THOUGHTS ON MALAYSIAN ARCHITECTURE IDENTITY AND DESIGN
PRINCIPLES OF MALAYAN ARCHITECTS CO-PARTNERSHIP

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A thesis submitted in fulfilment of the
Requirements for the award of the degree of
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ABSTRACT

The lack of discourses, research and documentations on Malaysian architectural identity are among the factors that contributed to persistent misunderstanding of architecture identity and its association with political, economic and socio-cultural context of Malaysia. Therefore, the objective of the thesis is to understand architectural identity thoughts that led to architecture design befitting with political, economic and socio-cultural context of Malaysia. This thesis looks at existing concepts, theories, types and approaches of Malaysian architecture identity, and it reviews the historical development of the search for Malaysian architecture identity from 1950s to 1960s, a dawning period in the attempts by architects in Malaya to infuse meaning and value to a new nation. A local architecture firm, Malayan Architects Co-Partnership (MAC) highlighted by scholars and historians as successful in designing suitable architecture to Malaya's (later Malaysia) identity is engaged as the case study. The thesis employed an interpretive architectural historical methodology employing postmodern paradigm as a basis for understanding meaning and values associated with architecture design. The study relies on literature review, speeches, interviews, archive documents, direct observation and building analysis. Data obtained which was triangulated revealed that thoughts on architecture identity are products of an architect's reflection of himself that is bounded by the external factors such as politic, economy and socio-culture. The study found that MAC's design principles is a synthesis of modern, vernacular and past tradition ideas encompassing three themes; adaptability, reinterpretation and realization of realities. Outcomes of the study extend existing views on Malaysian architecture identity and offer an architectural design approach that draw inspiration from the past architectural work. It also extended existing knowledge as it is a pioneering effort to document architectural identity thoughts in Malaysia and design principles of a local architecture firm as a step to reshaping the Malaysian national architecture identity.
ABSTRAK

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<td>Anglo Chinese School</td>
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<td>Architect Regional Council Asia</td>
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<td>Dewan Bandaraya Kuala Lumpur</td>
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<td>MSA</td>
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<td>NEP</td>
<td>New Economic Policy</td>
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<td>Singapore Conference Hall and Trade Union Congress</td>
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INTRODUCTION

1.1 Background of Research

Malaysian architecture today is a synthesis of architectural languages in which many are strongly influenced by western ideas, ranging from the Neo-Classical to the International Style and Post Modernism. Since early 1950s, architects and leaders in Malaya realized that many new buildings built in the country lack Malayan identity and was insensitive to Malayan context. They called for architecture for Malaya through the publication of several articles in PETA; the Journal of the Federation of Malaya Society of Architects (Honey, R. 1960; Morley, P.G. 1958; Posener, J. 1957; Yong, K.P. 1956; Hewish, R.A. 1956; Noone, R.O.D. 1955; Morley, P.G. 1955; Templer, G. 1954).

Since then, architects and scholars have attempted to produce architecture that identifies with Malaya (later Malaysia). The attempts led to a search and discourse on Malaya (later Malaysia) architecture identity. The early approaches of identity saw the universal and progressive interpretation of Malaya (later Malaysia) as a democratic and multi ethnic country. Buildings such as the Parliament, National Mosque and National Museum were among the examples (Lim Teng Ngiom, 2010, 2000; Goad, P., 2007; Lai Chee Kien, 2007; Mohd Tajuddin, 2002). However, later years saw this approach being constrained to a more ethnic-oriented and revivalist idea, which the Putrajaya Prime Minister Office is an example of. On the other end,
buildings following the universal language of the International Style, such as high-rise offices and housing have little regard to Malaysian socio-cultural context and do not address the local architectural identity, cultural context and climatic conditions. The outcomes were also costly and threatened the sustainability of the country environment and culture (Mohd Tajuddin, 2002).

After almost 5 decades in attempting to construct a viable Malaysian architecture identity, the answer is yet to be found. Recently, another plea was made by the President of the Malaysian Institute of Architects (PAM), Ar Saifuddin Ahmad (2012) at the official opening of the 'DATUM: KL 2012 International Architectural Design Conference at the Kuala Lumpur Convention Centre on 6th July 2012. In his speech, he stressed on the need to look back to the past in order to plan for the future and to reflect on achievements and shortcomings. He highlighted that Malaysia is still not having any architectural identity even though the professional body such as PAM has been established for almost 45 years. His views and current mis-representation of identity in Malaysian architecture highlights existing gaps in the present state of knowledge on architecture identity in Malaysia.

The thesis aims to understand thoughts that led to the construction of architecture befitting with the meaning and value that would serve as an identity of Malaysia. The thesis looks at concept, theories, types and approaches of architecture identity, and its historical development from the emancipation of Malaya in 1950s to the period after the formation of Malaysia in the late 1960s highlighting its association with politic, economic and socio-cultural context. The period was the dawn of attempts by architects in Malaya to infuse meaning and value to a new nation. It is in this light that the firm, Malayan Architects Co-Partnership (MAC) is engaged as the case study. Scholars and researchers regarded this firm as successful in its pursuit of a suitable architecture for Malaya (later Malaysia) that express political, economic and socio-cultural conditions of the fast developing nation at that period. MAC was mentioned as more successful in their endeavours to construct Malayan architectural identity through application of modern architecture ideals within the local contextual conditions of the 60s (Lim Teng Ngiom, 2010, 2000;
Goad, P., 2007; Chen Voon Fee, 2007; Chan Chee Yoong, 2007; Lai Chee Kien, 2007; Powell, R., 2002; Mohd Tajuddin, 2002; Abel, C., 2000; Ken Yeang, 1992). Tay Kheng Soon (2012), Goad (2007), Ken Yeang (1998) and Powell (2002) identified the firm as the most successful in competing with other major firms such as Booty Edwards & Partners, Swan & Maclaren and Raglan Squire.

“Among the firms in that period (1960s), Malayan Architects Co-Partnership (MAC) in its brief period of existence, had the more self-assured and independent architectural ideology. It pursued definite approaches to plan and to the use of structural building materials. The consistency in thinking and in production of designs led to a definable series.”

A draft of architectural practices genealogy in Singapore produced by Singapore Institute of Singapore in 2005 positioned the firm among the early architecture practices in Singapore in 1960 (Singapore Institute of Singapore, 2005). Powell (2002) highlighted that the firm “produced a number of experimental and innovative projects which attempt to apply, adapt and test ideas they learned abroad.” That period saw much experimentation by the firm, founded by Lim Chong Keat, Chen Voon Fee and William Lim Siew Wai that does not seem to show any influences of race and partisan politics and provided fresh new ideas to the present generation to contemplate (Mohd Tajuddin, 2002).

