; (b) as an ensemble; or (c) as individual buildings. In addition, it helped determine the three dimensions to be analyzed and informed our criteria/rubrics for assessing significance and impact.

#### 3.3. Methodology

For this study, we utilized World Heritage standards to assess the significance of the elements within the route so that critical values that emphasize the multivocality and multi-layered heritage aspects are appropriately identified and assessed.

Since there was a need for more research on the PNR, the team relied on primary sources, which they correlated with existing studies on historic railways. Trips were made to both the National Archives of the Philippines and the Philippine National Railways Archives in Tutuban to find primary material on the identified structures and the composition of the line itself. The team was able to retrieve copies of the station layouts as well as of some of the stations and auxiliary buildings. We

also reviewed the data from all the General Manager's Reports. This data was able to help the team build a clearer image of the PNR North and South lines during the different phases of its development. Three dimensions were analyzed: (a) Physical aspects; (b) Technical aspects; and (c) Social aspects. Each dimension was assigned specific attributes adapted from the World Heritage Convention. These are seen in the framework below (Figure 4).

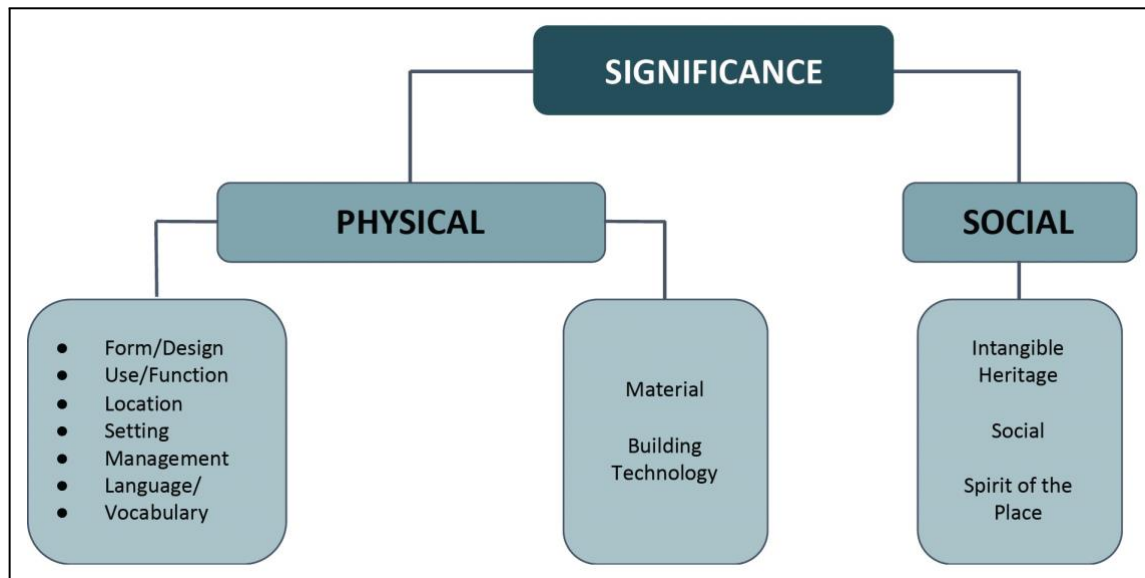


Figure 4. Framework for analysis of significance used in the HIA [15]

The initial basis of the assessment was done on two levels. First, the team determined if the area and the PNR structures were historically significant. Next, those with existing historic structures and historical narratives were prioritized, and those with altered or demolished structures were given lower priority. Photographs and plans were likewise examined before composing a shortlist of stations and bridges of interest.

The team employed a multidisciplinary approach to capture the complexity of the identified heritage values. The general steps included a General Desk Assessment, a Significance Assessment, and a Heritage Impact Assessment. Three teams (Architectural, Social, and Materials) were formed to identify and assess the heritage values. Each team had methodologies involving extensive research, documentation, comparative analysis, testing, and mixed-method research activities. This paper, however, will mainly discuss the studies done by the Architectural Team.

