The Brickmaking Industry in Kuala Lumpur in the Late Nineteenth Century

Shapiza Sharif and Arba’iyah Mohd Noor

Abstract
Kuala Lumpur was primarily a mining centre in the nineteenth century, but there were other significant economic activities as well. As the city grew, so did the demand for construction materials. Although small compared with mining, the brick-making industry helped change Kuala Lumpur from a small village to a substantial city. This article explains how brick-making developed, and examines its significance.

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Keywords
brickmaking, buildings, houses, factories, machinery, Kuala Lumpur, urban development, construction materials
Introduction

Following a series of destructive fires in 1881, the Selangor State Council took steps to ban the use of wood and thatch in construction in Kuala Lumpur. To meet the demand for bricks created by the new regulations, brick-making works developed around the city, and bricks played a significant part in shaping the city as it expanded in the decades that followed.

Factors That Led to the Brick-making Industry in Kuala Lumpur

In January 1881 a fire, believed to have started when an oil lamp fell inside an opium shop, killed three people and left 500 homeless. Another conflagration in August of the same year destroyed twelve houses. The damage caused by these fires was extensive because many houses were flimsy structures made of wood and attap, and residents stored flammable materials, including fireworks and firecrackers, in their homes for use during festive seasons.

Many buildings in Kuala Lumpur were poorly constructed and insubstantial. In April 1884 a severe storm caused considerable damage to buildings in and around Kuala Lumpur. In May of the same year a wing of a newly constructed police barracks in Kuala Lumpur suddenly collapsed, and 92 buildings, including the house of Yap Ah Loy, leader of the Chinese community, collapsed during a heavy rainstorm in December.

At the time, Kuala Lumpur had no specific guidelines for building construction and these incidents highlighted serious deficiencies in construction methods and materials. After the fire in January 1881 a group of Chinese businessmen sent a letter to the British Resident, Bloomfield Douglas, asking that steps be taken to improve the situation, calling specifically for a prohibition on setting off fireworks and firecrackers on Chinese New Year in Ulu Selangor and Kuala Lumpur because of the risk of fire. In September, after the second fire, the Selangor State Council introduced regulations prohibiting the building of wooden shophouses in the business area of Kuala Lumpur, and regulating the distance separating residential dwellings, as well as construction materials. Each block could contain a maximum of twelve houses, and blocks had to be separated by at least 20 feet. Only non-flammable materials such as stone and mud bricks could be used; thatch-roofed verandas were banned. Ceilings had to be more than 15 cm thick and made of non-flammable material. Owners of wooden houses could be fined $5 per month for failing to follow the new rules, especially if they were located in the business area. The administration also widened roads and divided

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1 Ahmad Kamal Ariffin (1993: 23–4).
3 Report on storm damage in Kuala Lumpur, SSF, 29 April 1884, MISC 817/84, pp. 1–2.
4 Copies of reports from Messrs. Spence Moss & Bellamy with reference to the fall of the completed wing of the near Police Barracks, in SSF, 8 May 1884, KL 890/84, pp. 8–14.
the city into zones, such as an opium shop zone, a business zone and a food court zone, to reduce the risk of fire.

In 1884 the Resident of Selangor, Frank A. Swettenham, called for structures in Kuala Lumpur to be rebuilt using stones, tiles and bricks, and required that new houses use these materials. A notice dated 15 September 1884 required owners to get approval from the Superintendent of Public Works before undertaking any building work or modifying existing premises. The regulations stipulated that buildings must be made from bricks, and roofs from tiles rather than nipah palm leaves. At the time, there were just four houses with tile roofs in Kuala Lumpur, but by early in 1885 there were 218 brick houses and two years later the number had risen to 518. The state government offered credit with low interest rates to residents of Kuala Lumpur to encourage them to build brick houses. Failure to switch from wood to brick carried a penalty of up to $100, which was a substantial sum at the time. Owners of business premises sought a delay in enforcing the requirement to change building materials, and the owners residing in attap houses near Batu Road and Batu-Maxwell Road on government land sought a postponement until late 1895, but clearly the regulations had a positive effect, and led to an expansion of the brick-making industry. By 1886 there were 15 brick factories and 6 limestone factories to meet the demand for bricks in Kuala Lumpur. The brickmaking factories used timber in the furnaces to fire the bricks. The choice of fuel was important for the industry because high temperatures produced better quality bricks that lasted longer.