Ngiom (2007) reiterated the significant impact of the firm to Malaysian architecture; “the firm brought home a rigorous plastic modernism that took its cues from the Chandigarh projects of Le Corbusier, and the work of Paul Rudolph and Mies van der Rohe. This architecture was startling – new and different – and pointed to a potential future for Malaysian architects.” Chen Voon Fee (1997), a partner of MAC, claimed that “the practice has been the subject of books and scholarly research papers not just because it was one of the first local firms in Malaya and Singapore; more importantly it was one of the first architectural firms in Malaya and Singapore.

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to explore the notion of a national and regional architectural idiom.” However, there are lack of writings on them and their works.

Through an in depth analysis of the MAC principals’ design principles and projects, the author hopes to offer further insights and inspirations for future designers on architecture identity. Specifically, the thesis will look on the firm’s emphasis on the spirit of times and spirit of place as a solution to the crisis of national architecture identity in Malaysia. This work can be said to be a pioneering effort in documenting the thoughts and design principles of the firm as a step to construct the Malaysian national architecture identity.

1.2 Research Aim and Objectives

Based on the issues highlighted above, this thesis aims to understand thoughts that led to the construction of architecture befitting with the meaning and value that would serve as an identity of Malaysia. The research objectives are therefore:

1. To examine attempts on architectural identity in Malaya (later Malaysia).
2. To understand factors that contribute to the thought and design principles in the creation of architecture identity for Malaya (later Malaysia)
3. To understand relationship between architecture and politic, economy and socio-culture in constructing suitable architecture identity for Malaya (later Malaysia)
1.3 Scope of research

The scope of this research is limited to the examination of thoughts that contribute to the construction of architecture identity in Malaya (later Malaysia) from the emancipation of Malaya in 1950s to the period after the formation of Malaysia in the late 1960s. It focuses on the works of an architecture firm, Malaysian Architect Co-Partnership (MAC) from its inception in 1960 to its dissolution in 1967. The period was the dawn of attempts by architects in Malaya to infuse meaning and value to a new nation. The 1960s was a great transformation period in politics, economy and socio-culture for Malaya (later Malaysia) and Singapore\(^2\) where the firm operated (Tay Kheng Soon, 2010; Phillip Goad, 2007; Ngiom, 2007; Robert Powell, 2002; Ken Yeang, 1998). It provided a condition for explorations and experimentations in producing architecture that indicated the spirit of the independence; repositioning the architecture of the country suiting locals' conditions and applying it subsequently in the search for a national architectural identity. Ken Yeang (1988) highlighted that “the sudden emergence of the sovereign nation brought about a spirit of assertion and increasing confidence” which according to him later, “generated a nationalistic pursuit for an identity (Ken Yeang, 1988).”

This research involves a three step process which will:

a. illuminate on identity in architecture in Malaya (later Malaysia).
b. articulate on attempts on architectural identity in Malaya (later Malaysia)
c. elaborate on factors that contribute to the thought and design principles in the creation of architecture identity for Malaya (later Malaysia) and its relation to political, economy and and socio-cultural conditions in Malaya and later in Malaysia

\(^2\) Malaya was already an independent country and Singapore had just gotten self-government status in 1959 with full rights on all matters except internal security and defense which was still under the British
The steps are expanded as follows:

a. Illumination on the idea of identity in architecture in Malaya (later Malaysia).
   
i. Reviewing of literature on its definition from local and non local interpretations, theories and types in order to understand its meaning and value and current standing in Malaya (later Malaysian) context.
   
i. Examinations of factors that influenced the construction of architecture identity.
   
i. Examination of architectural identity approaches in Malaya (later Malaysia) through inquiry of existing literature and discourses.

b. Articulation of attempts on architectural identity in Malaya and later in Malaysia.
   
i. Examination of architectural identity development in Malaya (later Malaysia) through inquiry of existing literature and discourses from pre-independence to post-independence period. The examination also look at development of architecture professional body and their activities towards establishment of architecture for Malaya (later Malaysia).
   
i. Reviewing of attempts by an architectural firm in constructing architectural identity in Malaya (later Malaysia) in 1960s through literature review, field observation, interviews and drawings. Primary and secondary sources are used.
   
i. Examination of available literature on Malaysian architecture identity in order to address the gap within documentation of attempts for architecture identity in Malaysia.
   
i. Analysing three main principal architects' attributes based on 4 aspects; personalities, architectural context, working experience and architectural thoughts. Using hermeneutics as method to interpret interviews, speeches, writings and archival records. This is done by revealing the meaning of the words in the text in relation to its cultural and intellectual context. Reference made to seminal works by Juan Pablo Bonta (1979) on Architecture and Its Interpretation.
v. Analyzing buildings in order to study architecture identity and its corelation to meaning and value based on form and space. A semantic analysis of the building was done with an understanding that architecture; "a sign able to communicates possible functions through a system of conventions or codes (Eco, 1973)." An analysis framework established by Alice Sabrina Ismail (2007) was adapted to study 4 aspects; position and setting, facade, material and spatial organisation. Three buildings are analysed based on Alice Sabrina Ismail's method (2007) which she adapted from Hillier's method of spatial syntax analysis (2006) on building plans and Shatha’s method of analyzing façade and treatment of built form (2004).

c. Elaboration on factors that contribute to the thought and design principles in the creation of architecture identity for Malaya (later Malaysia) and its relation to political, economy and socio-cultural conditions in Malaya and later in Malaysia.

i. Identifying contributing factors among the principals partners to suggest MAC’s design principles. Information on architects was cross-referenced against development in political, economic and socio-cultural conditions at the time of growing up and practice. Theory of Existential Space (Norberg-Shulz, 1971) and Theory of Perceiving Space (Lawson, 2008) were referred to provide understanding on relationship between man and his environment.

ii. Identifying themes that represent MAC design principles based on triangulation of findings. By using interpretive architecture historical methodology, findings on architecture identity are linked with politic, economy and socio-cultural context to suggest influences on thoughts and design principles toward identity in architecture.

i. Results obtained from the above process on contributing factors and design principles are then identified to reveal which principles from the firm that can be implemented into the current context in order to address the needs for a national architecture identity.

1.4 Research Questions

The following research questions are addressed in this study:

1. What are the design principles of Malayan Architect Co-Partnership (MAC)?
2. How did the Malayan Architect Co-Partnership’s principles implemented into building design?
3. What are the principles from the Malayan Architect Co-Partnership that can be implemented into architecture design and expression within the Malaysian context in order to address the needs for a national architecture identity?

Table below provides summary of Research Questions, Data Collection Methods, Methodology and Methods.

