Tracks of heritage

Reimagining Forgotten Industrial Heritage in Hanoi | A case of Gia Lam Train Factory

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Reimagining Forgotten Industrial Heritage in Hanoi | A Case of Gia Lam Train Factory

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abstract

After the late 19th-century industrial revolution, cities were designed to have separate residential and industrial zones. However, during this period of time, Hanoi (Vietnam) evolved on a different path. Industrial sites were established first in Hanoi, and from those sites, residential neighborhoods grew around and were deeply ingrained in the manufacturing landscape and the city.

Hanoi, like many cities around the world, has experienced significant industrialization in the past and is currently facing deindustrialization, leading to the presence of numerous abandoned factory plants that now serve as relics of a bygone era. As the country strives to transition toward a greener industry, these deserted factories continue to pose a persistent challenge for both the community and the city. The existence of these neglected industrial lands represents a squandered opportunity in terms of space, resources, and potential.

Are these neglected structures of steel and concrete suitable for repurposing to address current urban needs?

While Vietnam grows, the issue of reviving the relics of once-thriving industrial hubs to meet the expectations of citizens and community needs in this new period has become an ongoing topic of discussion in the country.

This thesis will present an in-depth examination of the overall situation, conduct an analysis, and propose a solution for the Gia Lam Train Factory, one of Hanoi's most significant industrial heritage sites. Which has been abandoned for more than a decade, and a revival project may hold a huge impact on the site itself and the urban regeneration of the surrounding neighborhood or a bigger picture of Hanoi's future.

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introduction

In 1880, France colonized Indochina, comprising the modern-day countries of Vietnam, Laos, and Cambodia. They introduced modern steel construction techniques, first applying this technology to the development of factories. As part of its goal to enhance resource extraction from the colonies, the French developed an extensive industrial infrastructure throughout the territory.

By 1905, the colonial capital of Hanoi had seen the rise of significant train workshops and depots, essential to this industrial growth. The Les Ateliers de Gia Lam, or Gia Lâm Train Factory, has been identified by historian Tim Doling as one of three key railway works during the early 20th century [1]. At its commencement, the factory was a mechanical depot dedicated to the repair and maintenance of train locomotives.

The notable site of Gia Lâm Train Factory, which will be the primary subject of my thesis due to its strategic position, utility to the local population, historical significance, and vastness, all of which make it potentially more influential.

The thesis will include four main parts.

1 Doling, T. (2012). The railways and tramways of Viet Nam. White Lotus.

1 \Hanoi's history and the modernization dream

This chapter will examine Hanoi's history, culture, and architecture, focusing on the industrial revolution. In 1010, King Ly Cong Uan founded Thang Long Citadel, now Hanoi, to build a new Dai Viet capital. French colonists chose Hanoi to build their ideal Indochina capital, a Paris-like eastern city. After independence, a communist capital was envisioned, and Soviet-style architecture appeared amid a war-torn setting. With a new economy in a flat digitized world, citizens' dreams of a livable and creative green city began to emerge, and with new investment from within and foreign countries, the city is changing fast and on the verge of reimagining itself as a sustainable, creative hub for the future.

2 \understand the city and its problems site introduction

This section examines Hanoi's current issues. From housing and student housing socioeconomic difficulties. A detailed analysis of the facts and concerns could assist the vision for transforming city centre leftover sites. This chapter will also examine culture and tourism challenges and prospects to determine Hanoi's cultural hub's importance. This chapter then discusses the Gia Lam Train Factory, a colonial Vietnamese industrial landmark. This section rationalizes adaptive reuse options that match people's ambitions and vision and the city's socio-cultural and ecological goals by examining the site, historical value, and present urban demands.

3 \envision the future

This section presents several revisions of the master designs for the Gia Lam Train Factory, informed by ideas derived from previous chapters. We rigorously assess each option, including issues such as durability, cultural preservation, community needs, and cost-effectiveness. The ideal option is attained by assessing stakeholder benefits, spatial designs, and conformity with governmental policies. The chapter's conclusion offers a clear framework for site rehabilitation that maintains historical significance, meets community requirements, and lays the groundwork for extensive design projects.

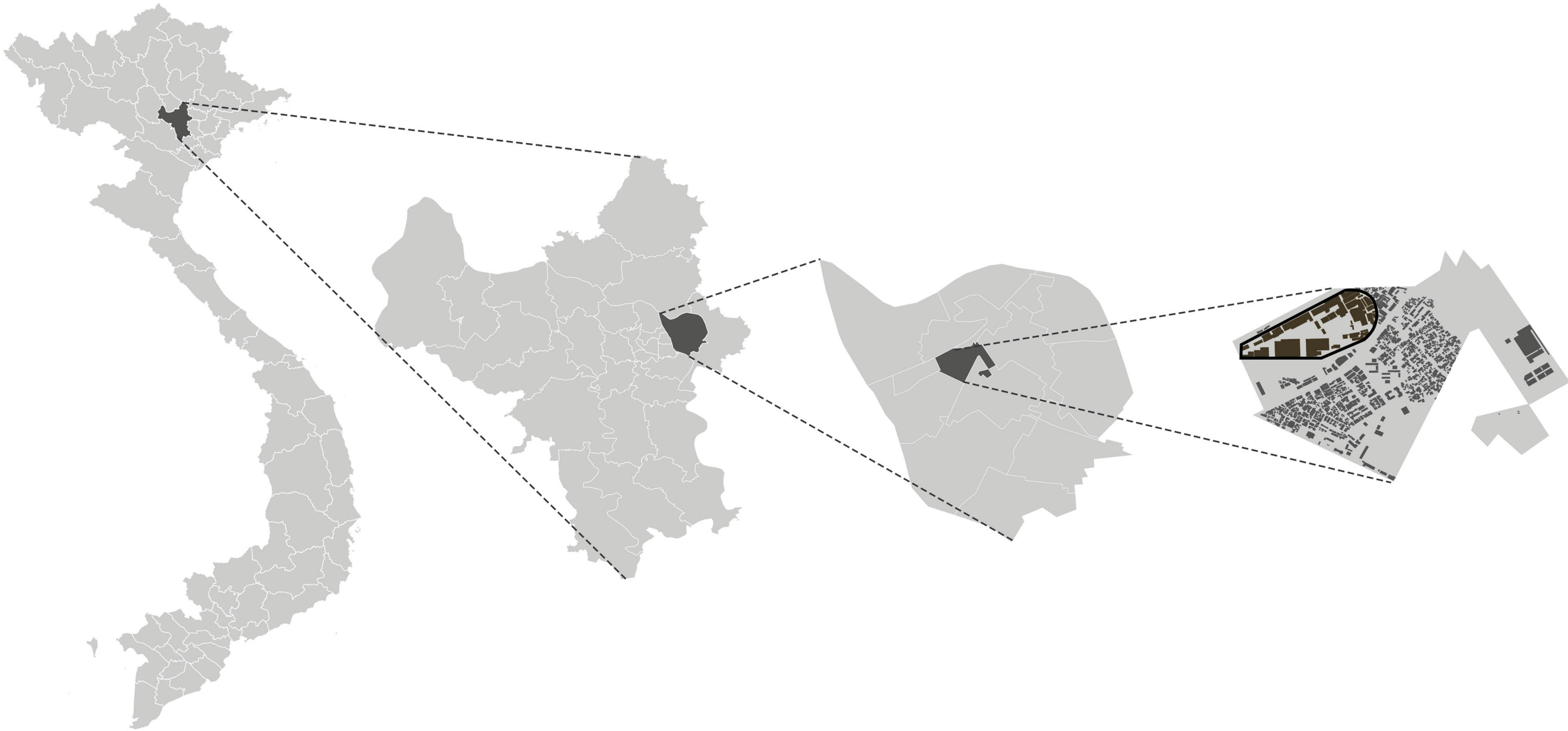
4 \design development

The final chapter provides a comprehensive analysis of the possible ways in which Gia Lam Train Factory could develop in the future. The presentation will include graphics and images, and it will feature a design that has credible features. This takes into account all of the research that was included in the sections that came before it and formulates a solution accordingly.

location



location



country	**Vietnam**
population	101 306 813
area	331 212 km^2

capital	**Hanoi**
population	8 587 100
area	3 359.84 km^2
av. density	2 600 people/km^2

district	**Long Bien**
population	347 829
area	60.38 km^2
density	5 761 people/km^2

ward	**Gia Thuy**
population	15 214
area	142.43 ha
density	106.81 people/ha

Gia Lam Train Factory



Hanoi overview

Hanoi is the capital of Vietnam, situated in northern Vietnam within the vast Red River Delta. The city is about 100 kilometers away from the Gulf of Tonkin. The Red River runs through the town from the north to the east side. Hanoi has many lakes, which are a notable characteristic of the city. Even today, when Hanoi has become a crowded urban hub, Hoan Kiem Lake and others continue to be the center for all the people, situated in the midst of some of the busiest streets in Asia. With an area of around 3,358 square kilometers and a population of over 8 million, Hanoi is one of Southeast Asia's most bustling and populated cities.



Hanoi overview

The national railway network in Hanoi is an important part of the city's history and culture. It originates from the period when the French colonized the region over a century ago. The national railway network, over 2,600 kilometres, connected Hanoi to significant Vietnamese cities and neighbouring countries like China. This influenced mobility, trade dynamics, and the capacity of individuals to maintain resilience during conflicts. Hanoi Central Station, Long Biên Bridge, and the renowned "Train Street" are significant landmarks that evoke the city's social and daily life.

Decades of insufficient investment have led to the deterioration of rail infrastructure and the obsolescence of rolling stock. Many individuals today perceive rail travel as slow and inefficient. Hanoi is progressing towards a contemporary future with a rapidly developing metro network.



Hanoi overview

Hanoi is a city that is constantly changing. The sounds of innumerable motorcycles weaving and darting in a seemingly chaotic yet somehow effective choreography awaken the streets from dawn's crack. Calling out to the early risers, vendors push carts filled with baskets of fresh herbs or steaming bowls of phở. Modern glass towers contrast with old colonial facades, and family-run businesses and secret cafés can be found down tiny alleys. With its horns blaring not out of rage but as a language of movement, the city's loud and unrelenting traffic is a vital component. There is an unspoken rhythm amidst the seeming chaos: older adults working out by Hoàn Kiếm Lake, children playing in the park, and neighbours conversing over tea on the sidewalk. Here, life spills out into the streets, colourful and unrepentant, making every day a celebration of connection, adaptation, and survival, and every corner a story.

	1.1	overview of the city history
1010-1880	1.2	Thang Long - the city of ascending dragon
	1.3	building a capital for French Indochina
1880-1954	1.4	railway as a tool
	1.5	industrial development during French control
1954-1965	1.6	early independence
1965-1975	1.7	under American bombs
1975-1986	1.8	create a new face for a socialist city
1986-now	1.9	new changes together with economic reforms
	1.10	industrial development in the new era
	1.11	conclusion

01

Hanoi’s history and the modernization dream

Hanoi has a unique spatial and contextual arrangement (even though it may not appear particularly spectacular at first glance). Thanks to the creativity and ingenuity of its residents living within this environment, this context has become a “constructed space” with its own distinctive dynamism.

Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House. p 17. translated by author



1.1 Overview of Hanoi's history

1010 — The emperor Ly Cong Uan moved the capital to Thăng Long, nowadays Hanoi

1882 — The begin of French colonialism

1887 — The Indochina Federation was established by the French.

1897 — Paul Doumer was appointed Governor-General of Indochina.

1930 — The Communist Party was founded by Ho Chi Minh.

1945 — World War II ended, Ho Chi Minh declared independence. The war against France continued.

1954 — The war against France ended. The Communist Party regained control of Hanoi. The country was divided. Hanoi was the capital of North Vietnam. South Vietnam was under American control.

1975 — Unification of North and South Vietnam. End of the war against USA. Hanoi is the capital of unified Vietnam

1986 — Introduced the economic reforms policy.

1990 — The Fall of the Soviet Union, Soviet influence ends in Vietnam

1995 — Vietnam normalizes relations with the United States. The era of integration begins.

HÀ NỘI

translates to “inside the rivers”

Hanoi, Vietnam's capital, has been around for over a thousand years. The city's name, "inside the rivers," refers to its location between the Red River and its tributaries. This has had a significant impact on how the city has grown. In 1010, Emperor Ly Cong Uan established Thăng Long as the Dai Viet Kingdom's capital. This marked the beginning of Hanoi's rise to prominence as the region's political, cultural, and economic centre. From the late 1800s to 1954, while the French dominated the city, it developed dramatically. The "French Quarter" represents the effects of colonialism. It has Western-style city planning, large boulevards surrounded with trees, and stunning colonial architecture that distinguishes Vietnamese and European towns. When North Vietnam gained independence in 1954, Hanoi became the country's capital. It became the capital of the Socialist Republic of Vietnam in 1975. This resulted in the development of enormous public housing and industrial sectors. Doi Moi's economic reforms of 1986 resulted in fast urbanization and economic growth. They shifted Hanoi's economy from central planning to market-oriented. Because of this transition, the population increased dramatically, from approximately 500,000 in the 1950s to more than 8 million now. Hanoi's skyline is a jumble of traditional Vietnamese architecture, colonial structures, and modern skyscrapers. This transition demonstrates the city's strength and ability to maintain its historical identity as it grows.

1.2 Thăng Long - The city of ascending dragon

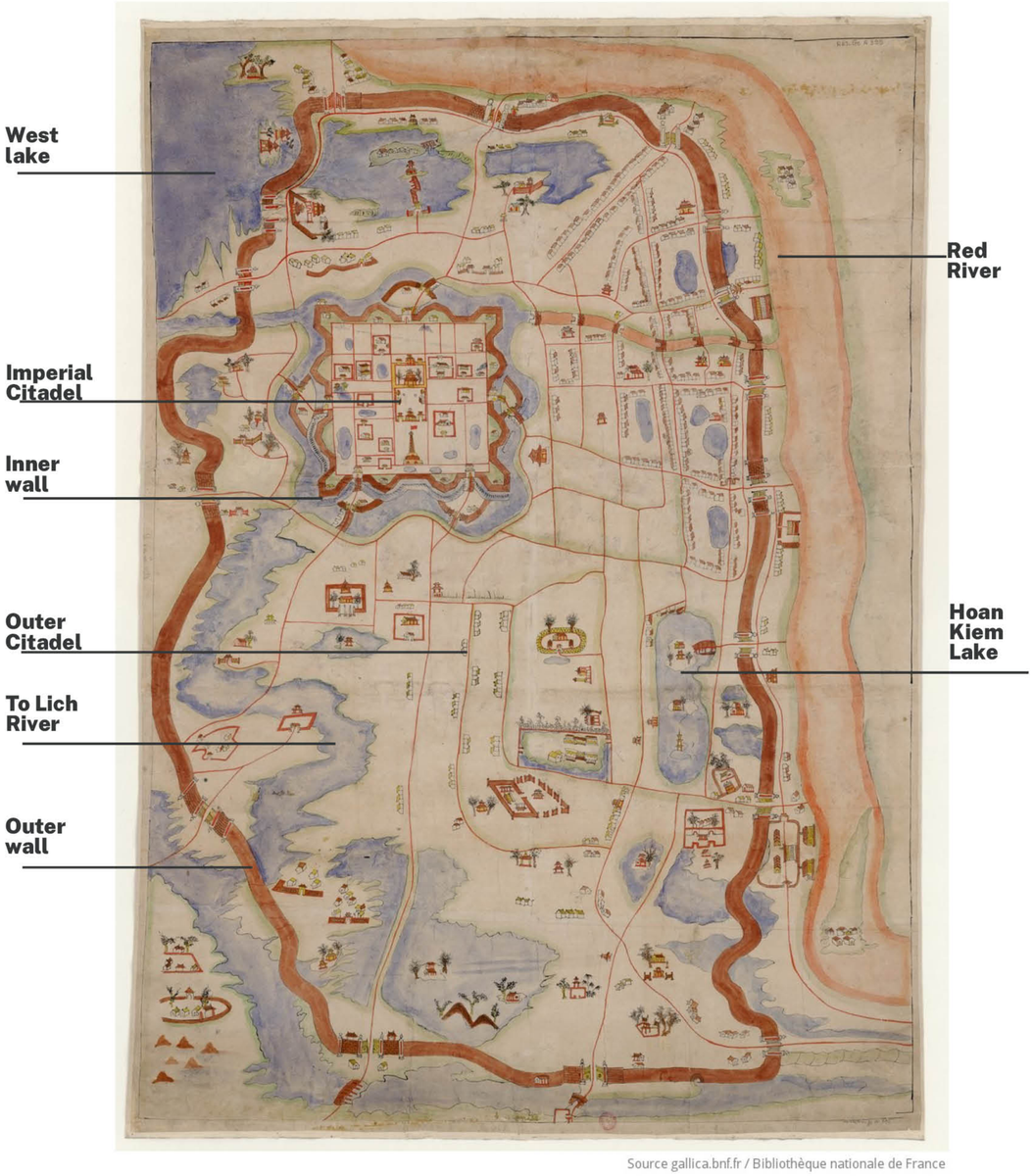
Hanoi in feudal times 1010-1880

Hanoi's urban architecture began in 1010, when Ly Cong Uan issued a royal decree to relocate the capital from Hoa Lu to Hanoi. The first task of the Lý Dynasty upon establishing the capital in Thăng Long was to construct palaces for the nobility to reside in and to build fortifications for protection. At that time, the Thăng Long Citadel was divided into two main parts: the Imperial Citadel (Hoàng Thành) and the Outer Citadel (Kinh Thành)[2]. As illustrated on the map of feudal times [Fig. 1].

Surrounding these areas were residential zones consisting of agricultural villages, streets for trade and crafts, and market docks. The entire city and surrounding areas were enclosed by an outer wall known as Dai La or La Thành, which served as both a defense system and a flood prevention measure.

Starting with these core elements — the citadel and adjacent residential zones — the city gradually developed. Each dynasty and century contributed to creating a prosperous, feudal-era Eastern city, which included the following functional areas: administrative, political, and military zones. The Imperial Citadel (Hoang Thanh) housed the highest state authority, including the king, officials, and soldiers [3].

Residential, craft, and commercial zone: This area extended from the eastern, northeastern, and southeastern parts of the Imperial Citadel, stretching toward the Red River. Residential and agricultural zone: Located slightly south, near the To Lich River in the west and the Kim Nguu River in the south. Cultural, educational, and public areas: These included the Temple of Literature – Imperial Academy (Van Mieu – Quoc Tu Giam), private schools, recreational spaces, and cultural areas in the Imperial Citadel, around West Lake, the To Lich River, and Hoan Kiem Lake.



Source gallica.bnf.fr / Bibliothèque nationale de France

figure 1 Hanoi in feudal times. Illustrative map not to exact scale, drawn around 1873-1876

2 UNESCO World Heritage Centre. (2010). The Imperial Citadel of Thăng Long–Hanoi. Retrieved from unesco.org/document/152382

3 Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House. p 21 (translated by author)

fig 1 Plan annamite d'Hanoï. (1876–1883). Bibliothèque nationale de France, département Cartes et plans, GE A-395 (RES). Retrieved from http://catalogue.bnf.fr/ark:/12148/cb406738613

1.3 Building A Capital For French Indochina

Hanoi Under French Rules 1880-1954

The map of Hanoi, 1885 [Fig 2], drawn in 1936, provides a depiction of Hanoi during the reign of Emperor Tu Duc, at the time when the French arrived in the city. Although it is still highly stylized, the map illustrates the Imperial Citadel with perfect symmetry and Vauban-style walls situated within the fortifications of the Thăng Long Citadel. The Kính Thiên Palace and two other palaces - likely only representations of what existed - are shown at the center, within the grounds of the Forbidden City [4]. During this period, the Old Quarter was densely packed with people. Under the reign of Minh Mang, the population was approximately 50,000, comprising Vietnamese residents in three areas and Chinese residents in one area[4].

The expansion of the city in the previous era laid the foundation upon which the French began to implement their urban development from 1880, through the destruction or alteration of much of the existing city upon their arrival. The subsequent decades of colonialism, military conflicts against the French, the war against the Americans and their allies, post-war reconstruction under Soviet influence, and most recently, the liberalization following Đổi Mới (economic reforms) all left their mark, erasing much of the image of a feudal Hanoi. However, the early and final years of the colonial period proved to be the most destructive [5].

figure 2 Hanoi in 1885 redrawn by the French in 1936



4 Vietnam Architecture Magazine. (2010). 1000 years of Thang Long-Hanoi: Architectural Milestones Through the Ages. https://www.tapchikientruc.com.vn

5 Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House.

figure 2 Babonneau, L. & Imprimerie photo-lithographique du Cadastre du Tonkin. (1936). Plan de la ville de Hanoï en 1885. Imprimerie photo-lithographique du cadastre du Tonkin. Bibliothèque nationale de France, département Cartes et plans, GE A-1131. Retrieved from http://catalogue.bnf.fr

However, French Hanoi had begun to see itself as the “Paris of Annam”. While not all the designs were completed, in 1902, the colonial government celebrated its growing stature with a grand exhibition [Fig 3]. Another grand idea of Paul Doumer was an exhibition designed to showcase the agricultural and industrial products of Tonkin, as well as the cultural artifacts of Indochina and the Far East. The horse racing grounds were ordered to be used for a large complex of buildings. The project depleted the city's budget for more than a decade, but was seen as a necessary “political prestige” to make Hanoi a “miniature Paris.” [6]

This period also saw the construction of iconic colonial landmarks, such as the Hanoi Opera House [fig 4] and St. Joseph’s Cathedral [fig 6], symbolizing French cultural and political dominance. [7]



figure 3 Grand Palais de l’Exposition 1902

6 Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House. p154

7 Meisler, S. (November 25, 2001). Traces of the French in Hanoi. Retrieved from https://www.stanleymeisler.com/article/traces-of-the-french-in-hanoi

fig 3 Pierre Dieulefils (1902). Postcard Grand Palais de l’Exposition 1902, Wikipedia. Retrieved from https://commons.wikimedia.org/wiki/File:Hanoi_Grand_Palais_de_Exposition.jpg

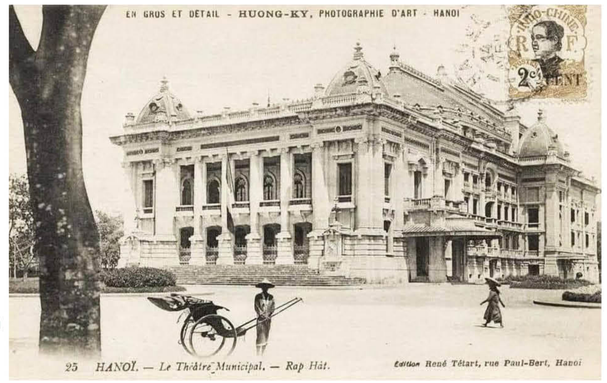


figure 4 Pierre Dieulefils (n.d.). Postcard Hanoi Opera House in the early twentieth century, taken from the old Paul Bert street. Wikipedia. Retrieved from https://it.wikipedia.org/wiki/File:Hanoi_rue_Paul_Bert.jpg



figure 5 Postcard (n.d.) Hanoi Opera House in the early 20th century. Postcard Hanoi Opera House. Retrieved from https://vietnamluxuryexpress.com/hanoi-opera-house/



figure 6 Postcard (n.d). St. Joseph’s Cathedral in Hanoi during colonial time. Vietnam Times. Retrieved from https://vietnamtimes.org.vn/the-outstanding-and-rustic-architecture-of-st-josephs-cathedral-in-hanoi-24366.html



figure 7 Pierre Dieulefils (n.d.). Postcard HangCo Train Station, Hanoi, Vietnam (circa 1912), Wikipedia. Retrieved from https://commons.wikimedia.org/wiki/File:Hanoi_Gare,.jpg

One of the most significant structures from the colonial period is the Long Biên Bridge, built between 1899 and 1902. The bridge constructed during this time spans nearly 1.7 kilometers in length. Many people believe that the bridge was designed by Gustave Eiffel. However, according to Doumer's memoirs, the construction contract was awarded to the Daydé & Pillé Company in Creil, Oise Province, which began construction in 1898 [8].

From Gia Lam, the railway lines split into separate directions, either heading towards China or Hai Phong Port city, making the bridge an essential component of the region's transportation network and a symbol of Hanoi's industrial and infrastructural development.

Originally called Paul Doumer Bridge, after the Governor-General of French Indochina (1897-1902), the bridge was a structural masterpiece, the epitome of Doumer's great ambitions. A traffic management master plan – a system of roads, railways and seaports – was envisaged in order to strengthen French control of the region, demonstrating France was 'here to stay'. Despite some opposition, construction of this historic cantilever structure was approved. At the time it was one of the four greatest bridges in the world and one of the greatest engineering accomplishments of the French colonial government [9].

Its steel framework, featuring intricate lattice girders, reflects the engineering aesthetics of that era. [10]

8 Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House. p130
9 Ehgtravel. (2022, November 21). Iconic structures: Long Bien bridge. EHGTRAVEL. https://ehgtravel.com/iconic-structures-long-bien-bridge/

10 Vietnam Original (n.d.). Long Bien Bridge : A 120 year old historic Icon of Hanoi. Vietnam Original. https://vietnamoriginal-travel.com/travel-guide/long-bien-bridge-a-historic-icon-of-hanoi/

Fig 8 Wikipedia contributors. (n.d.). Hanoï-Le Pont Doumer early 20th century. Wikimedia Commons. Retrieved from https://commons.wikimedia.org/wiki/File:Hanoi_Le_Pont_Doumer.jpg



figure 8 Hanoï-Le Pont Doumer in the early 20th century

This map of Hanoi from 1925 illustrates how the French altered the city after nearly 25 years of transforming it's newly ceased territory. Significant changes that took place in the city during this early period of colonization are depicted on the map. Originally a traditional feudal capital, Hanoi evolved into a trading and French colonial government center of Indochina. Significant changes were made to the city's infrastructure by the French colonial administration, which also incorporated French-style structures with elements of Vietnamese subtropical architecture.

The city was divided into separate functional areas. The French Quarter, south of Hoan Kiem Lake, had wide, tree-lined streets and French-style villas for colonial officials. The Old Quarter, to the north, kept its narrow streets and specialized trade, but some changes were made to make it easier to get around. Along the Red River, industrial and warehouse zones sprang up, while military zones were carefully kept near the ruins of the old Imperial city. [11]

With the French dominating the large French Quarter and the Vietnamese residing in denser, less structured neighborhoods with subpar living conditions, the urban plan of this era also demonstrated glaring social segregation and division in the period of history. [12]

But this modernization often meant tearing down old Vietnamese buildings. Parts of the Thăng Long Citadel and other historic sites were demolished to make way for new projects. [13]

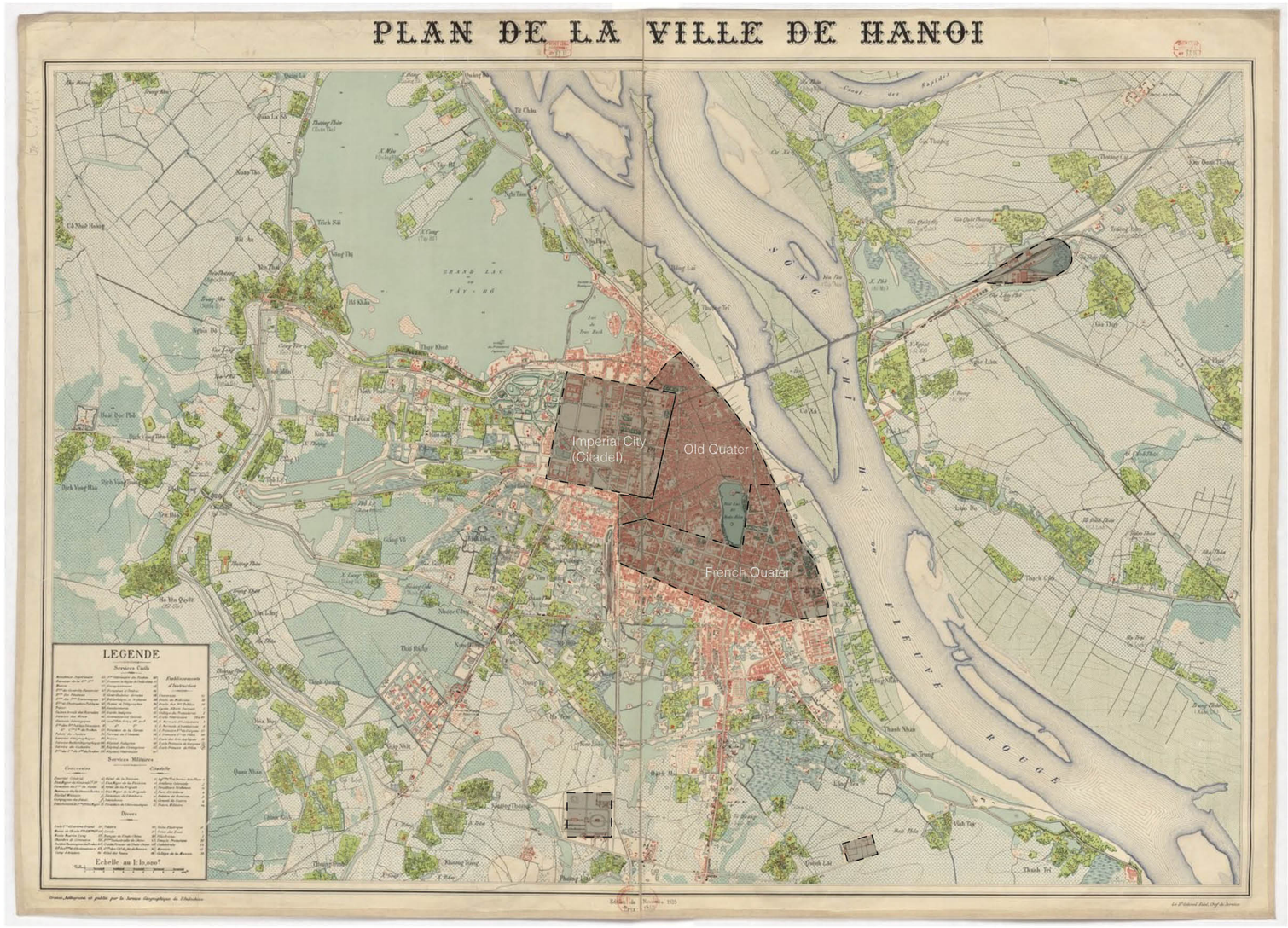


figure 9 Hanoi 1925 map

figure 9 Service géographique de l'Indochine. (1925). Plan de la ville de Hanoï [Map]. Bibliothèque nationale de France, département Cartes et plans, GE C-5451 (1-2). https://gallica.bnf.fr/ark:/12148/

11 Kyoto Southeast Asia Studies. (2012). Urban transformations in colonial Hanoi. Retrieved from https://kyoto-seas.org/wp-content/uploads/2012/01/460402.pdf

12 Alpha History. (n.d.). French colonialism in Vietnam. Retrieved from https://alphahistory.com/vietnamwar/french-colonialism-in-vietnam

13 Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House.

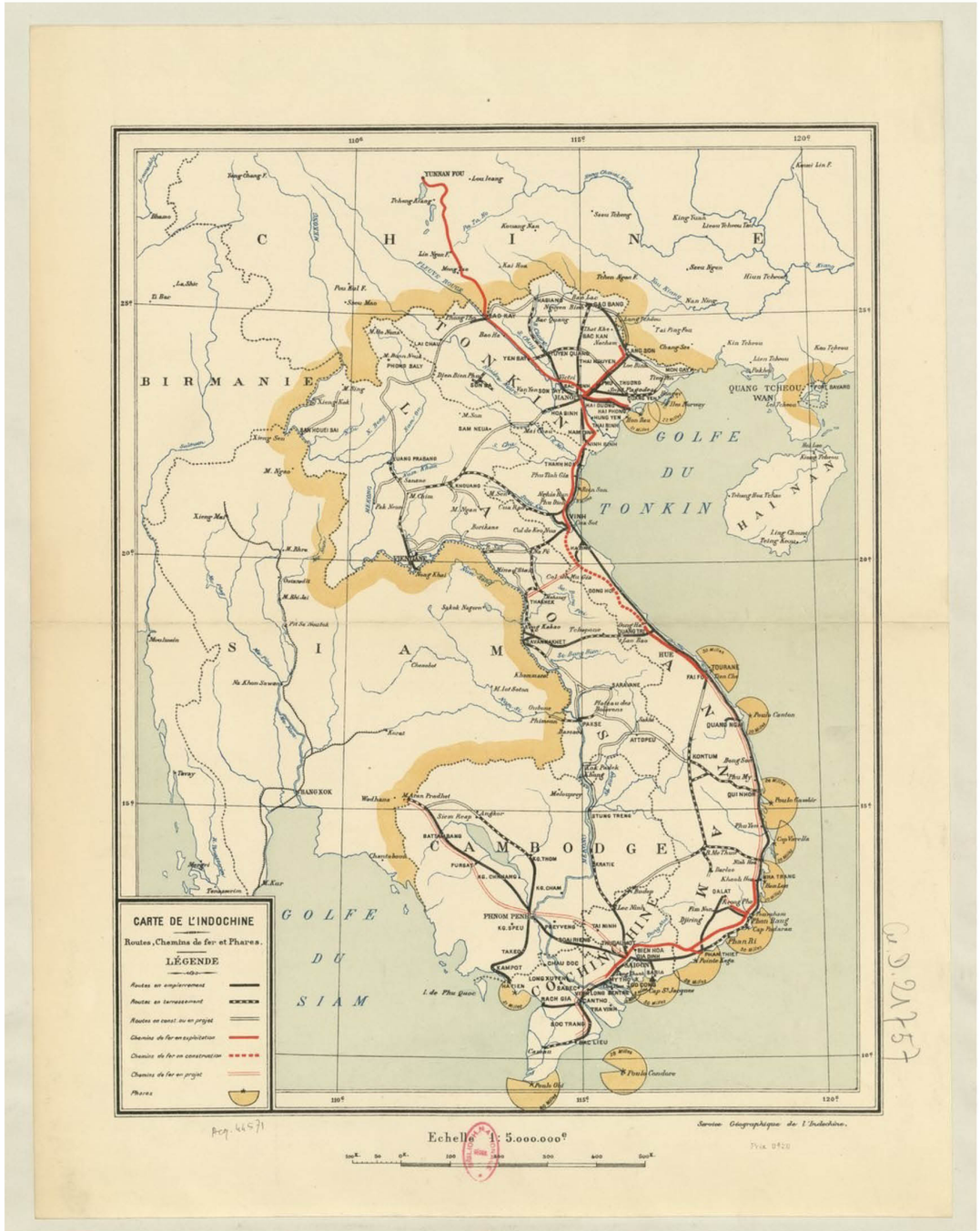
1.4 Railway as a tool

Hanoi Under French Rules 1880-1954 and following years

French railroads in Indochina were built to facilitate business and administration. Railroads connected resource-rich regions to major ports, making coal and agricultural products easier to extract and transport. The network allowed people and things to move, helping France govern the colony and achieve its commercial goals. Railroads helped the army move quickly to quell insurrections and preserve order. [14]

Governor-General Doumer developed a comprehensive plan for an Indochina Railways network. He envisaged the creation of “a network to cross the whole of Indochina from Saigon to Tonkin, connecting the ports of the coast with the rich valleys of Annam, connecting the sea with the major navigable reaches of the Mekong, and penetrating China by the Red River Valley.” The planned length of this network reached 3,200km, and according to the available capital, it was thought that we could immediately build between 600 and 1200km of railways. [15]

Doumer, the Governor-General with a mindset that was both practical and visionary, realized that prosperity could only be achieved through a highly efficient railway network that was not fragmented into separate sections and could meet all demands. For him, this network needed to connect with the railways of neighboring countries and eventually link these distant colonies to the motherland. [16]



Source gallica.bnf.fr / Bibliothèque nationale de France

figure 10 1933 Map of Indochina. Roads, railways and lighthouses

14 Wikipedia contributors. (n.d.). French Indochina. In Wikipedia. Retrieved from https://en.wikipedia.org/wiki/French_Indochina

15 Doling, Tim. Historic Vietnam. (2014). Indochina railways in 1928. Retrieved from https://www.historicvietnam.com/indochina-railways-in-1928/

16 Hublot, F. (2021). Les chemins de fer de la France d’outre-mer: L’Indochine-L’Yunnan (p. 330). Hanoi: Social Science Publishing House. (Translated by author).

figure 10 Bibliothèque nationale de France. (1933). Map of Indochina. Roads, railways and lighthouses. Gallica. https://gallica.bnf.fr/ark:/12148/btv1b530574891/

1.4 Railway as a tool

Hanoi Under French Rules 1880-1954 and following years

After Vietnam became one country again in 1975, the government made fixing the North–South railway line, called the Reunification Express, a top priority. The line had been badly damaged during the Vietnam War. By 1976, this restoration was partly finished. After a brutal war, the reconnection of North and South Vietnam serves as a unifying thread. [17]

In the following years and until this day, work has been ongoing to improve the railway system that was initiated by the French during the colonial era; some sections of it remain empty until now. They are important from a historical and architectural perspective. These relics are powerful reminders of Vietnam's colonial past and the movement for independence and freedom.