Apart from reducing the risk of damage from fire and storms, officials thought that substantial brick buildings would help attract overseas investment. Swettenham’s successors, Sir William Maxwell, Resident of Selangor 1889–1892, and J. P. Rodger, Resident 1896–1902, called for the use of bricks in the construction of public buildings, and many of the city’s iconic structures, such as the building housing government offices (now Bangunan Sultan Abdul Samad) and the Railway Station, are made of bricks.

Twentieth Century Impressions of British Malaya refers to Rodger’s concern for conditions in Kuala Lumpur, saying ‘He found it a hotbed of filth and dirt; he left it well advanced on the road to modern cleanliness and sanitation.’

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9 Proclamation: That from and after this date no new house shall be erected within the town of KL unless built of bricks, 15 Sept. 1884, in SSF, KL 1592/84, p. 8.
12 Proclamation: That from and after this date no new house shall be erected within the town of KL unless built of bricks, in SSF, 15 Sept. 1884, KL 1592/84, p. 8.
13 Attap houses situated on Government land state that they are willing to purchase the land to erect substantial brick building but pray that their houses may be allowed to stand till the end of 1895, in SSF, 22 Jul. 1895–13 Aug. 1895, CHINESE MISC 3774/1895, pp. 4–5.
17 Suleiman and Lokman (1999: 44).
18 Ibid.
19 Wright (1908: 846).
Illus 1: Detail of the Bangunan Sultan Abdul Samad

Illus 2: An Excerpt of the Notice on the Restriction of Bricks as Building Material for Building New Houses. [Source: Selangor Secretariat File KL 1592/84. Courtesy of National Archives Malaysia, Accession Number 1957/0003564.]

Illus 4: Layout of the Location of Four Attap House Owners Who Appealed for the Postponement on Bricks Control. [Source: Selangor Secretariat File, CHINESE MISC 3774/1895. Courtesy of National Archives Malaysia, Accession Number 1957/0054758]
The Brick-making Industry in Kuala Lumpur

Bricks became the construction material of choice in 1884 partly because stone, formerly the main non-flammable building material, was in short supply. The shortage eased by 1886, but bricks were preferred for construction at locations in the centre of the city such as Market Street, Ampang Road, High Street and Pudu Road. When inviting tenders for bridge construction for Sungai Klang and Gombak, the state government called for the use of bricks.20

Bricks had been made in Kuala Lumpur since 1878, and one of the leaders of the Chinese community, Yap Ah Loy, owned a brick factory that exported bricks to Singapore and Hong Kong. The regulation of building materials created a growing demand that existing brickworks could not satisfy, and government officials encouraged European and local companies to open brick factories.21 As the industry grew, the government received many requests for land to set up brickworks in the city. For example, an entrepreneur named Dorasamy asked for a piece of land to build a factory for brick and tile production near Jalan Batu and Sungai Gombak, while A. B. Rathborne was given 10 acres of land for brick production, and later asked for 5 acres more.22

Tenders submitted for supplying bricks to be used on government projects in Selangor provide details of the industry, including the price of bricks offered to the government. Any company that submitted bids had to send samples for evaluation, and the competition between companies provided a degree of quality assurance in brick production.23

<table>
<thead>
<tr>
<th>Measurement of Bricks and Tiles</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot;</td>
<td>$3.50</td>
</tr>
<tr>
<td>14&quot;</td>
<td>$4.75</td>
</tr>
<tr>
<td>10&quot; x 6&quot;</td>
<td>$4.00</td>
</tr>
<tr>
<td>81/2&quot; x 41/2&quot;</td>
<td>$2.25</td>
</tr>
</tbody>
</table>

Source: Mr. T. H. Hill Applies to Supply the Government of Selangor with bricks at a fixed price, in Selangor Secretariat File KL 718/83.