A rubric (Table 1) was developed to assess the different dimensions of railway heritage:

**Table 1**

The rubrics developed for the assessment of the significance of the heritage sites [15]

	0	1	2	3
	not significant	has poor significance	has average significance	has high significance
<b>HISTORICAL ARCHITECTURAL NARRATIVE</b> This weaves together the various factors that have affected the development of the station and of the area, including important personages and events that took place in the area.	The area is not historically significant	The area retains some local significance for the community.	The place is associated with a critical personage or organization in history	The place was the site or an associate site of an important event in the prehistory/history of the people, with most of the elements still in place
<b>FORM AND MASSING</b> This refers to the perception of the general shape and form of a building.	There is no apparent significance	The structure exhibits very little of the original design. In some cases, only the site or foundations are identifiable.	The place exhibits architectural attributes (form, massing, space, material, technology) that are relatively distinct and significant.	The place still exhibits much of the original architectural innovations and representations of architectural heritage. In addition, it may have inspired or influenced the development of other architectural styles.
<b>USE AND FUNCTION</b> These pertain to the assessment of the current use and function in context to the original use and function.	There is no apparent significance	The place is no longer in use or has been abandoned. However, the original functions are still somewhat legible	The place is still in use and retains some of its original functions. However, some areas have been re-adapted to accommodate other uses not necessarily aligned with the original ones	The place is still in use and largely retains its original functions.
<b>MANAGEMENT</b> Pertains to whether or not the property is still under the same ownership and if it is being maintained well	There is no apparent significance	The place is associated with the original users but is no longer under their management	The place is still under the same management but is not maintained at all	The place is actively maintained under the same management.

<b>LOCATION AND SETTING</b> This pertains to how the setting has changed over time and how this has either enhanced or degraded the significance of the property.	There is no apparent significance	The place once served as a pivotal structure, but its setting has been severely eroded	The place served as a referential point for the urban planning and site development of the landscape and is still being incorporated into the urban environment	The location and setting are very legible and serve as an iconic image that identifies the town and is still being incorporated into the urban environment
<b>ARCHITECTURAL LANGUAGE AND VOCABULARY</b> This pertains to building typology. The current elements are checked against documentary evidence of the original structure or ensemble.	There is no apparent significance	The site hardly retains any of its original components. However, the location/layout of the eroded elements is still somewhat legible	The site retains some of the original component elements. However, the location/ placement/ layout of the eroded elements remains legible	The site largely retains much of the original component elements that define its typology and is in good condition.
<b>MATERIAL AUTHENTICITY</b> This attribute deals with whether or not the materials present in the site are the originals.	Extant materials are completely not representative of the period when the structure was built.	Extant materials have low authenticity (less than 40%).	Extant materials have medium authenticity (40%-59%).	Extant materials have high authenticity (60% and above).
<b>BUILDING TECHNOLOGY</b> This pertains to the different technologies that were employed in the building of the structures.	The structure does not represent any building technology of the period when it was built.	Building technology is somehow representative of the period but with major interventions.	Building technology is representative of the period with minor interventions.	Building technology is 100% representative of the period.
<b>INTANGIBLE HERITAGE</b> This concept refers to the practices, expressions, knowledge and skills associated with the structure or ensemble.	There is no intangible heritage related to the site.	The site has an inconsiderable number of related intangible heritages that are rarely observed/practiced by the community	The site has an adequate number of related intangible heritages that are sometimes observed/practiced by the community	The site has a significant number of related intangible heritages that the community strictly observed/practiced to date.
<b>SOCIAL ASPECTS</b> This refers to the various life, community, or societal connections associated with the structure/ ensemble.	The site has no social implications for the community	The site has little social implications for the community	The site has moderate social implications for the community	The site has enormous social implications for the community

<b>SPIRIT OF THE PLACE</b> This refers to the unique, distinctive, and cherished aspects of a structure/ensemble (memories).	The site does not provide meaning, value, emotion, and mystery to the community	The site provides an inconsiderable amount of meaning, value, emotion, and mystery to the community	The site provides a modest amount of meaning, value, emotion, and mystery to the community	The site provides substantial meaning, value, emotion, and mystery to the community
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### 3.3. Data and Analysis

#### 3.3.1. Conditions Assessment

The team visited each pre-identified site and documented the existing buildings and structures. Special attention was given not only to the dimensions of the building, but also to the types of materials and construction methods used. Through this, the team could determine which parts of the building were older and which areas were added later. As-found plans were also produced and correlated to existing ones in the archives.