17 Pilot Guides. (n.d.). Journey guide: Vietnam's Reunification Express. Retrieved from https://www.pilotguides.com/articles/journey-guide-vietnams-unification-express/

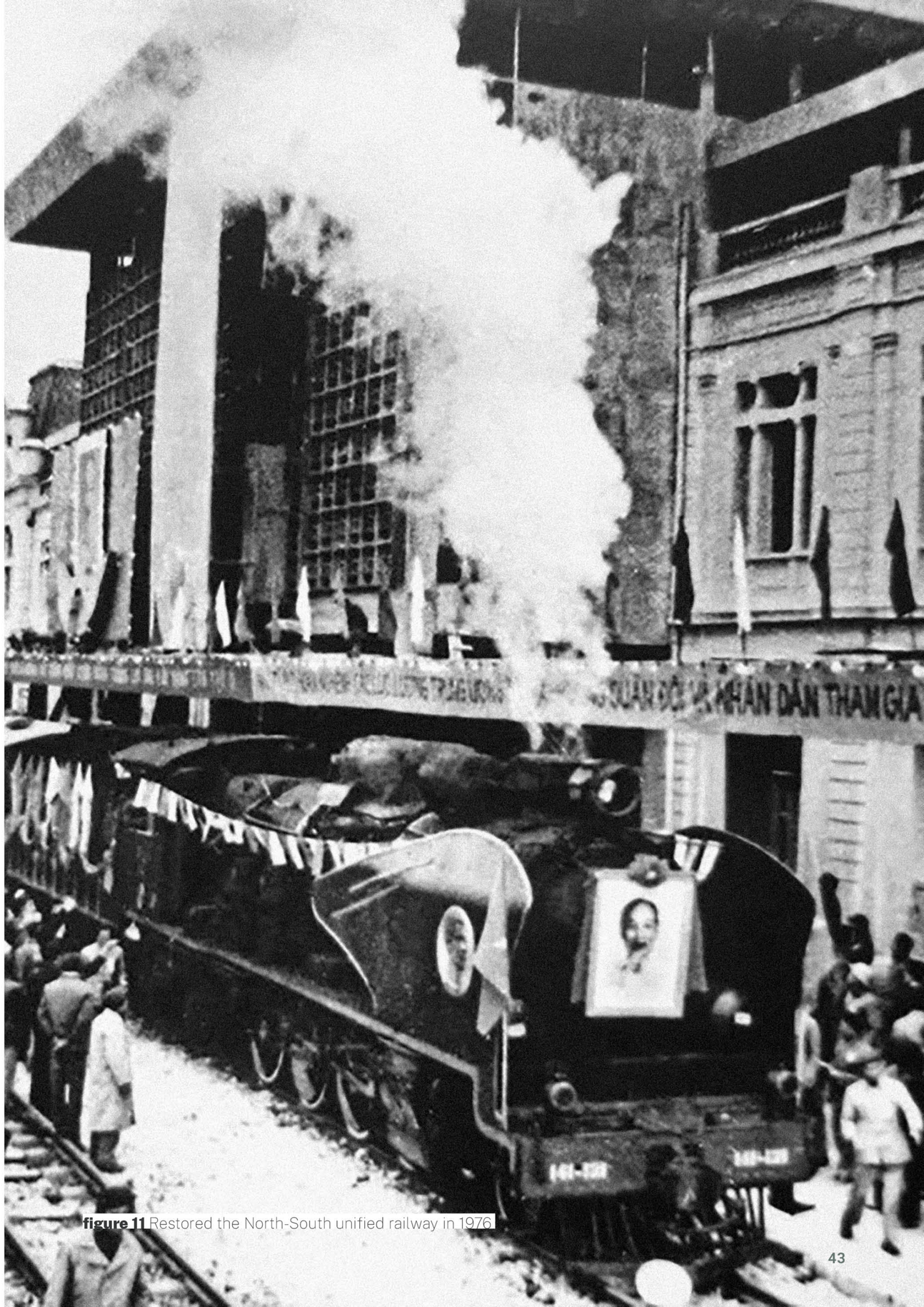


figure 11 Restored the North-South unified railway in 1976

figure 11 Đào, N. N. (2024, October 10). Hanoi Capital: 70 years of urbanization (1954–2024). Nhân Dân(People's) Newspaper. Retrieved from https://special.nhandan.vn/thu-do-Ha-Noi-70-nam-do-thi-hoa/index.html



figure 12 Donahue, J. (1976). Jeff Donahue gets invited to Hanoi–October 1976. Jeffrey Donahue. https://jcdonahue24.wordpress.com/2014/05/19/jeff-donahue-gets-invited-to-hanoi-october-1976/

1.5 Industrial Development During French Control

Hanoi Under French Rules 1880-1954

During the period of French colonial rule (late nineteenth century–1945), Hanoi was reconfigured from a traditional, court-centered city into a modern administrative and commercial centre through an intentional program of infrastructure investment and urban transformation designed to integrate Indochina into metropolitan France's economic system. The colonial administration — notably under Governor-General Paul Doumer — directed large-scale public works including railways, roads, ports, bridges, canals, and electrical utilities to accelerate resource extraction and market integration with France. [18]

Industrial development in northern Vietnam concentrated principally in light manufacturing and processing: breweries [fig 13], distilleries, small sugar refineries, rice and paper mills, glass and cement works, and textile factories; the largest of these enterprises was the Nam Định textile establishment, which at its peak employed several thousand workers. [19; 20]

In addition to light industry, the colonial era introduced heavier sectors — coal mining, shipbuilding, and hydroelectric installations — especially in the northern provinces, producing an early but uneven industrial base whose benefits were disproportionately captured by colonial and foreign interests rather than by the majority Vietnamese population. [21; 22]

18 Encyclopaedia Britannica. (n.d.). Vietnam — The conquest of Vietnam by France. Encyclopaedia Britannica. Retrieved August 15, 2025, from https://www.britannica.com/place/Vietnam/The-conquest-of-Vietnam-by-France

19 Encyclopaedia Britannica. (n.d.). History of Vietnam — Public works under Doumer. Encyclopaedia Britannica. Retrieved August 15, 2025, from https://www.britannica.com/topic/history-of-Vietnam (see section on colonial public works).

20 Vietnam News Agency (VNA). (2016). Nam Dinh textile plant to be moved (report). Vietnam News Agency. Retrieved August 15, 2025, from https://vietnam.vnanet.vn/english/tin-tuc/nam-dinh-textile-plant-to-be-moved-124213.html.

21 Gillespie, J., & Others. (2014). Scaling the commanding heights: The colonial conglomerates and the changing political economy of French Indochina. Modern Asian Studies. Cambridge University Press. Retrieved from https://www.cambridge.org/core/journals/modern-asian-studies/

22 Nguyen, Q. (n.d.). The economies of Cochinchina and Tonkin, 1900–1940 (working paper). CORE. Retrieved August 15, 2025, from https://core.ac.uk/download/pdf/16390630.pdf (discussion of regional specialization — North for industry and mining).

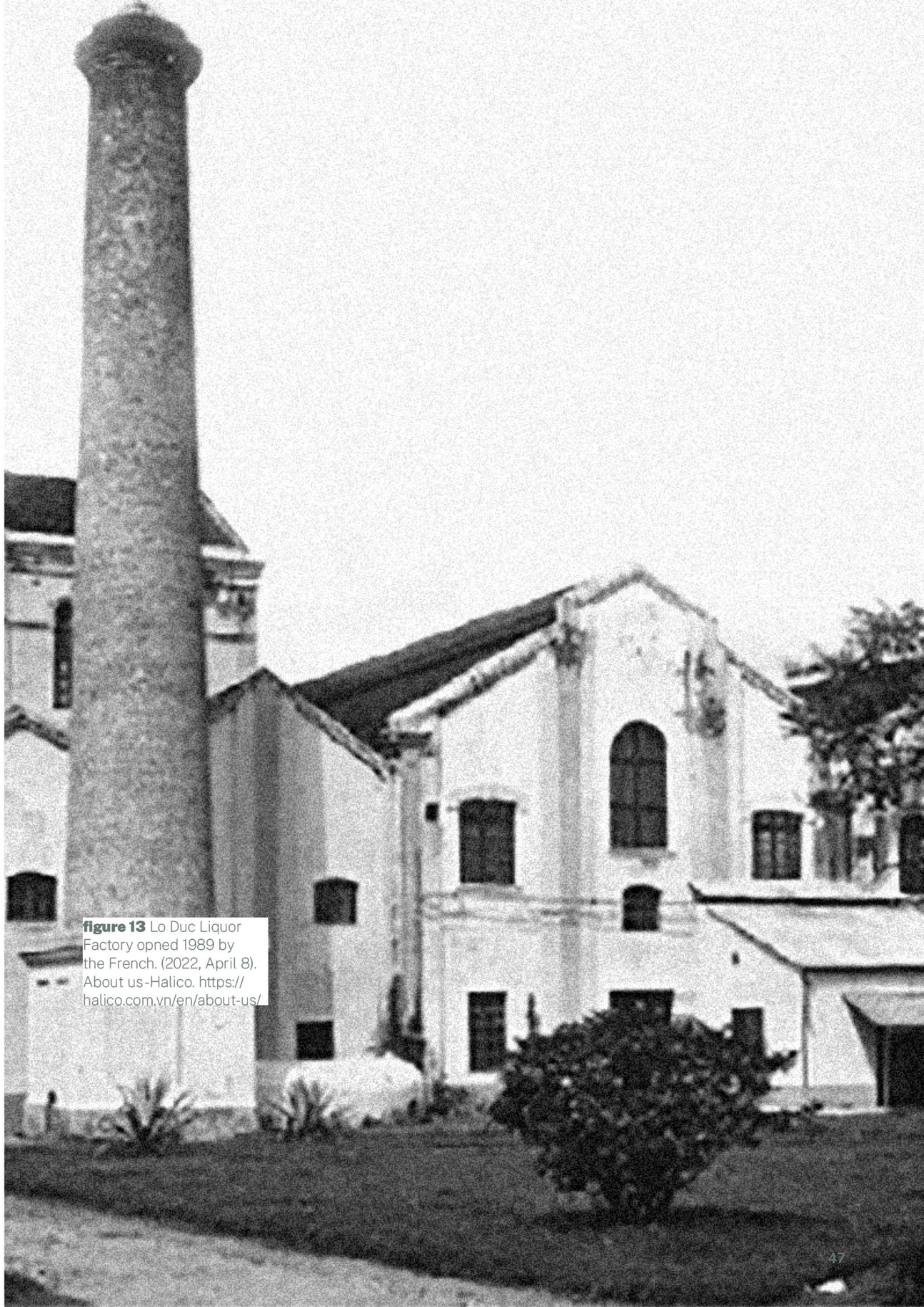


figure 13 Lo Duc Liquor Factory opned 1989 by the French. (2022, April 8). About us-Halico. https://halico.com.vn/en/about-us/

1.6 Early Independence

Hanoi After Gaining Complete Control 1954-1965

After the French were defeated in Dien Bien Phu in 1954, in October that year, the Democratic Republic of Vietnam, led by Ho Chi Minh, took full control over Hanoi. [23]

The city embarked on a comprehensive socialist reconstruction program. The newly established Communist Government of Hanoi's authorities initiated immediate restoration of infrastructure, normalization of public services, and implementation of land reforms, aiming to lay the foundations of a socialist economy in the capital of Vietnam. [24]

In the subsequent years, the city became the northern republic's principal hub for culture, education, and industry.

Institutions such as universities, museums, technical schools, and new cultural establishments proliferated: for instance, the University of Science and Technology (1956), the Vietnam National Museum of History (1958), and the Foreign Trade University (1960) were founded. Hanoi also advanced broad economic visions with restoration efforts (1954–57), socialist transformation (1958–60), and the launch of its first five-year plan (1960–65), underscoring its dual role as a political capital and an industrialized urban center even before significant US military escalation. [25]

23 Vietnam.vn. (n.d.). The birth of Hanoi Party Committee. Retrieved August 15, 2025, from https://www.vietnam.vn/en/su-ra-doi-cua-dang-bo-ha-noi
vietnam.vn

24 Vietnam.vn. (n.d.). Thang Long-Hanoi: From glorious history to prosperous future. Retrieved August 15, 2025, from https://www.vietnam.vn/en/thang-long-ha-noi-tu-lich-su-hao-hung-den-tuong-lai-thinh-vuong
vietnam.vn

25 VOV World. (n.d.). Hanoi on track to new era of growth and progress. Retrieved August 15, 2025, from https://vovworld.vn/en-US/vietnam-rising-era/hanoi-on-track-to-new-era-of-growth-and-progress-1334283.vov



figure 14 Vietnam+. On top of 8/3 textile factory (2020, January 10). Building socialism in North, fighting US in South Vietnam (1954-1965). Vietnam+ (VietnamPlus). https://en.vietnamplus.vn/building-socialism-in-north-fighting-us-in-south-vietnam-1954-1965.vnp



figure 15 Đào, N. N. (1954). President Ho Chi Minh work with Hanoi's urban planners. Hanoi Capital: 70 years of urbanization (1954–2024). Nhân Dân(People's) Newspaper. Retrieved from https://special.nhandan.vn/thu-do-Ha-Noi-70-nam-do-thi-hoa/index.html

1.7 Under Americans Bombs

Hanoi During The Vietnam-American War 1965-1975

The history of Hanoi during the Vietnam-American War, from 1965 to 1975, was defined by a sustained period of conflict and resilience under an intense air campaign. Following the U.S. decision to “Americanize” the war in spring 1965 by committing its own combat forces and initiating continuous bombings of the North, the communist leadership in Hanoi directed the “anti-American resistance for national salvation” [26].

This effort began with Operation Rolling Thunder, a "gradual and sustained aerial bombardment campaign" that lasted until November 1968, conducted against North Vietnam by the U.S. and its allies. Rolling Thunder had three broad objectives: to reduce the flow of external assistance, to decrease military and industrial resources, and to raise the morale of South Vietnam [27].

However, American aircraft were often “restricted or prohibited from attacking targets in the vicinity of Hanoi and Haiphong as well as any targets near the Chinese border, for fear of provoking China and the Soviet Union to enter the war” [28].

This campaign did not break the resolve of Hanoi's leadership, which, though "increasingly reliant over time upon military and other aid from socialist allies, most notably China and the Soviet Union, it still jealously guarded its autonomy". [27]

26 Asselin, P. (2013). Hanoi’s Politburo at War, 1969-1975. In L.-H. T. Nguyen (Ed.), The Cambridge History of the Vietnam War. Cambridge University Press. https://www.cambridge.org/core/books/cambridge-history-of-the-vietnam-war/hanois-politburo-at-war-19691975/

27 Birtle, A. J. (2013). American Military Strategy in the Vietnam War, 1965–1973. Chapman University Digital Commons. https://digitalcommons.chapman.edu/cgi/

28 Operation ROLLING THUNDER Begins the Sustained Bombing of North Vietnam. (2017). Vietnam War 50th. https://www.vietnamwar50th.com/1965_stemming_the_tide/

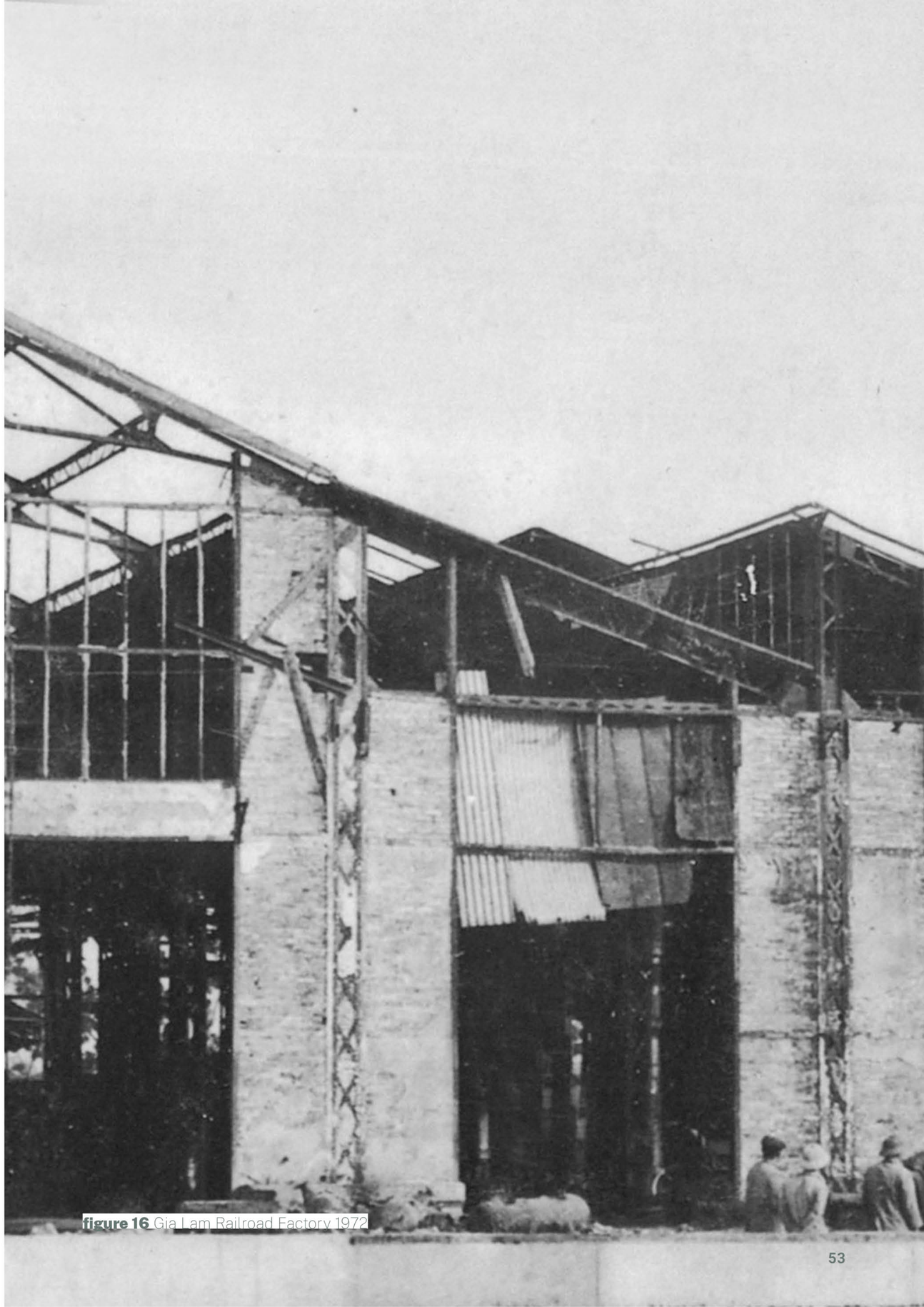
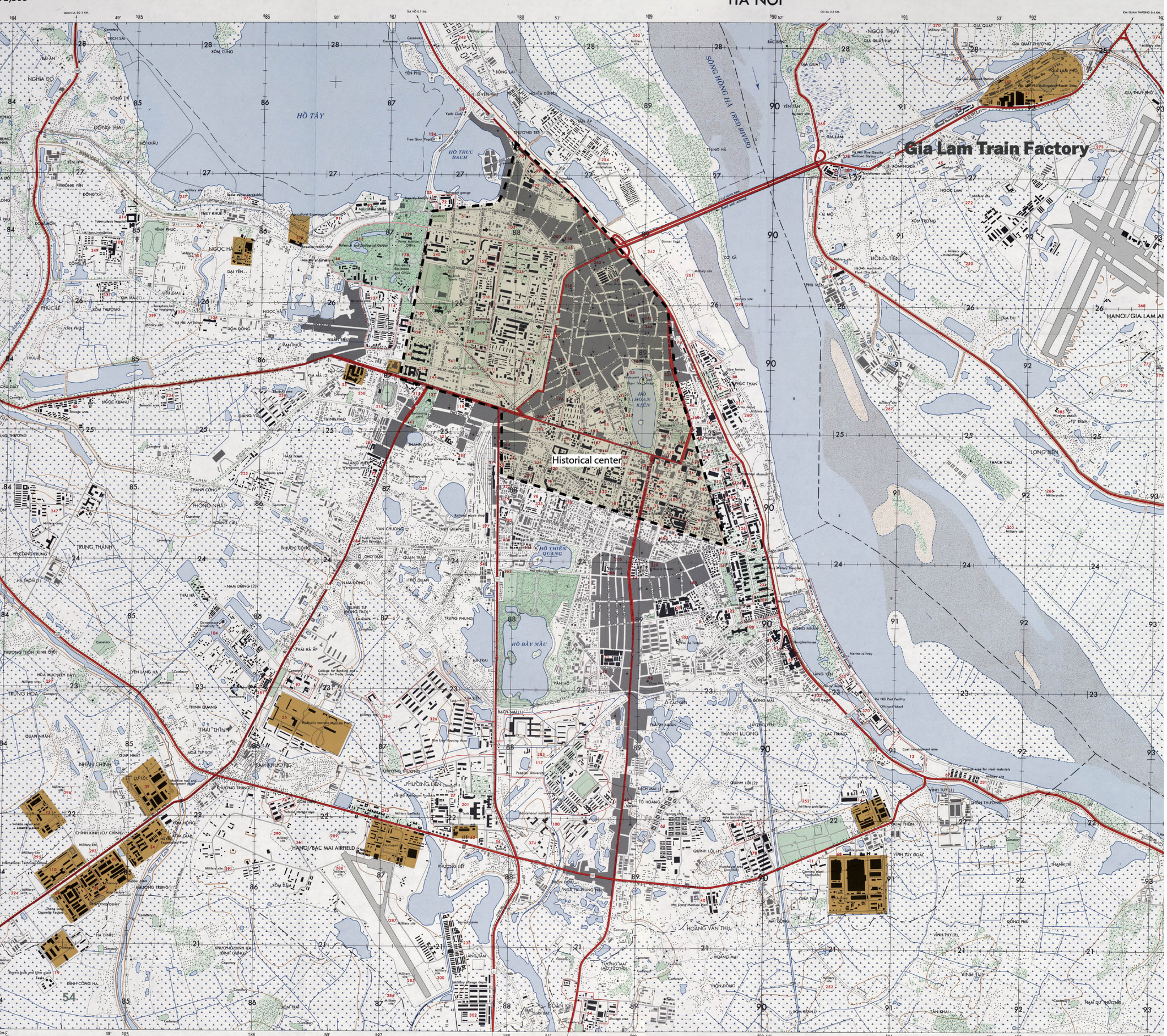


figure 16 Gia Lam Railroad Factory 1972



1968 map of US Airforce shows the urban context at the time with the note of possible bombing target which the US would conclude in 1972 [fig 17]. It is easy to spot around the city suburban there's a large amount of industrial sites developed after North Vietnam gained indipendence by the Comunist goverment with the help of USSR. These became the bombing target for USA. Gia Lam Train Factory was also one of the main target.

Figure 17 Hanoi 1968 map drawn by the US for bombing purpose. National Imagery and Mapping Agency USA. (1968). Ha Noi [Hanoi], 1:12,500, Edition 3, Series L909 [Map]. The University of Texas at Austin Library. Retrieved from https://maps.lib.utexas.edu/maps/vietnam.html

1.7 Under Americans Bombs

Hanoi During The Vietnam-American War 1965-1975

Years later, with peace talks stalled, President Richard Nixon announced the beginning of a massive bombing campaign to break the stalemate [29]. This was Operation Linebacker II, also known as the Christmas bombings, a strategic campaign conducted against targets in North Vietnam from December 18 to 29, 1972 [30]. Over this eleven-day period, “more than 20,000 tons of ordnance was dropped on military and industrial areas in Hanoi and Haiphong and at least 1,624 civilians were killed” 30. One of the most heavily bombed areas, Kham Thien street in Hanoi, saw 287 people killed in just one night, almost all of whom were "women and children" [31]. Throughout the conflict, the Vietnamese were prepared for these attacks, having a “massive warning system using sirens” and constructing “large rooms underground as well as these single-person tiny concrete foxholes throughout Hanoi” [32].

29 Nixon announces start of “Christmas Bombing” of North Vietnam | December 18, 1972. (2025). HISTORY.com. https://www.history.com/this-day-in-history/december-18/nixon-announces-start-of-christmas-bombing-of-north-vietnam

30 Operation Linebacker II. (n.d.). Wikipedia. https://en.wikipedia.org/wiki/Operation_Linebacker_II

31 Remembering the Christmas Bombing. (n.d.). Vietnam Veterans Against the War. https://www.vvaw.org/veteran/article

32 Fifty years since the US Christmas bombing of North Vietnam. (n.d.). World Socialist Web Site. https://www.wsws.org/en/articles/2022/12/30/



Figure 18 Minh Loc. (1972). Bombing: Hang Co Station was bombed by US aircraft on December 24, 1972. Peace History -U.S. Foreign Policy. Retrieved from https://peacehistory-usfp.org/vietnam-war/00_bombing_hang-co-ga-was-bombed-by-us-aircraft-on-december-24-1972-by-minh-loc/

1.8 Create A New Face For A Socialist City

Hanoi After The Reunification Of Vietnam 1975 - 1986

The architecture of Hanoi following the reunification of Vietnam in 1975 was defined by the country's socialist system and a centrally planned economy, which lasted until the economic reforms of 1986. The period from 1975-1986 witnessed many changes in the architecture of public projects and works, with design during this time being “many and diverse in typesand styles compared with the time 1954-1975” [36]. New architectural projects were mostly funded by complete aid packages from the Soviet Union and socialist allies [33]. As a result, Eastern European-style modernist architecture appeared throughout the country: “mid-and high-rise housing blocks, schools, hospitals, cultural centers, museums, factories”[33].
A notable characteristic was that “architecture and design during this period in Hanoi was strongly influenced by the Soviet Union architecture” [36].

This was evident in the development of housing, where a number of collective living quarters were constructed during this period, such as Trung Tu, Giang Vo [fig 19], and Thanh Cong [34]. These "collective living quarters" became a “symbol of modern life” at the time [34]. The housing architecture of Hanoi was strongly influenced by the Soviet Union architecture, with some building blocks using “ready-made concrete panels” from the Soviet Union with assistance from specialists from North Korea [36]. Vietnamese planners often developed the city's planning “with advice from specialists from the Soviet Union (from Leningrad)” [36].

33 Huy, P. M., & Anh, N. M. (N.d.). Reflections On The Future Of Vietnamese Architecture. Tạp Chí Kiến Trúc. Https://Tckt.vn/English/?P=69096

34 Tran, T. Q. (2023). “Tiger Cages”: Self-Construction In “Socialist Housing” As Prototype For New Models Of Living. A/R/C/O/M/A/I, 6(1), 16–29. Https://Www.arcomai.org/2023/01/03/Tiger-Cages-Self-Construction-In-Socialist-Housing-As-Prototype-For-New-Models-Of-Living/

35 Trinh, N. B. (2018). Modern Architecture Of Saigon-Ho Chi Minh City. Matec Web Of Conferences. Https://Www.matec-Conferences.org/Articles/Matecconf/Pdf/2018/52/Matecconf_esci2018_04004.Pdf

36 Vu, D. H. (N.d.). Impacts Of The Soviet Union Architecture To Housing And Public Works In Hanoi During 1954-1986. Hanoi Architecture University. Https://Hau.edu.vn/Storedata/Pagedata/4259/



Figure 19 Steinhauer, P. (2016). Giang Vo Cages, Hanoi–2016 [Epson legacy platine paper, 25.8 x 70 cm]. Retrieved from https://nguyenartfoundation.com/artwork/giang-vo-cages-hanoi-2016/

1.8 Create A New Face For A Socialist City

Hanoi After The Reunification Of Vietnam 1975 - 1986

During this phase, public works were “strongly influenced from Soviet Union architecture, for example Ho Chi Minh mausoleum, Cultural palace, Ho Chi Minh museum”[36; fig 20]. Due to financial constraints, “not many buildings were built until after 1986” when the country began to transition to a market-oriented economy [35]. The shift from a “top-down, guided model” to a “market-competition” approach would fundamentally change the architectural landscape after 1986 [33].

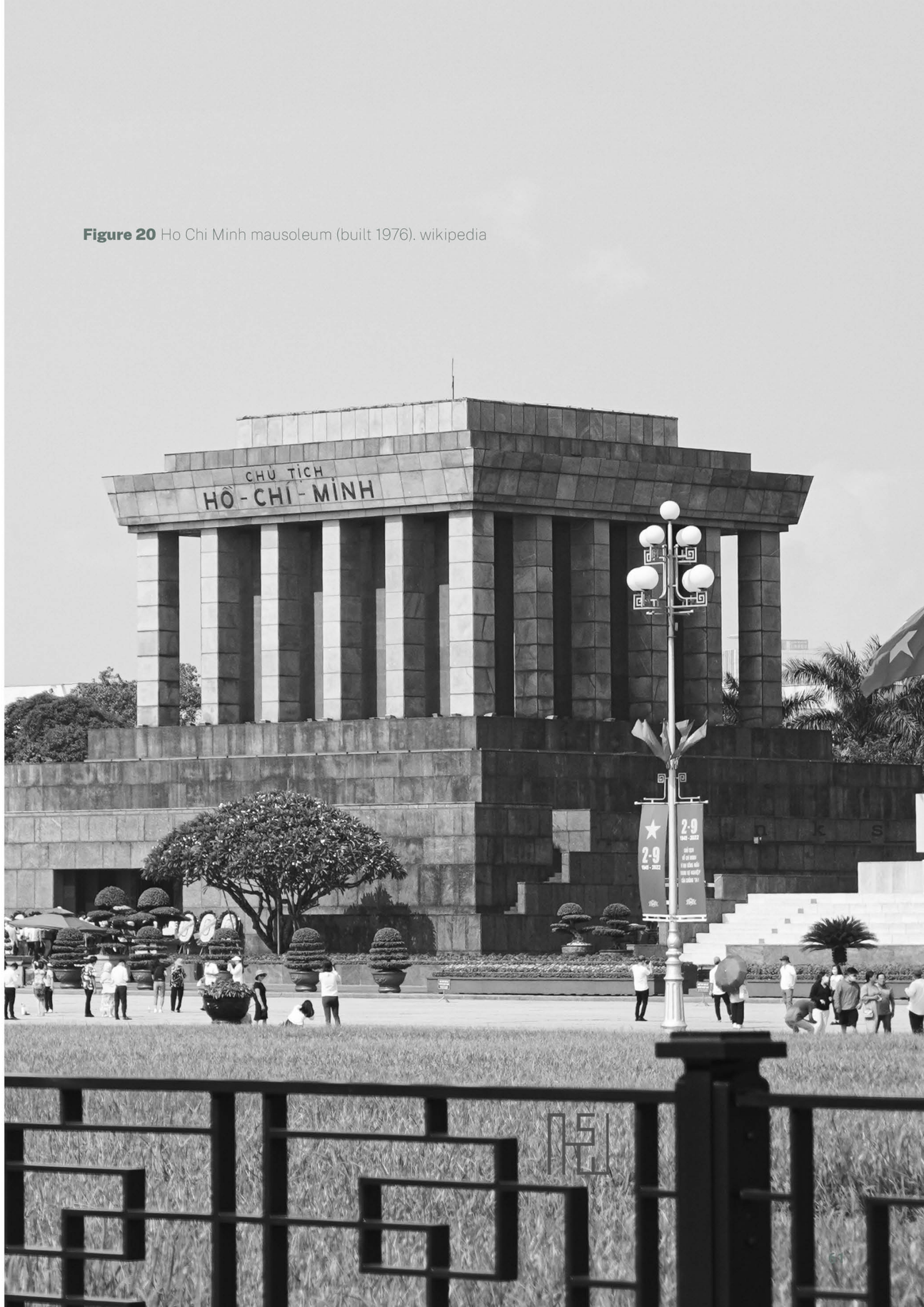
33 Huy, P. M., & Anh, N. M. (N.d.). Reflections On The Future Of Vietnamese Architecture. Tạp Chí Kiến Trúc. Https://Tckt.vn/English/?P=69096

34 Tran, T. Q. (2023). “Tiger Cages”: Self-Construction In “Socialist Housing” As Prototype For New Models Of Living. A/R/C/O/M/A/I, 6(1), 16–29. Https://Www.arcomai.org/2023/01/03/Tiger-Cages-Self-Construction-In-Socialist-Housing-As-Prototype-For-New-Models-Of-Living/

35 Trinh, N. B. (2018). Modern Architecture Of Saigon-Ho Chi Minh City. Matec Web Of Conferences. Https://Www.matec-Conferences.org/Articles/Matecconf/Pdf/2018/52/Matecconf_esci2018_04004.Pdf

36 Vu, D. H. (N.d.). Impacts Of The Soviet Union Architecture To Housing And Public Works In Hanoi During 1954-1986. Hanoi Architecture University. Https://Hau.edu.vn/Storedata/Pagedata/4259/

Figure 20 Ho Chi Minh mausoleum (built 1976). wikipedia



1.9 New Changes Together With Economic Reforms

Hanoi After 1986 Refroms

"Hanoi has been a booming city for almost a decade in the 90s"
Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House. p 22 (translated by author)

The economic reform policy known as Đổi Mới, initiated in 1986, is considered a significant event in transforming Vietnam, as it changed the national economic structure and wealth distribution, and transformed the physical urban fabric of cities like Hanoi[40]. The introduction of a market-oriented economy and the opening up to global capital instigated the processes of internationalization and modernization, leading to remarkable economic success and a building and renovation boom [37; 38]. The Đổi Mới reforms, which officially began in December 1986, introduced a greater role for market forces and allowed for private ownership of small enterprises [39]. Before 1986, the housing sector was entirely subsidized and housing construction was delivered by the state on the basis of state-run schemes characterized by collective housing projects [42]. With the new policies, the state decided to partially hand over the leading role to non-state enterprises in some parts of the housing supply, and in 1991, an act was promulgated that recognized and legally protected housing ownership [42]. This period saw a significant re-direction in urban housing development policy, for instance, the socialization of housing development could be supported, and enterprises were allowed to invest in new living quarters [42]. Following the new economic policies, Hanoi experienced a rapid demographic rise and radical socio-economic transformation [41]. The city's original shape, which had been confined for hundreds of years to a limited space on the right bank of the Red River, has changed, and it is now a fringed city that has developed beyond the river into the surrounding periurban areas [41]. Urbanization has converted the region around Hanoi from solely rural into an industrial and commercial region in just thirty years [41].