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>1. What are the design principles of Malayan Architects Co-Partnership (MAC)?</th>
<th>2. How did the Malayan Architects Co-Partnership’s principles implemented into building design?</th>
<th>3. What are the principles from the Malayan Architects Co-Partner Co-Partnership that can be implemented into the Malaysian context in order to address the needs for a national architecture identity?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Collection Methods</td>
<td>• Participant Observation. • Literature review • Interviews • Archives</td>
<td>• Participant Observation. • Interviews • Literature review • Drawings, Photographs &amp; Blueprints</td>
<td>• Literature Review • Drawings, Photographs &amp; Blueprints</td>
</tr>
<tr>
<td>Methodology</td>
<td>Interpretive Architecture Historical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods</td>
<td>Case Study</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1.1: Summary of Research Questions, Data Collection Methods, Methodology and Methods.

1.5 Research Methodology

This section presents a detailed description of the research design framework which governs research activities of this study. It focuses on research methodology
which establishes this research as historical research\textsuperscript{4} (Groat & Wang, 2013). Furthermore, it elaborates on case study method which is the tactic applied in the study. Based on literature review and observation during the early stage of the research, it was discovered that the methods are to focus on two main areas; the architects (A) and the works (B). The methods are influenced by 2 theories; hermeneutics\textsuperscript{5} and semiotics\textsuperscript{6}. Hermeneutics are used to decode text for A and semiotics offer tactics for decoding 'sign' for B. Moreover, information on data collection and data analysis is explained. Findings from the analysis are discussed in chapter 6. And chapter 7 will focus on synthesis and discussion.

Linda Groat and David Wang (2013) defined methodology as strategies; “the skilful management and planning of anything.” It was referred to the overall research plan or structure of the research study which it provides ‘action plan’ on how to go about in doing the research based on research questions. The plan is directed through systematic set of ‘steps and procedures’ that might have been pre-planned or developed during the course of research. For architectural research, seven research strategies were identified. They are historical, qualitative, correlational, experimental and quasi-experimental, simulation, logical and case studies and combined research (Groat and Wang, 2013). Since architectural researches are conducted for various reasons and in different contexts, each strategy could be applied independently or merged.

This study uses historical research strategies as its methodology due to its focus on ‘a setting or circumstances from the past.’ It attempts to provide meaning of human actions conducted from encounters with the subject of investigation or derived from ‘textual-archival or artifactual sources’ and fieldwork (Groat & Wang, 2013).

\textsuperscript{4} Labeled it as Interpretive Historical Research in 2002 edition (Groat and Wang, 2013)
\textsuperscript{5} Hermeneutics is a method or principle of interpretation (Merriam-Webster, 2013)
\textsuperscript{6} Semiotics is the study of signs and symbol and how they are used; a general philosophical theory of signs and symbols that deals especially with their function in both artificially constructed and natural languages and comprises syntactic, semantics and pragmatics (Merriam-Webster, 2013)
"Historical research depends on a constructed logic of interpretation, but that interpretation is based on documents and artifactual evidence, and typically entails a narrative structure."

Diagram below provides the research design framework of this study highlighting methodology and methods employed.

In constructing knowledge on identity in architecture it is assumed that ‘realities’ are interpreted and created socially based on certain condition and

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7 Groat & Wang, 2013, p18
'context'. The explanation is subjective as it was drawn from socio-cultural engagement (Groat & Wang, 2013). This approach is known as Constructivism or naturalistic approach to social science. It accepts knowledge as an emergent outcomes as the "researcher/s and respondent co-create understandings of the situation or context being studied (Groat & Wang, 2013)." In addition, the constructivist clarifies extensive comprehensions and analyses of a particular event based on the perspectives of the individuals who experience that environment. Sattrup (2012) highlighted that a research that employ this worldview focuses not to "prove or disprove a hypothesis. Instead of formulating a hypothesis, the aim is rather to describe the complexities of a dilemma." Furthermore, this approach allows for reinterpretation as it considers knowledge as 'temporarily or provisionally established (Groat & Wang, 2013).

"In the social sciences of the humanities, this version of constructivism often takes the form of in-depth textual analyses of either documents or interview materials; "hegemonic" interpretations are reconsidered in the light of what is or is not stated in the text. In architectural or environmental design research, artifacts, buildings, and settings are often the "texts" that are the subject of interpretation and reinterpretation. In its most radical form, reinterpretations are always provisional and fluid; no shared or common understanding can be established." 8

This notion of identity as an active interpretation rather than static was emphasized by Trant (2012) derived from cultural, historical aspects of meaning advocated in the works of Pierre Bourdie (1993, 1997, 2002), Michael Foucault (1989, 2009) and Roland Barthes (1977).

"These ideas of meaning open up a dynamic notion of built environment which allow architectural identity to be understood as an unstable construct that forms and alters according to historically

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8 Groat & Wang, 2013, pg79.
specific socio-cultural, perceptual and contextual conditions across time.\footnote{Trant, Jennifet (2012).}

For historical research, 3 components are essential; data-gathering, narration (description-employment-story) and evaluations (data comparisons) which normally would proceed simultaneously as research progresses. Evidences are to be evaluated based on “textual authentication, validity of factual reference and weighing alternative interpretations (Groat & Wang, 2013).” One the main verification methods is Triangulation that requires cross-checking various aspects of data for validity.

1.5.1 Case Study as Method (Tactics)

In contrast to methodology which encompasses the overall planning of ‘everything’, methods are “more detailed deployment of specific techniques, such as data collection devices, response formats, archival treatment, analytical procedures, etc (Groat & Wang, 2013).” Generally, case studies are associated with the social sciences and humanities, and referred to students and researchers in the Social Sciences, Health Sciences, Business and Management Studies, Education, Nursing and Public Health, Public Administration, Anthropology, Sociology, Political Sciences and Humanities (Thomas, 2012; Yin, 2009; Creswell, 2007). As of late, however, this research method has been widely adapted to architectural research particularly by those engage with historical and theoretical study (Groat & Wang, 2013).

Groat and Wang (2013) provides meaning to case study based on Yin’s ‘empirical inquiry’ definition (2009) to make case study relevant to architectural inquiry. Groat and Wang replaced the word ‘contemporary’ with the word ‘setting’
connoting the inclusion of “historic phenomena and both historic and contemporary settings as potential foci of case studies.” The notion of focus as the main element in any case study is supported by other scholars (Thomas, 2012; Stake, 2005).

“The Case Study is not a method in itself, rather, it is a focus and the focus is on one thing, looked at in depth and from any angles.”

