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SYSTEMATIC INVENTORY FOR HERITAGE SHOPHOUSE FACADES IN IPOH, PERAK, MALAYSIA

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Abstract

Nowadays, many heritage shophouses remain intact in major urban areas in Malaysia, including Ipoh, Perak. These architectural assets are significant as they portray the glory and achievements of Ipoh over the centuries. However, some shophouses face inappropriate façade changes due to improper conservation activities performed on the heritage properties. These situations have resulted in the phenomenon of inconsistency elements of building facades. Therefore, this paper focuses on two aspects regarding heritage shophouse facades; first, developing the taxonomy of architectural styles according to the tangible elements, and second, classifying and grading the architectural styles. Then, an inventory form named eFakad was developed as a tool to evaluate 65 shophouses at Jalan Sultan Iskandar, Ipoh. The result shows that 49% of facades are in excellent condition, but the rest of the facades need to be conserved and maintained, particularly roof finishes, windows and doors. By applying eFakad inventory form, the documentation and conservation management of the heritage shophouses can be done systematically. Consequently, the stakeholders will be aware of the main problems faced by the heritage shophouses through the inventory record and appropriate actions can be taken in preserving the integrity of the facades. Additionally, the local authority may use the information to improve the existing conservation guidelines.

***Keywords**:* Heritage shophouse, façade, architectural styles, inventory, grading

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INTRODUCTION

The conservation of heritage buildings requires strong desire and dedication to preserve their cultural, historical and architectural significance so that they can serve as part of the economic indicator (Nur Shahirah & Junainah, 2021). Conservation embraces all acts that extend the life and basic functions of buildings (Arazi et al., 2010; Fielden, 2003) from being destroyed or changed in an inappropriate manner (A. Ghafar, 1997) and involves minimal intervention approaches (Tan et al., 2016). For decades, modernisation has caused the demolition of heritage buildings for urban renewal projects (Karam et al., 2017), unequivocal process of gentrification and regeneration (Pheng et al., 2014) which compel heritage shop owners to maintain the aesthetic and economic balance of the buildings (Zalina & Rodzyah, 2012) and subsequently losing their sense of place (Nur Raqena et al., 2020). Consequently, the vestiges of facades have disappeared gradually (Ju & Saari, 2010). New and old façades are sandwiched in between buildings (Shahrul et al., 2013). Some of the old buildings were left neglected, abandoned, dilapidated (Tan et al., 2016), in a state of neglect (Ummu Liyana & Noordeyana, 2021), and deterioration (Robiah & A. Ghafar, 2011) due to poor maintenance management (Arazi et al., 2010).

According to Toong and Utaberta (2015), there is an increasing number of interventions on the elements of building façades that ignore the architectural characteristics (Noorfadhilah & Shamzani, 2012; Tan, 2014; Shuhana et al., 2012, Pheng, 2014; Nur Farhana et al., 2017) due to improper activities performed on the façades and failure of following the correct rules during renovation (Omar & Muna Hanim, 2016; Karam et al., 2017; Toong & Utaberta, 2015). The situation has created a phenomenon of inconsistency among the elements of building façades that caused visual problems and has negatively impacted the historical images and identity of the place (Omar & Muna Hanim, 2016). The situation happens due to the absence of guidelines regarding the façade's design (Wan Hashimah & Shuhana, 2005), lack of technical information (Tan et al., 2016) and knowledge in building conservation. Other issues that need to be highlighted are lack of inventory (Omar and Muna Hanim, 2016) and recorded data which can be understood and kept comprehensively (Tan & Fujita, 2014). Hassani (2015) stated that any conservation project needs to be understood and data about the current physical condition of the object should be recorded before any action and intervention that might change the object are carried out. Furthermore, cultural heritage is ageing and there is no guarantee the heritage will last. Thus, the shophouses should be well documented since the data may be useful in the future for conservation purposes.