37 Böhme, A. (2025). The Ancient Quarter of Hanoi -A Reflection of Urban Transition Processes. https://d-nb.info/1371248230

38 Fassmann, H. (2025). (PDF) The Ancient Quarter of Hanoi-A Reflection of Urban Transition Processes. https://www.researchgate.net/publication/238076719

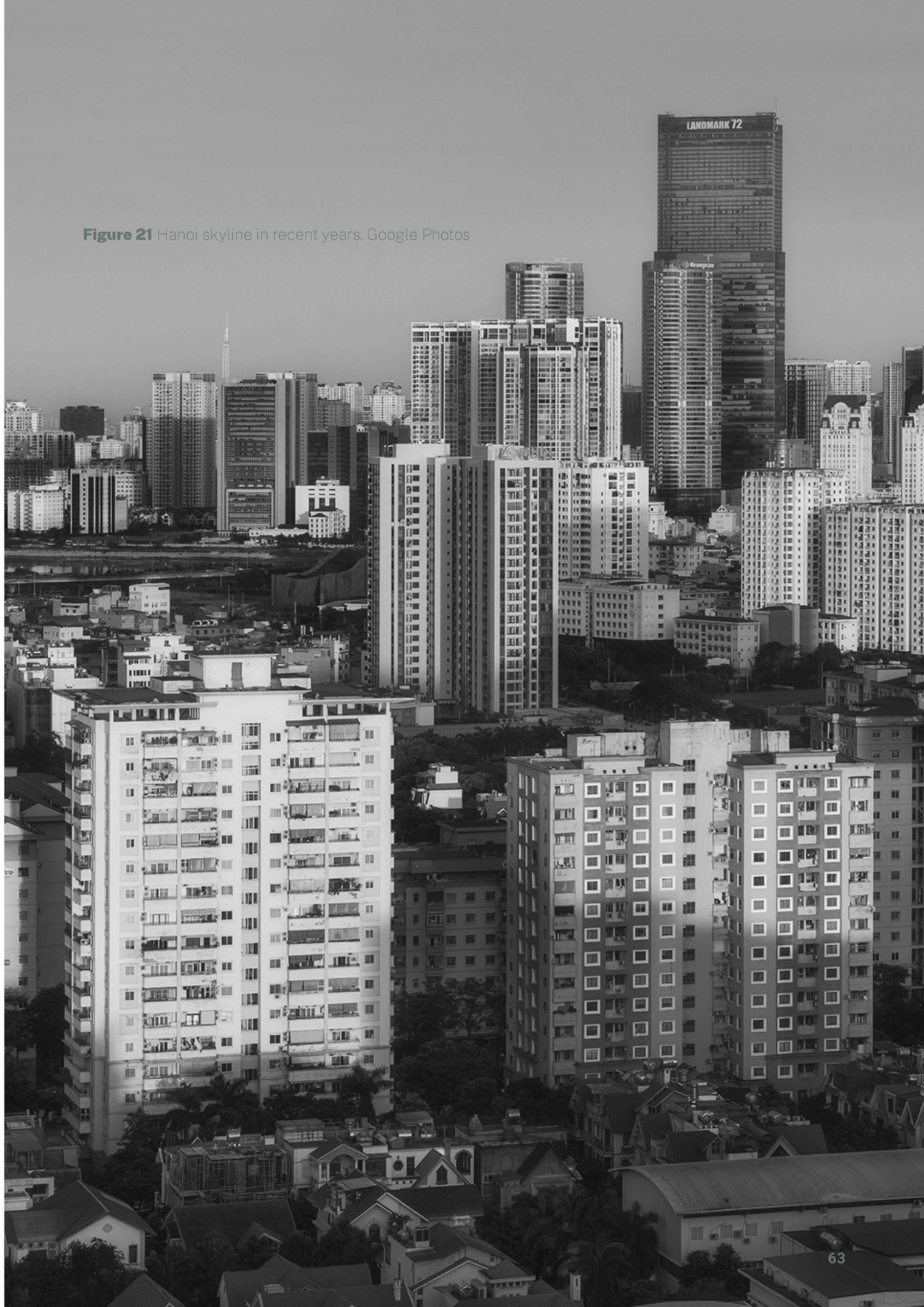
39 Wikipedia. (n.d.). Đổi Mới. https://en.wikipedia.org/wiki/

40 Suntikul, T. (2025). Heritage Planning in Post-Dºi Moi Hanoi: The National and International Contributions. https://www.researchgate.net/publication/249052045

41 MDPI. (2020). Rural–Urban Transition of Hanoi (Vietnam): Using Landsat Imagery to Map Its Recent Peri-Urbanization. https://www.mdpi.com/2220-9964/9/11/669

42 ResearchGate. (2020). (PDF) A preliminary study on the development of new urban areas in Hanoi over the past ten years and their interactions with surrounding villages-a review from Van Quan new town.

Figure 21 Hanoi skyline in recent years. Google Photos



1.10 Industrial Development In The New Era

Hanoi In Recent Years

For many years, the air in the Hanoi metropolitan area has been polluted by industrial factories [43]. The city has set up a list of 90 industrial establishments that have to be moved out of the inner city. Hanoi has another 92 industrial facilities that must be moved out of the inner city [44]. The relocation of factories posing risks of pollution from residential areas was necessary, and more public space should be created. The proximity of factories to residential areas has led to serious environmental and health concerns [45].

43 HANOI PORTAL. (2021). Polluting factories must be moved out of center Ha Noi by 2025. Retrieved from https://english.thudo.gov.vn/departments-boards-sectors-unions/polluting-factories-must-be-moved-out-of-center-ha-noi-by-2025

44 Nhan Dan Online. (n.d.). New innovations in “industrial heritage”. Retrieved from https://en.nhandan.vn/new-innovations-in-industrial-heritage-post94067.html

45 THE HANOI TIMES. (2025). Hanoi struggles to relocate polluting factories. Retrieved from https://hanoitimes.vn/hanoi-struggles-to-relocate-polluting-factories.645417.html



Figure 22 Gia Lam Train Factory in 2019. Taken by author

1.10 Industrial Development In The New Era

Hanoi In Recent Years

The plan to remove industrial factories out of the inner city was made more than 20 years ago and relocation decisions were issued for some factories four to five years ago but were not implemented [46]. The city has made new development plans to create conditions for some factories to move their production units out of the inner city while keeping only offices for paperwork [46]. However, many factories have not yet relocated for various reasons, including disputes over valuable urban land [45]. The lack of resources is the key reason, and many businesses used this reason to not move to new positions [46]. The relocation of some factories remains slow, even though the State has issued regulations on land compensation for the removal [46].

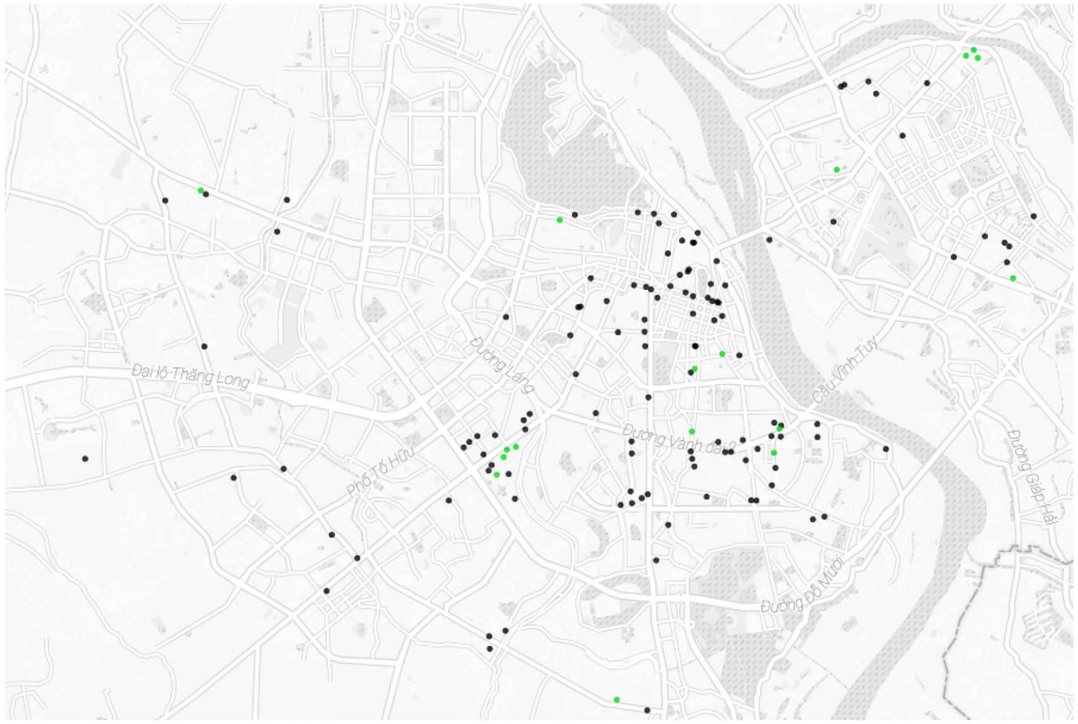


figure 23 locations of 92 facotries that are planned to move out of the city.

45 THE HANOI TIMES. (2025). Hanoi struggles to relocate polluting factories. Retrieved from https://hanoitimes.vn/hanoi-struggles-to-relocate-polluting-factories.645417.html

46 VietNamNet. (2019). Removal of factories from inner city needed after factory fire. Retrieved from https://vietnamnet.vn/en/removal-of-factories-from-inner-city-needed-after-factory-fire-568524.html

A survey conducted in September and October 2020 by experts from the “Network for a livable Hanoi” reviewed all 92 factories, and conducted an in-depth survey of 10 selected factories, to assess the overall location, scale, current status of facilities, current production status, current management status, and historical, heritage, and memory values; thereby assessing the potential and opportunities for conversion into cultural - creative spaces, Public spaces, which are the infrastructure of the industrialization industry for Hanoi [47].

The survey results show that these relocated industrial facilities have quite diverse conditions in terms of location, land scale, type of enterprise, production and business status, status of facilities, factories, as well as their architectural and historical values.

Also, some factories have intact and valuable space and architecture, even the most modern and beautiful architectural works in Hanoi and the North (based on the aesthetic perspective of Modernism) at the time of construction. Typical examples are Gia Lam Train Factory, Sao Vang Rubber factory , Thang Long Tobacco Factory[fig24] Hanoi Beer Factory. Many factories play a role in the birth of an industry in Hanoi, representing the development of society and urban areas in a historical period, marking important milestones in the history of modernization, urbanization, and industrialization in Vietnam and Hanoi. Becoming imprints of memories and images of the city.

The fact that these 92 factories that are scheduled for relocation were mostly state-owned/public-owned or partly privately owned due to the political and socialist economic system gives it has enormous opportunity to transform into something that benefits the citizens and not only revenues-driven facilities.

47 Thuy Loan, P., & Truong, N. L. (2022, January 5). Converting old factories in Hanoi. Architecture Magazine-Vietnam Association of Architects. Retrieved from https://www.tapchikientruc.com.vn

figure 24 Thanh, N. (2023, November 27). Hanoi’s industrial symbols of city past being phased out. VnExpress International – Latest News, Business, Travel and Analysis From Vietnam. https://e.vnexpress.net/photo/news/hanois-industrial-symbols-of-city-past-being-phased-out-4681321.html

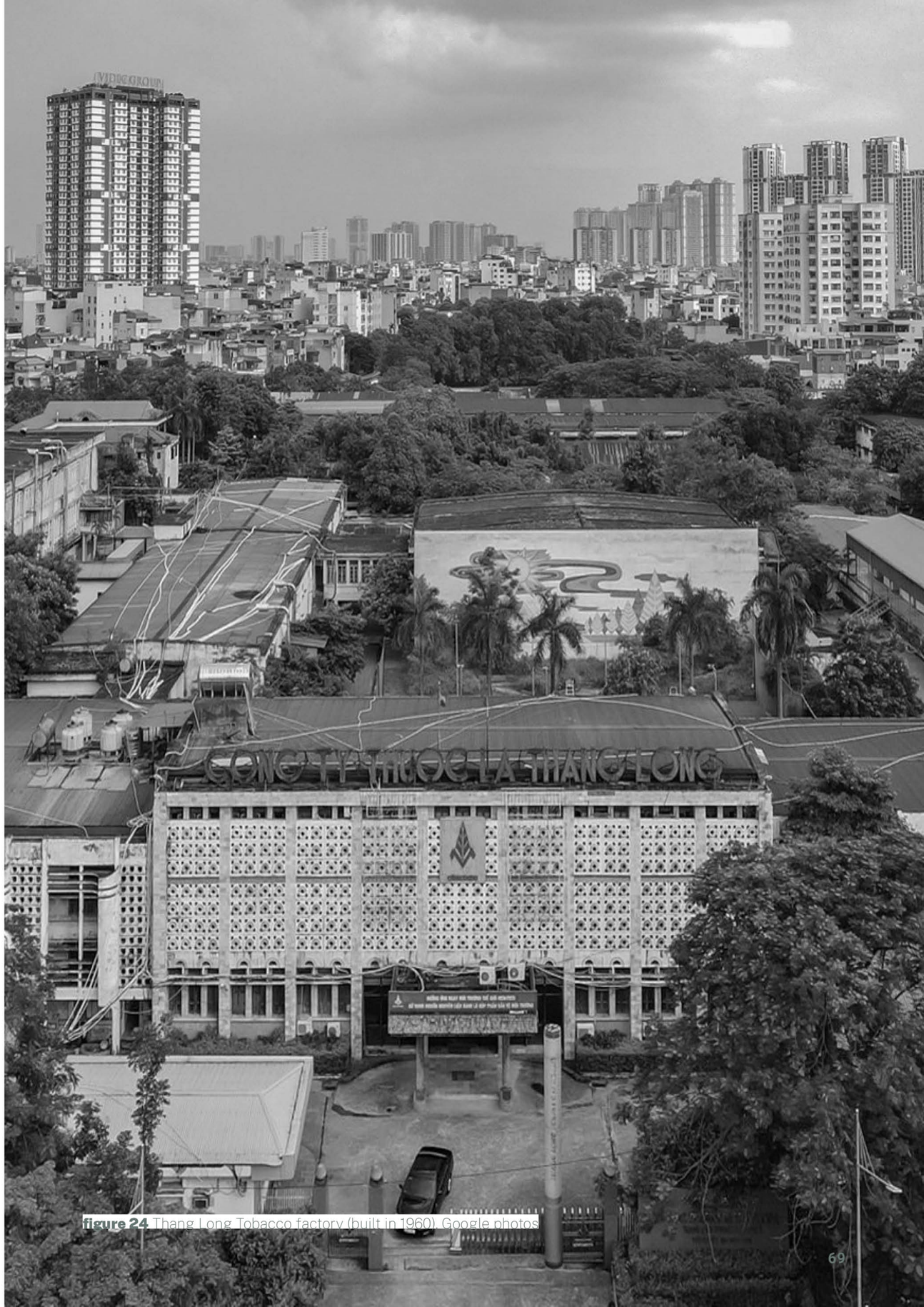


figure 24 Thang Long Tobacco factory (built in 1960). Google photos

A major challenge in redeveloping old manufacturing sites in Hanoi is their transformation into large residential projects by big corporations. These developments often consist of towering high-rise buildings, which significantly increase urban density and worsen traffic congestion and social issues. Over the past 15 years, these projects have been implemented quickly and on a large scale, leaving little land available for more balanced urban functions. As a result, there is limited space to include essential features such as cultural hubs, public spaces, green areas, or social housing.

With Decision 130 of the Prime Minister, Article 3 clearly states: “The use of land funds after relocating industrial production facilities, universities, vocational training facilities, agencies and units is given priority to build and develop public works, trees, parking lots, social infrastructure and urban technical works; not to increase the load on the inner city area, ensuring a balance in the needs of social infrastructure, technical and urban environment, not to be used to build high-rise apartments in violation of planning”.[48]

Most of the old factories, if relocated, are converted into **new high-density urban areas, high-rise commercial apartments**, completely contrary to Article 3 above: Hanoi Mechanical Factory becomes Royal City, 8-3 Textile Factory becomes Times City residential area [fig 25], 120 Mechanical Factory at 609 Truong Dinh becomes Nam Do Complex, Trang An Confectionery Factory becomes Trang An Complex.

PPWG’s 2020 survey showed that: **19/21 factories in Hai Ba Trung district after relocation were converted into commercial apartment complexes - accounting for 84% of the land fund.** [49]

48 Nguyen, Tan Dung. Prime Minister (January 23, 2015). Decision No. 130/QD-TTg of the Prime Minister: On measures, roadmap for relocation and use of land funds after relocation of industrial production facilities, hospitals, universities, colleges, vocational training facilities and agencies, units in Hanoi city. -Retrieved from: http://vanban.chinhphu.vn. https://vanban.chinhphu.vn/

49 Thuy Loan, P., & Truong, N. L. (2022, January 5). Converting old factories in Hanoi. Architecture Magazine-Vietnam Association of Architects. Retrieved from https://www.tapchikientruc.com.vn



figure 25 Times City residential area, Google photos

1.11 conclusion

This chapter helps readers to understand the origin of Hanoi and the formation of today's urban scenery. The city has always been chosen to be a center of politics and social changes throughout history, despite becoming the target of all revolutions and wars, its value remains intact. These days, the city is usually described as an "organized mess" with its busting street and architectural style standing together with a not-so-organized urban system as a result of turbulent history. Day by day, the citizens of the 21st century are making it more livable, healing its wounds and moving on to become one of the most modern and sustainable creative cities in South East Asia. The city has challenges to solve but also heritage to protect. With new ideas coming around, and a young population with strong innovative ideas, the city is set to thrive and adapt to the new world. It might not be the best place for everyone right now but it is trying to be. Understanding the past is a foundation for the future, with the knowledge of part 1, part 2 will examine the current situation of the city and make rational decisions for revitalization.

"Actually, by global standards, Hanoi does not possess monumental individual relics. What captivates visitors is the special significance of the places the city inhabits. Tourists are quickly drawn into the cultural landscapes as a whole — a complete blend of human activities, systems of meaning, and symbolic forms within the urban framework"

Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House.p. 17 (translated by author)

"It is precisely this cultural layering and the sense of the cultural landscape in Hanoi as a kind of parchment written over many times — a manuscript through which the handwriting of earlier texts still appears on the surface — that gives Hanoi its unique, endemic character. As Alan Balfour has noted of Berlin's "residual layers of life," the "ideals, myths, illusions of a culture seen through the projections of architecture, architects, and artists"

Logan, William Stewart (2010) Hanoi: Biography of a City. Hanoi Publishing House.p. 29 (translated by author)

2.1 Hanoi urban facts
2.2 about Hanoi's housing
2.2.1 housing price problems
2.2.2 student housing problems
2.3 lack of open & green public spaces
2.4 tourism in Hanoi
2.5 site introduction
2.5.1 brief history
2.5.2 why choose Gia Lam train factory ?
2.5.3 current condition
2.6 conclusion

02

Understand the city and its problems | site introduction



“Old ideas can sometimes use new buildings. New ideas must use old buildings.”

Jacobs, J. (1961). The Death and Life of Great American Cities.p 188

2.1 Hanoi urban facts

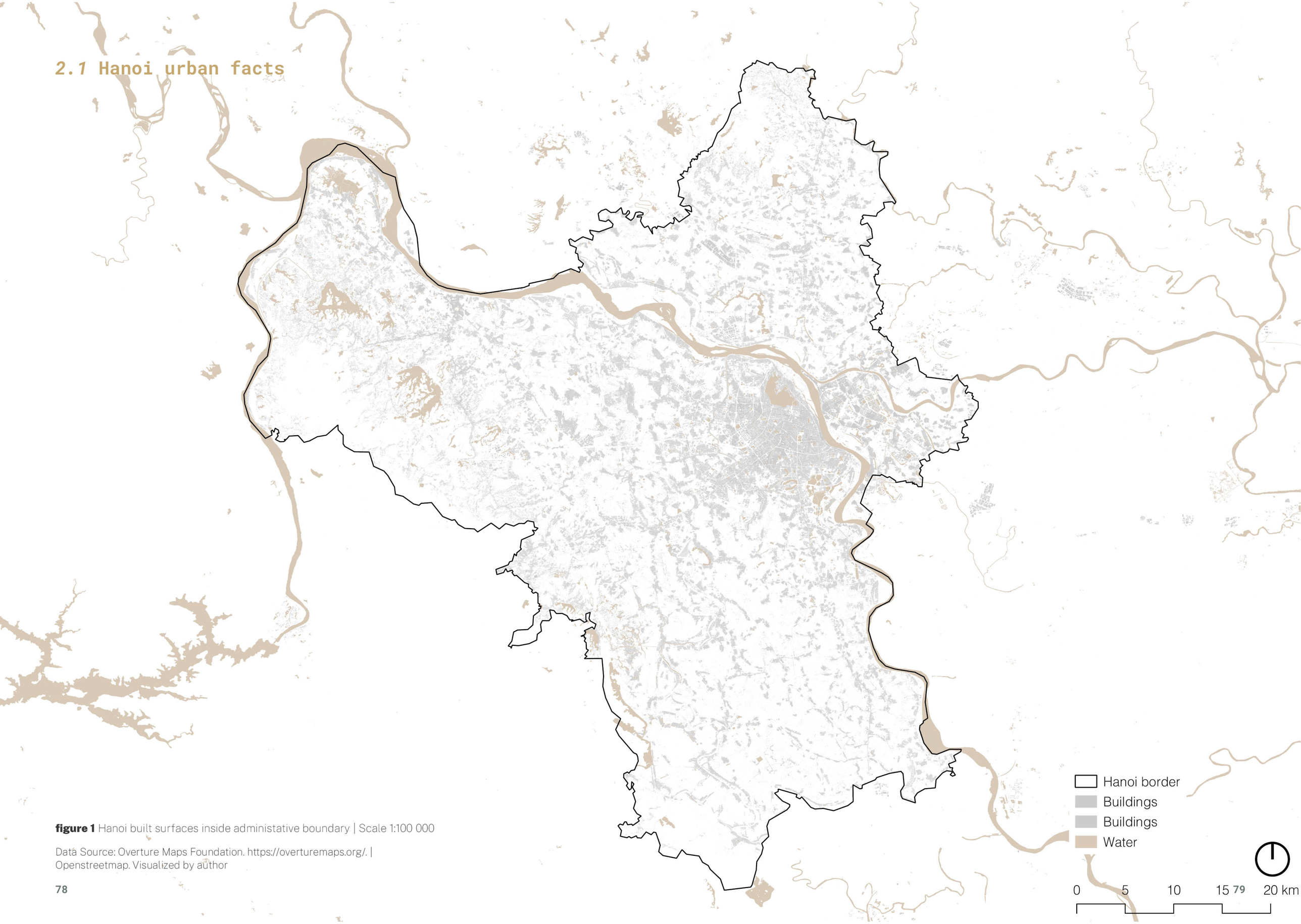


figure 1 Hanoi built surfaces inside administative boundary | Scale 1:100 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

2.1 Hanoi urban facts

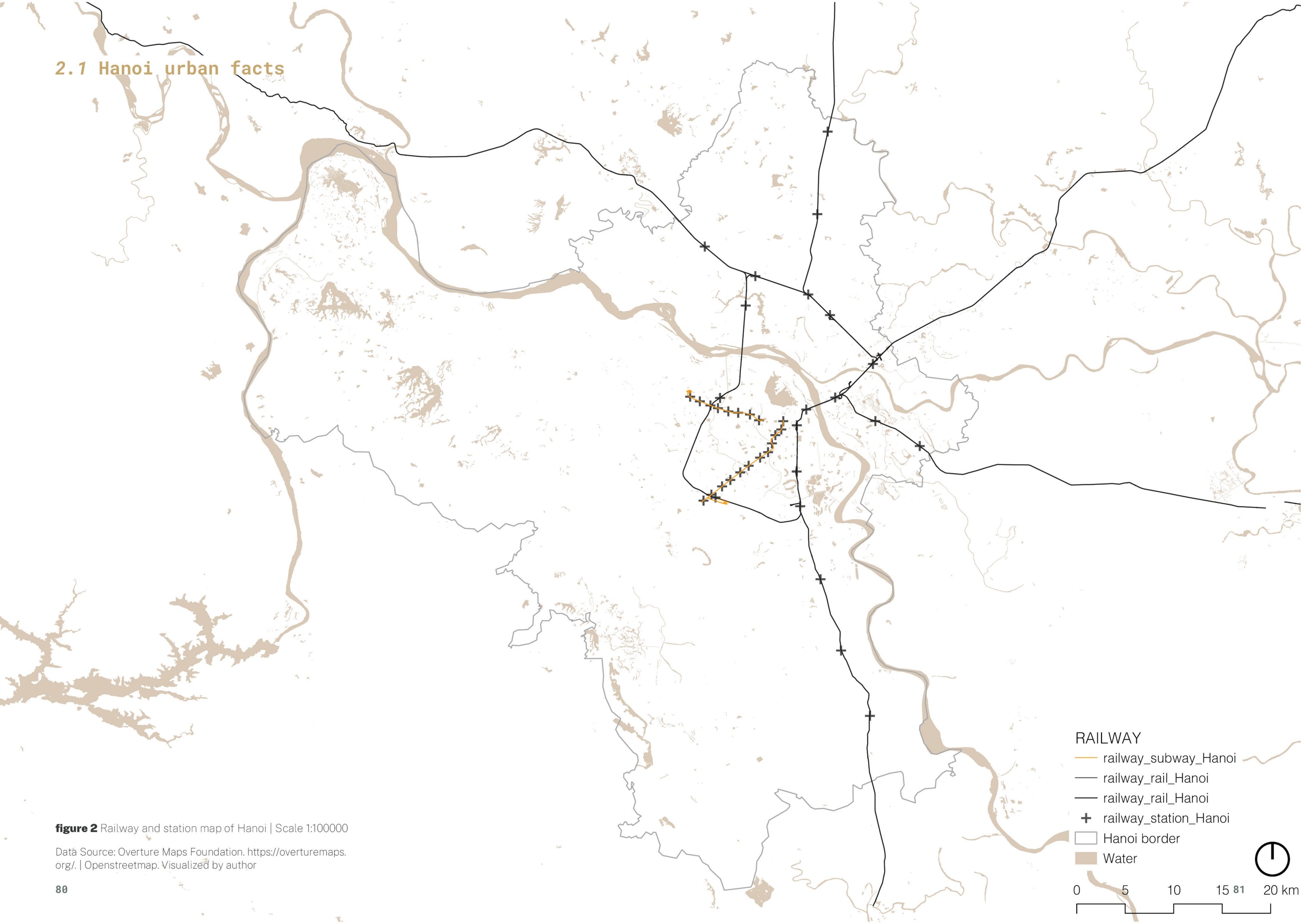


figure 2 Railway and station map of Hanoi | Scale 1:100000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

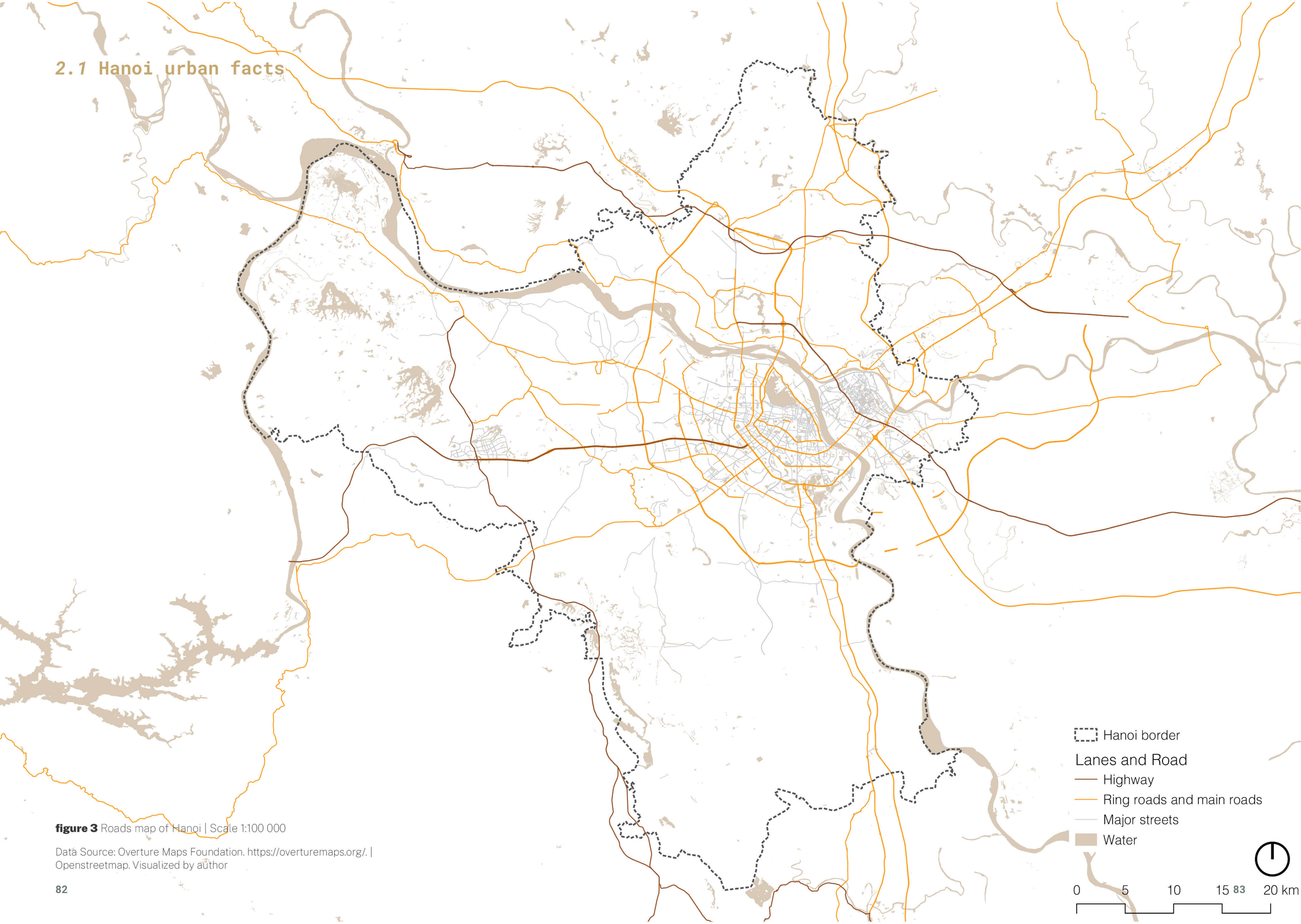


figure 3 Roads map of Hanoi | Scale 1:100 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

Gia Lam Train Factory

Railway
railway_subway_Hanoi
railway_rail_Hanoi
railway_rail_Hanoi
railway_station_Hanoi
Buildings
Water

0 1 2 3 4 km

figure 4 Built surfaces and railway maps of Hanoi | Scale 1:50 000
Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

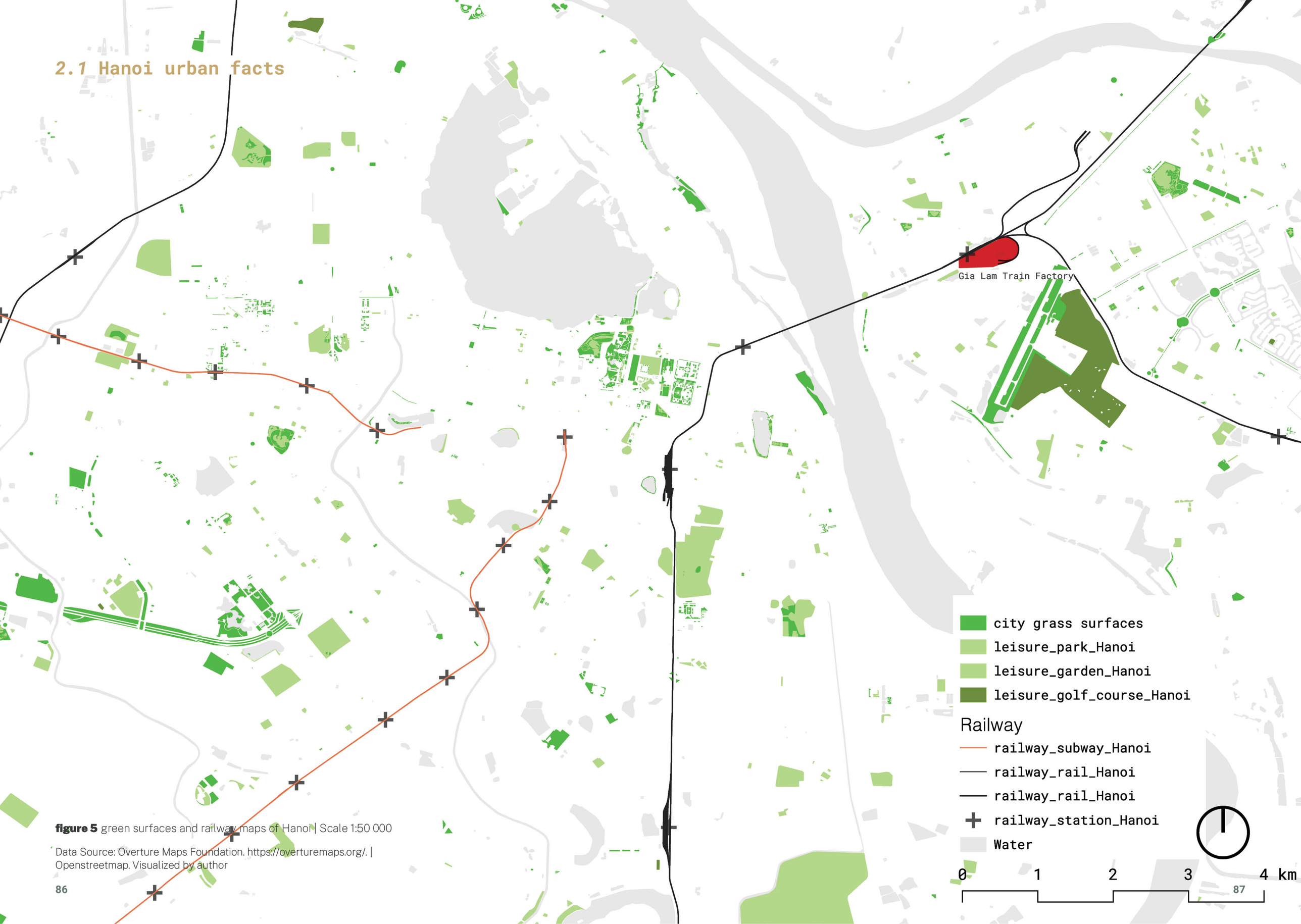


figure 5 green surfaces and railway maps of Hanoi | Scale 1:50 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

