

Conserving Industrial Architecture in Asia: Problems and Prospects

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Abstract: The debate on industrial heritage in Asia is directly related to the history of industrialization and modernization process that happened during the colonial period in many Asian countries. Rapid economic and urban development in Asian countries have put a lot of pressure to the efforts to conserve, even the significant industrial heritage, due to ignorance, economic greed, speculative development, etc. The article is attempted to look into the issues related to the reasons for conservation and the problems for the conservation efforts using some cases in Singapore and Indonesia to pin-point the direction for the theoretical and practical discourse in the conservation of modern industrial Architecture in Asia.

Keywords: industrial heritage; modernization process; Asian modernism

1. Industrialization in Asia

Industrialization in Asia is as old as the civilization itself, from of the development of metallurgy and mass production of objects and weaponries in China in 3000 BCE, to factories producing traditional utensils, foods, firecrackers, and ships, that still surviving until today across Asian countries. Ocean-going vessels from China, Ryukyu, India, Arabia, Nusantara, and Oceania were carrying and exchanging industrial goods produced in the factories, workshops, and kilns in various parts of Europe, Africa, Asia and the Pacific. The evidences of industrial architectural forms from this period are buried in the archaeological sites around the world.

The intensification of industry during the European colonization period in Asia especially happened after the seventeenth century, when building materials like bricks and ceramic tiles were began to be produced locally in the colonized land. Until the seventeenth century, bricks that was produced in Europe were brought as ballast in ships to the colonies around the world, such as Melaka and Batavia, to construct forts, churches, warehouses, and houses in the earlier period of colonization in Asia.

Lime mixed with sand, water, often added with volcanic ash, gypsum, brick dust, egg-white, or sugarcane, was used for plaster to stick the bricks and to cover the walls. These materials were obtained from natural sources. Load-bearing walls or timber frame structures were used as the main building structures to carry the load from roof and floors to the ground. Building height and span were limited due to the limitations of the materials' properties. The limitation was surpassed using concrete as the main building material and structural system.

2. Modernization of building industry for Asian modernization

Concrete requires Portland cement, produced through industrial process that requires complex processes and factory buildings. The availability of cement since the nineteenth century has changed the building and construction landscape in the colonies in Asia.

A cement factory was established in Ilha Verde, Macau in 1886, then it was moved to Hong Kong in the 1930s. The French built Hai Phong cement plant in 1899. The Dutch set up the first cement factory in Indarung, West Sumatra, Indonesia in 1910. King Rama VI of Thailand founded Siam Cement factory in 1913. The British established Burma Cement Company in 1935. Denmark was the main supplier of the cement machineries, like Indarung and Burma. The proliferation of cement factories across Asia was fuelled by the construction boom of infrastructures (such as irrigation canals, bridges, harbours, dams), civil and military buildings. These cement factory buildings in Asia were adopting building-envelop typology of utilitarian steel structure architecture with concrete and brick walls, covering the cement production machineries.



Figure 1. Old machineries on the old part of Indarung Cement Factory, West Sumatra, Indonesia (by the author, 2009).



Figure 2. Remains of the circular dome at Indarung Cement Factory (by the author, 2009)

Breweries were built in China (Qingdao, 1903), Dutch Netherlands Indies (Batavia and Medan, both in 1929 – followed by “Java Beer” factory in Surabaya in 1931), also in Vietnam, India, Singapore, and other colonies in Asia. Different from cement factory, the equipment and machineries for beer making process are mostly kept in enclosed space. The old Qingdao Beer Brewery was built in German brick classical architectural style like factories in four-season Europe, using German industrial technology. The period of early nineteenth century in tropical Southeast Asia was marked by the architecture that adapted to the environment, combining modern architectural style and materials with tropical vernacular architectural language. Larger pyramid roof or steeper pitch roof were used to absorb the heat, cooling shadow was formed by wider eaves and verandas, and many openings on the walls was provided to achieve temperature comfort inside the building by cross ventilation.



Figure 3. Beer Factory Surabaya, East Java, Indonesia, during demolition process after the factory was relocated in 1988 and the site was converted into commercial complex since 2000 (by the author, 1999)

Whilst many industrial buildings from the colonial period in Asia could not survive economic, urban, and technological developments and being demolished or changed beyond recognition, but some are surviving due to the recognition of its historical significance, heritage values, or economic potentials.