One of the most crucial parts of an inventory is classifying the architectural styles of the façades. What parameters and formulas can be used to classify the architectural styles of facades, particularly in Ipoh? Thus, this research aims to answer this question and develop a tool that includes a taxonomy

matrix of architectural styles as the parameter for classifying and grading the architectural styles of heritage shophouse facades in Ipoh for a systematic inventory, planning permission and documentation purposes.

RESEARCH BACKGROUND

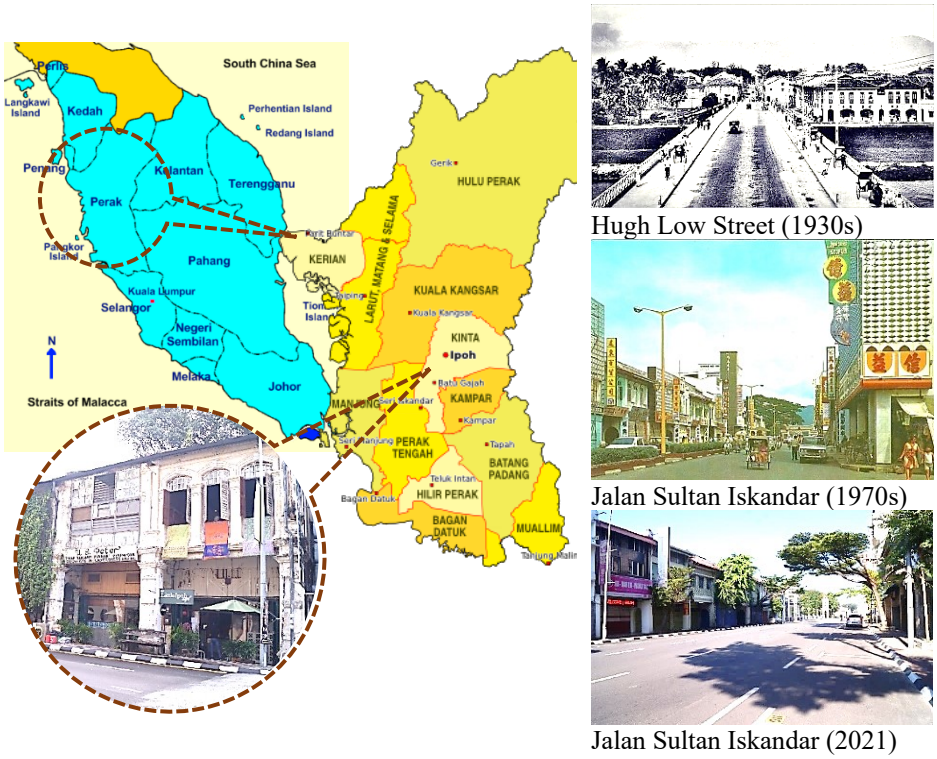

Figure 1: Heritage area of Ipoh, Perak.

Ipoh is the capital city and the administrative centre for the state of Perak Darul Ridzuan. It is located at the North of Peninsular Malaysia, approximately 200km from Kuala Lumpur (Refer to Figure 1). The city was founded in 1874 with approximately 100 attap houses and a small market. However, in 1892, a great fire broke out and destroyed most houses (Hin et al., 2013). The town then was rebuilt with brick buildings and shophouses that became the architectural asset of Ipoh. The shophouses are unique as they reflect various architectural styles from the early 1880s to the 1970s. In 1988, Ipoh was granted city status by the Sultan of Perak. On 18th December 2014 due to the provision of Town and Country Planning Act (Act 172), approximately 183.2 hectares of Ipoh City which consists of Core Zone (79.70 hectares) and Buffer

Zone (175.50 hectares), has been gazetted as Heritage Area (Ipoh City Council, 2014). Thus, 1,022 shophouses in the core zone have been listed to be preserved and conserved according to conservation principles. This research focuses on rows of shophouses at Jalan Sultan Iskandar, previously known as Hugh Low Street (Refer to Figure 1), which are very significant in the development of Ipoh.