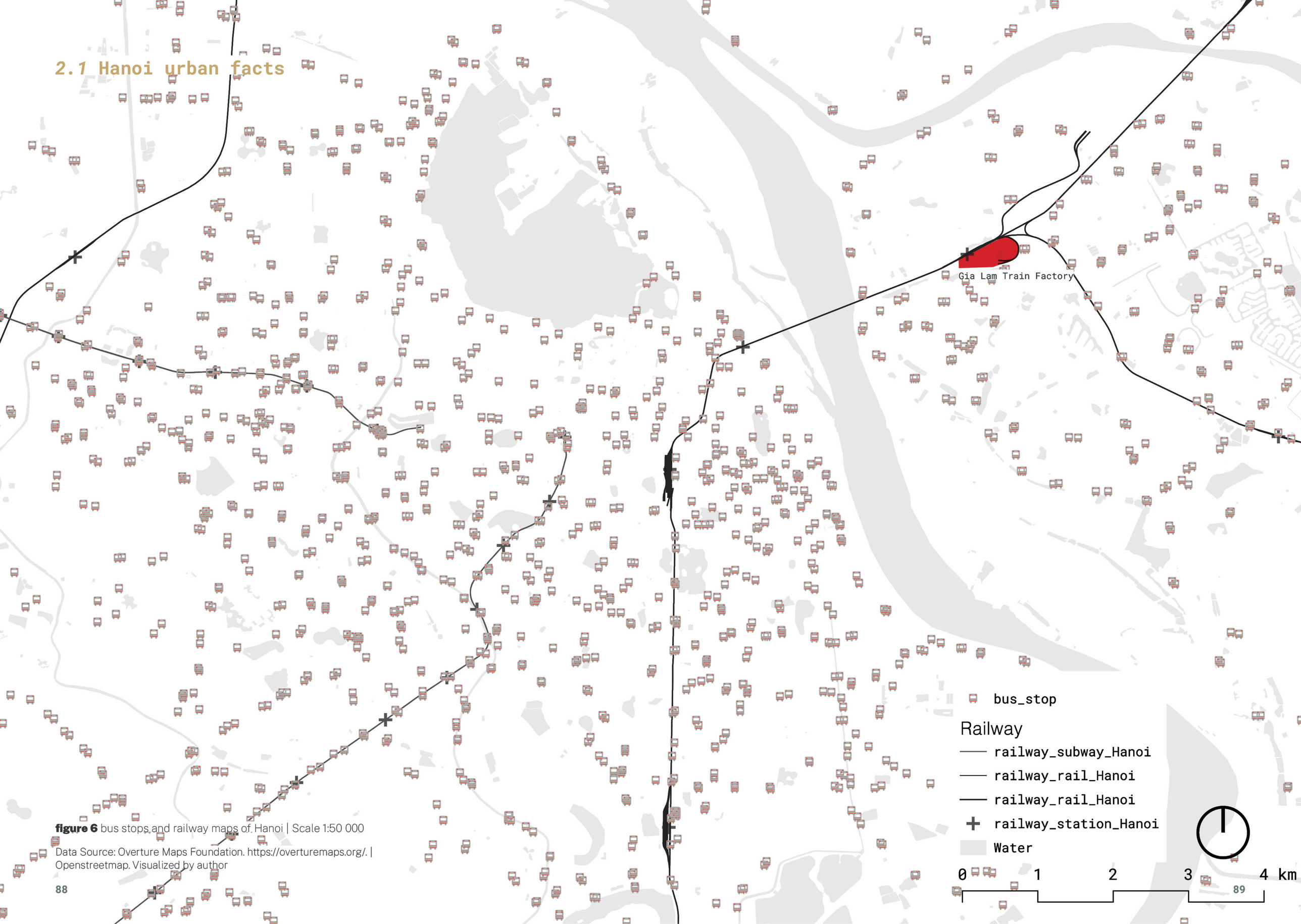


figure 6 bus stops and railway maps of Hanoi | Scale 1:50 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

Gia Lam Train Factory

amenity_charging_station_Hanoi
amenity_parking_Hanoi
amenity_parking_Hanoi

Railway
railway_subway_Hanoi
railway_rail_Hanoi
railway_rail_Hanoi
railway_station_Hanoi
Water

0 1 2 3 4 km

figure 6 parking and EV charging stations maps of Hanoi | Scale 1:50 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

Les Ateliers de Gia Lam
(Gia Lam Train Factory)

1905
1959
1892
1930
1931
1890
1955
1951
1920
1945
1933
1925
1919
1905
1885
1995
1954
1968
1954
1920
1964
1974
1965
1961
1992
1984
1958
1960
1958
1964
1945
1958
1992
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1971
1960
1968
1959
1959
1956
1958
1957
1955
1990
1958

Fully redeveloped
Production stopped
In Use
Unknown
railway_subway_Hanoi
railway_rail_Hanoi
railway_rail_Hanoi
railway_station_Hanoi
1945 Year of built
Major streets
Water

0 1 2 3 4 km

figure 7 industrial maps of Hanoi | Scale 1:50 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

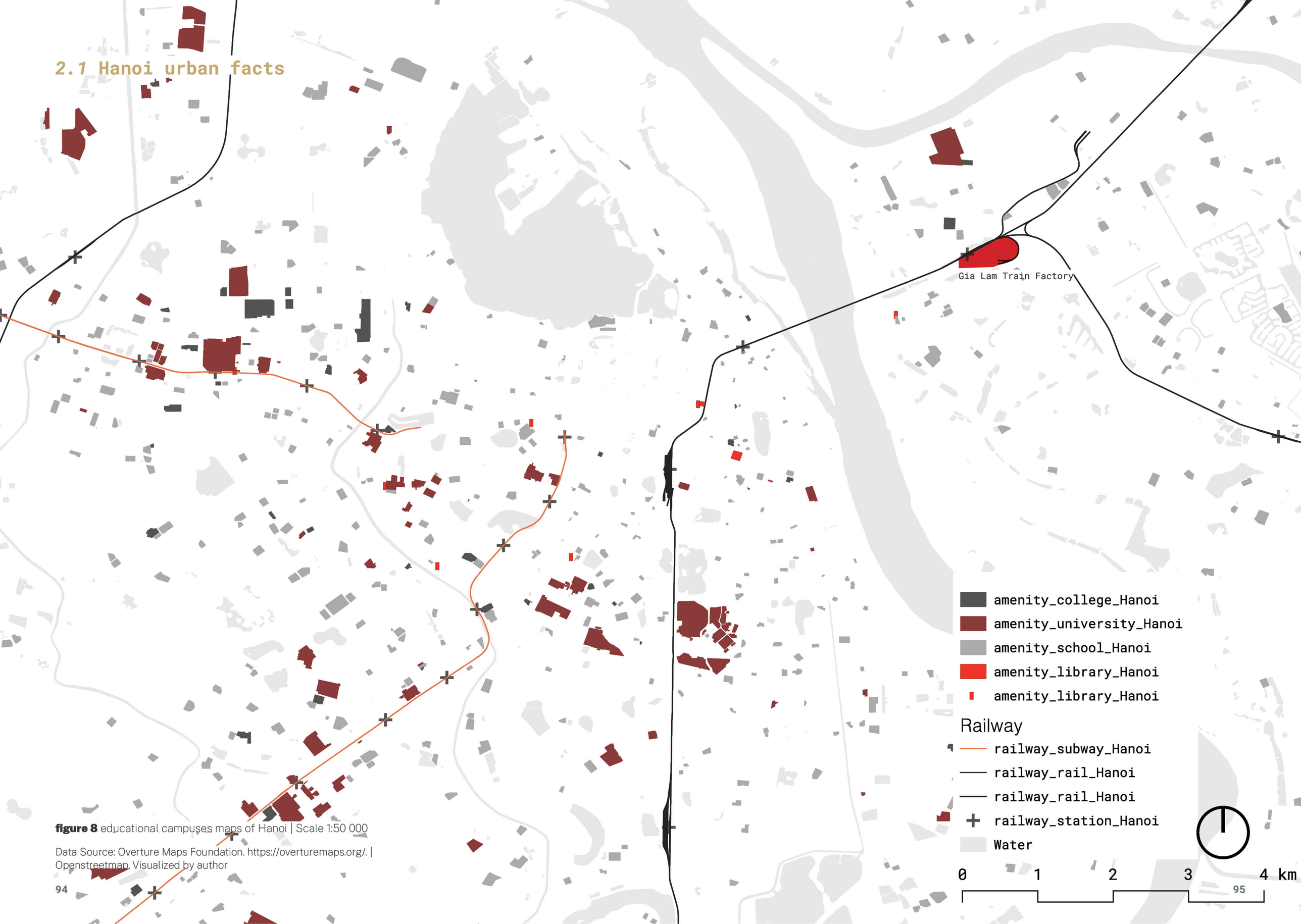


figure 8 educational campuses maps of Hanoi | Scale 1:50 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

Gia Lam Train Factory

tourism_museum_Hanoi
tourism_museum_Hanoi
amenity_events_venue_Hanoi
amenity_arts_centre_Hanoi
tourism_attraction_Hanoi
tourism_viewpoint_Hanoi

Railway

railway_subway_Hanoi
railway_rail_Hanoi
railway_rail_Hanoi
railway_station_Hanoi
Water

0 1 2 3 4 km

figure 9 culture maps of Hanoi | Scale 1:50 000

Data Source: Overture Maps Foundation. https://overturemaps.org/. | Openstreetmap. Visualized by author

2.2 about Hanoi's housing
2.2.1 housing price problem

The problems of Hanoi's housing price has roots in its population density. Similar to most of the world's big cities, Hanoi is dealing with issues of high density within both its traditional center and newly urbanized districts. As the city grows denser and continues to expand, what were previously suburban districts at the edge have been incorporated into the city core. These areas were traditionally industrial due to their relative distance from the city center and their appropriateness for hosting factories and workshops. But with fast urbanization, increasing population density, and movement of workers and students from rural to urban areas, these once industrial zones have been converted into highly populated residential zones.

With the expansion of the city, the population density increased. By 2024, the population of Hanoi was **8 587 100** The average density of Hanoi is **2.555,8 people/km2**. But this figure takes into account the whole administrative boundaries which include a large area of agricultural land and a buffer zone. The average density in the center of the city calculated by a study in 2016 [fig 10] was more than **6000 people/km2**, the 2024 data is still unavailable but compared to the percentage of the rise of the population, it could have been around more than 7000 people/km2. This is a dramatic change compared to 1999 when Hanoi's center population was only about 2.672.122. The density in the city center is **around 2800 people/km2**

This trend has resulted in higher house and rent prices, which has had tremendous consequences for the overall stability and prosperity of the citizens.

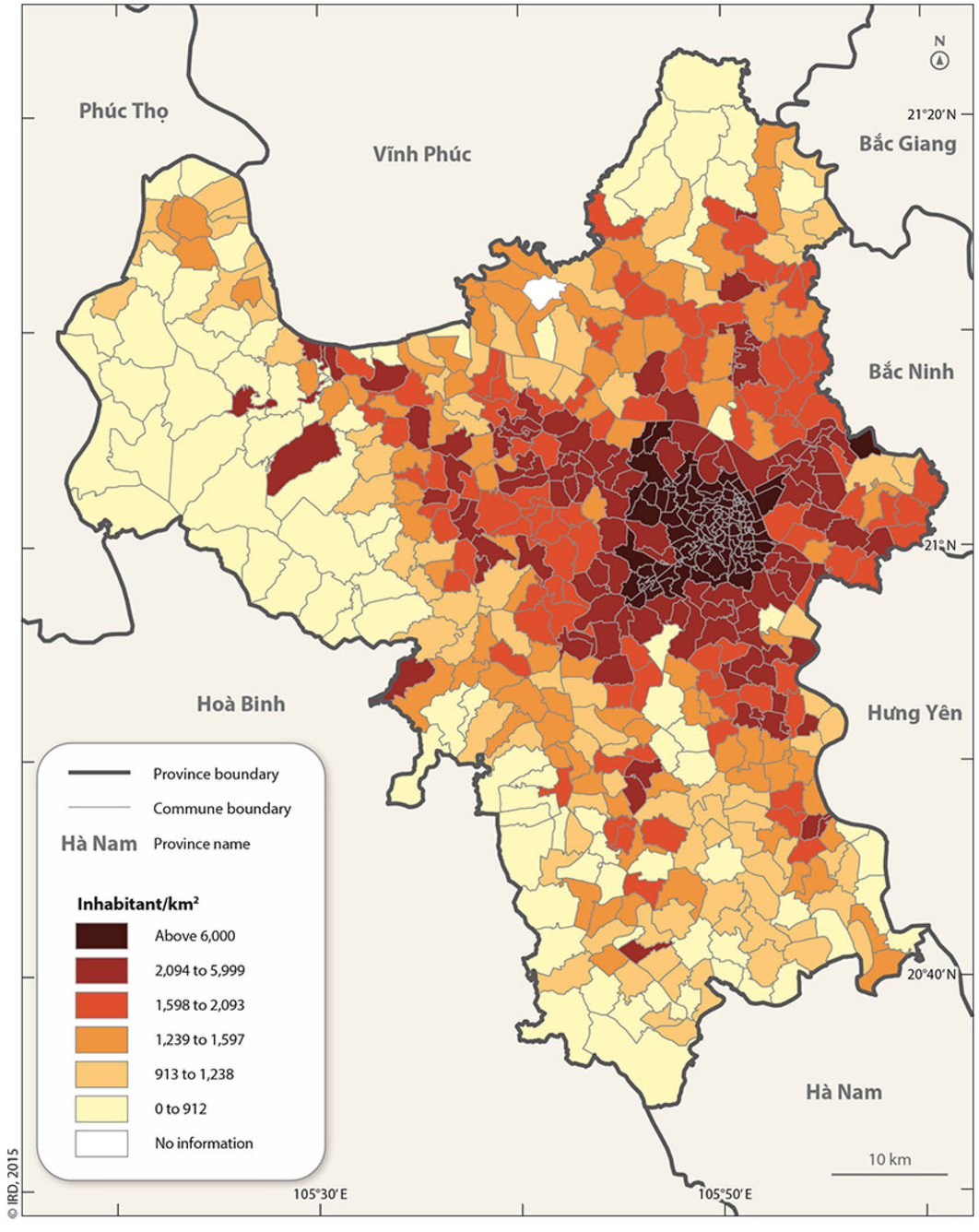


figure 10 Hanoi density map inside administrative area. Scale 1 : 100000 (Fanchette, S., Văn Hùng, L., Moustier, P., Thu Anh, Đào, & Xuân Hoan, N. 2016)

figure 10 Fanchette, S., Văn Hùng, L., Moustier, P., Thu Anh, Đào, & Xuân Hoan, N. (2016). Chapter 8. Multi-activity employment, agricultural decline and urban transition. In S. Fanchette (ed.), Hanoi, a Metropolis in the Making (1-). IRD Éditions. https://doi.org/10.4000/books.irdeditions.26256

2.2.1 housing price problems

Another source of the housing problems can be found in the nation's real estate market and how it works. The issue can be traced back to the subsidy era when the urban housing sector was allocated a meagre part of state resources. This was compounded by a subsequent 30 years of wartime economy and the destruction of buildings by bombing (1945-1975) [1].

By the late 1980s, the acute lack of housing space manifested in population densities reaching 30,000 persons/km2 in the inner city [2].

Inevitably, this under-investment in housing by a centralized state that kept promising a rapidly growing urban population the “right to shelter” became a source of popular discontent [3].

The adoption of the Doi Moi policies greatly influenced housing production in Hanoi. Major changes included the withdrawal of public housing subsidies and the encouragement of an emerging private housing development sector along with traditional self-help housing production [4].

In the 1990s, the progressive removal of state control over the housing and construction market conflated with newly-formed private capital to foster a construction boom mainly driven by informal self-help housing practices [5].



1 Papin, P. (2001). Histoire de Hanoi. Paris, Fayard.

2 Gubry, P., B. Lortic, et al. (2002). Hanoi: Population et migrations intra-urbaines. Regards croisés sur Hanoi: Transition, spécificité urbaine et choix de développement, Hanoi, Institut des Métiers de la Ville.

3 Dao Thi Thu Huong (1999) The Development of Housing Sector in Vietnam. Lund, Sweden (unpublished manuscript) Retrieved from www.hdm.lth.se

4 Trinh Duy Luân. (1995). The urban housing problem in Vietnam before and during «renovation». De la métropoloe au micro-territoire: gérer la complexité, gérer la diversité, Montréal, Ville et développement - Groupe interuniversitaire de Montréal.

5 Everestz, H. (2000). Popular Housing in Hanoi. Shelter and Living in Hanoi. Luan, T. D. and H. Schenk (eds). Hanoi, Cultural Publishing House: 57-84.

2.2.1 housing price problems

This major problem can be easily measured in how the people of Hanoi buy house in recent years. As of 2023, the average annual income in Hanoi is approximately about €5200 [6]. If an average price of an 100m2 apartment in Hanoi is about €290 000. [7]

This would take an average income earner in Hanoi approximately **56 years to save enough to buy a house outright**, assuming no loans, income growth, or changes in housing prices. This highlights the significant challenge of housing affordability in Hanoi. Most people rely on mortgages or family support to purchase property much earlier.

approximate price per district [8]

Hoan Kiem	€4,600–6,440/m^2
Ba Dinh	€4,140–5,980/m^2
Hai Ba Trung	€3,220–4,600/m^2
Long Bien	**€1,380–2,760/m^2 (Gia Lam Train Factory)**

6 Global Property Guide. (2024, July 8). Vietnam's Residential property market Analysis 2024. https://www.globalpropertyguide.com/asia/vietnam/price-history

7 Nhat, P. (2025, January 9). Hanoi's new apartment supply triples, reaches highest level since 2020. hanoitimes.vn. https://hanoitimes.vn/hanois-new-apartment-supply-triples-reaches-highest-level-since-2020-328978.html

8 Various source of real estate pricing

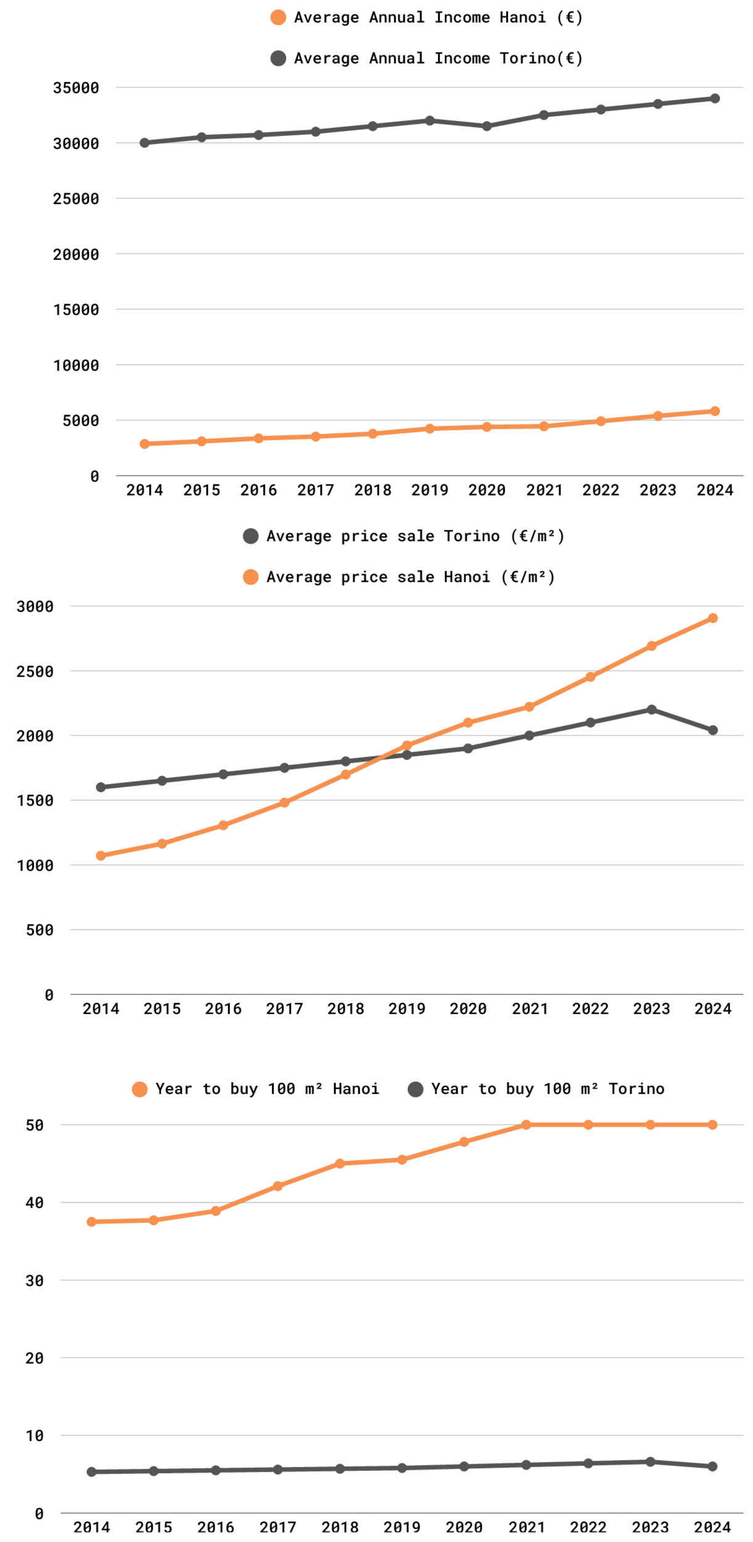


figure 11 Line graphs compare income and years to buy a house in Hanoi and Torino
Data: Various source of real estate pricing. Visualized by author

Luxury area
Nice view
International community

TAY HO

Gia Lam Train Factory

CAU GIAY

BA DINH

HOAN KIEM

Historical center
High value

LONG BIEN

New developement area
High quality
High number of offices

DONG DA

HAI BA TRUNG

THANH XUAN

HOANG MAI

Average House Price in Vietnam €2,344 / m²

Average House Price in Hanoi (€/ m²)

4000-5000
3000-4000
2000-3000
1000-2000
600-1000
200-600

LONG BIEN District name

0 1 2 3 4 km

figure 12 Spatial Visualization of House Prices in Euro per Square Meter of Floor.

Data: Bui, Quang-Thanh & Do, Nhu-Hiep & Phe, Hoang. (2017). House Price Estimation in Hanoi using Artificial Neural Network and Support Vector Machine: in Considering Effects of Status and House Quality. Visualized by Author

2.2.2 student housing problems

Hanoi's student accommodation shortage has intensified as the city's overall student population and annual inflows have outpaced available housing and institutional facilities, producing recurring enrollment and accommodation pressures across education levels.[9]

Rapid urbanization and a rising student cohort — officials report Hanoi hosts roughly 2.3 million students and that "every year, Hà Nội sees an increase of 40,000 to 50,000 students" — have required the construction of dozens of new schools annually to keep pace with demand.[10]

At the tertiary level, demand for private rental rooms and shared apartments surges when classes resume, forcing many college entrants to compete for scarce, informal lodging and prompting universities and platforms to broker connections between students and landlords.[11]

Concurrently, rising rents and a tightening affordable-rental market have pushed single-room and micro-apartment prices upward in Hanoi, further constraining low-income students' options and encouraging high-occupancy micro-rentals and informal "mini-dorm" arrangements.[12]

Long-delayed public dormitory projects and policy lags have compounded the shortage: some planned student dormitories were left unfinished or repurposed, prompting local authorities to convert or reallocate partially built blocks to social-housing schemes rather than ready student accommodation.[13]

Together, these trends indicate a structural gap between the pace of student population growth and the provision of purpose-built student housing and public school capacity in Hanoi, implying an urgent need for integrated land-use planning, accelerated dormitory investment, and regulatory measures to protect affordable student rentals.



figure 13 FPT University Student Housing in the west suburban area of Hanoi
FPT University. (2022, May 11). Dormitory-Home of Youth | FPT University. https://daihoc.fpt.edu.vn/ky-tuc-xa-nha-cua-thoi-thanh-xuan/

9 Asia News Network / Viet Nam News. (2025, April 21). Lack of long-term planning causes shortages of schools in Vietnam. Asia News Network. https://asianews.network/lack-of-long-term-planning-causes-shortages-of-schools-in-vietnam/

10 VOV / VietnamPlus. (2024). Hanoi builds more new schools to match growing educational demands. VietnamPlus. https://en.vietnamplus.vn/hanoi-builds-more-new-schools-to-match-growing-educational-demands

11 VnExpress. (2021). College students rush to find accommodation. VnExpress. https://e.vnexpress.net/news/trend/college-students-rush-to-find-accommodation

12 VnExpress. (2024, May 28). Single-room housing grows increasingly expensive in Hanoi. VnExpress. https://e.vnexpress.net/news/business/property/single-room-housing-grows-increasingly-expensive-in-hanoi

13 Dân Trí / DTI News. (2024/2025). Hanoi's long-delayed student dormitory project turned into social housing. DTI News / Dantri. https://dtinews.dantri.com.vn/vietnam-today/hanois-long-delayed-student-dormitory-project-turned-into-social-housing

The cost of student dormitory rooms in Hanoi varies depending on the university and the type of room. Typical dormitory costs in Hanoi range from about minimum € 44/month to € 270/month depending on the accommodation and semester length. There are still more expensive options available [14;15]. It's important to note that these prices can vary based on the specific university, room type, and included amenities.

The GDP per capital of Vietnam is around €4500/year. The average monthly income in Hanoi, Vietnam is €300 -€350 per month. Usually, university students have less money to spend. The average expenditure of a student in Hanoi is around €200-400/ month. This makes €270/month/room is a quite high number and it is causing social problems.

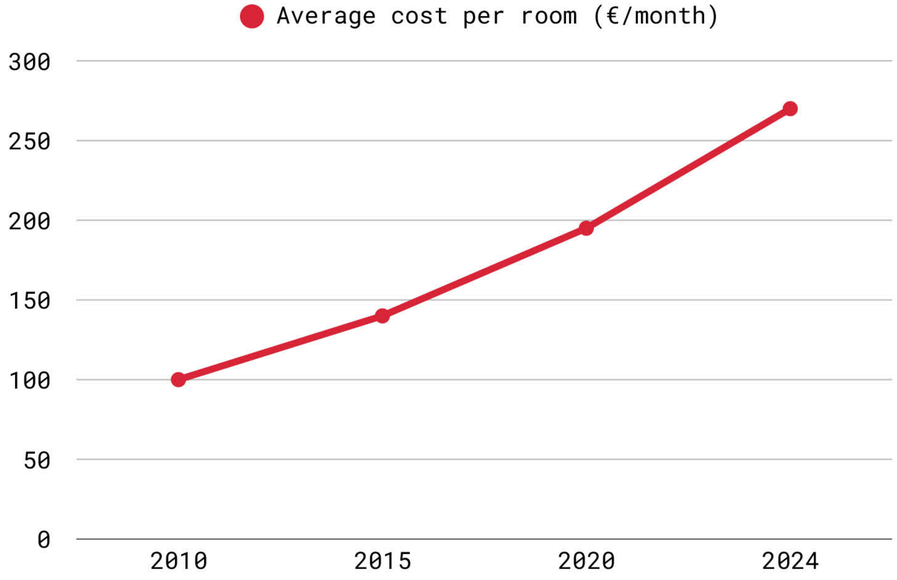


figure 14 Average student room price per month from 2010 to 2024. Visualized by author

14 Vietnam.vn. (2024). Dormitory rental costs at universities in Hanoi in 2024. Retrieved January 13, 2025, from https://www.vietnam.vn/en/gia-thue-ky-tuc-xa-cac-truong-dai-hoc-o-ha-noi-nam-2024/

15 Expat.com. (n.d.). Student life in Hanoi. Retrieved January 13, 2025, from https://www.expat.com/en/guide/asia/vietnam/hanoi/20491-student-life-in-hanoi.html

It is difficult to calculate the actual number of student rooms available in Hanoi because various data sources and the developments of the student accommodations are ongoing. However, the available data presents the accommodation capacities for some of the major institutions.

Hanoi National University of Education (HNUE): the dormitory area has the size of 12,000 square meters with various buildings with the number of 500 rooms, accommodating approximately 2,800 students [16]. Hanoi University of Natural Resources and Environment has dorm services with more than 2,000 places for students [17]. My Dinh II social Housing Area: planned with the number of 7,368 apartments (not only for students) [18]. Phap Van - Tu Hiep Student Housing Area planned with the number of 6,768 apartments (also rent out for different groups) [18].

In addition, Hanoi has constructed social housing projects that would likely be occupied by low-income families and students. Hanoi had nearly 8,000 rental government-owned student housing and social housing units as of the year 2023.[18]

It should be noted that the numbers may be interchange, as certain student accommodations are adapted to be utilized in social housing developments.

Taking into account just the number of the government-owned social housing and student dormitory rooms alone. The Gia Lam Train Factory renovation with an addition of approximately 1,000 to 1,500 rooms alone gives a big impetus to the current figure of 8000 rooms.

16 Hanoi National University of Education Dormitory. (n.d.). https://english.hnue.edu.vn/About/Office/p/hanoi-national-university-of-education-dormitory-170

17 Wikipedia contributors. (2024, October 7). Hanoi University of Natural Resources and Environment. Wikipedia. https://en.wikipedia.org/wiki/Hanoi_University_of_Natural_Resources_and_Environment

18 Sinh B. D., & Sinh B. D. (2023, July 21). Hanoi has nearly 8,000 social housing apartments and state-owned student housing for rent -Vietnam.vn. Vietnam.vn -Vietnam promotion platform. https://www.vietnam.vn/en/ha-noi-co-gan-8-000-can-ho-nha-o-xa-hoi-nha-o-sinh-vien-thuoc-so-huu-nha-nuoc-cho-thue/

2.3 lack of open & green public spaces

Public-space provision is “very challenging" in Hanoi. The Vietnamese capital is characterized by some of the worlds’ highest human densities (up to 404 persons/ha), and very scarce formal public spaces: only 0.3% of the city’s territory and less than 1 m^2 per capita”[19]. According to Labbé, “within Hanoi’s central districts, parks, playgrounds, and flower gardens account for less than 1.2 percent of total land area, equal to about one square meter per person” [20] report that “only 15 % of Hanoi’s residential blocks had access to a park or public garden within a reasonable walking (1000 m) or biking distance (2500 m)” [20] . The same study notes that “the city’s densest residential areas have only access to relatively small gardens and parks, resulting in overcrowding” [20] . More recent data shows that “Hanoi’s urban green space ratio currently stands at about 2 m^2 per capita only, while the standard for Type 1 and special cities is at least 6-7 m^2 per capita” [21] . According to Vietnam News, Hanoians likewise face severe constraints: “in Hoàn Kiếm District , the public area per capita is just 0.1 sq.m” [22] .

20 Pham, T.-T.-H., & Labbé, D. (2017). Spatial Logic and the Distribution of Open and Green Public Spaces in Hanoi: Planning in a Dense and Rapidly Changing City. Urban Policy and Research, 36(2), 168–185.

21 VnExpress International. (2023, December 16). Hanoi aims to increase per capita green space five-fold. VnExpress International. https://e.vnexpress.net/news/news/environment/hanoi-aims-to-increase-per-capita-green-space-five-fold.html

22 Vietnam News. (2021, May 24). Hanoians need more public spaces. Vietnam News. https://vietnamnews.vn/society/954227/hanoians-need-more-public-spaces.html

19; figure 16 HealthBridge. (2020). Hanoi youth public spaces. Retrieved from https://healthbridge.ca/projects/hanoi-youth-public-spaces

figure 16 Japan Times. (2023). Park life: Growing Japan's green spaces through private investment. Retrieved from https://www.japantimes.co.jp/

figure 16 Development Asia. (2024). Seoul's approach to urban development. Retrieved from https://development.asia/insight/build-together-benefit-together-seouls-approach-urban-development

figure 16 FairPlanet. (2023). Greening Bangkok: Inside the rise of the pocket parks. Retrieved from https://www.fairplanet.org/editors-pick/bangkok-thai-park-climate-heat/

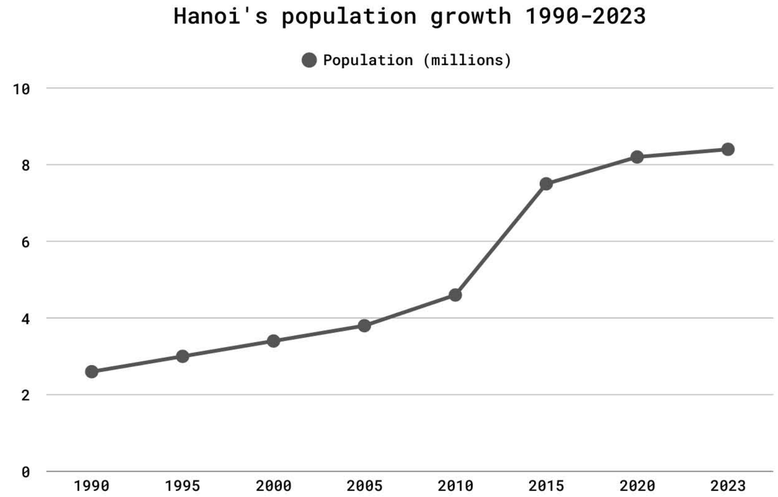


figure 15 Hanoi’s population growth 1990-2023. Visualized by author
General Statistics Office of Vietnam. (2020). Statistical yearbook of Vietnam 2020. Retrieved from https://www.gso.gov.vn/wp-content/uploads/2021/07/Sach-NGTK-2020Ban-quyen.pdf

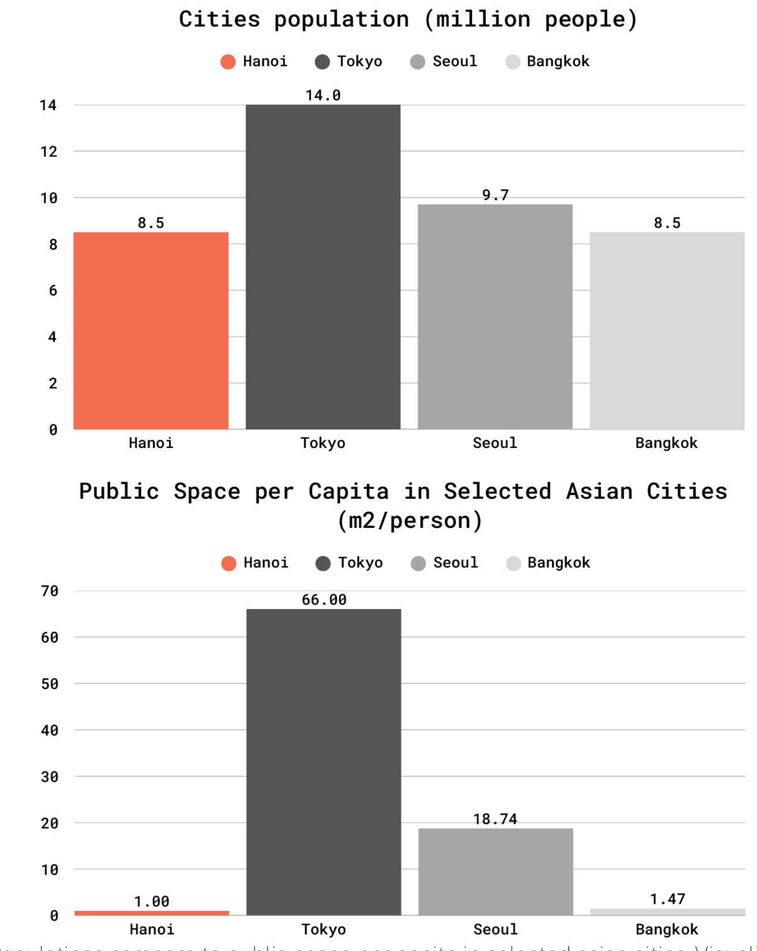


figure 16 Populations compare to public space per capita in selected asian cities. Visualized by author

2.4 tourism in Hanoi

It is reasonable to say that tourism in Hanoi is on the rise and is projected to continue booming in the future, as Vietnam has become one of the most popular destinations in Southeast Asia.