Thomas (2012), in his definition of case studies provide broader scope of the focus to include “analyses of a person, events, decisions, periods, projects, policies, institutions or other systems which are studied holistically by one or more methods.” He highlighted meaning of the case that is “the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame - an object - which within the study is conducted and which the case illuminates and explicates (Thomas, 2012).” In addition, a case study to him is driven by a ‘purpose’ which is something that needs to be found through formulation of question and become the “heart of the research (Thomas, 2012).” Stake (2005) supported the idea of concentration on specific point of study, by highlighting that case study “is not a methodological choice but a choice of what is to be studied (i.e. a case within a bounded system) by whatever methods we choose to study the case. We could study it analytically or holistically, organically or culturally, and by mixed methods- but we concentrate, at least for time being, on the case (Thomas, 2012).”

In his explanation, Stake (2005) included another element to be included in the definition of case study which is the boundary. He further emphasised that “case study is the study of the particularity and complexity of a single case, caring to understand its activity within important circumstances (Stake, 1995).” The ‘boundaries’ was highlighted by Hammersley and Gomm Ragin (1992, cited by Thomas, 2012) as places and time periods. Therefore Thomas (2012) concluded that the importance of understanding the meaning of the word ‘case’ in case study as container that emphasises “containment as situation or event that focus on particular instance, as event, a happening, and the set of circumstances that surrounding this

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10 Bob Stake, 2005
Therefore case study is about a set of circumstances in its completeness and the case is described – marked out – by those circumstances. Case selections can either due to firstly, familiarity of the ‘case’ (subject) and the interest to know more about it (object), secondly, due to it significant as a model of something, or lastly, by studying the subject, it will enlighten researcher on something interesting due to its uniqueness (Thomas, 2012). The purpose would be defined by the reason for doing a case study which forms the analytical frame of the research in selecting the best approach or approaches as the researcher is free to pick and mix, determined by the questions and purpose. The process is determined by the way the researcher is planning to go about doing the research (Thomas, 2012).

As summary, definition by Creswell (2007) is viewed as the most comprehensive in defining case study taking consideration of its stance on research inquiry, approach, methods and outcomes. Creswell chooses to view case study a "qualitative approach in which the investigation explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in depth data collection involving multiple sources of information (e.g. Observations, interviews, audio visual material and documents and reports) and reports a case description and case-based themes (Creswell, 2007)." This echoed definition by Groat & Wang (2013) as a strategy in which ‘a particular setting or circumstances is investigated holistically using a variety of data collections and analysis tactics’. Creswell’s summary of the case studies was comprehensive for non-architectural studies. For architectural research, Groat and Wang (2013) explored the existing approaches to make them relevant to architecture and architects. They look at multiple connections between human experiences and built forms which they believe were missing from many approaches offered by other disciplines.

Lara (2008) employed case study and combined strategies approach in his research in 2001 to understand (how and why) the popularity of modern architecture

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11 Prof. Fernando Luiz Lara, Brazilian architect, BArch (the Federal Uni of Minas Gerais, 1993) PhD (the University of Michigan, 2001).
in Brazil. The research was driven by 3 research questions that compare and question acceptance of modern architecture in Brazil and United States, its dissemination in the working and middle-class houses of the 1950s and legitimacy as modern architecture. He investigated reasons for using modern architecture in the city; economy, culture and politics. Based on extensive data attained, Lara narrated the how and why modernism was implanted in the buildings. In the case of Izziah Hassan research, she employed the case study within an explorative approach. Her research focuses to examine the issue of architectural identity in the Region of Aceh, Indonesia and the relationship between Acehnese architecture and local Indonesian culture. Selection of her subject was due to concerns over the loss of local character due to rapid modern and urban transformations under the pressure of globalization (Izziah Hassan, 2009). She based her primary sources firstly, on pre-modern narratives and chronicles, reports of travellers, modern historical studies and modern theoretical studies, and secondly, built form which includes extant and non-extant from pre-colonial to the postcolonial periods. Izziah Hassan’s case study methodology allowed her to engage the critical analysis of historical and theoretical material in analysing her data. She underlined two levels of analyses based on her research questions that focus on historical development and architecture, urbanity and cultural identity within the scope of pre-colonial to post-colonial periods. Her rich and detailed collection of data supported her narration as she explained the development of Aceh architecture history and identity from pre-colonial to post-colonial periods. Her argument then validated by her thorough analysis of political aspirations and policies imposed during the periods by political leaders.

1.5.2 Data Collection

Data collection is primarily from interviews, archival records, documents, publications by Pertubuhan Akitek Malaysia, Singapore Institute of Architects


1.5.3 Data Analysis

For this particular study, two theories have been adopted in decoding two distinct cases which provide knowledge on the subject of national architecture identity in Malaysia. The two theories; Hermeneutics and Semiotics, provide tactics for analysis based development in linguistic analogy on notion that architecture can be seen as a visual language (Nesbitt, 1996). Due to its scale and physical nature, buildings are focus of attention and regarded as permanent ‘artefact’ of the place where they stand. Johansson (2000) reiterate Collingwood’s explanation on how ‘story’ of the past could be immortalized in buildings.

"An artefact is a carrier of its history. That is what the philosopher and archaeologist Robin George Collingwood calls his “first principle of a philosophy of history: that the past which an historian studies is not a dead past, but a past which in some sense is still living in the present” (1939/1978:97) The context of design and the context of use may be separated in time, but are often equally important to the understanding of the case of an artefact. In architectural research, when the case is a physical artefact, case studies often become more or less historical case studies."\(^{14}\)

As building embodies certain values and meaning; identity, it would communicate them directly to viewers. Nesbitt (1996) stressed the use of linguist analogy in architecture.

\(^{14}\) Johansson, 2000a
"Architects studied how meaning is carried in language and applied that knowledge, via the linguist analogy to architecture."\(^{15}\)

**Case A: Hermeneutics**

Carr\(^{16}\) (2001) stated that a human is inseparable from his or her surroundings. "Every human being at every stage of history or prehistory is born into a society and from his earliest years is moulded by the society (Carr, 2001). His expression echoed Donne’s famous poem,

"No man is an island; entire of itself, every man is a piece of the continent, a part of the main."\(^{17}\)

Subsequently, according to Carr (2001), human would 'speaks' with language that was acquired from the group he grew up with rather than inherited. Ever since birth, "the world gets to work on us (human) and transform us (human) from merely biological into social units (Carr, 2001)." He concluded that both language and environment contributed to the development of person thoughts in which his most basic ideas were derived from others around him. To him, "the individual apart from society would be both speechless and mindless (Carr, 2001)." Consistent with Carr’s thoughts, this study employs the theory of Hermeneutics in decoding texts of the architects (case); Lim Chong Keat, William Lim Siew Wai and Chen Voon Fee, to enlighten on principles and ideologies of MAC that shaped architecture with

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\(^{16}\) E.H.Carr, a Fellow of Trinity College at the University of Cambridge and an Honorary Fellow of Balliol College, Oxford, famous for his influential works on foreign policy and history. His revised edition of “What is History?” was incomplete at the time of his death in 1982 was resumed by Richard J. Evans, Professor of Modern History at the University of Cambridge in 2001.