LITERATURE REVIEW

Heritage shophouses

A shophouse is usually listed in the category of mixed-use and commercial buildings. Gurstein (1990) stated that, due to its double function as residential on the upper floor and business on the ground floor, the shophouse classification is inclined towards the mixed-use category. Nowadays, most heritage shophouses are no longer occupied for residential purposes. Thus, commercial use is more appropriate. This long-narrow building consists of a façade, commercial area, air-well, dining area, kitchen, and bedroom on the upper floor. The most significant element is the design of the front façade as a medium to convey the era when it was built and the building's function. The heritage shophouse façade, therefore, is defined as a building element facing the street consisting of structural, enclosure, opening, fenestration and ornamentation (Burden, 1996, 2003; Wooi, 2015; Curl, 2006; Ahmad Sanusi and Shaiful Rizal, 2012).

Architectural styles of façade

Special Area Plan of Ipoh 2020 (Ipoh City Council, 2014) has recorded that 1,022 heritage shophouses in Ipoh have six major architectural styles: Transitional, Eclectic, Neo-Classical, Art Deco, and Early Modern and Modern spanning over a period from the 1880s until the 1970s. The architectural styles' typology and characteristics for nine (9) tangible elements of facade are illustrated and listed in Table 1. The tangible elements include; structural (beam and column), enclosure (roof and external wall), and opening (door, window and air vent), fenestration and ornamentation. These tangible elements are the parameters for the indicator in classifying the styles and grading the integrity level of the façades.

Table 1: Taxonomy matrix of architectural characteristics for heritage shophouse facades at Ipoh.

	Traditional			**Modern**	
Transitional (1890-1900s)	Eclectic (1890-1950s)	Neo-Classical (1880-1920s)	Art Deco (1925-1950s)	Early Modern (1940-1970s)	Modern (1970s)

Traditional		
Transitional	**Eclectic**	**Neo-Classical**
Used of timber for the upper floor beam. Engaged column at the upper façade and free-standing column below. Pitch roof with terracotta roof tiles. Wall is painted in pastel or white finishing. Some shophouses use timber wall at the upper floor. The door is two timber shutters, or vertical timber or metal folding panelling. Transoms light or fanlight infilled with glass, often combined timber carved or radiating bars. Two or three bay windows full-length shutters at the upper floor. Top part shutters has louvres, bottom part is a flat panel. Architrave framed the window openings sometimes with a keystone at the top. Some of the facades have full-width timber louvred shutters. Timber or steel lattice above door height along the wall at the ground floor for natural ventilation. Simple design with minimal ornamentation.	Used of timber for the upper floor beam. Engaged column at the upper façade and free-standing column below. Pitch roof with terracotta roof tiles. Bright colour painted on the wall. The door is two timber shutters, or vertical timber or metal folding panelling. Transoms light or fanlight infilled with glass are often combined timber carved. Two or three bay windows full-length shutters at the upper floor. Top part shutters has louvres, bottom part is a flat panel. Pilasters and architrave framed the window openings. Decorative plasterworks of flora motifs with various ethnic tradition influence.	Used of timber for the upper floor beam. Engaged column at the upper façade and free-standing column below. Cornice at the parapet, upper floor beam and column. Dentil below the beam cornice. Adaptation of Classical order such as fluted columns or pilasters. Pitch roof hidden behind parapet or a Grecian pediment. Wall is painted in pastel or white finishing. The door is vertical timber or metal folding panelling. Transoms light infilled with glass. Two or three bay windows full-length shutters at the upper floor. Top part shutters has louvres and sometimes infill with glass, bottom part is a flat panel. Architrave framed the window openings with a keystone at the top.