Hanoi recorded an estimated 24 million tourist arrivals this year, reflecting a remarkable annual increase of 27 %, according to the municipal Tourism Department.[23]

Among the total, foreign visitors reached 4 million, marking an impressive 266.7 % year-on-year growth, and 20 million domestic tourists, an increase of 16.3 % year-on-year and equal to 91 % of the 2019 figure. [23]

The city expects to receive 15.55 million visitors in the first half, an 11.8 % rise on the same period last year. [24]

Hanoi aims to welcome 46 million visitors by 2030, including 12 million international arrivals. [24]

Total tourism revenue is projected to reach 280 trillion VND (10.7 billion USD), with hotel occupancy rates averaging 68 % and the sector's contribution to the city's gross regional domestic product (GRDP) estimated at 7–7.5 %. [25]

In 2020, the city welcomed only 8.65 million visitors, but by 2024, that figure had risen to 27.88 million, including 6.37 million international visitors and 21.51 million domestic visitors, up 7.5 % from 2023. [25]



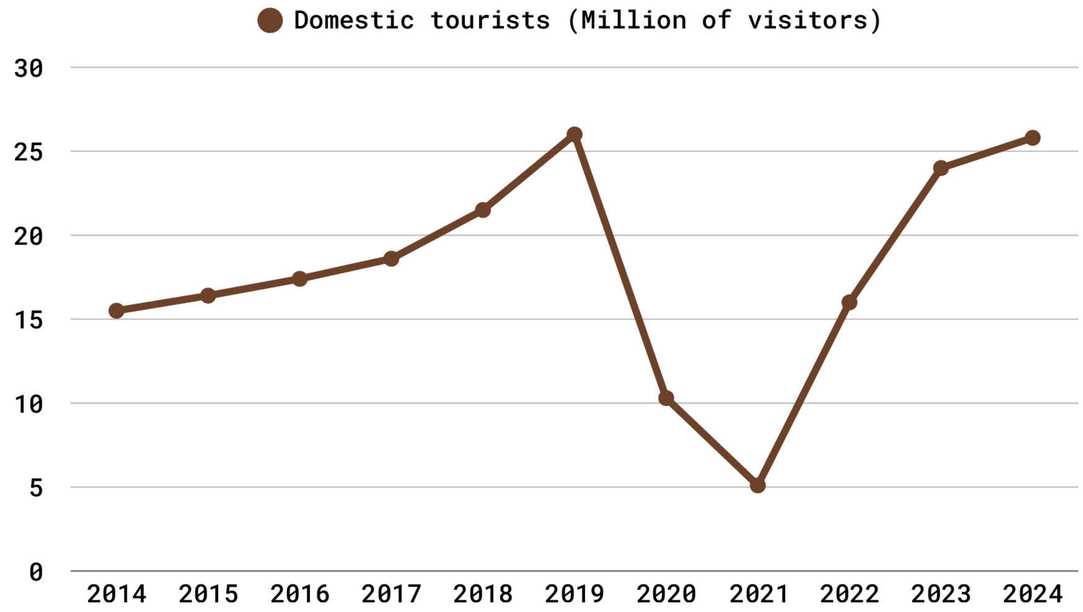


figure 17 Number of tourists visit Hanoi from 2014 to 2024. Visualized by author.

23 Hanoi Department of Tourism. (2023, December 27). Tourists to Hanoi hit 24 million in 2023. Hanoi Times. https://hanoitimes.vn/tourists-to-hanoi-hit-24-million-in-2023.591679.html

24 VietnamPlus. (2025, May 26). Hanoi hosts nearly 13 million tourists in first five months. VNA / VietnamPlus. https://en.vietnamplus.vn/first-5-months-of-2025-hanoi-welcomes-nearly-13-million-tourists-post319852.vnp

25 Vietnam News (Life & Style). (2025, June 25). Hà Nội eyes 46 million visitors by 2030. Vietnam News (VNA / VNS). https://vietnamnews.vn/life-style/1720211/ha-noi-eyes-46-million-visitors-by-2030.html

2.5 site introduction

Official names	**Les Ateliers de Gia Lam** **Gia Lam Train Factory** **Gia Lam Train Joint-stock company** **Nhà máy Xe lửa Gia Lâm**
Area	20 hectare / 200 000 m2
Address	551 Nguyen Van Cu, Gia Thuy Ward, Long Bien District, Hanoi, Vietnam
Managing agency	Gia Lam Railway Joint Stock Company Vietnam Railway Corporation Ministry of Transportation (state/public owned)
Old function	Manufacturing facility for locomotives, carriages. Supplying railway spare parts and equipment.
Operation status	Currently awaiting dissolution. Factory abandoned.
Planning info	Belonging to the N10 subdivision planning and A6/CCTP planning block, which is public land use of Hanoi City

2.5.1 breif history

1905 After invading Vietnam, the French seek to exploit the colony's resoures for the benefit of industries in France

1940 In September 1940, Japan takes over Vietnam. Gia-Lam Train Factory also falls under Japanese occupation.

1943 To avoid war destruction, the factory owners relocate some skilled workers and machines to Dong Anh to build another factory.

1949 The French government, having retaken Hanoi, restarts the Gia-Lam train factory's production.

1954 The factory returns to production under Vietnamese governance.

1972 In December, a corner of the Gia Lâm Works is destroyed by US bombs

1973 Gia Lam train factory Reconstruction starts

1988 Gia Lâm Train Factory rebuilt with Polish assistance

2005 Production gradually drops. Most of the factory is poorly maintained.



figure 18 Workers of Gia Lam Train Factory make efforts to complete 309 locomotive to celebrate Labour Day. **May 1, 1959** Vietnam+. (2020, January 10). Building socialism in North, fighting US in South Vietnam (1954-1965). Vietnam+ (VietnamPlus). https://en.vietnamplus.vn/building-socialism-in-north-fighting-us-in-south-vietnam-1954-1965-post167122.vnp

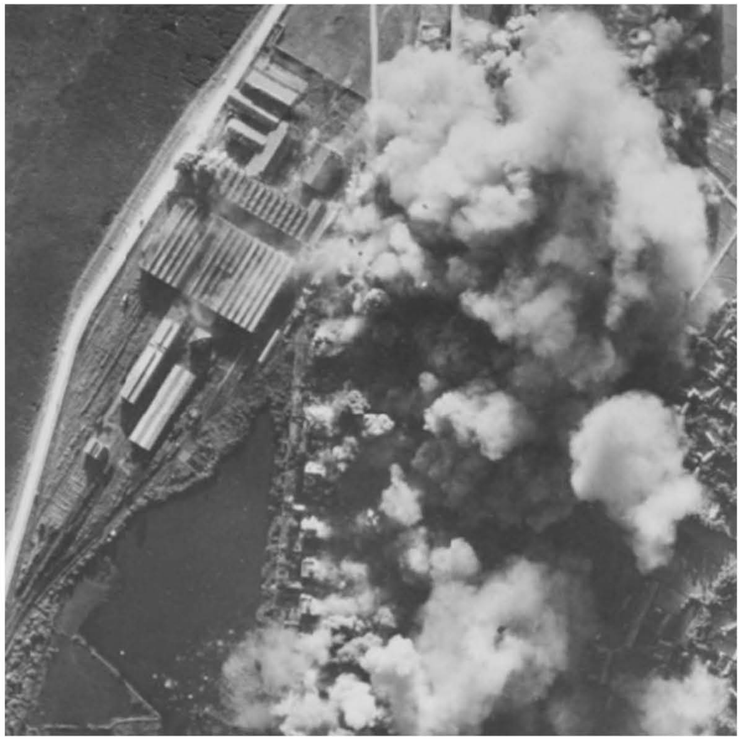


figure 19 Alamy. (n.d.). Rolling stock in Gia Lam Railway Yards at Hanoi, French Indo-China during attack by Liberators on **27 Nov. 1944**. Alamy Images. https://www.alamy.com/rolling-stock-in-gia-lam-railway-yards-at-hanoi-french-indo-china-during-attack-by-liberators-on-27-nov-1944-image481323623.html

2.5.2 why Gia Lam Train Factory?

Culture and historical significant

The Gia Lam Tram Factory is a historical significance part of the Vietnamese railways history. Established in 1905, it started as a train fabrication for French. The factory is a pioneer in the fabrication of locomotive and carriage manufacturing, representing the beginnings of the rail industry in Indochina.

Historical context regarding revolutions proves that, before 1954, the factory served as a central hub of labor unions in Hanoi where workers could participate in anti-French colonial protest activities alongside promoting better working conditions. After the division of Vietnam, the factory represented the determination and defiance of the Vietnamese citizens in pursuit of nationalist unification.

Despite the reality that the Gia Lam Railway Factory survived attacks by the United States military during the War between Vietnam and USA, it remained operational, thereby highlighting its importance in ensuring the continuity of railway activities in North Vietnam and supporting the war of resistance in the South. Additionally, the importance of the factory to the railway industry further increased in 1988 with the merger of auxiliary facilities acquired from Poland, highlighting the spirit of socialist bloc cooperation on a worldwide scope.

The Gia Lam Factory is also seen as a major industrial complex alongside other major cultural venues, namely the Ho Chi Minh Museum and the Friendship Cultural Palace. It is also famous for creating legendary train artifacts that symbolize Vietnam, namely the "Tu Luc" steam locomotive and the "Doi Moi" diesel locomotive, which mark major turning points in building an independent Vietnamese rail network.



figure 20 Ho Chi Minh Young Pioneers Team train launch ceremony 1-1-1979

Hoangha. (2014, January 4). The train named after the Ho Chi Minh Young Pioneers. https://www.qdnd.vn. https://www.qdnd.vn/chinh-tri/tin-tuc/doan-tau-mang-ten-doi-thieu-nien-tien-phong-ho-chi-minh-424407

2.5.2 why Gia Lam Train Factory?

Valuable architectural elements

Structures | Details | Aesthetic | Symbolic | International

The remaining notable architectural works include a group of houses constructed in 1988 with support from Poland, representing the socialist bloc's ideals of Internationalism, Friendship, and a production model heavily focused on industry.

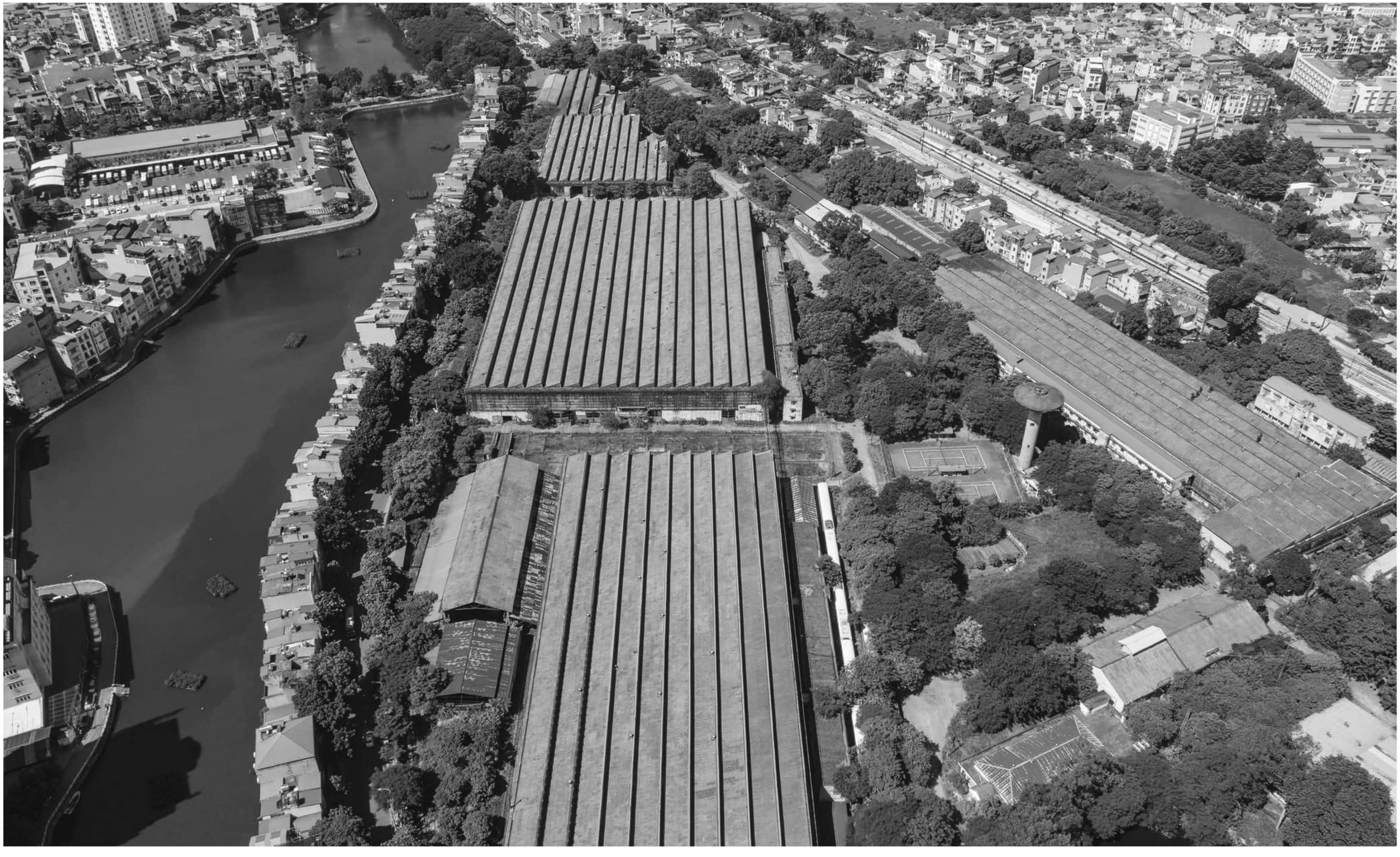
Structurally, the factories built by Poland feature large-span spaces typical of heavy industrial facilities worldwide, equipped with robust crane systems, oversized steel beams, and sawtooth folding roofs. Among these, the Gia Lam Railway Factory stands out as the most advanced facility in Vietnam at that time. The workshop's layout and the roof's structural system were carefully thought out when it was designed. This made sure that all of the roof doors opened to the North-South direction. This orientation is in line with Vietnam's climate and keeps too much tropical sunlight from getting into the workspace. The Gia Lam Railway Factory is the only railway facility in Vietnam that can currently fit 1435mm gauge trains in its workshops.



figure 21 inside Gia Lam Train Factory

2.5.3 current condition

figure 22 Arial photos of Gia Lam Train Factory
NOTES. (n.d.). NOTES. https://notes.vn



2.5.3 current condition

figure 23 Arial photos of Gia Lam Train Factory. Google Earth



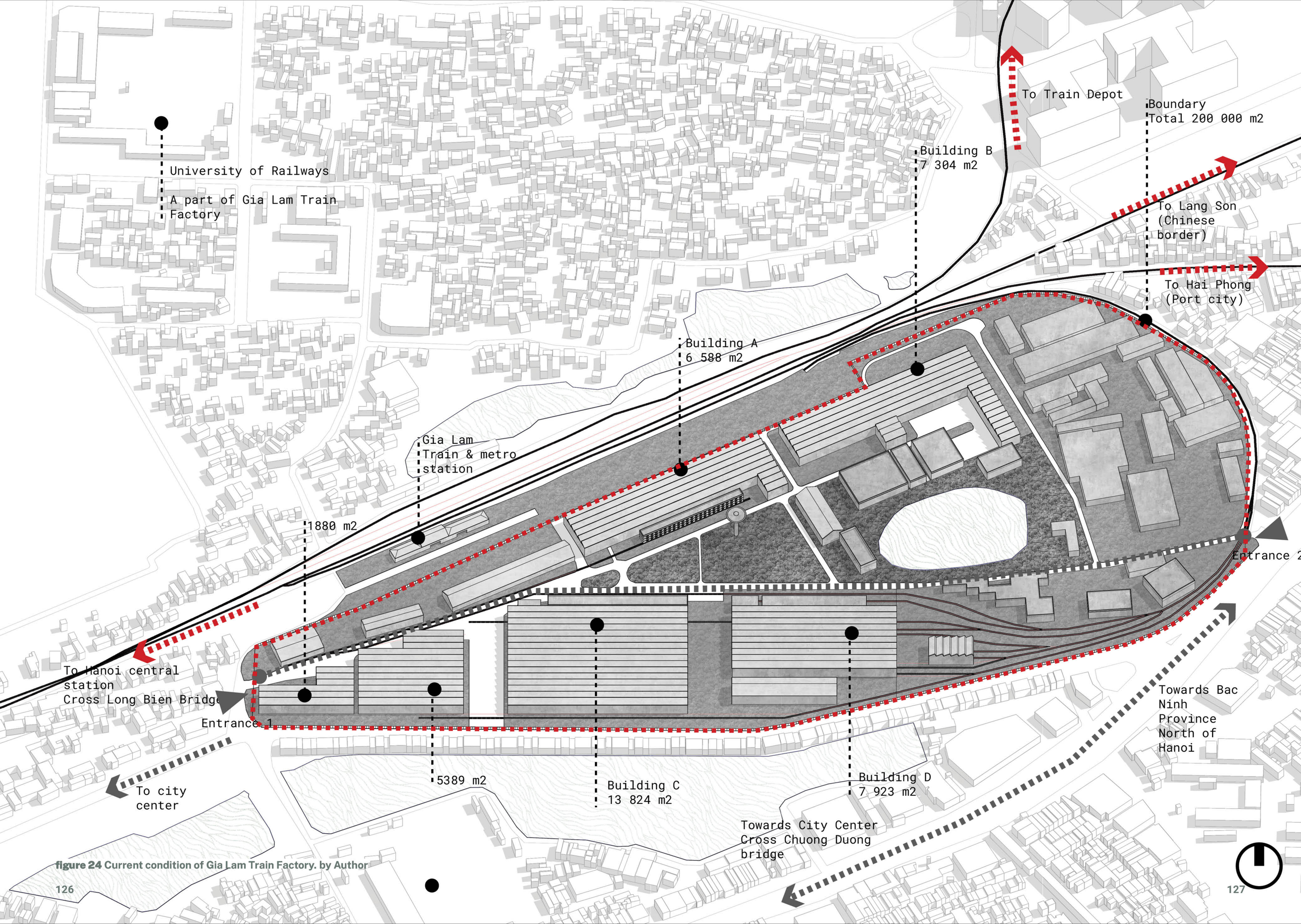


figure 24 Current condition of Gia Lam Train Factory. by Author

University of Railways

A part of Gia Lam Train Factory

To Train Depot

Boundary
Total 200 000 m2

Building B
7 304 m2

To Lang Son
(Chinese
border)

To Hai Phong
(Port city)

Building A
6 588 m2

Gia Lam
Train & metro
station

1880 m2

Entrance 2

To Hanoi central
station
Cross Long Bien Bridge

Entrance 1

To city
center

5389 m2

Building C
13 824 m2

Building D
7 923 m2

Towards City Center
Cross Chuong Duong
bridge

Towards Bac
Ninh
Province
North of
Hanoi

Built in the
1990s

Built 1905
Rebuilt 1988

Built 1905
Rebuilt 1973

figure 25 Time of built of different buildings of Gia Lam Train Factory. by Author

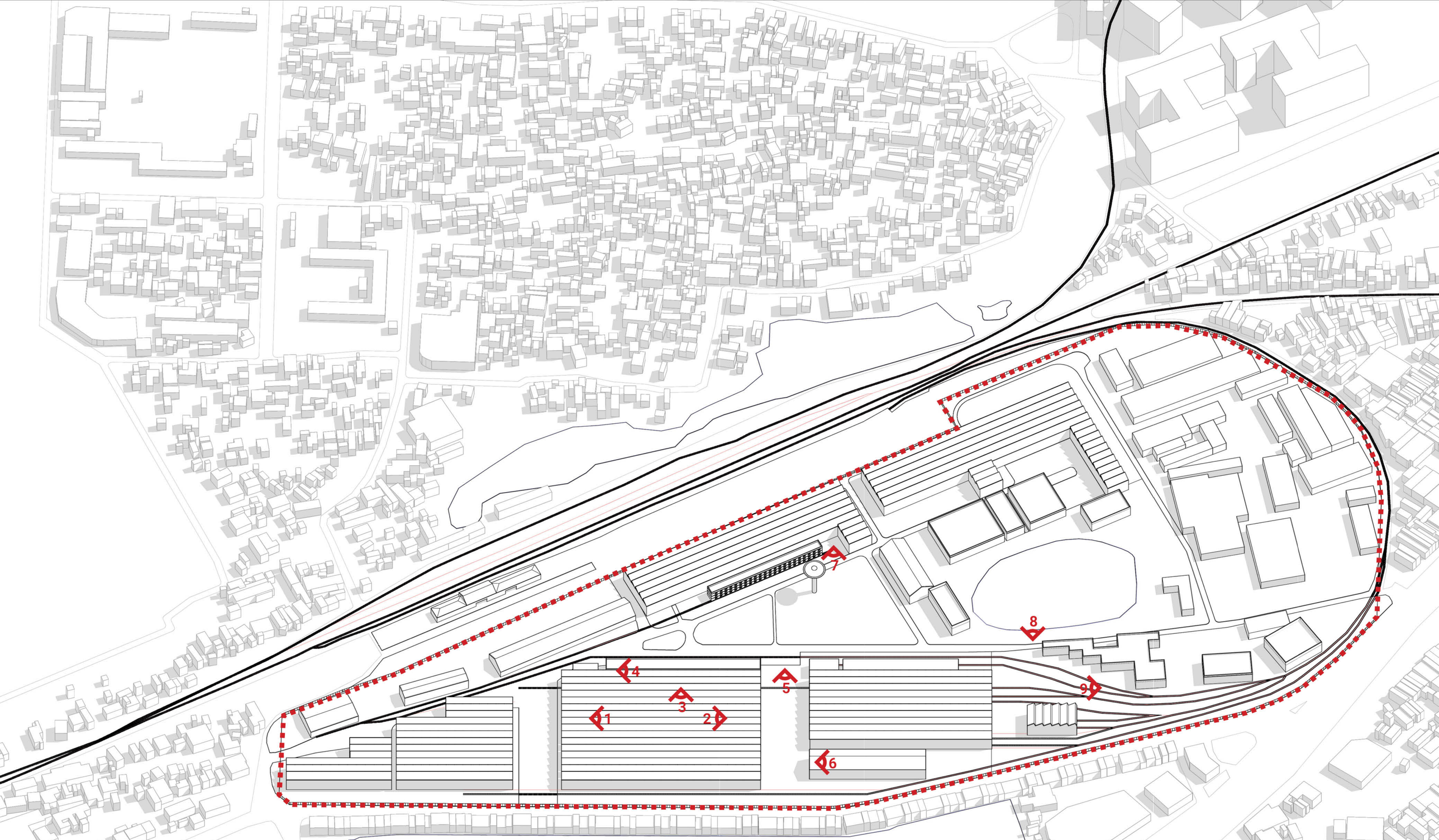


figure 26 Photos taken points marked on the site's axonometric. by Author

2.5.3 current condition



View 1



View 2



View 3



View 4

2.5.3 current condition



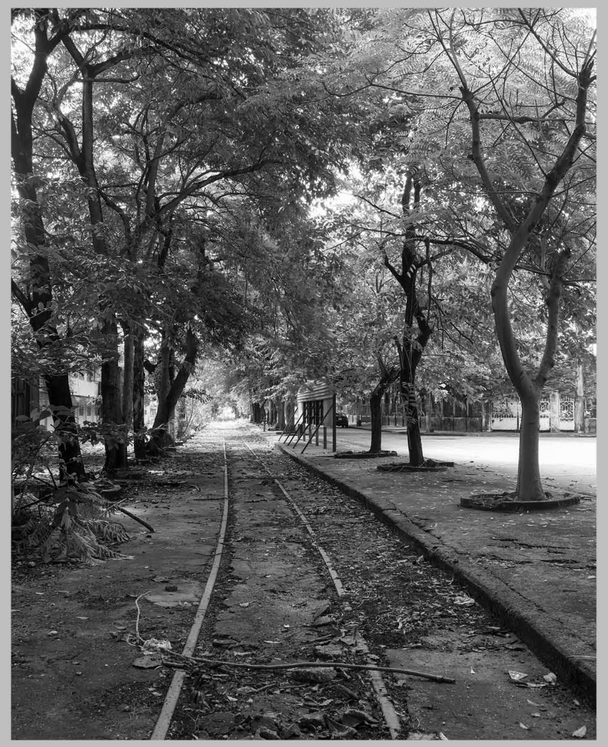
View 5



View 6



View 7



View 9

figure 27 Current status of the factory



figure 28 Current status of the factory



figure 29 Current status of the factory

2.6 conclusion

Until this point, Hanoi's historical context has been examined concerning its desire for modernization, as well as an examination of the current problems the city faces. The abandoned Gia Lam Train Factory sits in a location that holds strategic value and presents a unique set of opportunities. In the context of the severe shortage of land within the Hanoi metropolis, the site stands as a unique opportunity for the revitalization of the city, as the availability of land in the city continues to dwindle; the abandoned factory stands as **one of the last few parcels that has the potential to make a substantial dent in the pressure that the too-dense Hanoi city poses.** On the corner where pressures for relocation come up against rising governmental and public demand for adaptive reuse, the site holds great potential for redevelopment.

Facility augmentation indicates that the site has the potential to develop as a vibrant mixed-use development. The creation of a cultural center, including a railroad museum, low-cost student housing, and private parcels, has the chance to create an essential, sustainable cityscape that respects the city's heritage and responds to its future visions.



figure 30 Current status of the factory

03

envision the future

3.1 city plan
3.2 public private partnerships
3.3 master plans
3.3.1 master plan a
3.3.2 master plan b
3.3.3 master plan c
3.3.4 evaluation of master plans
3.4 conclusion



To restore a building is not to maintain it, repair it or remake it: it is to re-establish it in a complete state which may never have existed at any given moment.

Eugène-Emmanuel Viollet-le-Duc, 'Restauration', in Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle, Paris, B. Bance, 1866, t.VIII, pp. 14-34

3.1 city plan

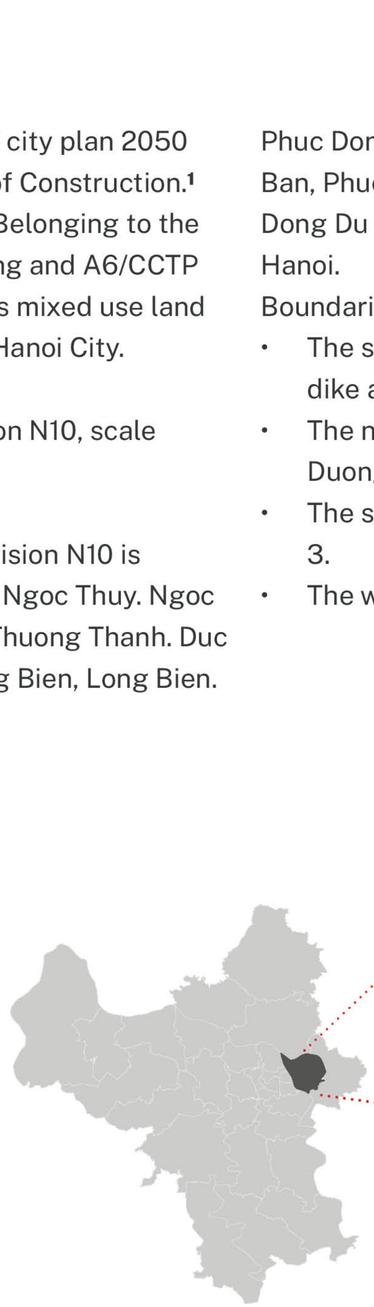
According to the Hanoi city plan 2050 published by Ministry of Construction.[1] Gia Lam Train Factory Belonging to the N10 subdivision planning and A6/CCTP planning block, which is mixed use land (public, residential) of Hanoi City.

About Urban Subdivision N10, scale 1/2000.

Location: Urban Subdivision N10 is located in the wards of Ngoc Thuy. Ngoc Lam, Bo De, Gia Thuy, Thuong Thanh. Duc Giang, Viet Hung, Giang Bien, Long Bien. Phuc Dong, Cu Khoi, Sai Dong, Thach Ban, Phuc Loi - Long Bien district, Co Bi, Dong Du communes - Gia Lam district - Hanoi.

Boundaries:

- The southwest borders the Red River dike and flood escape corridor.
- The north and northeast borders the Duong River dike.
- The southeast borders the Ring Road 3.
- The west borders the Red River dike.



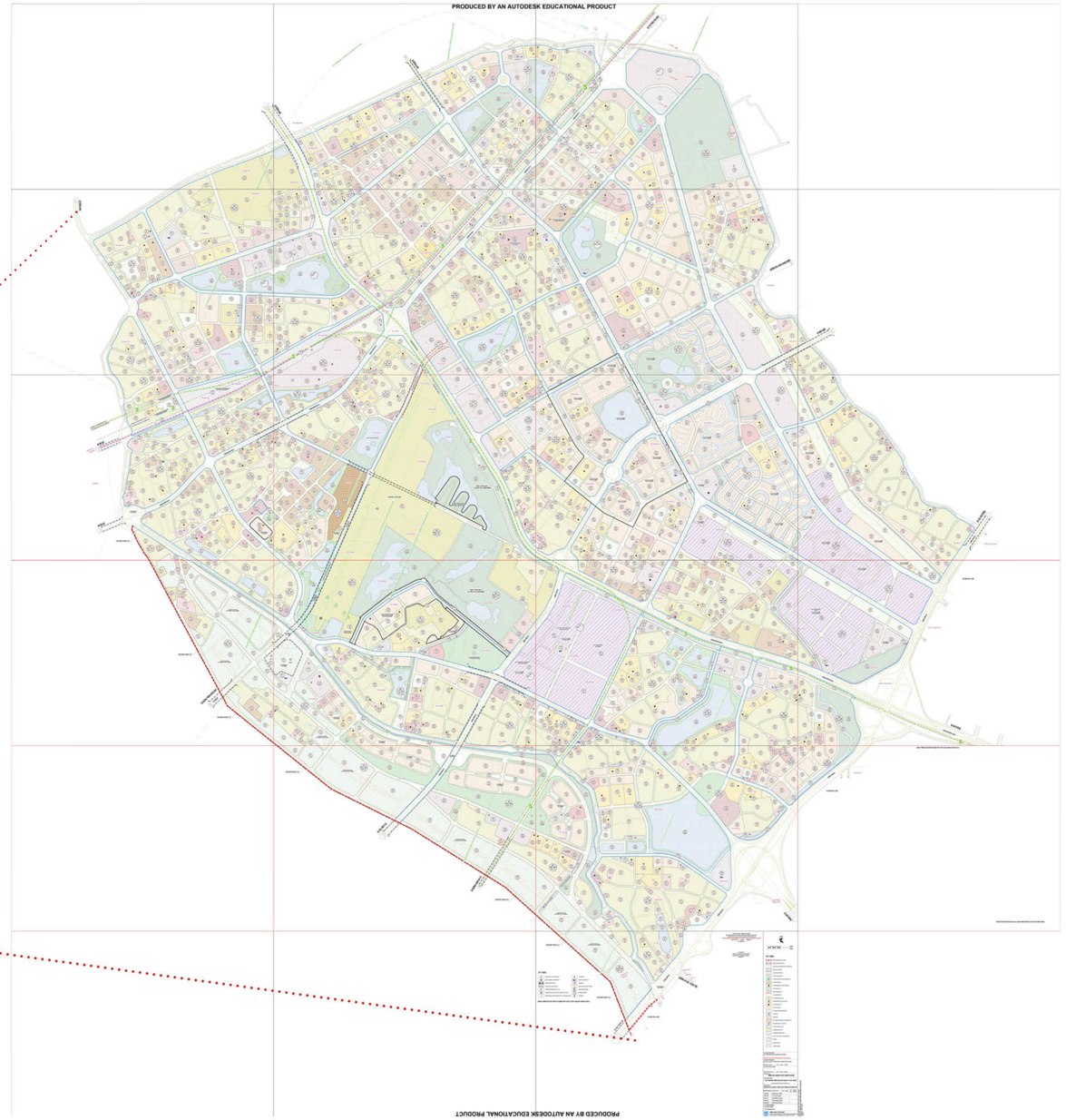


figure 1 Urban Subdivision N10 map drawn by Ministry of Construction

1 Construction Planning and Urban Planning Portal of Vietnam. (2014). Subdivision planning N10 (Decision No. 6115/QĐ-UBND, Chairman of the People's Committee of Hanoi). Ministry of Construction. Retrieved from https://quyhoach.xaydung.gov.vn/vn/quy-hoach/4287

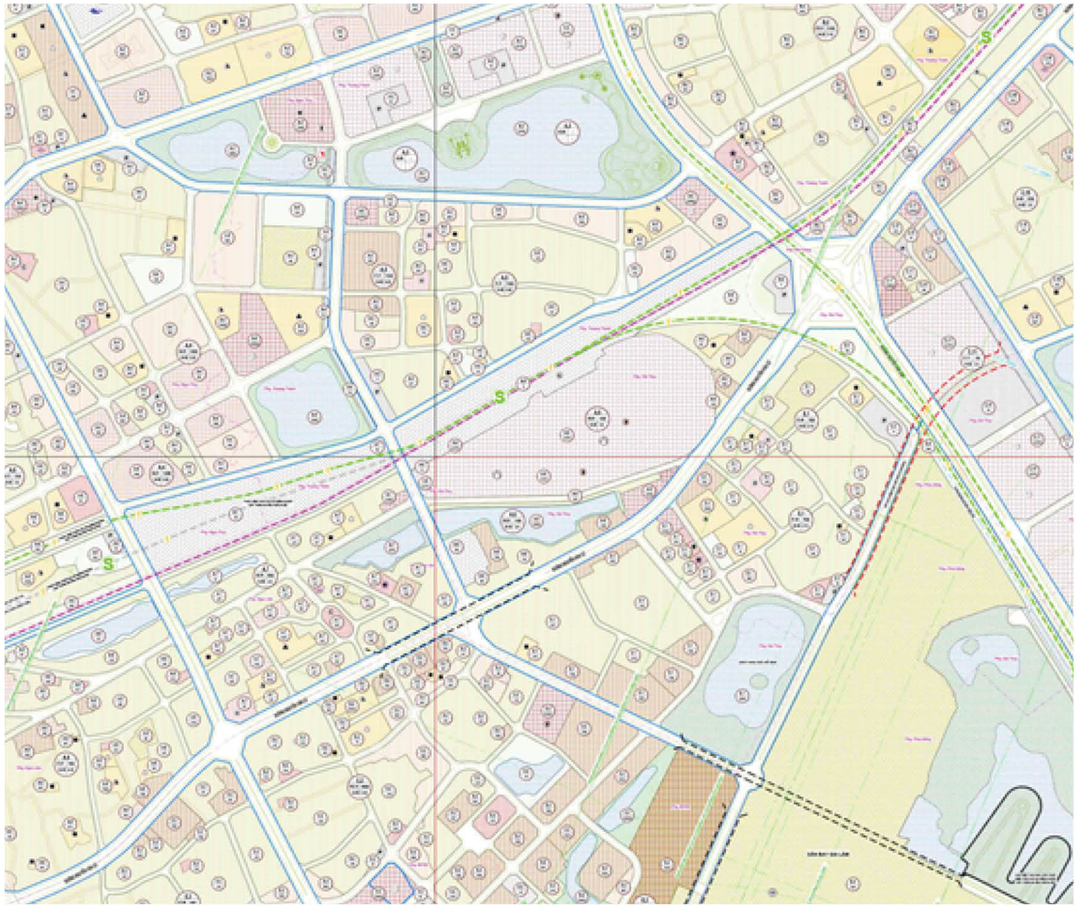


figure 2 Urban Subdivision N10 map drawn by Ministry of Construction

Functions	Standards (m2/person)	Building density		Number of floors	
		min (%)	max (%)	min	max
City public land	3.8	20	40	3	50
City traffic land	8.82				
Street, square	7.12				
Station, urban railway	1.67				
Residential land	61.1	14	59	2	35
Public land residential area	1.25	20	40	3	35
Residential area traffic	6.93				
Residential unit land	48.17	14	59	2	25
Residential cluster land	30.69	20	59	3	25
New residential cluster land		20	59	3	25
Renovate residential cluster land		30	59	3	5
Residential unit transportation land	10.07				

figure 3 Standards retrieved from Government Decision .[1]

Summary of Key Points – N10 Area, Hanoi City Plan 2050.[1]

The 2050 urban development plan for Hanoi's N10 subdivision focuses on changing how land is used to fit with current conditions. This makes sure that the law is clear and that there are no conflicts. The focus of industrial development will be on clean, high-tech, and supporting industries. Warehouses that don't follow the rules and factories that pollute will slowly be moved to centralized zones. Vacated sites will be used for approved purposes, especially social infrastructure. **One important part of cultural development is building an urban public facility complex, like a railway museum at the Gia Lam Train Factory site in Gia Thuy Ward**.