The Old Ford Motor Company in Upper Bukit Timah Road was the place where the British surrendered to the Japanese army on 15 February 1942. The factory building with Art Deco façade was Ford’s first motor car assembly plant in Southeast Asia, built in 1941. Before the war, the factory was used by the British Royal Air Force to assemble fighter planes. Subsequently the Japanese took over the factory and used it as the first military headquarter, then it was taken over by Nissan motor company to assemble military trucks and other vehicles for Japanese military during the occupation. After the war the Ford Motor Company resumed its operation from 1947 until it was closed down in 1980 and subsequently abandoned. The building was gazetted as National Monument on the 64th anniversary of the surrender of Singapore on 15 February 2006, and was turned into an exhibition gallery and archival repository called “Memories at Old Ford Factory”. The only part that has been “preserved” (or technically “restored”) from the original factory building is the Art Deco façade and the boardroom where the surrender took place. The rest are new structures, including a large contemporary box structure near the road entrance.

Saint James Power Station was built between 1924 and 1927 as Singapore's first coal-fired power plant supplying electricity to shipyards, industrial buildings, and residences around it. The main three buildings were a steel framed structure supported by reinforced concrete piles with brick walls and Edwardian red-bricked façade. The roof structures were covered with asbestos corrugated sheets. The power station was closed in 1962 due to its incapability to fulfill the increasing demand of electricity, then the complex was used as a commercial warehouse by the Port Authority of Singapore between 1982 and 1992 before it was abandoned. The buildings were converted into a multi-concepts entertainment hub and nightclub in 2006. The building façades were restored and its interior were refurbished to house 9 clubs and 3 restaurants.

The term "Preservation" and "Conservation" are used differently in Singapore, although in practice both are almost the same. "Preservation" is used for buildings (or parts of it) with National Monument status, while "Conservation" is for any other buildings and districts that are listed for rehabilitation, adaptive re-used, or reconstruction. "Façadism" is endorsed as the easiest way to balance the preservation of the exterior architectural style, while allowing exploitation of the economic potential within the building behind the façade.

One typical example of a conserved and adaptive-reused industrial building is Khong Guan Biscuit Factory at MacTaggart Road No 2. It was the former headquarter of the famous Khong Guan biscuit firm established in 1947 and considered as a landmark at the middle of MacTaggart industrial area (one of the earliest post-war industrial estate in Singapore. It is a three-story modernist structure with the lower floor is used as office, storeroom and shopfront for the biscuit company, while the upper floors were used as home for the family members who own the company until 1960s. The conservation status was given in 2005 to keep most of the exterior features, but the interior has been gutted to make way for the new rental offices and light-industry tenants.

3. Conserving Industrial Heritage in Asia

Industrial heritage is inherently "local" as it is specific to a site and a community, but at the same time "global" because of the connections that was established through shared investment, technology, and consumption. This simultaneous duality between local and global is the nature of our industrial heritage. In Asia, the industrial heritage is placed within the context of colonial, post-colonial, rapid economic development, and urbanization process, all within a very short period since the end of World War II.

mAAN Seoul Declaration 2011 on Industrial Heritage stated that Asian industrial heritage past is an interrelated process of production, transfers, and consumption through a complex network involving multiple political entities and different geographic locations. One aspect of this complexity comes from the painful association with economic exploitation through colonialism and imperialism.

In Asia, conservation and preservation of buildings and sites are often considered as hampering progress, trapping the economic potential, or anti-development. Therefore, pragmatic approach by conserving the façade or building envelope and allowing changes in the interior and redevelopment of other parts of the site, are seen to be a good compromise. This approached is considered as better alternative than demolished and rebuild policy.

Recognizing, understanding, interpreting, and conserving industrial architecture and site as heritage is still a challenge in Asia. Many of modern industrial heritage in Asia, unlike in many parts of the post-industrial Europe or US, is still alive and very much integrated in the physical and cultural landscape today, but it has been put under continuous and rapid changes especially since 1970s.

The term "conserving modern heritage" itself is an oxymoron or contradictory, since "modernism" is associated with functionalism, rationality, new materials, openness to innovation, timeless, and always "new". Modern industry, which has been an inseparable part of Asian modernity and modernization process, is associated with technology and progression. Certain technology and machineries became redundant due to latest demands and newer technologies, likewise the industrial buildings.

Thus conservation of modern industrial heritage shall be viewed as a process of managing change, rather than a way to freeze physical artefacts. It is not possible to freeze things because everything changes. If we want to keep buildings and sites from the point of view of ecology and sustainability, then we need to embrace the idea of recycling and reusing the old building stocks, to extend its physical life by adaptive reuse while keeping some of the tangible architectural features and intangible heritage values as much as we can.

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