Cont'…

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Art Deco	Modern Early Modern	Modern
Reinforce concrete beam. Engaged column at the upper façade and free-standing column below. Pitch roof with terracotta roof tiles sometimes hidden behind high pediment or parapet wall. Granulated render known as Shanghai plaster applied on wall. Door is timber or metal folding panelling. Metal frame windows infilled with glass. Concrete shading devices above the window frame. Concrete air vent slots at the upper floor facade. Windows are arranged in group typically three sets. Geometric design highlights straight lines or forms arranged either vertically or horizontally. Flagpoles and relief writing date of building construction on the facade.	Reinforce concrete beam. Engaged column at the upper façade and free-standing column below. Pitch roof with terracotta roof tiles sometimes hidden behind parapet wall. Painted in shade colour or white finishing. Door is metal folding panelling. Two or three bays windows, used of glass and steel framework and sometimes with glass louvres. Horizontal and vertical reinforced concrete shading fin. Various shape of concrete air vent slots at the upper floor. Relief writing date of building construction on the facade. Devoid any decoration and craftsmanship.	Reinforce concrete for the upper floor beam. Five-foot walkway sometimes built without columns. Some building exceeds two storeys height. Flat roof is hidden behind the parapet wall. Common used of wall tiles. Metal folding panelling door for ground floor access and single-leaf door for upper floor access. Large glass window with steel frame. Front façade usually built without vent hole. Windows are arranged in group. Geometric design in cuboidal form. Devoid any decoration and craftsmanship.

Heritage Building Inventory

Developing an inventory is part of the process of preserving heritage buildings and cultural landscapes because identification and documentation are the first steps towards preservation (Thornes, 1992). Thus, the Special Area Plan of Ipoh City (2014) documentation was prepared to create an urban design that combines urban development and the conservation of heritage buildings. One of the important tasks stated in the report is that there is a need to prepare an inventory of heritage buildings to be used as the primary reference in; i) Planning and building control, ii) Preserving significant heritage buildings, iii) Mapping the history of the building and the area, and iv) Preserving cultural heritage and urban activities.

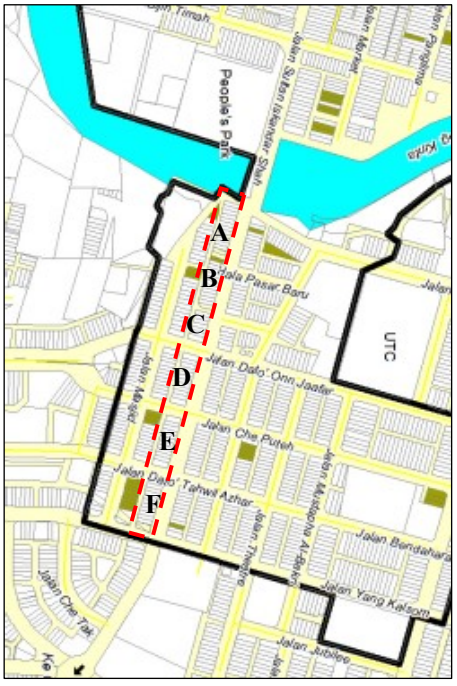
METHODOLOGY

The data for this research was collected using multiple methods. Firstly, related documents were reviewed to identify the architectural characteristics of the buildings whether they are Transitional, Eclectic, Neo-Classical, Art Deco, Early Modern and Modern. Data sources for the review were articles, books, dictionaries, and government reports ranging from local to international authors.

The relevant characters or parameters were finalised using thematic analysis: beam, column, roof, wall, door, window, air vent, fenestration and ornamentation to form a taxonomy of architectural styles (See Table 1). Secondly, the inventory form named 'eFakad' was developed with a specific mathematical formula to give the total value for each selection of architectural criteria. A pilot test for eFakad was then conducted. Thirdly, after a few improvements, fieldwork involving 65 shophouse facades (see Table 2) at Jalan Sultan Iskandar, Ipoh which represent a sample size of approximately 6.4% of the population (the total number of heritages shophouses at Ipoh is 1,022) was conducted. Finally, an analysis and report were prepared to complete this research paper.