There will be big improvements to transportation infrastructure. For example, the Hanoi–Yen Vien railway will become a dual-track, 1,435 mm gauge line that connects with Urban Railway Line 1. The Yen Vien–Ngoc Hoi and Gia Lam–Phu Thuy routes will use Gia Lam Station as a public transportation hub. The station will be about 1,200 m long and 11.23 ha in area. The Yen Vien–Ngoc Hoi urban railway branch will be connected to the national railway by an elevated 5.5 km section in the N10 area. This will include four stations to improve connectivity.

1 Construction Planning and Urban Planning Portal of Vietnam. (2014). Subdivision planning N10 (Decision No. 6115/QĐ-UBND, Chairman of the People's Committee of Hanoi). Ministry of Construction. Retrieved from https://quyhoach.xaydung.gov.vn/vn/quy-hoach/4287

3.2 public-private partnerships

“Public-private partnerships (PPPs) are a mechanism for government to procure and implement public infrastructure and/or services using the resources and expertise of the private sector”. [2]

Similarly, “a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance”. [2]

“Advantages of public-private partnerships (PPPs) include cost savings, risk sharing, better services, and economic growth. PPPs combine the strengths of private companies, such as efficiency and innovation with those of the public sector, such as resources and stability.” [3]

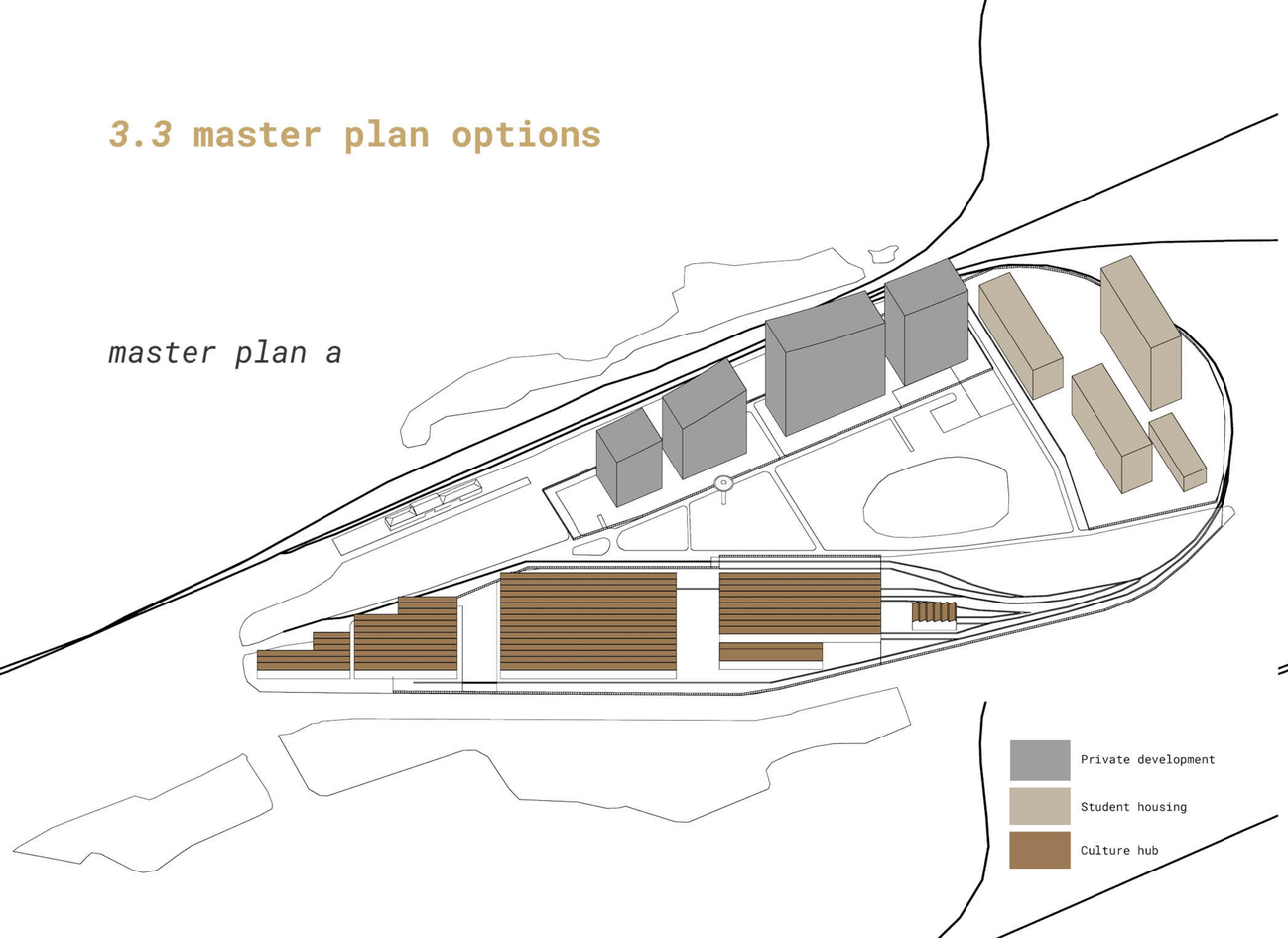
Utilizing a public-private partnership (PPP) model to revitalize the Gia Lam Train Factory is an astute approach to leverage private sector expertise in infrastructure reconstruction, distribute financial and operational risks, and establish a contemporary historical complex that is both efficient and sustainable.

2 World Bank Group. (2024, August 19). About public-private partnerships. Public-Private Partnership Legal Resource Center. Retrieved August 15, 2025, from https://ppp.worldbank.org/public-private-partnership/about-public-private-partnerships

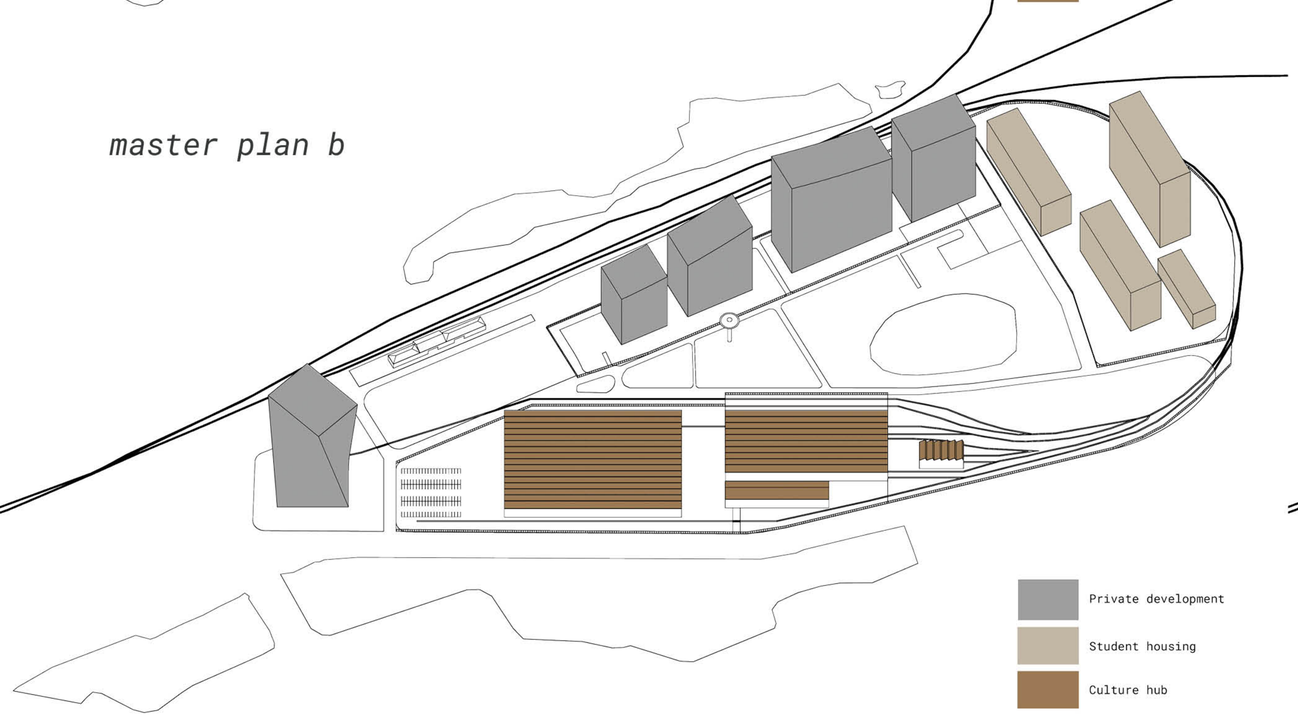
3 Investopedia. (2025, February 14). Public-private partnerships (PPPs): Definition, how they work, and examples. Retrieved August 15, 2025, from https://www.investopedia.com/ask/answers/021715/what-impact-publicprivate-partnerships-have-economic-growth.asp

3.3 master plan options

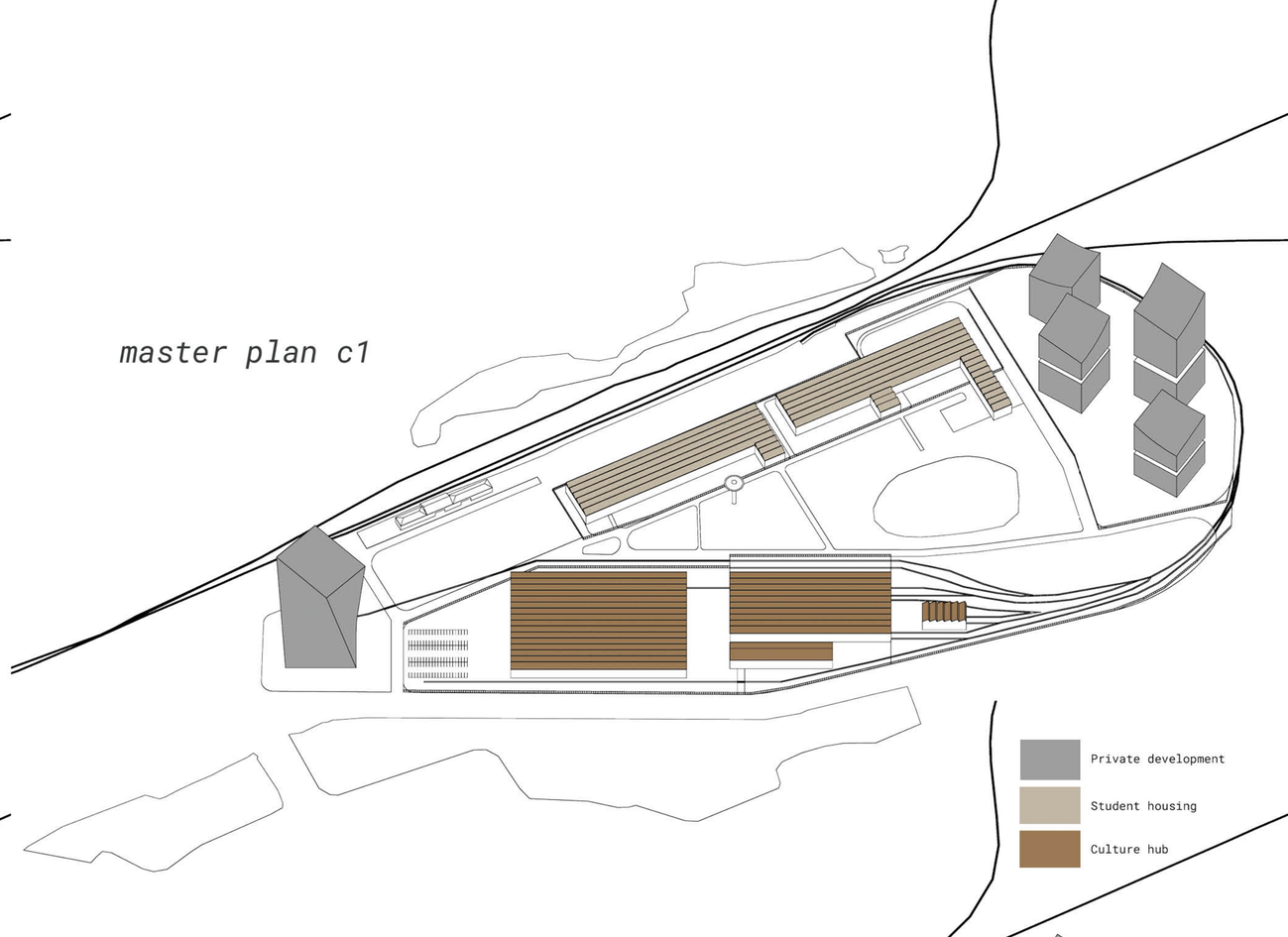
master plan a



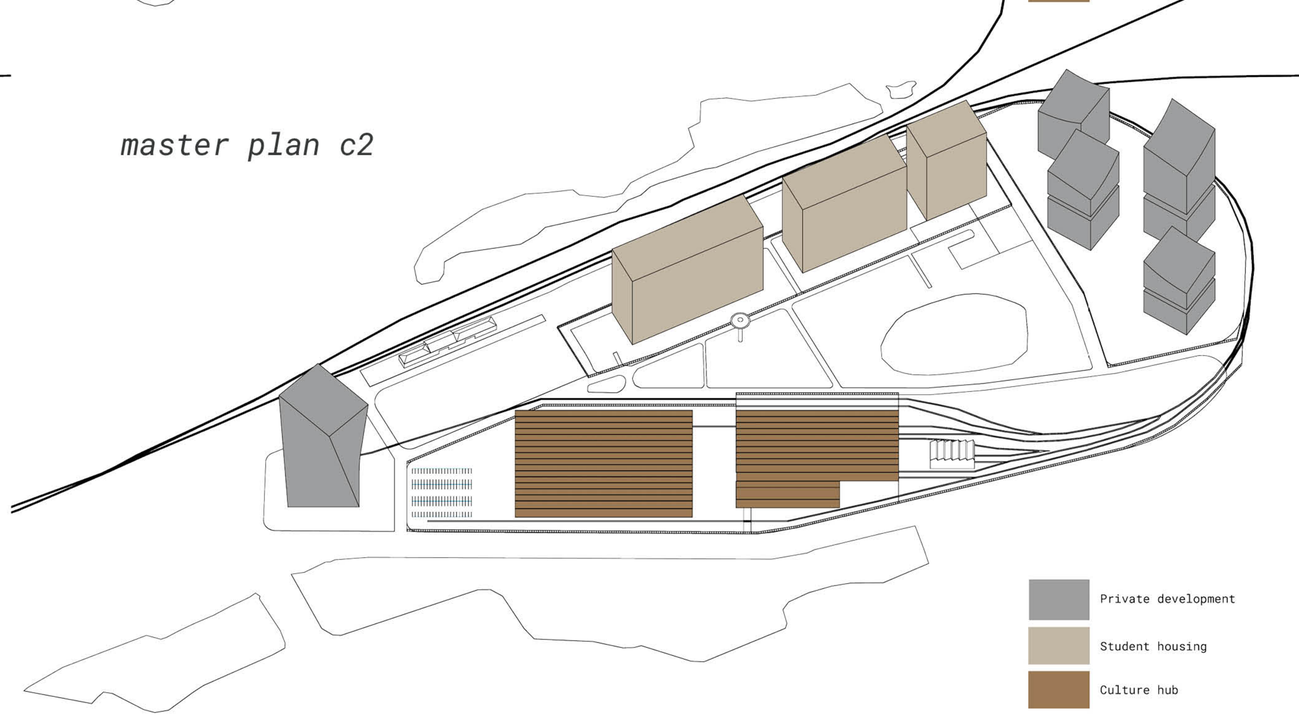
master plan b



master plan c1



master plan c2



3.3.1 master plan A

University of Railways

A part of Gia Lam
Train Factory

To Train Depot

Boundary
Total 200 000 m2

To Lang Son
(Chinese border)

Private developement
Total 30 030 m2
Building B 7 304 m2

To Hai Phong
(Port city)

Private development
Total 30 030 m2
Building A 6 588 m2

New build
student housing
Total 36 028 m2
Built 10 000 m2
(28%)

Culture hub
Plot 52 707 m2
Building E 5389 m2

Gia Lam
Train & metro
station

Culture hub
Plot 52 707 m2
Building G 1880 m2

Entrance
station

Entrance 2

To Hanoi central station
Cross Long Bien Bridge

Towards Bac
Ninh Province
North of Hanoi

Entrance 1

Entrance
culture hub

Culture hub
Plot 52 707 m2
Building D 7 923 m2

To city
center

Bus depot

Culture hub
Plot 52 707 m2
Building C 13 824 m2

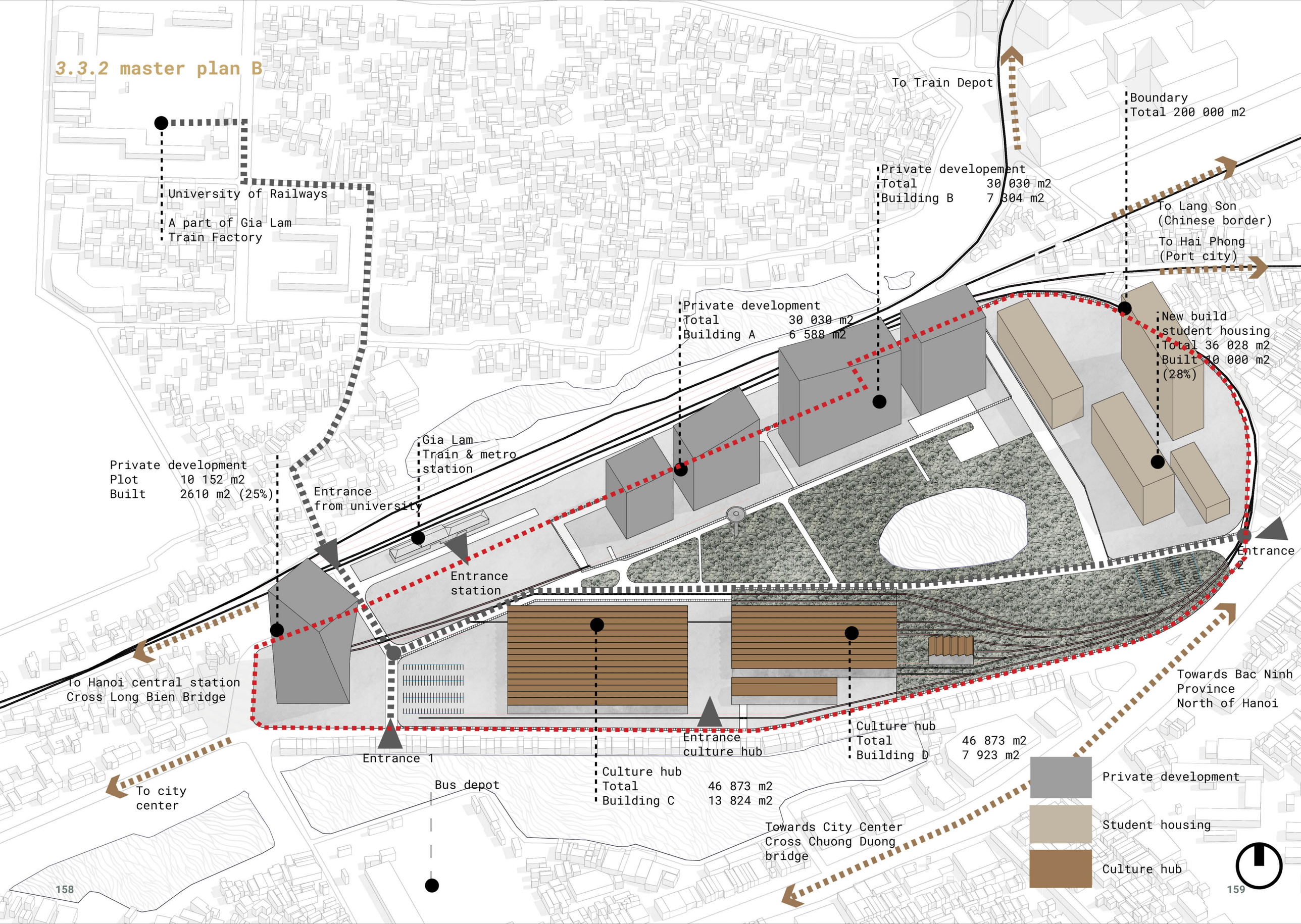
Towards City Center
Cross Chuong Duong
bridge

Private development

Student housing

Culture hub

3.3.2 master plan B



3.3.3 master plan C

University of Railways

A part of Gia Lam
Train Factory

To Train Depot

Boundary
Total 200 000 m2

Student housing
Total 30 030 m2
Building B 7 304 m2

To Lang Son
(Chinese border)

To Hai Phong
(Port city)

Student housing
Total 30 030 m2
Building A 6 588
m2

Private developement
Total 36 028 m2
Built 7 056 m2 (20%)

Gia Lam
Train & metro station

Private development
Plot 10 152 m2
Built 2610 m2 (25%)

Entrance
from university

Entrance
station

Entrance
2

To Hanoi central station
Cross Long Bien Bridge

Towards Bac Ninh
Province
North of Hanoi

Entrance 1

Entrance
culture hub

Culture hub
Total 52 707 m2
Building D 7 923 m2

To city
center

Bus depot

Culture hub
Total 52 707 m2
Building C 13 824 m2

Towards City Center
Cross Chuong Duong
bridge

Private development

Student housing

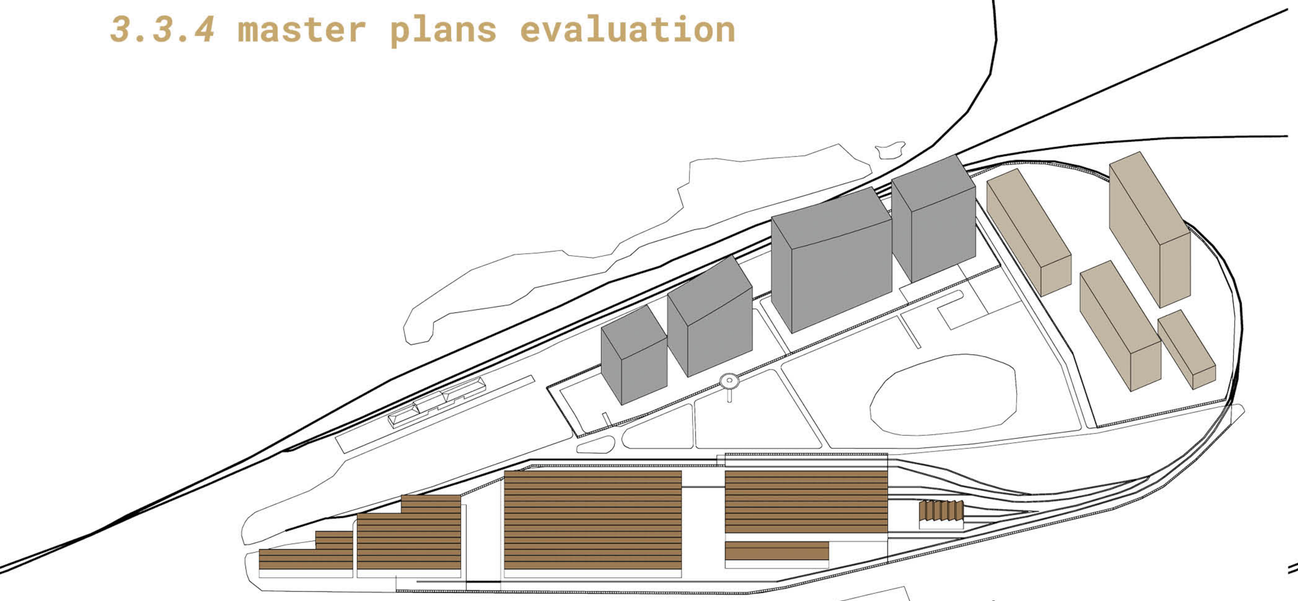
Culture hub

3.3.4 master plans evaluation

	Pros Public	Cons Public	Plot area		Gross floor area			
			Culture Hub & Museum	Student housing	Culture Hub & Museum	Student housing	Total Gross Floor Area	
Master plan A	Preserve more historical structure	Student housing accessibility problems	52707	36028	43482	200000	**243482**	
Master plan B	Direct access from university to the culture hub	Preserve only 2 historical buildings	46873	36028	32621	200000	**232621**	
Master plan C1	Flexible phasing, different part can be developed seperatedly Student housing close to university		46873	30030	32621	55568	**88189**	
Master plan C2	Accessible directly from university to culture hub	Preserve only 2 historical buildings	46873	30030	32621	277840	**310461**	

	Pros Private	Cons Private	Total plots area	Gross floor area				
				Retail 1 to 5 base floors	Offices Max 50 floors	Residential Max 40 floors	Total Gross Floors Area	
Master plan A	Close to metro and train station	Residential building suffer from noise from railways	30030	13050	65250	347300	**425600**	
Master plan B	Close to metro and train station	Residential building suffer from noise from railways	40182	26100	130500	555680	**712280**	
Master plan C1	Residential buildings facing a park → Higher price	Residential buildings have accisibility problems	46180	26100	130500	480000	**636600**	
Master plan C2	Flexible phasing, different part can be developed seperatedly		46180	26100	130500	480000	**636600**	

3.3.4 master plans evaluation

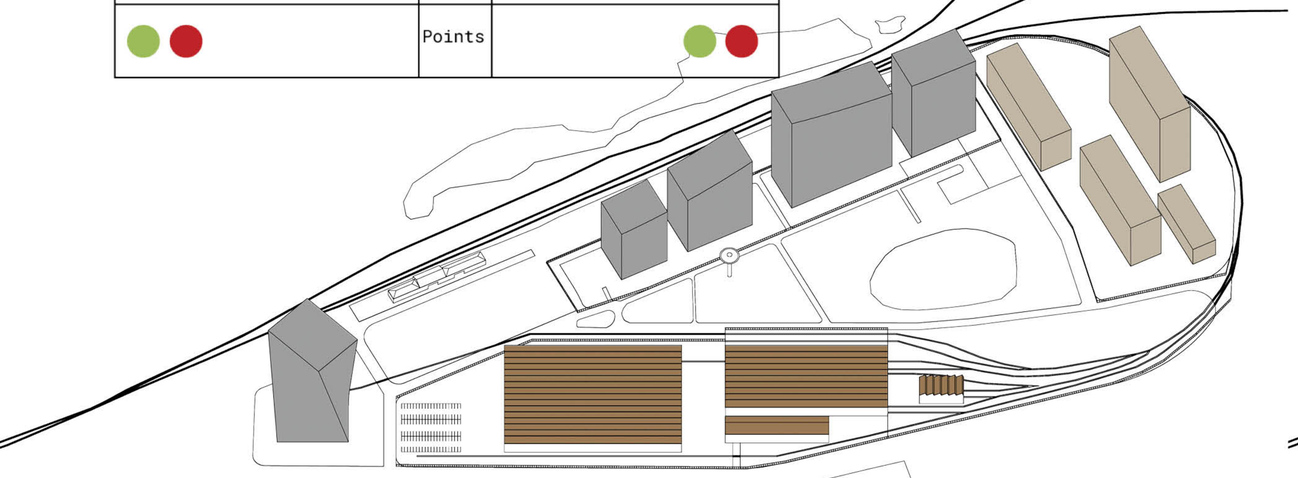


master plan a

- Private development
- Student housing
- Culture hub

Public **Private**

52 707 m2 Culture 36 028 m2 Housing	Plot Area	30 030 m2
43 482 m2 Culture 200 000 m2 Housing	Gross Floor Area	425 600 m2
🟢 🔴	Points	🟢 🔴

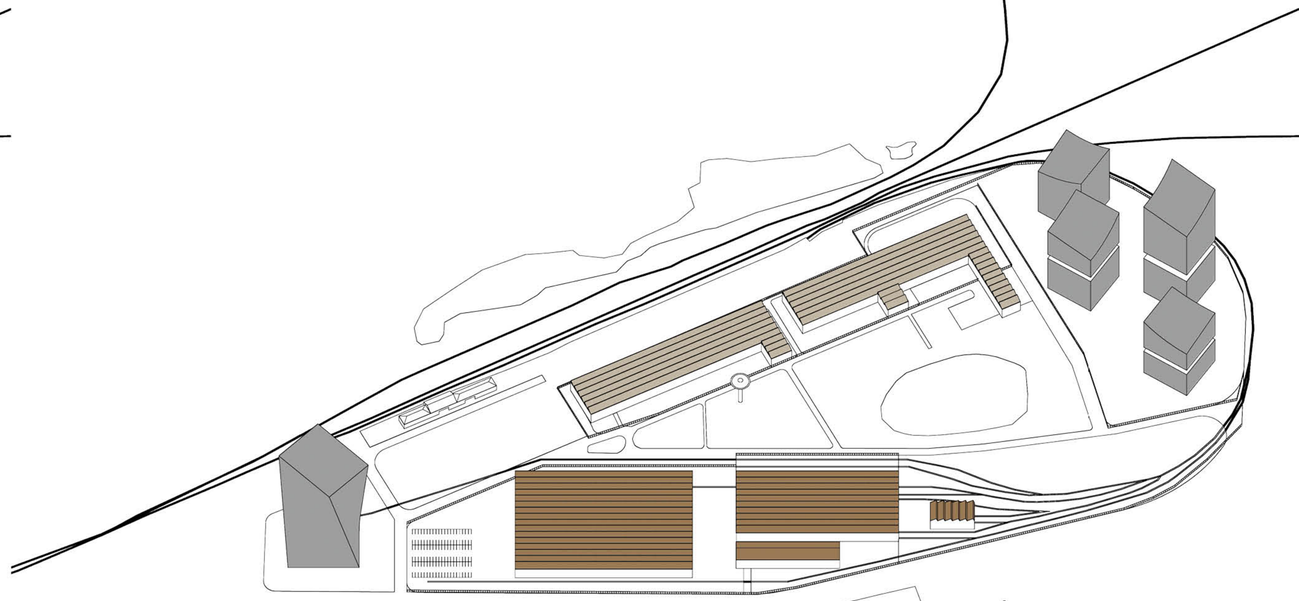


master plan b

- Private development
- Student housing
- Culture hub

Public **Private**

46 873 m2 Culture 36 028 m2 Housing	Plot Area	40 182 m2
32 612 m2 Culture 200 000 m2 Housing	Gross Floor Area	712 280 m2
🟢 🔴	Points	🟢 🟢 🔴