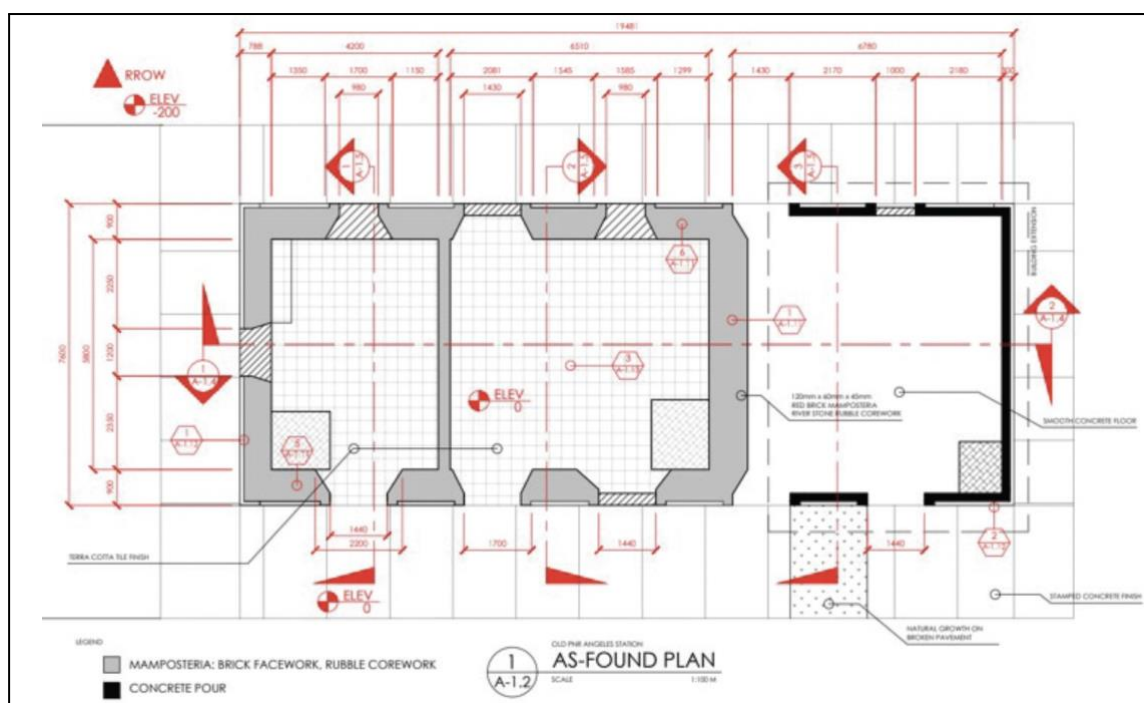


Figure 5. As-found plan of Angeles Station Building [15]