\(^{17}\) Donne, John (1624). No Man Is an Island - Devotions upon Emergent Occasions: MEDITATION XVII. A poem emphasizes a person's connections to his or her surroundings. An English poet, satirist, lawyer and a cleric in the Church of England, well known as metaphysical poet 1572[1] – 31 March 1631)
particular meanings and value identified as Malaya (later Malaysian) architecture identity. Hermeneutic, an art of interpreting text, directs text analysis to attain comprehensible explanation of situation against its contextual background. Its application allows for “historical retrieval and reconstruction of the historical context of scientific and literary works (Hale, 2000)” for the purpose of understanding a problem that engrosses the present. Philosophical hermeneutics primarily to the theory of knowledge initiated by Martin Heidegger and developed by Hans-Georg Gadamer in his work Truth and Method.

In addition, seminal works by Juan Pablo Bonta (1979) provides direction for text analysis which expounded further by other studies (Unwin, 2014; Zuraini Md Ali, 2013; Alice Sabrina Ismail, 2007; Lawson, 1994; Laseau and Tice, 1992). The text analysis focuses on 4 aspects; personal character, architectural climate and context, working experience and architectural thoughts, treated as indicators which constructed to shape thoughts on architecture identity. The indicators are scrutinized against political, economic and socio-cultural developments to provide coherent interpretation of meanings and values.

**Case B: Semiotics**

In the process of decoding the text, the study found lack of available primary text sources regarding the case due to many factors; no previous study and record on the architects, restrictions on documents that are considered confidential and not accessible to public and poor record keeping due to time. There were also challenges with interviews due to interviewees unable to recall details of certain events and unwillingness to share ‘sensitive’ information due to bad past experiences among the partners. Moreover, the demise of a partner (Chen Voon Fee) and unavailability of another partner for interview limited access to primary oral sources.

Consequently, the study focuses to study on architecture as evidence of thought based on linguistic paradigm of Semiotics. Among the semioticians,
Umberto Eco, a novelist and critic, wrote on 'architecture as a semiotic system of signification'. His book titled "Function and Sign: Semiotics on Architecture", presented architecture as "signs (morphemes) able to communicate possible functions through a system of conventions or codes." Also, according to Nesbitt (1996) semiotics emphasized that "architectural object has no inherent meaning, but can develop it through cultural convention." Agrest and Gandelsonas (1973) and Broadbent found semiotics as an approach to reading architecture that culminated to production of knowledge.

"Semiotics is the science of the different systems of linguistic signs. It is concerned with the nature of signs and the rules governing their behaviour within a system. Semiotics is thus involved with signification, or the production of meaning, which is accomplished via the relation between the two components of the sign: the signifier (such as word) and the signified (the object denoted)."\(^{18}\)

Thus, architecture is studied as communicative mean of sign that explain thoughts on architecture identity. (Unwin, 2014; Davies, 2011; Amer & Kamariah, 2009; Zulkifli Hanafi, 2001; Baker, 1991, 1996; Weber, 1995; Bachelard, 1994; Kamaruddin Md Nor, 1991; Antoniades, 1986, 1992; Jencks, 1987). An analysis framework established by Alice Sabrina Ismail (2007) was adapted to study on 4 aspects; position and setting, façade, material and spatial organisation. Out of 21 buildings by MAC, 3 are chosen for this study. The three buildings are Nooraihan Ali House in Petaling Jaya (1960 – 1964), Singapore Conference Hall and Trade Union Office (1962 – 1964) and Negeri Sembilan State Mosque (1963 – 1967). These three buildings were selected because they represents three phases of MAC works in response to political, economic and socio-cultural changes in formerly Malaya then Malaysia (Appendix B: List of Documents on Buildings).

\(^{18}\)Nesbitt, Kate, 1996, p111
Table below elaborates on analysis tactics of architectural elements employed in this study.

<table>
<thead>
<tr>
<th>Architectural Elements</th>
<th>Details and criteria of analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Context and surrounding (App. C1)</td>
<td>To established building location as an island site or disintegrated from the urban site – reflection of domination or submission</td>
</tr>
<tr>
<td>Scale and relation to site context (App. C2)</td>
<td>To investigate vertical height and horizontal length for overall building scale in comparison to its context (macro level) and between building elements (micro level) - suggesting conflict / admission</td>
</tr>
<tr>
<td>Relationship between approach, entrance and main space (App. C3)</td>
<td>To determine accessibility and circulation which indicate well-ordered / disordered pattern of movement – illustrate systematic or unsystematic passage – welcoming / undesirable</td>
</tr>
<tr>
<td>Details of entrance and gateway (App. C4)</td>
<td>To determine accessibility and circulation which indicate well-ordered / disordered pattern of movement – illustrate systematic or unsystematic passage – welcoming / undesirable</td>
</tr>
<tr>
<td>Planning Layout (App. C5)</td>
<td>To investigate the overall spatial layout – relationship between primary and ancillary spaces and movement inside and between spaces – suggesting level of control on activities – free / constraint</td>
</tr>
<tr>
<td>Plan Shape and spatial arrangement of the main space (App. C6)</td>
<td>To investigate the overall spatial layout – relationship between primary and ancillary spaces and movement inside and between spaces – suggesting level of control on activities – free / constraint</td>
</tr>
<tr>
<td>Organization of form and space (App. C7)</td>
<td>To investigate overall building organization in comparison to its context (macro level) and between building elements (micro level) - suggesting conflict / admission</td>
</tr>
<tr>
<td>Structural and sectional arrangement (App. C8)</td>
<td>To examine structural arrangement for closure / opening of a space in determining relationship within internal spaces and between inside and outside spaces. It will suggest authority/ subjection, governing/ trivial arrangements.</td>
</tr>
<tr>
<td>Façade Treatment (App. C9)</td>
<td>To investigate all 4 sides of the building for architectural language, façade treatments and detailing - impressive / unassertive, intricate/ simple which indirectly portrays and signifies status – imposing/ delicate</td>
</tr>
<tr>
<td>Interior Treatment (App. C10)</td>
<td>To investigate interior of the building for architectural language, internal façade treatments and detailing - impressive / unassertive, intricate/ simple which indirectly portrays and signifies status – imposing/ delicate</td>
</tr>
</tbody>
</table>
Layering of Façade (App. C11)  

To study composition of façade through systematic layering reflecting expression of building massing and detailing — transparent / opaque — truthful / deceitful, showy / modest, dramatic/ natural.