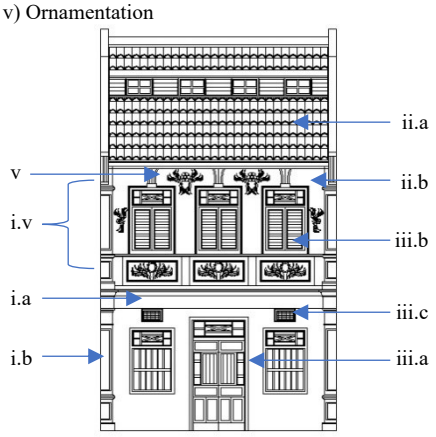
FINDING AND DISCUSSIONS

Table 2: Analysis of architectural styles of heritage shophouse façades at Jalan Sultan Iskandar, Ipoh, Perak.



Tangible Elements of Heritage Shophouse Facade

Main Tangible Elements	Sub-elements
i) Structural	a) Beam
	b) Column
ii) Building Enclosure	a) Roof
	b) Wall
iii) Opening	a) Door
	b) Window
	c) Air-vent
iv) Fenestration	
v) Ornamentation	



Architectural Styles	**Block**						TOTAL	**%**
	A	**B**	**C**	**D**	**E**	**F**		
Transitional	6	2	4	1			13	**20**
Eclectic				7	6	11	24	**37**
Neo-Classical							0	**0**
Art Deco		4					4	**6**
Early Modern	5	3	1	1	1		11	**17**
Modern		3		3	3		9	**14**

Others	1	1	2				4	**6**
TOTAL	**12**	**13**	**7**	**12**	**10**	**11**	**65**	**100**

The selected rows or blocks of heritage shophouses at Jalan Sultan Iskandar are shown in Table 2. Each block was coded from A (12 shophouses), B (13 shophouses), C (7 shophouses), D (12 shophouses), E (10 shophouses) and F (11 shophouses). There are nine (9) codes namely i.a, i.b, ii.a, ii.b, iii.a, iii.b, iii.c, iv and v which are used identify the elements of the facades that represent; structural (beam and column), enclosure (roof and external wall), and opening (door, window and air vent), fenestration and ornamentation. The design of each element portrays the character of the architectural style of the facade it depicts, as described in the taxonomy matrix of architectural styles (refer to Table 1). Therefore, it was found that the classification of architectural styles for heritage shophouse façades via eFakad is more systematic as the evaluation process is based on the architectural characters outlined in the taxonomy matrix. From the inventory, there are 13 (20%) shophouses of Transitional, 24 (37%) shophouses of Eclectic, 0 (0%) of Neo-Classical, 4 (6%) of shophouses Art Deco, 11 (17%) shophouses of Early Modern, 9 (14%) shophouses of Modern and 4 (6%) shophouses are of other styles or unidentified. Block F shows consistency in maintaining the same styles of facades followed by Block D and Block E. Other blocks portray a mix of architectural styles that require further research to be conducted to identify the reasons behind the dissimilar architectural styles within the same row of shophouses. The most common architectural style found at this road is Eclectic (37%).

Table 3: Analysis of architectural styles of heritage shophouse façades at Jalan Sultan Iskandar, Ipoh, Perak.

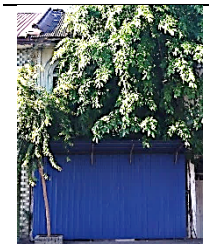
	Architectural Styles										**Total All Block Grade**		
Block	Block A			Block B			Block C						
Grade	A	B	C	A	B	C	A	B	C		**A**	**B**	**C**
Transitional	4	2		1	1		3	1			8	5	0
Eclectic											11	13	0
Neo-Classical											0	0	0
Art Deco				2	2						2	2	0
Early Modern	2	3		2	1		1				6	5	0
Modern				1	2						5	4	0
Others			1			1			2		0	0	4
TOTAL	**6**	**5**	**1**	**6**	**6**	**1**	**4**	**1**	**2**				
	Architectural Styles									**Total**	**32**	**29**	**4**
Block	Block D			Block E			Block F			**%**	**49**	**45**	**6**
Grade	A	B	C	A	B	C	A	B	C				
Transitional		1											
Eclectic	7				6		4	7					
Neo-Classical													
Art Deco													
Early Modern	1				1								
Modern	3			1	2								
Others													