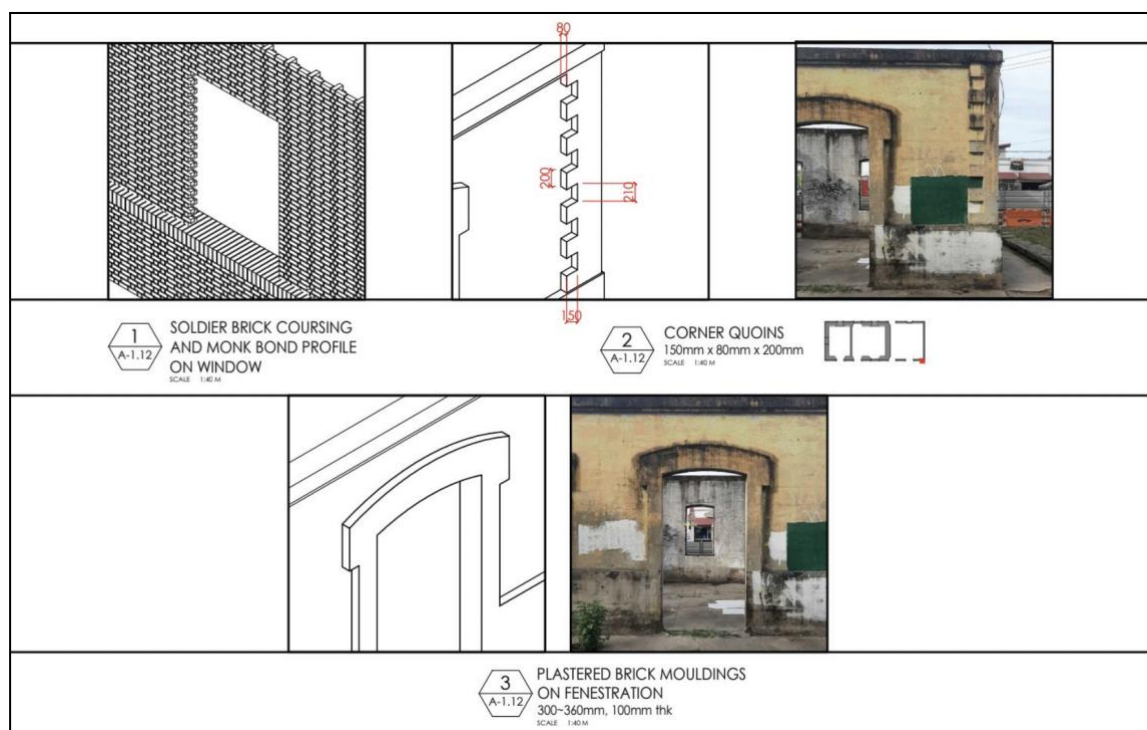


Figure 6. (Clockwise from top left) Details of the soldier brick coursing and monk bond profile; corner quoins, and raised surround articulating the arched opening [15]

### 3.3.2. Comparative Analysis: As a Route, Ensemble, and Individual Buildings

Since only a portion of the entire route was assigned to the team for the HIA, assessing it as a whole route was challenging, especially given the Theoretical and Practical Considerations laid out in the earlier section of this report. Thus, more studies on the heritage of the whole PNR route are needed.

Next, to proceed with the railway assessment as an ensemble, it was necessary to determine what elements comprised a complete set. To examine this, old station layouts were graphically color-coded and correlated with the current conditions. This was done to help us understand the stations' components and how they worked.

The placement of the different elements within the station often showed commonalities, like the location of freight and passenger platforms in the north line or the outhouses being usually accessible from the platforms. Other stations in our assigned segment were also examined to compare and contrast the stations. This made it easy to discern the types of stations in our assigned segment. For example, stations with more auxiliary buildings for maintenance of the trains or dorms for their staff denoted busier and larger stations.

It was observed that many stations had been demolished and replaced with newer ones. Smaller stations tended to be more complete, while larger stations have lost most of their elements due to developmental pressures. Thus, we found that only a tiny portion of the original heritage fabric was intact and that not all stations could be significant as an ensemble. This being the case, it was easiest for the team to assess the heritage values of individual buildings.

### 3.3.3. Quantifying Significance

The teams assessed the identified attributes per short-listed station based on the developed rubrics. The assessment was done using the Delphi method, a process used to arrive at a group decision by a panel of experts.

To arrive at a numeric significance index, the attributes were weighed as follows: 50% for architectural, 10% for material, and 40% for social. This proportion of weights is because the architectural analysis investigated the most attributes, which formed the basis of the study of the other teams. For example, the materials team used information from the architectural analysis database for tests and experiments. Finally, the social analysis captured the Asian context by investigating the Filipino value of place attachment, the communal memory on the PNR, and the perceptions of the N2SCR.

The quantitative data from qualitative research allowed the researchers to objectively evaluate each station's value.

Angeles Station	CATEGORY	0	1	2	3	
		0	2.77	5.54	8.33	
<b>50%</b>	Historical Architectural Narrative			X		33.26
	Form and Massing (Design)				X	
	Use and Function		X			
	Management (maintenance)			X		
	Location and Setting (Townscape)			X		
	Architectural Language and Vocabulary			X		
<b>10%</b>		0	1.66	3.32	5	6.64
	Material Authenticity			X		
	Building Technology			X		
<b>40%</b>		0	4.44	8.88	13.33	39.99
	Intangible Heritage				X	
	Social Aspects				X	
	Spirit of the Place				X	
TOTAL						<b>79.89</b>

Figure 7. Sample computation of Angeles Station showing the weights and the total value of significance [15]

### 3.4. Significance Assessment

The summary of the results may be seen in the table below (Table 2). This assessment shows all sites included in the segment except for bridges, which have different rubrics. Aside from low, medium, and high significance, there are also classifications for Possible Significance and No Material Significance. General Recommendations are shown here, but specific recommendations for each station were provided in the full report.