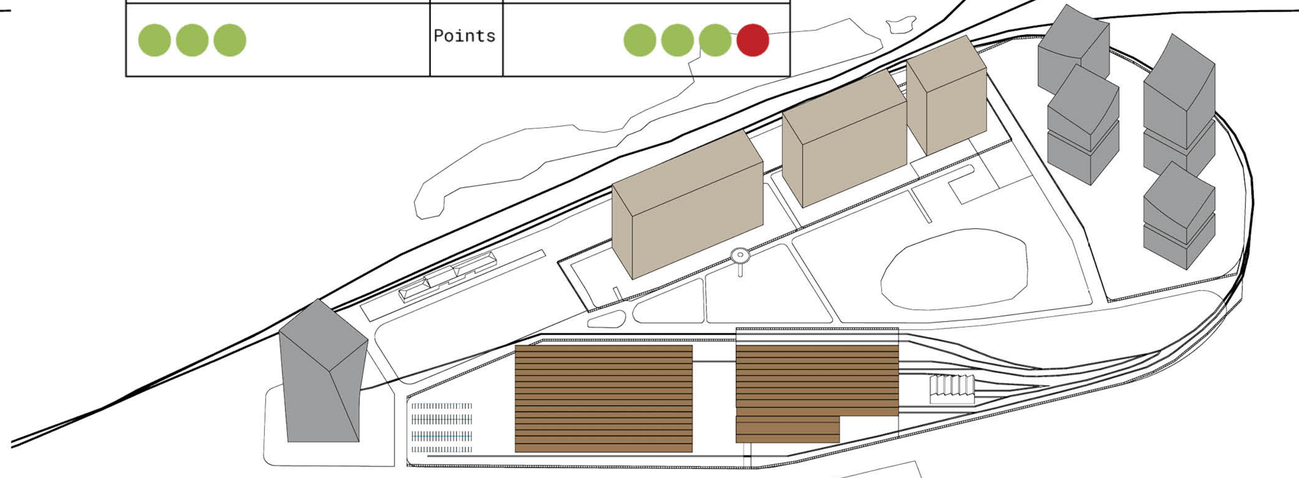


master plan c1

- Private development
- Student housing
- Culture hub

Public **Private**

46 873 m2 Culture 30 030 m2 Housing	Plot Area	40 182 m2
32 621 m2 Culture 55 568 m2 Housing	Gross Floor Area	636 600 m2
🟢 🟢 🟢	Points	🟢 🟢 🟢 🔴



master plan c2

- Private development
- Student housing
- Culture hub

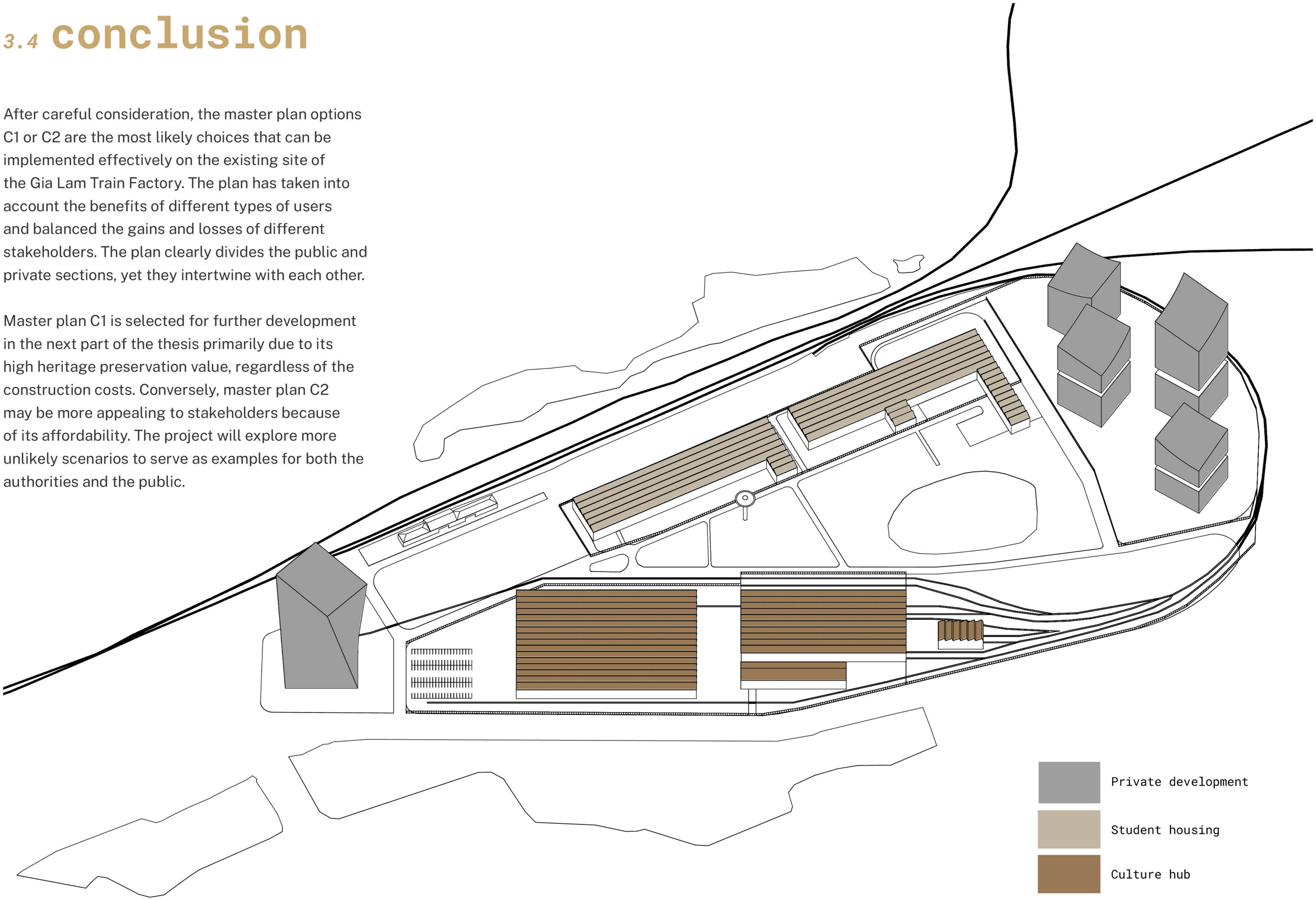
Public **Private**

46 873 m2 Culture 30 030 m2 Housing	Plot Area	40 182 m2
32 621 m2 Culture 277 840 m2 Housing	Gross Floor Area	636 600 m2
🟢 🟢 🟢 🟢 🔴	Points	🟢 🟢 🟢 🔴

3.4 conclusion

After careful consideration, the master plan options C1 or C2 are the most likely choices that can be implemented effectively on the existing site of the Gia Lam Train Factory. The plan has taken into account the benefits of different types of users and balanced the gains and losses of different stakeholders. The plan clearly divides the public and private sections, yet they intertwine with each other.

Master plan C1 is selected for further development in the next part of the thesis primarily due to its high heritage preservation value, regardless of the construction costs. Conversely, master plan C2 may be more appealing to stakeholders because of its affordability. The project will explore more unlikely scenarios to serve as examples for both the authorities and the public.



04

design development

4.1 case studies
4.2 renovation methods
4.3 program
4.4 master plan
4.5 culture hub and museum
4.6 visual narrative

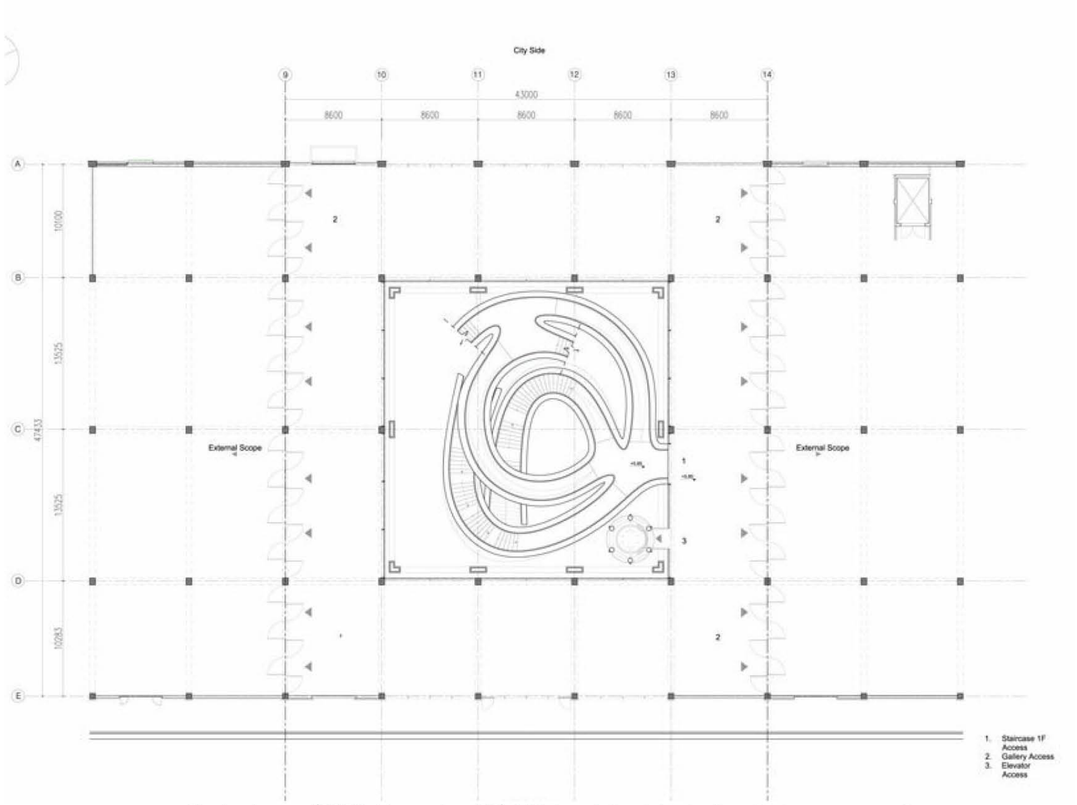
We shape our buildings and afterwards our buildings shape us

Churchill, W. (1943, October 28). Speech to the House of Commons.

4.1 case studies

Project	Fenix Museum of Migration
Location	Rotterdam, Netherlands
Year	2025
Architect	MAD Architects
Typology	Former warehouse to Museum
Site Area	13 200 m²

‘From a distance, the platform and staircase look like a single entity, but when it’s in front of you, it stands as a sculptural work that invites you to explore,’ says MAD founder Ma Yanson. ‘It both signifies the Fenix’s witnessing of Europe’s history of migration from the port, and svmbolizes the future of the citv.’



Designboom. (2024, November 26). MAD architects’ spiraling fenix museum of migration in rotterdam to open may 2025. Designboom | Architecture & Design Magazine. https://www.designboom.com/architecture/mad-architects-fe-nix-museum-migration-rotterdam-breaks-ground-11-13-2020/



4.1 case studies

Project	Library TU Delft
Location	Delft, The Netherlands
Year	1998
Architect	Mecanoo
Typology	Library
Site Area	15 000 m²

Hanging bookcase. The interior of the library is characterised by an enormous spaciousness, thanks, particularly to the large, central hall. The atmosphere in the building is warm. The floor has the colour of the Sahara and the furniture is made of warm MDF board. The most requested books are housed in a four storey high bookcase hanging in front of a deep blue rear wall. The hard, metal ceiling is softened by the light coming from the columns. The lower part of the columns consists of gratings through which warm air is blown into the building. Via glazed facades and interior walls, a necklace of glazing placed around the cone, and the glazed roof at the apex of the cone, daylight penetrates deep into the building. The transparency that is thus created makes the building bright and surveyable.

Library Delft University of Technology. (n.d.). https://www.mecanoo.nl/Projects/project/27/Library-Delft-University-of-Technology

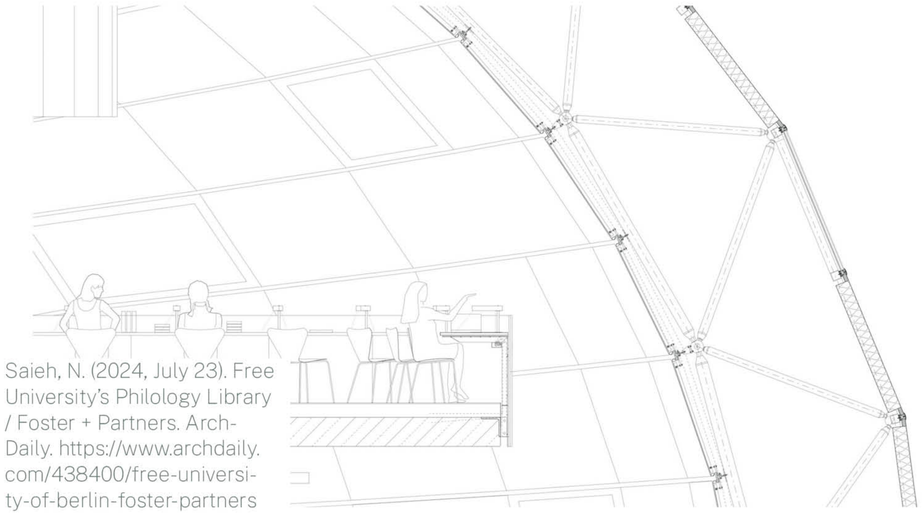
Pintos, P. (2024, July 2). Library Delft University of Technology / Mecanoo. ArchDaily. https://www.archdaily.com/958636/library-delft-university-of-technology-mecanoo



4.1 case studies

Project	Free University's Philology Library
Location	Berlin, Germany
Year	2005
Architect	Foster + Partners
Typology	Library

The double skin of the enclosure acts as an air duct and thermal buffer, ‘breathing’ by opening and closing different panels. In combination with the mass of the concrete structure, which is a passive thermal store that is further heated and cooled by piped water inside the structure, it acts in response to Berlin’s varying climate. In lower temperatures (below 6°c), the external skin closes like a cocoon and fresh air is drawn through an undercroft and warmed as it passes through by the thermal core. In moderate temperatures (above 16°), a mix of fresh and recirculated air is cooled by the core. While for 60 percent of the year, the library can be entirely naturally ventilated by opening various panels and using controlled fresh air drawn in through the undercroft. During the day the library is entirely naturally lit. These factors mean that the library will consume 35 percent less energy than a comparable building.



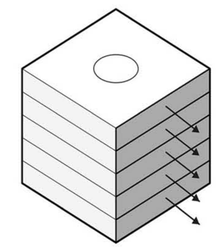
Saieh, N. (2024, July 23). Free University’s Philology Library / Foster + Partners. ArchDaily. https://www.archdaily.com/438400/free-university-of-berlin-foster-partners



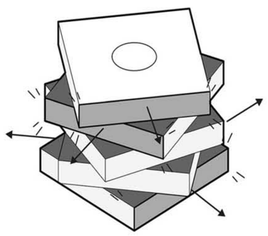
4.1 case studies

Project	Portlantis
Location	Rotterdam, Netherlands
Year	2025
Architect	MVRDV
Typology	Educational, Cultural, Industrial
Site	3352 m^2

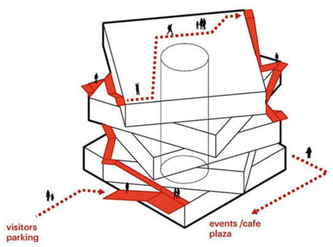
The shape of the building is a direct response to the activities taking place inside and out: each floor is square in plan and has a large panorama window that frames a different view of the surroundings



Block
one continuous material



Turn towards the views
cantilevers and terraces emerge



Route to the roof:
an attractive and inviting route, with an accent color, continuing over the roof and into the landscape

MVRDV. (n.d.). MVRDV - Architects. https://www.mvrdv.com/projects/466/portlantis



4.1 case studies

Project	Rolex learning center EPFL
Location	Lausanne, Switzerland
Year	2010
Architect	SANAA
Typology	Education, University
Site Area	8,000 m²
Floor area	37,000 m²

One of the most unique aspects of the building is the absence of physical boundaries. It is an unobstructed space, defined by its artificial geography. The separation between the different functions is based on the manipulation of the horizontal plane, lifting it or subtly reducing its height with undulations that delimit the different areas, emphasizing the sensation of openness and transparency without interrupting the spatial continuity and free-flowing relationship with the landscape. In this way, the silence zones are grouped together and separated from the rest by changes in height.



Viva, A. (2021, January 11). EPFL Rolex Learning Center, Lausanne-SANAA Arquitectura Viva. https://arquitecturaviva.com/works/epfl-rolex-learning-center-1



4.1 case studies



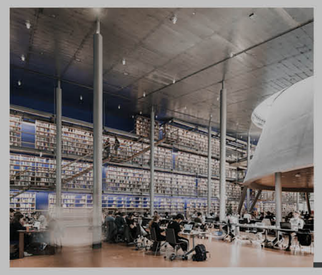
MAD

central spiral and circulation
new structure on top of the old



MVRDV

circulation outside of the building
from ground to top



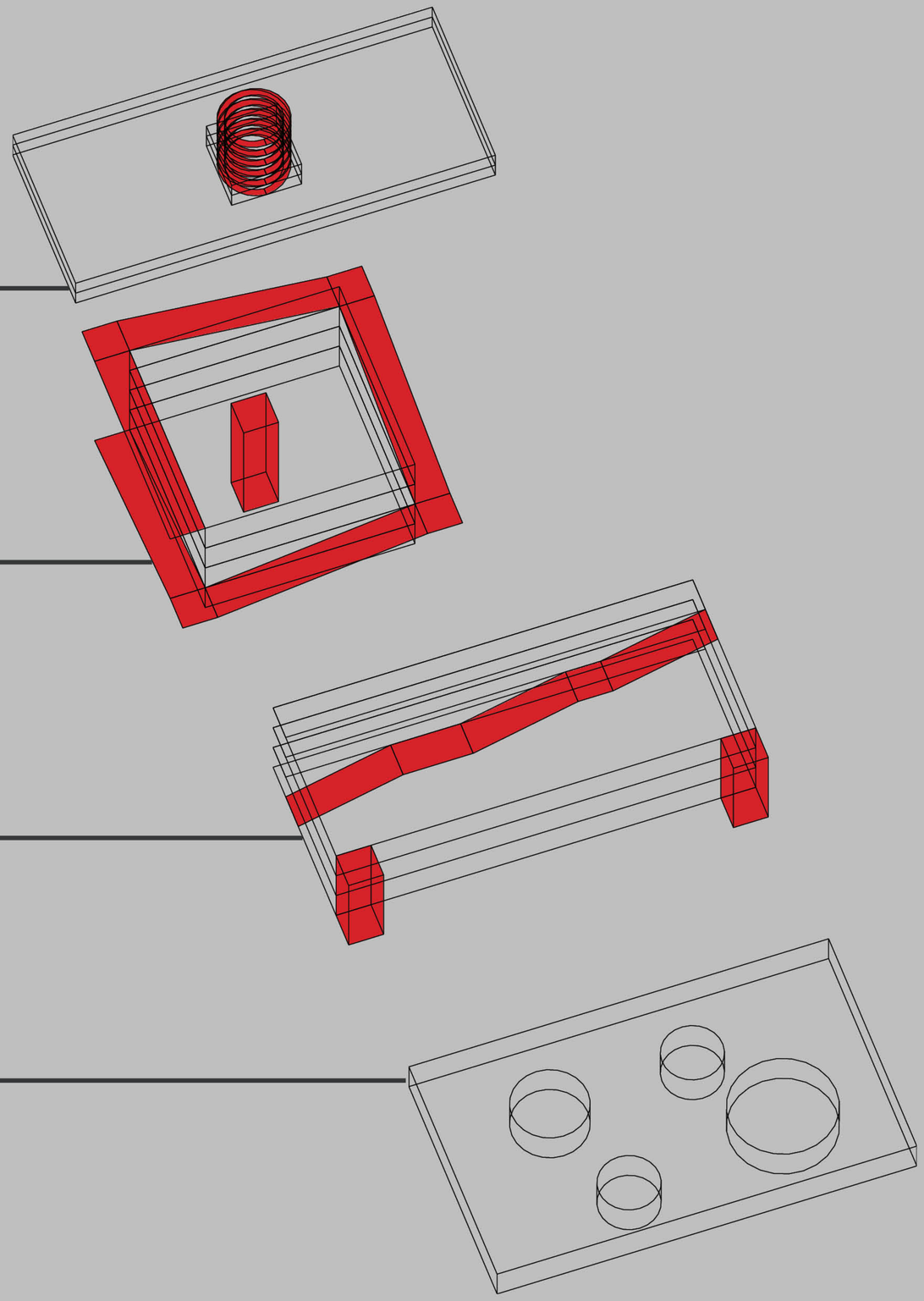
MECCANO

hanging bookcase
more open space



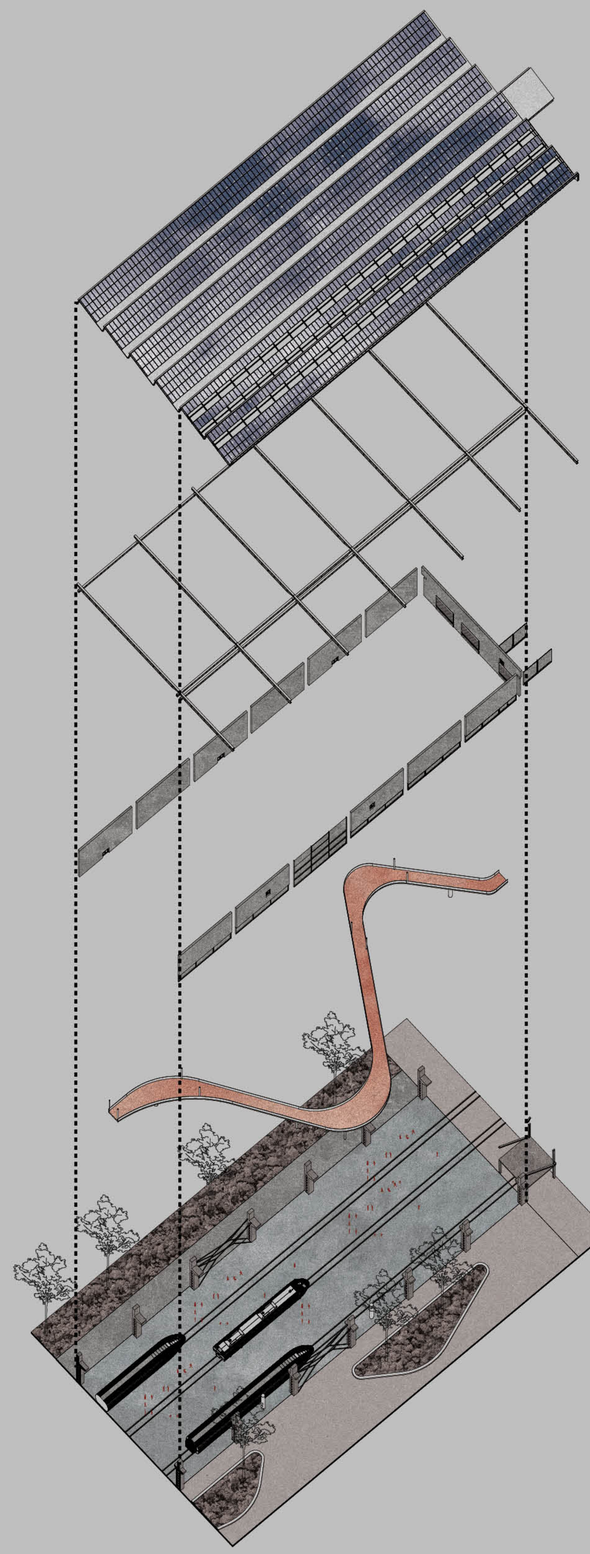
SANAA

seamless flow of space
all technical underground

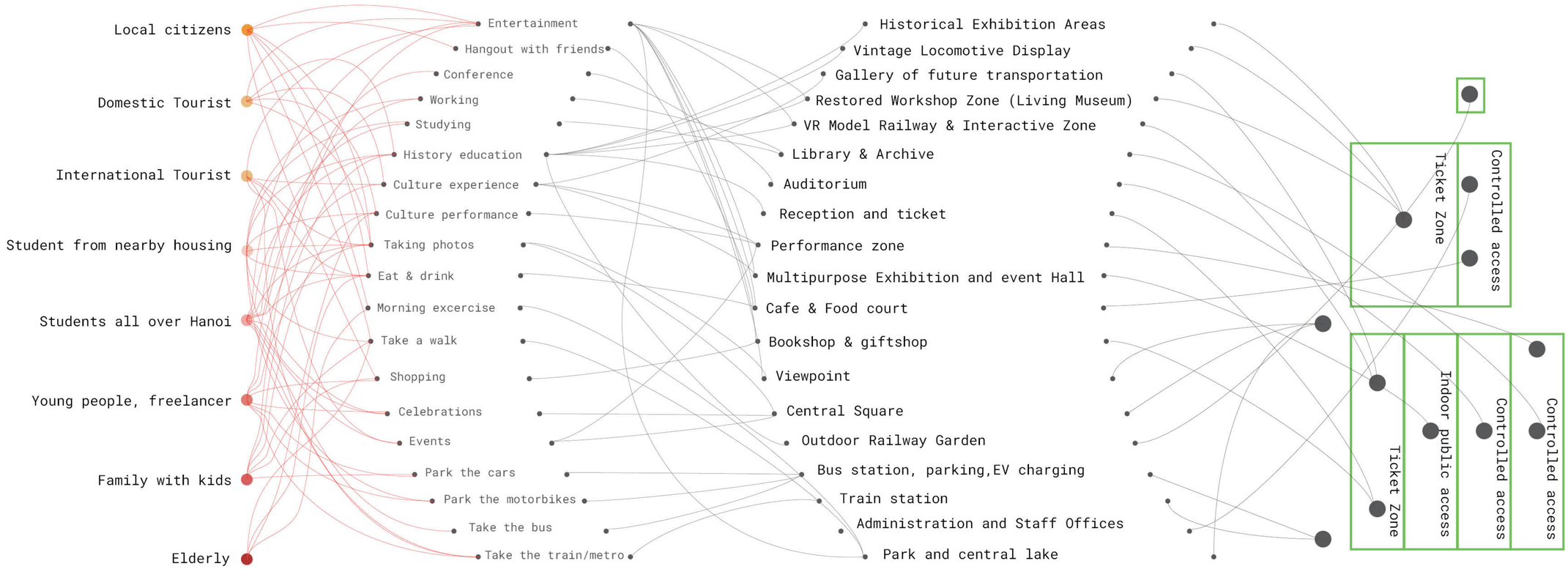


4.2 renovation method

The revitalization of the Gia Lam Train Factory primarily aims to transform the old structure into a vibrant cultural hub while preserving its distinct industrial character. The goal is to maintain the notable steel framework and authentic steel and concrete finishes to ensure structural integrity and retain the site's inherent character. Contemporary spaces, including galleries, workshops, and cafés, will be integrated beneath the original beams without altering the existing design. We will enhance the roof and façade with lightweight, sustainable materials to improve comfort and energy efficiency. Additionally, the design would convert disused railway tracks into public and recreational areas, featuring adaptable spaces designated for exhibitions, festivals, and community gatherings. The concept seeks to protect and restore authentic details and forms while integrating new functions and ideas and establishing a permanent, timeless cultural icon for Hanoi.



4.3 program


Local citizens
Domestic Tourist
International Tourist
Student from nearby housing
Students all over Hanoi
Young people, freelancer
Family with kids
Elderly
Entertainment
Hangout with friends
Conference
Working
Studying
History education
Culture experience
Culture performance
Taking photos
Eat & drink
Morning excercise
Take a walk
Shopping
Celebrations
Events
Park the cars
Park the motorbikes
Take the bus
Take the train/metro
Historical Exhibition Areas
Vintage Locomotive Display
Gallery of future transportation
Restored Workshop Zone (Living Museum)
VR Model Railway & Interactive Zone
Library & Archive
Auditorium
Reception and ticket
Performance zone
Multipurpose Exhibition and event Hall
Cafe & Food court
Bookshop & giftshop
Viewpoint
Central Square
Outdoor Railway Garden
Bus station, parking,EV charging
Train station
Administration and Staff Offices
Park and central lake
Ticket Zone
Controlled access
Ticket Zone
Indoor public access
Controlled access
Controlled access

4.4 master plan

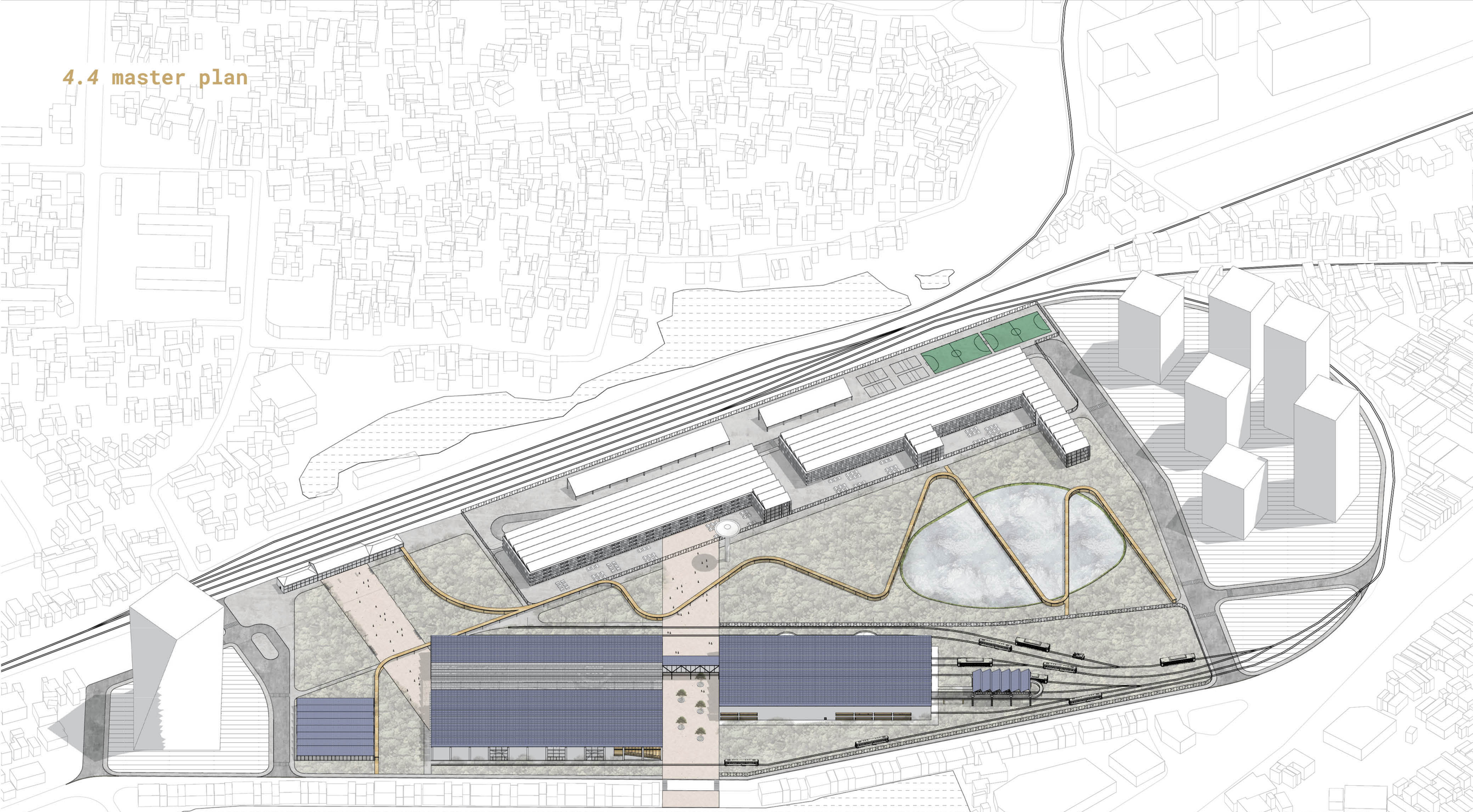


figure 1 General axonometric of Gia Lam Train Factory proposed master plan

4.4 master plan

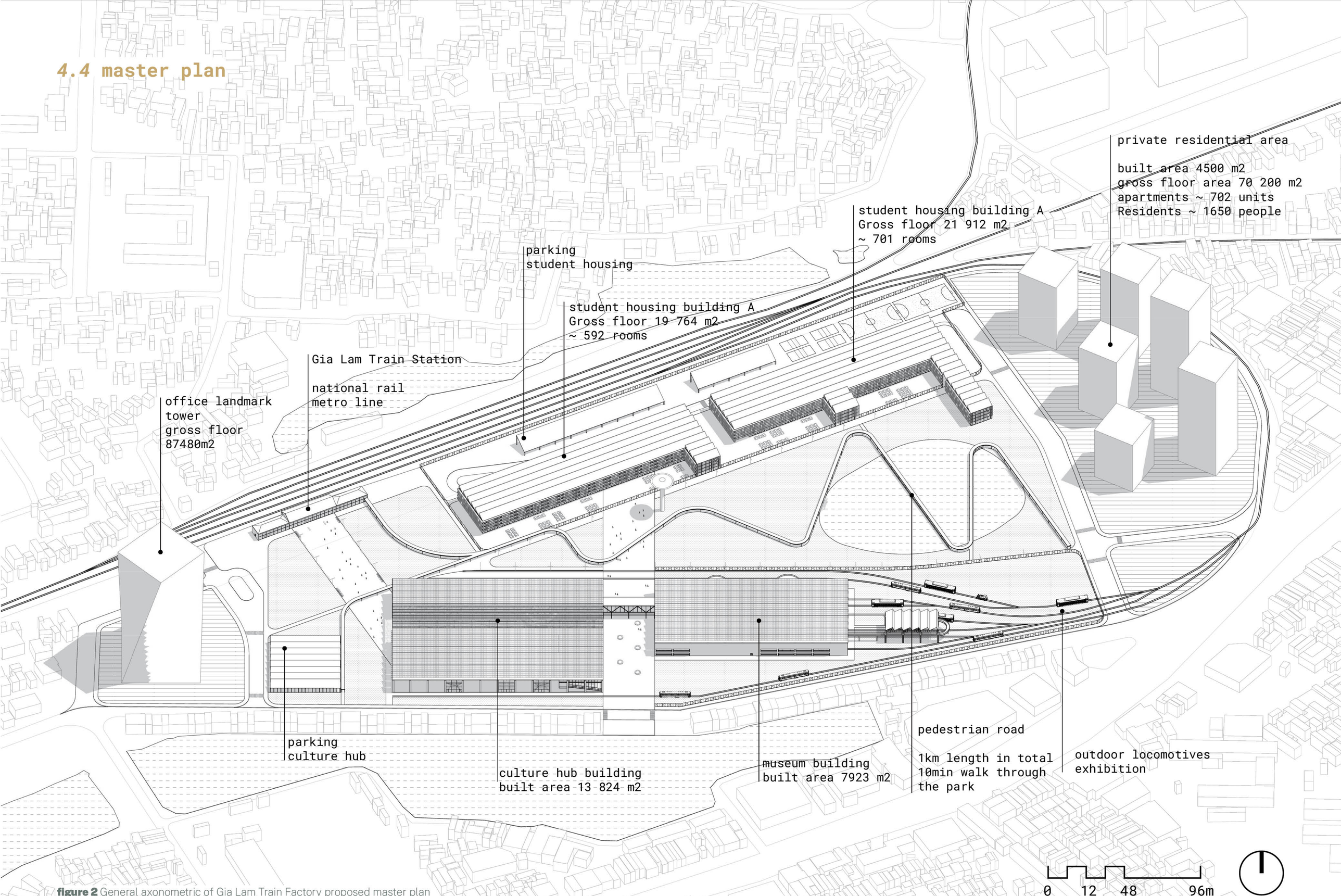
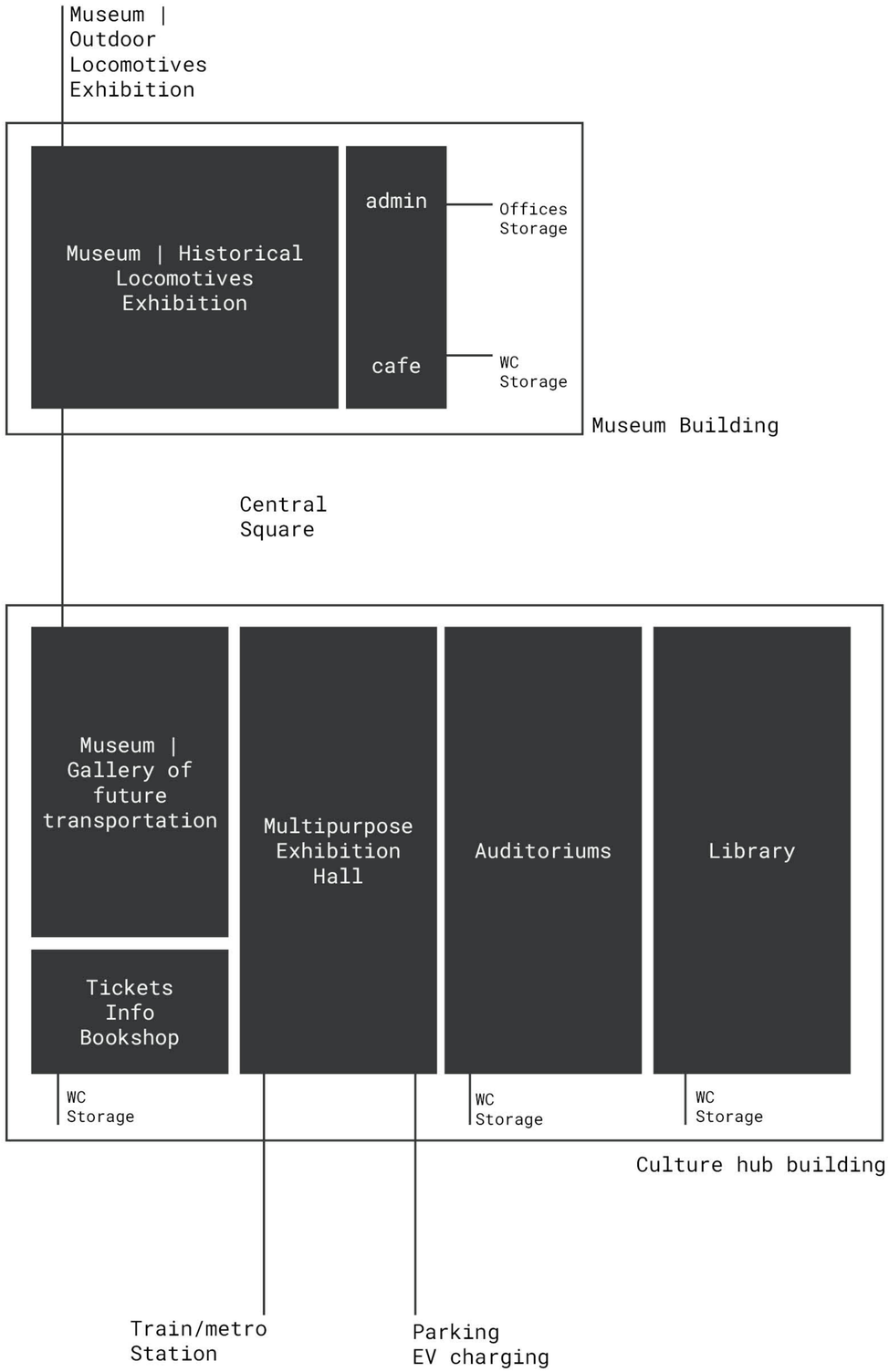