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20 Tender notice for the construction of four brick piers for pipe bridges over Gombak and Klang Rivers, in SSF, 30 Oct. 1894, PWD 4927/1894.
23 Asking for stamped samples of bricks & tiles, in SSF, 31 Jul. 1883, PWD 227/83; Tender for supply of Bricks, in SSF, 9 May 1894–10 May 1894, SECRETARIAT 2589/1894.
Messrs. Hill & Rathbone Company operated the largest factory in Brickfields and Damansara producing bricks and tiles, and in 1884 they won a contract to supply bricks and related materials to the city of Kuala Lumpur. The prices were based on size, and initially they were asked to supply 5,000 tiles measuring 10” x 6” and 550,000 tiles measuring 8½” x 4½” for roofing. Later, they supplied 1,000 tiles measuring 12” x 12” and 550 measuring 14” x 14” for flooring.24

![Illus 5: Bricks, Tiles and Wood Supply Contract between Messrs. Hill & Rathbone Company and the Public Works Department in Kuala Lumpur. [Source: Selangor Secretariat File PWD 1671/84. Courtesy of National Archives Malaysia, Accession Number 1957/0003611.]

Because planned developments required a massive number of bricks, the Public Works Department (PWD) set up its own brickworks in 1894.25 The launching of this factory sped up production and made it possible to carry out a large-scale building programme in Kuala Lumpur.

While bricks were initially made by hand, the introduction of brick-making machinery brought a number of changes that allowed bricks to be made more efficiently.26 Machine-made bricks also required less labour, a point that was

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25 Tate (1987: 45).
demonstrated when machines sold by H. Clayton, Son & Howlett’s reduced the time and the number of workers needed for brick-making in Kuala Lumpur. A ‘Single Chamber Machine’ required just one employee and produced 5,000 bricks per day. A ‘Double Chamber Machine’ could produce 6,500 units per day, but two workers were needed to operate the machine. As the cost of production fell, bricks became cheaper, and the number and quality of bricks manufactured per day increased as equipment was upgraded, with production rising from 10,000 to 16,000 to 25,000 units per day. Moreover, the new machinery produced better quality bricks, and by 1892 machines could make bricks and tiles measuring 6”, 9”, 12” and 15”.


27 Brick Manufacture K. Lumpur, in SSF, 30 Nov 1892, PWD 8122/92, pp. 8–10.
Illus 7: Advertisement for a Machine That Could Manufacture 3 Different Bricks Measurement in the Quantities 10,000, 16,000 and 25,000 per day. [Source: Selangor Secretariat File, PWD 8122/92. Courtesy of National Archives Malaysia, Accession Number 1957/0035877.]

Illus 8: Advertisement for an Improved Brick-making Machine. [Source: Selangor Secretariat File, PWD 8122/92. Courtesy of National Archives Malaysia, Accession Number 1957/0035877.]
Kuala Lumpur was built on low-lying, swampy land in the valley of the Klang River. The eastern part of the city was a catchment area for the surrounding highlands, and the city experienced heavy rainfall throughout the year. Accordingly, it required an extensive network of drains to remove excess water. The government required that drains and sewers be built with an average depth of around 20 feet, with the exact measurement adjusted to suit the length and width of individual roads\(^{28}\) (see Table 2). Fixed measurements for bricks made it easier to meet the specifications for drains, and the demand was strong. The Selangor State Railway, for example, used 1,050,000 bricks measuring 9“ x 4½“ x 3” to build drains.\(^{29}\)