Table 2.  
Summary of Significance Assessment and General Recommendations [15]

STATIONS / SITES	RATING	DEFINITION	GENERAL RECOMMENDATIONS
Binang, Angeles (Freight), Calamba Station Shed, San Fernando, Calumpit, Angeles (Station), Calamba Train Drivers Dorm, Calamba Train Conductors Dorm, Casitas B (Solis), Casitas A (Abad Santos)	<b>HIGH SIGNIFICANCE (67-100 points)</b>	These structures scored highly regarding historical, architectural, material, and social significance. They have existing historic physical fabric that is largely intact.	Conservation in situ is highly recommended. The structure may be adaptively reused for other compatible uses for the railway or the existing community. It is likewise recommended that if the historic structure is restored, a connection with the new railway operations be established to sustain its significance
Paco, Cabuyao, Santo Tomas	<b>MEDIUM SIGNIFICANCE (34-66 points)</b>	These structures have average scores regarding historical, architectural, material, and social significance. They have existing historic physical fabric that is largely intact.	Conservation in situ is highly recommended. However, adaptive reuse and relocation may also be considered. A connection with the new railway operations is desirable to sustain significance
Apalit	<b>LOW SIGNIFICANCE (0-33 points)</b>	These structures had historical narratives attached and were included in the physical survey. However, it had low architectural, material, and social significance scores. The existing historic physical fabric is severely degraded.	The structure may be demolished, but recognition of the location and the historic events should be sustained.
Vito Cruz, Buendia, Mamatid, Pacita, Alabang, San Pedro, Dau, Bamban Stations	<b>POSSIBLE SIGNIFICANCE</b>	Structures had no historical narrative, and thus were not included in the physical survey. They still have existing structures that seem to conform to the established typologies, although most have been renovated/altered or are in severe disrepair	Further studies of the structures may be carried out to ascertain their authenticity/integrity. They may also be adaptively reused for the use of the PNR or by the public (to increase awareness and appreciation of local railways).
Calamba, Pandacan, Sta. Mesa, San Lazaro, Sampaloc, Muntulupa, San Pedro, Sta. Rosa, Sucat, Pio Del Pilar, Balagbag Stations, Antipolo, Pacita, Calamba Signal Outposts	<b>NO MATERIAL SIGNIFICANCE</b>	These sites do not have any existing historic physical fabric. The original stations were demolished to make way for new structures. However, their location may still be significant in terms of the history of PNR operations	Since no material significance exists, these sites are more open to new structures and designs.

### 3.5. Heritage Impact Assessment.

The main goal is to establish the significance of the railway heritage and gauge the impact of the development project on the site's values. In assessing the effects, the team relied heavily on the generated ranking of significance. Aside from the practical and theoretical considerations mentioned

earlier, the HIA included a thorough review of the technical documents that were turned over to the team. These documents included the plans for the new developments, specifically where the supports for the overhead rails would be erected.

From this, the team assessed the sites for two kinds of impact: (1) Direct Impact, wherein the actions directly affect the heritage site, and (2) Indirect Impact. Of the latter, two kinds were noted: (a) Cumulative Impact, which is an amalgam of various factors affecting the past, present, and future of the site, and (b) Induced Impact, which is an indirect impact that results in a stimulus toward directions that may be different from what was initially intended.

Each site was evaluated for heritage impact, with Cultural Heritage Significance as the basis. So, even if the site was directly impacted by the development, if the cultural heritage significance was low, the impact was negligible. These helped inform decision points for the overall development.

#### **4. Summary and Recommendations**

Both sites examined in this paper are examples of modern built heritage that deals with transport and communication. The authors illustrated how the various significance values were defined through the studies and how knowledge of these can guide future conservation.

Although the two sites differ in scope, both employ a values-based approach. Further, exploring the sites from varying perspectives was necessary to examine these heritage values. Comparative Assessment studies are crucial in understanding the buildings' formal and spatial qualities and how they are connected to other examples of the same style or typology. Likewise, although most methods were qualitative, the quantitative analysis provided a basis for the hierarchy of heritage structures. It should also be stressed that dialogue between the different teams during the rating was crucial in determining the final significance values.

These methodologies may be adapted to examine other examples of modern heritage. However, it is essential to note that each site is unique and should be discussed within its context.

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