Table 1.2: Details and criteria of analysis of architectural elements (Alice Sabrina Ismail, 2007)

In summary, diagrams below illustrate relationship between architects and architecture and thoughts on architecture identity, and relationship between MAC thoughts on architecture identity and architecture in Malaysia.

**Figure 1.2:** Relationship between architects and architecture and thoughts on architecture identity.

**Figure 1.3:** Relationship between MAC and thoughts on architecture identity and architecture in Malaysia.
1.6 Significance of research

Eventhough there have been studies that describe the development of modern architecture ideas in Malaysia, there are no studies that look into Malayan architecture firm and its design ideologies related to the construction of a viable national architecture identity. The significance of the study therefore can be appreciated from three distinct aspects. Firstly, this study is significant as it will enrich literature about Malaysian architecture identity.

Secondly, a study on issues of identity in architecture will provide an insight on how to design a more appropriate architectural design to local political, economy and socio-cultural contexts. Thirdly, a comprehensive documentation of Malayan Architect Co-Partnership’s works and design ideologies will provide a major reference to one of the first Malayan architect firms which is not available locally and internationally.

1.5 Outline of the thesis

This thesis consists of seven chapters. A summary of each chapter is outlined below.

Chapter One introduces the research question, objectives, purpose of research, research scope, methodology and significance of the research.

Chapter Two reviews literature on identity and its role in architecture, its type and approaches that define the Malaya (later Malaysian) context. The chapter highlights the different types of identity and discusses the relationship of identity and architecture through the role of form and space. It also clarifies how form and space symbolizes building identity. The chapter, then, examines several approaches employed that define architectural identity in the Malaysian context; revivalism, modernistic expressionism, regionalism, functionalism and metaphor.
Chapter Three examines Malaysian architecture historical development and factors that contributed to the formation of different kinds of modern architectural identities in Malaysia. It begins by reviewing the development of modern Malaysian architecture and then, focuses on 3 contributing factors; politic, economy and socio-culture as conditions that directly affect building design in Malaya (later Malaysia) in 1960s. The chapter then moves on to study 4 main factors that influence the formation of identity in architecture; climate, material and technology, topography and culture and heritage.

Chapter Four examines architects' ideology and philosophy in reshaping Malaya (later Malaysian) architecture identity in the 1960s and establishes the need for research. It reviews architecture professional institutes development in Malaya during the post independence period. Then, it discusses efforts to reshape architecture identity in Malaysia and elaborates on the development of architectural firms in 1960s. A case study for this particular research, Malayan Architect Co-Partnership is examined to provide background information for analysis in chapter 6. Finally, the chapter identifies a gap in the available literature in establishing the need for this study.

Chapter five presents examination of design principles of founders of MAC; Lim Chong Keat, Chen Voon Fee and William Lim Siew Wai and analysis of MAC's works. The chapter discusses development of principles and philosophies of the firm through examination of the three partners' personal character, architectural climate and context, working experience and architectural thoughts. Then, it elaborates on 3 selected buildings that represent MAC works from 1960 to 1967.

Chapter Six synthesises and discusses MAC design principles towards a Malaysian national identity in architecture and its impact on future Malaysian architecture. It refers to the three main research questions and presents interpretation and explanation based on findings derived from all of the chapters.

Chapter Seven provides conclusion and recommendation for future study.
REFERENCES


Competition Project for a War Memorial to civilian victims of the Japanese Occupation in Singapore 1942 – 1945 (1967, February 16). The Eastern Sun, 11
Competition project for the Singapore Conference Hall and Office for Trade Union Congress in Singapore (1965, 2 July) Straits Time.


PAM (2012). The Urban Redevelopment of Sentul. *MA* 4:12


Runah (1962). *Competition project for the University Malaya Great Hall and Administration Building in Kuala Lumpur*. RUMAH 5, 40.


The Unveiling of the war memorial (1967, February 16). The Eastern Sun, 1.


Yong, K.P (1956). *Chinese Building in Malaya, Towards a Malayan Architecture*, *PETA*, vol 1, Number 3, 2 – 12.


**Documents from the National Archive**


Malaysia, February 1966, Negeri Sembilan Mosque, 15.


Malaysia, November 1965. Malaysia’s Education Program, Malaysia, 12

Malaysia, August 1965, Abdul Razak Husein, The Public Debate, 9

Malaysia, February 1964, Supreme Ruler’s New Year Message, 11.

Malaysia, February 1964. Strong Protest by Malaysia, 11 - 14
Malaya, 1964, News from Malaya.
Malaya, March 1962. Memorandum on Malaysia, 11-21
Annual Report for Education for 1967, Federation of Malaya, Government punters
Kuala Lumpur.
Demographic background, The People Historical Outline, Chapter 11, Malaysia Year
Malaysia,
The Memorandum on Malaysia, 1962
The Malaysia Year Book, 1966.

Special Publication
Kuala Lumpur Today & Tomorrow, DBKL, 1991
The PAM Annual Report 68/69
The PAM Annual Report 67/68
The University of Manchester Year Book, 1958.

Internet
research example. Retrieved 10 June 2013 from
http://orbit.dtu.dk/ws/files/54007887/Peter_Andreas_Sattrup_Architectural_R
esearch_Paradigms_rev.pdf
Shenton Way, Singapore the Encyclopedia Retrieved 18 April 2011
Yau Tet Shin Market and Shopping Centre. Retrieved on 10 march 2011 from
http://www.ipohworld.org/search8/result.asp?strid=1625
Speech
Lee Kuan Yew (1966). The opening of People’s Association Conference at the Singapore Conference Hall on Saturday, January 8 1966 at 11am.
Lee Kuan Yew (1965). The Opening of the Singapore Conference Hall and Trade Union House on 15th October 1965
Jawaharlal Nehru (1952). The Opening Address, Proceedings of Symposium 1952
Yusof Ishak (1965). H.E Yang di-Pertuan Negara, Opening of the Second National Language Month at the Singapore Conference Hall, on 12th November 1965
THOUGHTS ON MALAYSIAN ARCHITECTURE IDENTITY AND DESIGN
PRINCIPLES OF MALAYAN ARCHITECTS CO-PARTNERSHIP

NOR HAYATI HUSSAIN

A thesis submitted in fulfilment of the
Requirements for the award of the degree of
Doctor of Philosophy (Architecture)