TOTAL	**11**	**1**	**0**	**1**	**9**	**0**	**4**	**7**	**0**

The physical and design conditions of the heritage shophouse façade is graded according to its preservation level to measure its integrity in retaining the facade's architectural design. There are three grades; A, B and C. A - Very Good: The original architectural style of the facade is easily recognised as most of the significant elements are retain (Score 70-100); B – Good: Architectural style of the facade can still be recognised even if there is a significant element has been replaced by a new element (Score 40-69); and C - Poor Architectural style of facade is difficult to be identified as the significant elements have been redesigned, modified, or replaced (Score 1-39). From the analysis of the inventory, 32 (49%) shophouses are Grade A, 29 (45%) shophouses are Grade B and 4 (6%) shophouses are Grade C. Block D is the most preserved façade as there are 11 facades which are given Grade A. The data is shown in Table 3.

Four (4) facades are classified as Grade C or in poor condition. The styles of the facades is difficult to be identified as the significant elements have been modified or replaced (Score 1-39). Types of intervention on the facades according to their elements are shown in Table 4. Only 2 to 4 elements of the facades are preserved or deteriorated, whereby the designs of the elements are still in their original form. At least 5 to 6 elements have been replaced or are facing problems such as the façades are covered by vegetation, signage, wall panels or curtain walling, which is categorised as 'Others'. Thus, these problems caused the facades' inventory and assessment to be obstructed since the architectural styles of the façades cannot be identified and the streetscape is also affected.

Table 4: Photos of Grade C's facades.

Intervention	**(a)Block A**	**(b)Block B**	**(c)Block C**	**(d)Block C**
				
Preserved	Fenestration	Door, air-vent	Beam, door	-
Deterioration	Wall	Beam, column	Column, air-vent	Beam, column, air-vent
Replacement	Roof	-	-	Roof, door
Redesign	-	-	-	-

Others	Beam, column, door, window, air-vent, ornament	Roof, wall, window, fenestration, ornament	Roof, wall, window, fenestration, ornament	Wall, window, fenestration, ornament

CONCLUSION

All buildings, including heritage buildings, are ageing and facing intervention processes such as preservation, deterioration, replacement or redesign. In order to restore and conserve the original design of the heritage shophouses facades, there is a need to refer to complete data regarding the architectural styles and materials as outlined in the taxonomy matrix other than conservation approaches to maintain the design. It is believed that the taxonomy matrix has sufficient data as a basic design guideline in preserving the original form of heritage shophouse facades. Therefore, inventories and documentation are essential in the conservation procedure of the heritage building as a reference for conservation purposes in the future. In addition, theoretical and technological improvements in inventory technique and information seem necessary. To achieve the goal, it is recommended that the inventory form, eFakad, be applied in software such as Mapinfo or other relevant software to facilitate the local authorities in data search for each documented façades.

Based on the fieldwork analysis, 49% of the facades are classified as Grade A. Most are Eclectic styles. Even though they are classified in excellent condition, most of the facades have been through change at least once, such as roof finishes which has been changed from terracotta roof tiles to zink or asbestos and steel roller shutter at the entrance door are now used instead of timber panels. Facades which are classified as Grade B (45%) have gone through changes mainly on the roof, windows and entrance door. The windows, for instance, have been changed from traditional window frames to modern steel frames with dark glass infilled. This kind of improper action should be avoided as the windows are the most significant elements that can be seen from the roadside. In the presence of such information, the local authority can advise the building owners to do restoration and maintenance works to the affected elements. Four (4) facades are categorised as Grade C and need to be conserved before the integrity of the facade vanishes due to refurbishment, renovation, demolition or redesign. Conservation management should be more effective because it is afraid that improper actions against facades will continue to increase due to business survival in attracting customers or tourists. Lastly, it is recommended that this research procedure and eFakad inventory form be used at other heritage areas in Malaysia as a tool for grading the integrity level of the heritage shophouse facades to identify and propose appropriate actions to be taken in conserving the heritage shophouse facades.

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