### Table 2: The Measurement and Total Number of Bricks Used in Construction of Drains and Sewers in Kuala Lumpur

<table>
<thead>
<tr>
<th>Road</th>
<th>No. of Bricks</th>
<th>Measurement of Bricks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damansara Road</td>
<td>500</td>
<td>(not specified)</td>
</tr>
<tr>
<td>Sultan Street</td>
<td>46</td>
<td>12“ x 12“</td>
</tr>
<tr>
<td>Junction of Clarke Street &amp; Jalan Raja</td>
<td>19</td>
<td>12“ x 12“</td>
</tr>
<tr>
<td>Petaling Lane</td>
<td>134</td>
<td>12“ x 15“</td>
</tr>
<tr>
<td>Holland Road</td>
<td>99 (\frac{1}{3})</td>
<td>12“ x 15“</td>
</tr>
<tr>
<td>Petaling Street Lane</td>
<td>60</td>
<td>12“ x 12“</td>
</tr>
<tr>
<td>Gombak Lane</td>
<td>37</td>
<td>12“ x 12“</td>
</tr>
<tr>
<td>Sultan Street</td>
<td>60</td>
<td>12“ x 24“</td>
</tr>
<tr>
<td>Petaling Street</td>
<td>60</td>
<td>12“ x 24“</td>
</tr>
</tbody>
</table>


Machine-made bricks were identical and did not need to be cut to size manually. The clay used to manufacture bricks did not require expensive tempering, but was simply mixed with water and passed through a pug mill to reduce it to a plastic state. It was then pressed downwards into a chamber where a revolving arm forced it through dies and onto the rollers of a cutting frame that could produce either perforated or solid bricks.\(^{30}\) J. M. Gullick noted that bricks made in this way were ‘produced in larger quantity, better quality, and at lower cost’.\(^{31}\) Using bricks as building material not only saved on cost but also gave the impression of better quality.

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\(^{30}\) Brick Manufacture K. Lumpur, 30 Nov 1892, SSF PWD 8122/92, p. 8. The machines were made of iron and driven by tooth-gearing … [or] by a belt.

\(^{31}\) Gullick (1992a: 30).
The brick-making industry in Kuala Lumpur transformed the appearance of the city, as buildings and houses made from nipah and attap were replaced with brick structures. The magnificent building that housed government offices, now Bangunan Sultan Abdul Samad, was built in 1897 and required 4 million bricks, 2,500 barrels of cement, 18,000 pikuls of lime, 5,000 pounds of copper, 50 tons of steel and about 30,000 cubic feet of timber. The secretariat building was designed by A. C. Norman. Sir Charles Mitchell, Governor of the Straits Settlements in 1894 when it was in the planning stages, stipulated that it should be made of bricks (Gullick, 1992a: 27–38).

Factories in the Brickfields area supplied bricks for the building, for the Pudu Gaol (built in 1891–5), and for other government construction projects.

Conclusion

Brick-making became a major industry in Kuala Lumpur after conflagrations in the city led the British administration to control the use of flammable building materials. The principal non-flammable materials that were available were bricks and tiles, and the restrictions created a strong stimulus for the brick-making industry in Kuala Lumpur. Improved machinery for making bricks helped develop the industry, giving it the capacity to provide the bricks needed for large-scale infrastructure projects.

Abbreviations

AR  Annual Report
JMBRAS Journal of the Malaysian Branch of the Royal Asiatic Society
KL  Kuala Lumpur
KS  Kuala Selangor
MISC  Miscellaneous
PWD  Public Works Department
SSF  Selangor Secretariat Files

References


The secretariat building was designed by A. C. Norman. Sir Charles Mitchell, Governor of the Straits Settlements in 1894 when it was in the planning stages, stipulated that it should be made of bricks (Gullick, 1992a: 27–38).

For a proposal to supply all timber, bricks and tiles required for the new Gaol building, see SSF, 10 Jul. 1884–11 Jul. 1884, MISC 1309/84; Gullick (1992a: 30).

Tate, D. J. M. (1987), Kuala Lumpur in Postcards 1900–1930: from the collection of Major David Ng (Rtd) and Steven Tan, Petaling Jaya: Fajar Bakti.