Faculty of Built Environment
Universiti Teknologi Malaysia

MAY 2015
The lack of discourses, research and documentations on Malaysian architectural identity are among the factors that contributed to persistent misunderstanding of architecture identity and its association with political, economic and socio-cultural context of Malaysia. Therefore, the objective of the thesis is to understand architectural identity thoughts that led to architecture design befitting with political, economic and socio-cultural context of Malaysia. This thesis looks at existing concepts, theories, types and approaches of Malaysian architecture identity, and it reviews the historical development of the search for Malaysian architecture identity from 1950s to 1960s, a dawning period in the attempts by architects in Malaya to infuse meaning and value to a new nation. A local architecture firm, Malayan Architects Co-Partnership (MAC) highlighted by scholars and historians as successful in designing suitable architecture to Malaya’s (later Malaysia) identity is engaged as the case study. The thesis employed an interpretive architectural historical methodology employing postmodern paradigm as a basis for understanding meaning and values associated with architecture design. The study relies on literature review, speeches, interviews, archive documents, direct observation and building analysis. Data obtained which was triangulated revealed that thoughts on architecture identity are products of an architect’s reflection of himself that is bounded by the external factors such as politic, economy and socio-culture. The study found that MAC’s design principles is a synthesis of modern, vernacular and past tradition ideas encompassing three themes; adaptability, reinterpretation and realization of realities. Outcomes of the study extend existing views on Malaysian architecture identity and offer an architectural design approach that draw inspiration from the past architectural work. It also extended existing knowledge as it is a pioneering effort to document architectural identity thoughts in Malaysia and design principles of a local architecture firm as a step to reshaping the Malaysian national architecture identity.
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<td>Fellow of the Royal Institute of British Architects</td>
</tr>
<tr>
<td>IAM</td>
<td>Institute of Architects of Malaya</td>
</tr>
<tr>
<td>LCC</td>
<td>London County Council</td>
</tr>
<tr>
<td>MA</td>
<td>Majalah Akitek</td>
</tr>
<tr>
<td>MAC</td>
<td>Malayan Architects Co-Partnership</td>
</tr>
<tr>
<td>MARS</td>
<td>Modern Architecture Research Group</td>
</tr>
<tr>
<td>MCA</td>
<td>The Malayan Chinese Association</td>
</tr>
<tr>
<td>MIC</td>
<td>The Malayan Indian Congress</td>
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<tr>
<td>MIT</td>
<td>Massachusetts Institute of Technology</td>
</tr>
<tr>
<td>MSA</td>
<td>Malaysia Singapore Airlines</td>
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<tr>
<td>NEP</td>
<td>New Economic Policy</td>
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<tr>
<td>NUS</td>
<td>National University of Singapore</td>
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<td>PAM</td>
<td>Pertubuhan Akitek Malaysia</td>
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<tr>
<td>PAP</td>
<td>People Action Party</td>
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<tr>
<td>PEKEMBAR</td>
<td>Pertubuhan Kebangsaan Melayu Bersatu</td>
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<tr>
<td>PTSC</td>
<td>Perak Turf Sports Club</td>
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<tr>
<td>PWD</td>
<td>Public Work Department</td>
</tr>
<tr>
<td>RIBA</td>
<td>Royal Institute of British Architects</td>
</tr>
<tr>
<td>RMIT</td>
<td>Royal Melbourne Institute of Technology</td>
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<tr>
<td>RRIM</td>
<td>Rubber Research Institute of Malaya</td>
</tr>
<tr>
<td>Acronym</td>
<td>Abbreviation</td>
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<tr>
<td>---------</td>
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</tr>
<tr>
<td>SCHTUC</td>
<td>Singapore Conference Hall and Trade Union Congress</td>
</tr>
<tr>
<td>SIA</td>
<td>Singapore Institute of Architects</td>
</tr>
<tr>
<td>SIAJ</td>
<td>Singapore Institute of Architects Journal</td>
</tr>
<tr>
<td>SMA</td>
<td>Society of Malayan Architects</td>
</tr>
<tr>
<td>SPUR</td>
<td>Singapore Planning and Urban Research</td>
</tr>
<tr>
<td>SSA</td>
<td>Singapore Society of Architects</td>
</tr>
<tr>
<td>UM</td>
<td>University Malaya</td>
</tr>
<tr>
<td>UMIST</td>
<td>University of Manchester Institute of Science and Technology</td>
</tr>
<tr>
<td>UMNO</td>
<td>The United Malays National Organization</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>UTM</td>
<td>Universiti Teknologi Malaysia</td>
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<tr>
<td>YMCA</td>
<td>Young Men’s Christian Association</td>
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INTRODUCTION

1.1 Background of Research

Malaysian architecture today is a syntheses of architectural languages in which many are strongly influenced by western ideas, ranging from the Neo-Classical to the International Style and Post Modernism. Since early 1950s, architects and leaders in Malaya realized that many new buildings built in the country lack Malayan identity and was insensitive to Malayan context. They called for architecture for Malaya through the publication of several articles in PETA; the Journal of the Federation of Malaya Society of Architects (Honey, R. 1960; Morley, P.G. 1958; Posener, J. 1957; Yong, K.P. 1956; Hewish, R.A. 1956; Noone, R.O.D. 1955; Morley, P.G. 1955; Templer, G. 1954).

Since then, architects and scholars have attempted to produce architecture that identifies with Malaya (later Malaysia). The attempts led to a search and discourse on Malaya (later Malaysia) architecture identity. The early approaches of identity saw the universal and progressive interpretation of Malaya (later Malaysia) as a democratic and multi ethnic country. Buildings such as the Parliament, National Mosque and National Museum were among the examples (Lim Teng Ngiom, 2010, 2000; Goad, P., 2007; Lai Chee Kien, 2007; Mohd Tajuddin, 2002). However, later years saw this approach being constrained to a more ethnic-oriented and revivalist idea, which the Putrajaya Prime Minister Office is an example of. On the other end,
buildings following the universal language of the International Style, such as high-rise offices and housing have little regard to Malaysian socio-cultural context and do not address the local architectural identity, cultural context and climatic conditions. The outcomes were also costly and threatened the sustainability of the country environment and culture (Mohd Tajuddin, 2002).

After almost 5 decades in attempting to construct a viable Malaysian architecture identity, the answer is yet to be found. Recently, another plea was made by the President of the Malaysian Institute of Architects (PAM), Ar Saifuddin Ahmad (2012) at the official opening of the 'DATUM: KL 2012 International Architectural Design Conference at the Kuala Lumpur Convention Centre on 6th July 2012. In his speech, he stressed on the need to look back to the past in order to plan for the future and to reflect on achievements and shortcomings. He highlighted that Malaysia is still not having any architectural identity even though the professional body such as PAM has been established for almost 45 years. His views and current mis-representation of identity in Malaysian architecture highlights existing gaps in the present state of knowledge on architecture identity in Malaysia.