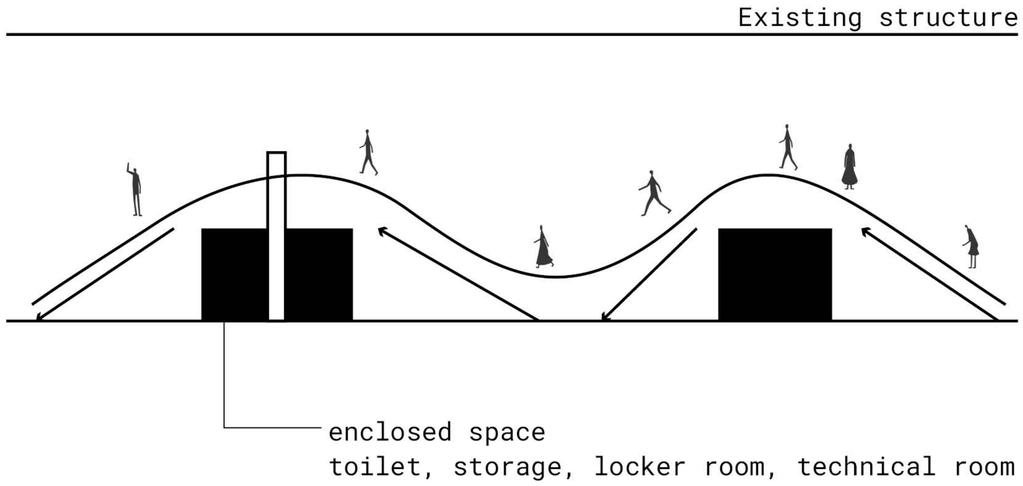
figure 2 General axonometric of Gia Lam Train Factory proposed master plan

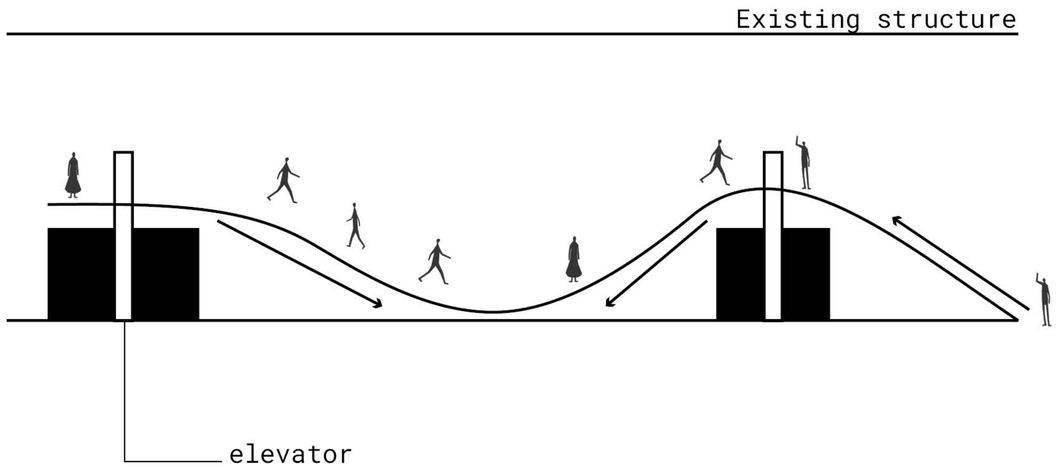
4.4 master plan



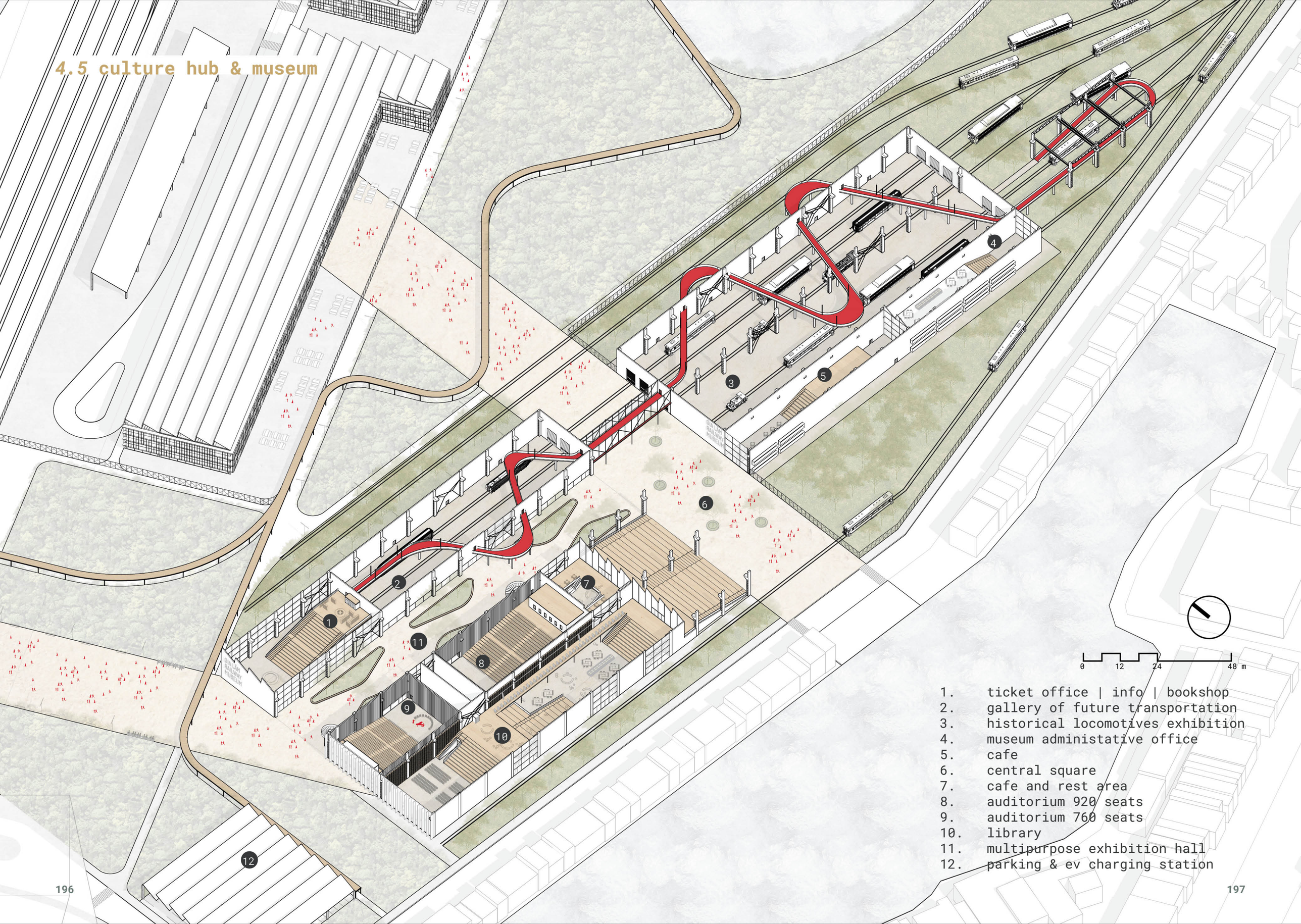
4.5 culture hub & museum





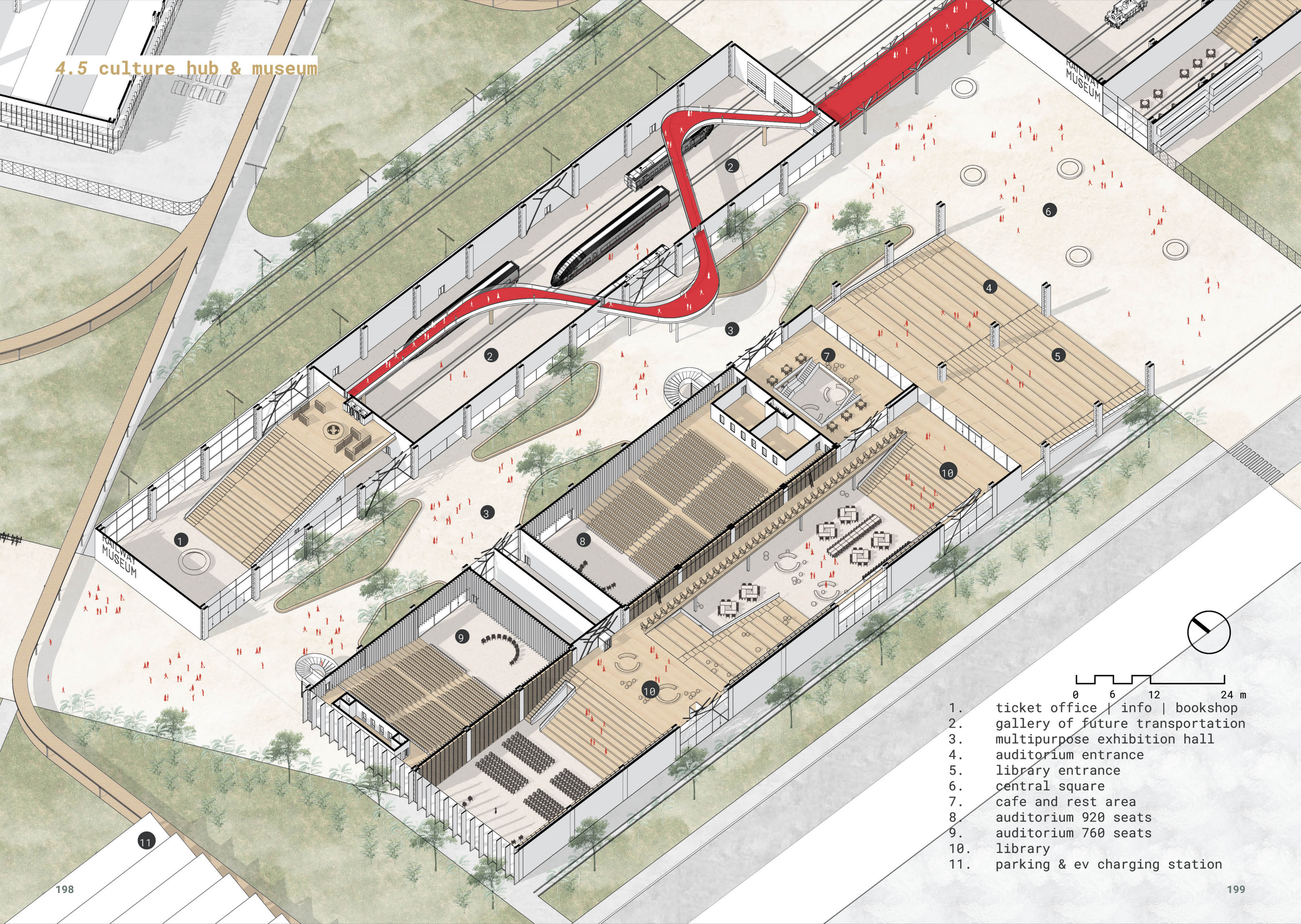


4.5 culture hub & museum



1. ticket office | info | bookshop
2. gallery of future transportation
3. historical locomotives exhibition
4. museum administative office
5. cafe
6. central square
7. cafe and rest area
8. auditorium 920 seats
9. auditorium 760 seats
10. library
11. multipurpose exhibition hall
12. parking & ev charging station

4.5 culture hub & museum



1. ticket office | info | bookshop
2. gallery of future transportation
3. multipurpose exhibition hall
4. auditorium entrance
5. library entrance
6. central square
7. cafe and rest area
8. auditorium 920 seats
9. auditorium 760 seats
10. library
11. parking & ev charging station

museum entrance

ticket office
information desk
bookshop & souvenir

locker
room

toilet

toilet

gallery of future transportation

museum entrance

multipurpose exhibition hall and event space

toilet

toilet

auditorium 760 seats

backstage

auditorium 920 seats

storage

toilet

toilet

rest area
cafe

auditorium main entrance

talk show space

toilet

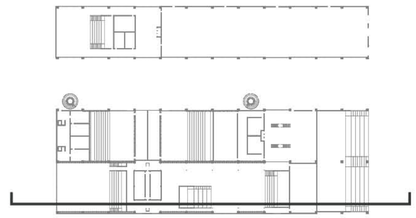
toilet

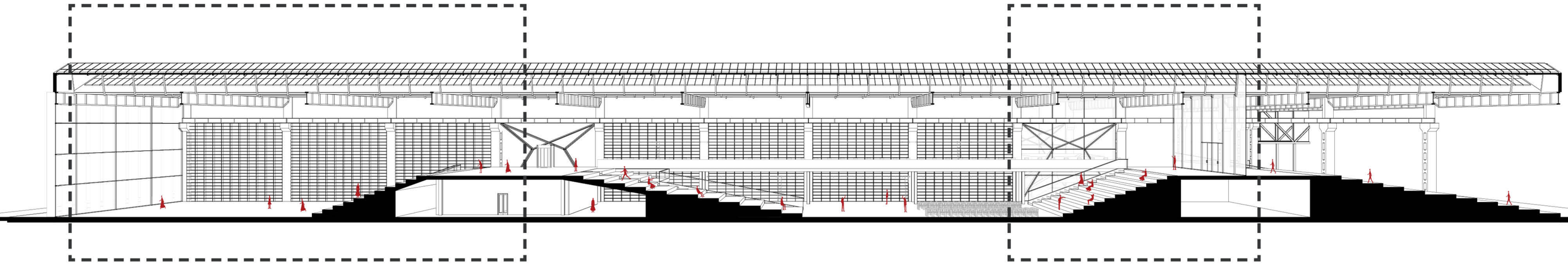
library

locker room

library main entrance

0 3 6 9 12 24 m

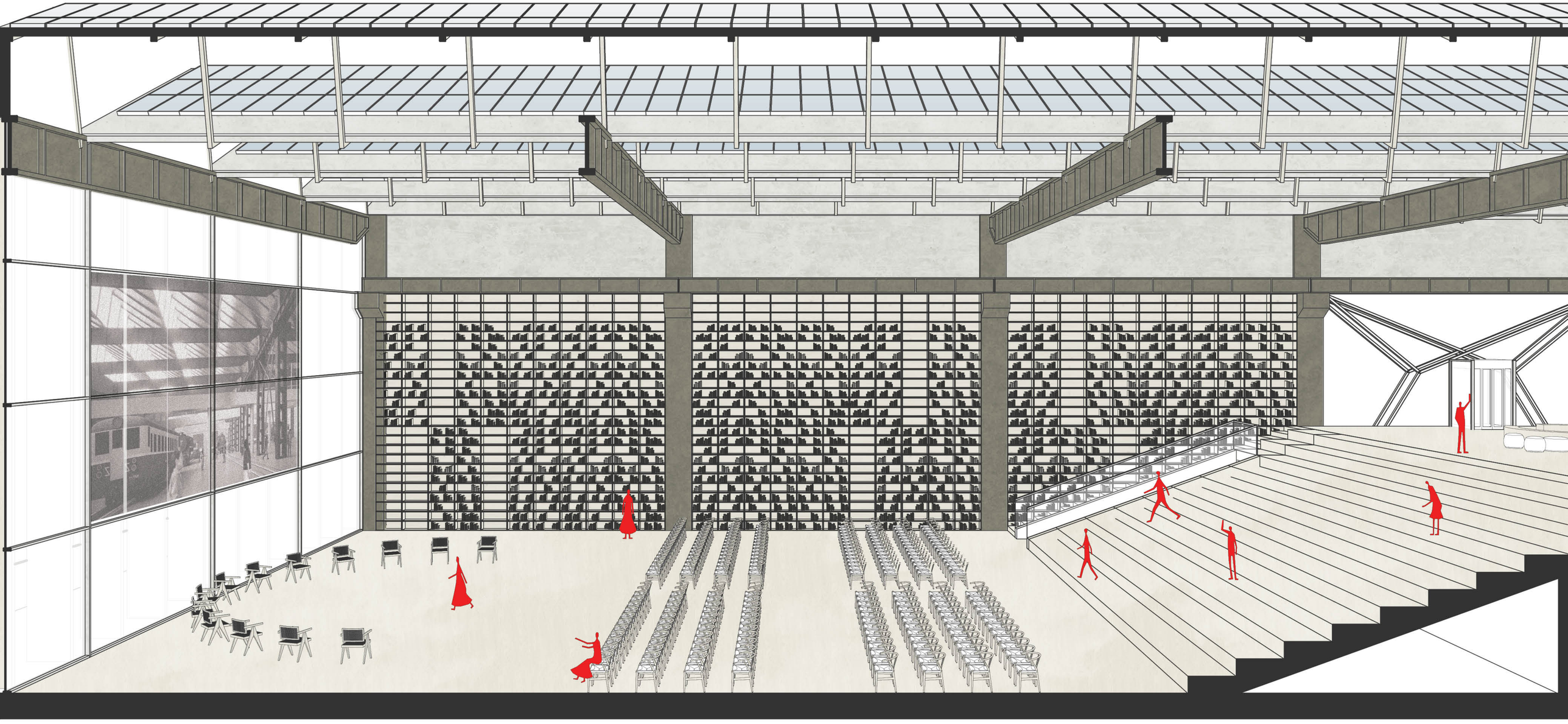




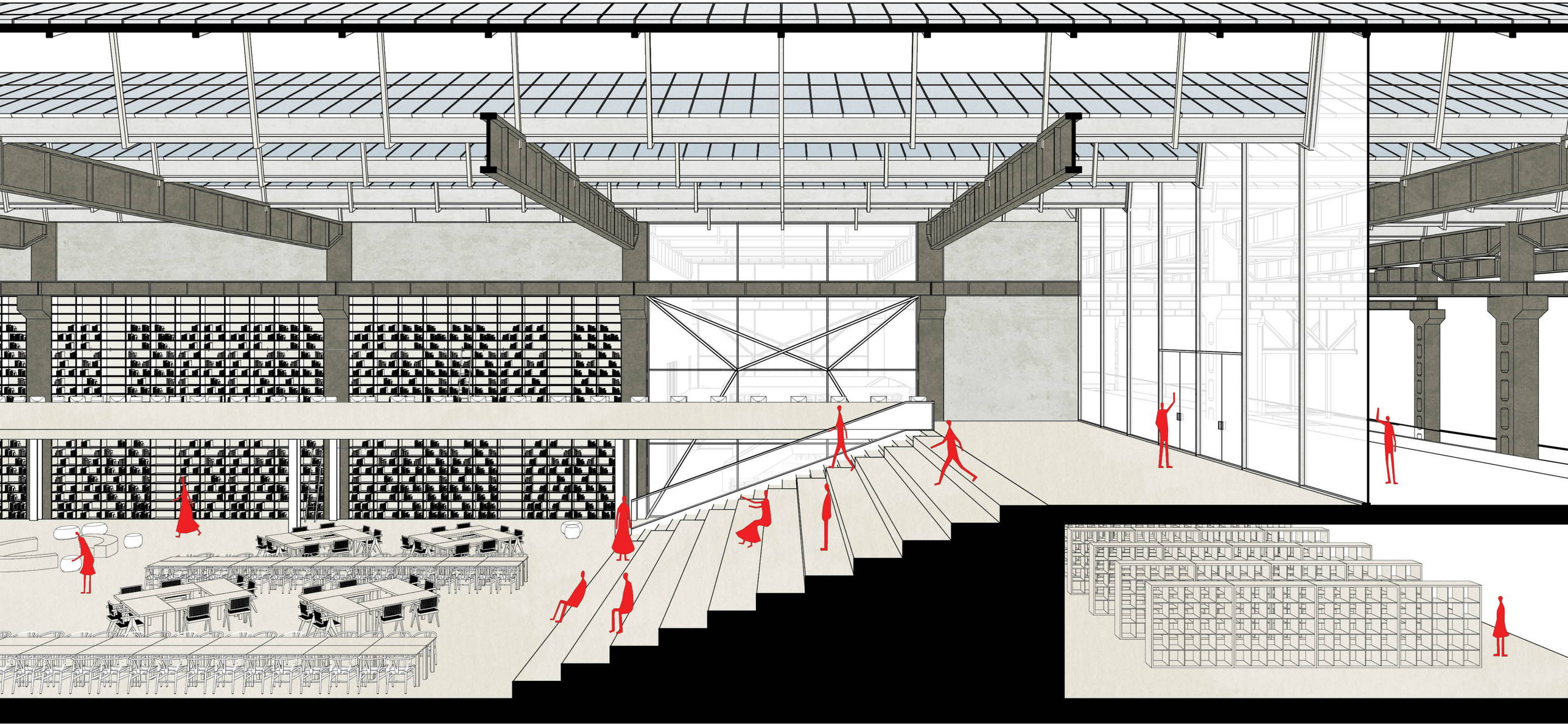
callout 1

callout 2

section A | library

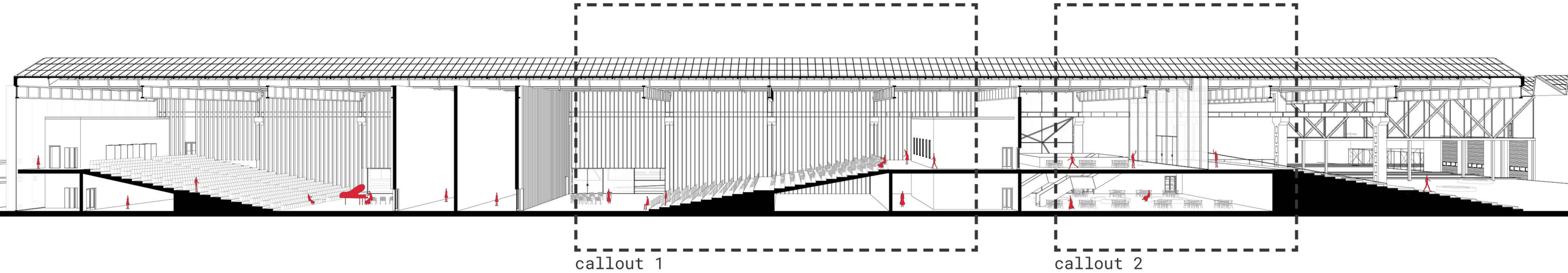


callout 1 | section A | talk show, event area

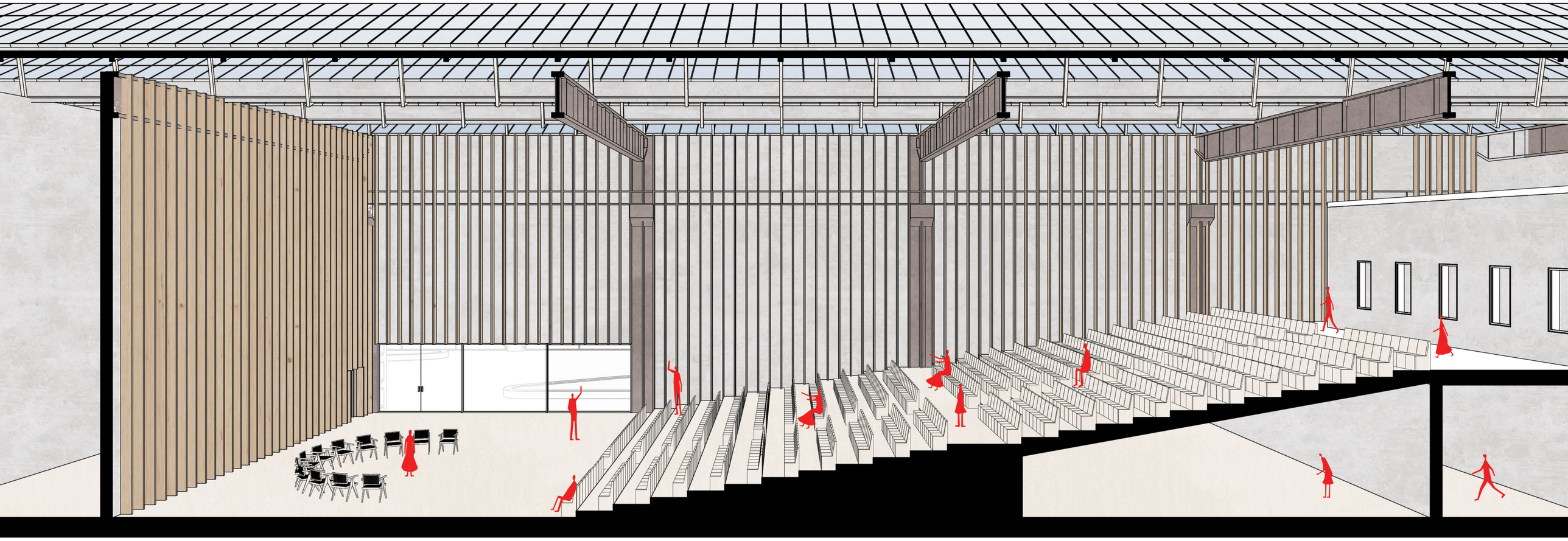


callout 2 | section A | library

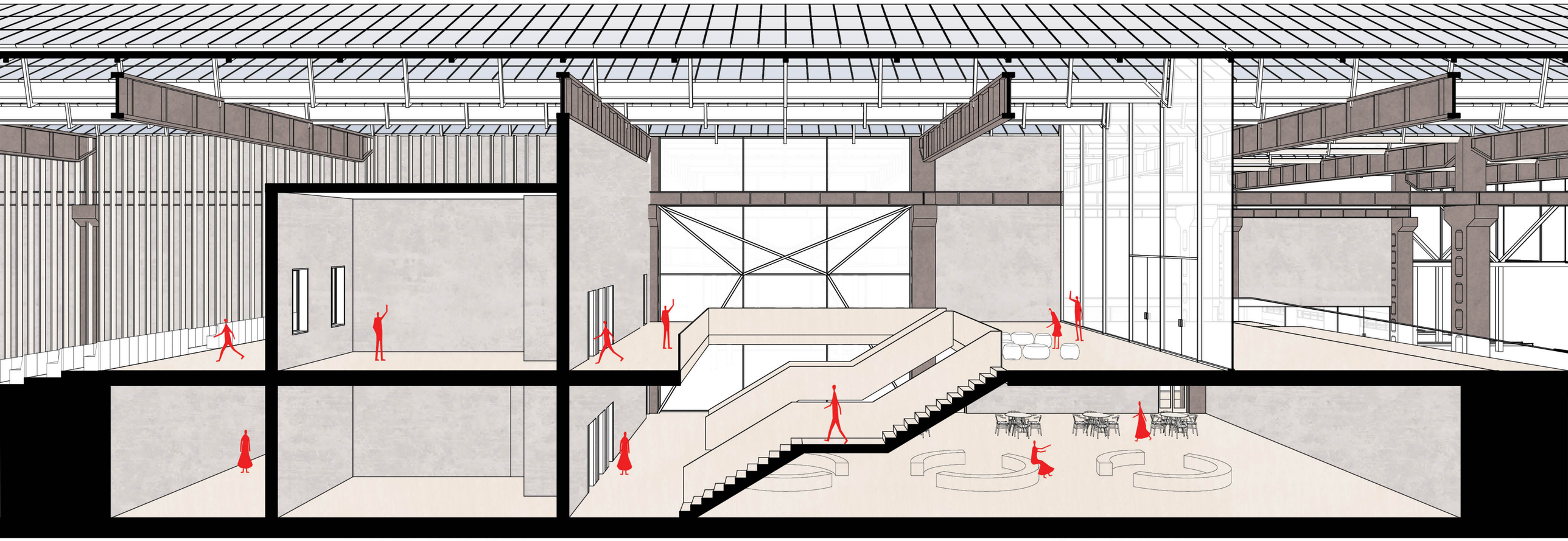




section B | auditoriums



callout 1 | section B | 920-seats auditorium



callout 2 | section B | auditorium entrance

4.6 visual narrative

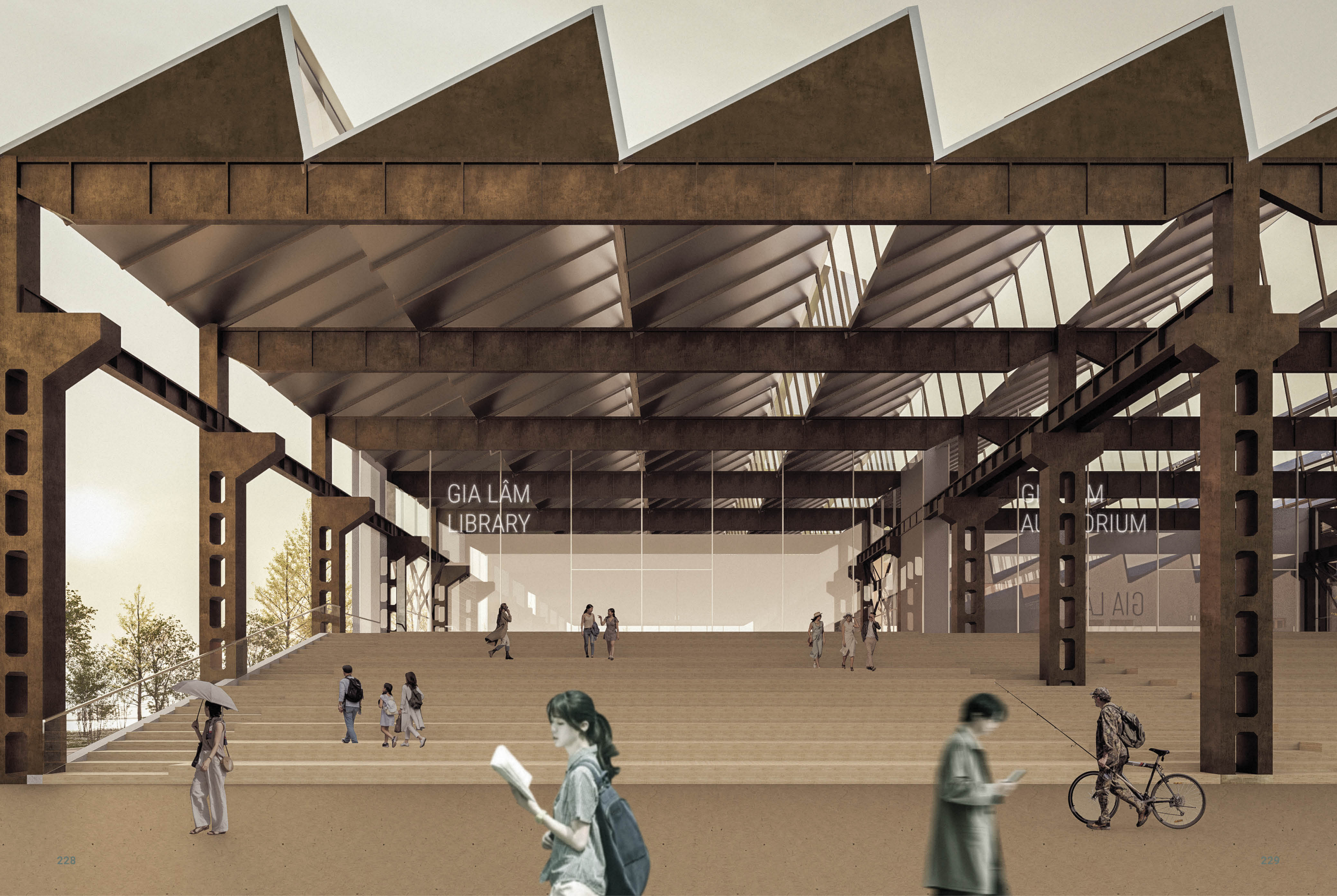



GIA LAM
RAILWAY
MUSEUM




hyperloop and the future of railway
shinkansen speed 300km/h


GIA LÂM
RAILWAY
MUSEUM


GIA LÂM
LIBRARY



epilogue

In the end, there are thousands of possibilities for this large 20-hectare site in Hanoi. This option could be considered one of the best, depending on whom you ask. But the final purpose is to push the transformation of Hanoi, which has not been a super great city to live in, to becoming a more livable and environmentally friendly city. This research aims to show the city officials and the people of Hanoi one of the reasonable ways to transform this precious plot of land that is left in the city. Without being too dramatic or too cheap, balance between stakeholders and the people benefits. Overall, architecture is one of the languages that most people can easily understand.

2024-2025

Ha Trung Hieu NGUYEN