The thesis aims to understand thoughts that led to the construction of architecture befitting with the meaning and value that would serve as an identity of Malaysia. The thesis looks at concept, theories, types and approaches of architecture identity, and its historical development from the emancipation of Malaya in 1950s to the period after the formation of Malaysia in the late 1960s highlighting its association with politic, economic and socio-cultural context. The period was the dawn of attempts by architects in Malaya to infuse meaning and value to a new nation. It is in this light that the firm, Malayan Architects Co-Partnership (MAC) is engaged as the case study. Scholars and researchers regarded this firm as successful in its pursuit of a suitable architecture for Malaya (later Malaysia) that express political, economic and socio-cultural conditions of the fast developing nation at that period. MAC was mentioned as more successful in their endeavours to construct Malayan architectural identity through application of modern architecture ideals within the local contextual conditions of the 60s (Lim Teng Ngiom, 2010, 2000;
Goad, P., 2007; Chen Voon Fee, 2007; Chan Chee Yoong, 2007; Lai Chee Kien, 2007; Powell, R., 2002; Mohd Tajuddin, 2002; Abel, C., 2000; Ken Yeang, 1992). Tay Kheng Soon (2012), Goad (2007), Ken Yeang (1998) and Powell (2002) identified the firm as the most successful in competing with other major firms such as Booty Edwards & Partners, Swan & Maclaren and Raglan Squire.

“Among the firms in that period (1960s), Malayan Architects Co-Partnership (MAC) in its brief period of existence, had the more self-assured and independent architectural ideology. It pursued definite approaches to plan and to the use of structural building materials. The consistency in thinking and in production of designs led to a definable series.”

A draft of architectural practices genealogy in Singapore produced by Singapore Institute of Singapore in 2005 positioned the firm among the early architecture practices in Singapore in 1960 (Singapore Institute of Singapore, 2005). Powell (2002) highlighted that the firm “produced a number of experimental and innovative projects which attempt to apply, adapt and test ideas they learned abroad.” That period saw much experimentation by the firm, founded by Lim Chong Keat, Chen Voon Fee and William Lim Siew Wai that does not seem to show any influences of race and partisan politics and provided fresh new ideas to the present generation to contemplate (Mohd Tajuddin, 2002).

Ngiom (2007) reiterated the significant impact of the firm to Malaysian architecture; “the firm brought home a rigorous plastic modernism that took its cues from the Chandigarh projects of Le Corbusier, and the work of Paul Rudolph and Mies van der Rohe. This architecture was startling – new and different – and pointed to a potential future for Malaysian architects.” Chen Voon Fee (1997), a partner of MAC, claimed that “the practice has been the subject of books and scholarly research papers not just because it was one of the first local firms in Malaya and Singapore; more importantly it was one of the first architectural firms in Malaya and Singapore

to explore the notion of a national and regional architectural idiom.” However, there are lack of writings on them and their works.

Through an in depth analysis of the MAC principals’ design principles and projects, the author hopes to offer further insights and inspirations for future designers on architecture identity. Specifically, the thesis will look on the firm’s emphasis on the spirit of times and spirit of place as a solution to the crisis of national architecture identity in Malaysia. This work can be said to be a pioneering effort in documenting the thoughts and design principles of the firm as a step to construct the Malaysian national architecture identity.

1.2 Research Aim and Objectives

Based on the issues highlighted above, this thesis aims to understand thoughts that led to the construction of architecture befitting with the meaning and value that would serve as an identity of Malaysia. The research objectives are therefore:

1. To examine attempts on architectural identity in Malaya (later Malaysia).
2. To understand factors that contribute to the thought and design principles in the creation of architecture identity for Malaya (later Malaysia)
3. To understand relationship between architecture and politic, economy and socio-culture in constructing suitable architecture identity for Malaya (later Malaysia)
1.3 Scope of research

The scope of this research is limited to the examination of thoughts that contribute to the construction of architecture identity in Malaya (later Malaysia) from the emancipation of Malaya in 1950s to the period after the formation of Malaysia in the late 1960s. It focuses on the works of an architecture firm, Malaysian Architect Co-Partnership (MAC) from its inception in 1960 to its dissolution in 1967. The period was the dawn of attempts by architects in Malaya to infuse meaning and value to a new nation. The 1960s was a great transformation period in politics, economy and socio-culture for Malaya (later Malaysia) and Singapore where the firm operated (Tay Kheng Soon, 2010; Phillip Goad, 2007; Ngiom, 2007; Robert Powell, 2002; Ken Yeang, 1998). It provided a condition for explorations and experimentations in producing architecture that indicated the spirit of the independence; repositioning the architecture of the country suiting locals' conditions and applying it subsequently in the search for a national architectural identity. Ken Yeang (1988) highlighted that “the sudden emergence of the sovereign nation brought about a spirit of assertion and increasing confidence” which according to him later, “generated a nationalistic pursuit for an identity (Ken Yeang, 1988).”

This research involves a three step process which will:

a. illuminate on identity in architecture in Malaya (later Malaysia).

b. articulate on attempts on architectural identity in Malaya (later Malaysia)

c. elaborate on factors that contribute to the thought and design principles in the creation of architecture identity for Malaya (later Malaysia) and its relation to political, economy and and socio-cultural conditions in Malaya and later in Malaysia

2 Malaya was already an independent country and Singapore had just gotten self-government status in 1959 with full rights on all matters except internal security and defense which was still under the British
The steps are expanded as follows:

a. Illumination on the idea of identity in architecture in Malaya (later Malaysia).
   i. Reviewing of literature on its definition from local and non local interpretations, theories and types in order to understand its meaning and value and current standing in Malaya (later Malaysian) context.
   ii. Examinations of factors that influenced the construction of architecture identity.
   iii. Examination of architectural identity approaches in Malaya (later Malaysia) through inquiry of existing literature and discourses.

b. Articulation of attempts on architectural identity in Malaya and later in Malaysia.
   i. Examination of architectural identity development in Malaya (later Malaysia) through inquiry of existing literature and discourses from pre-independence to post-independence period. The examination also look at development of architecture professional body and their activities towards establishment of architecture for Malaya (later Malaysia).
   ii. Reviewing of attempts by an architectural firm in constructing architectural identity in Malaya (later Malaysia) in 1960s through literature review, field observation, interviews and drawings. Primary and secondary sources are used.
   iii. Examination of available literature on Malaysian architecture identity in order to address the gap within documentation of attempts for architecture identity in Malaysia.
   iv. Analysing three main principal architects’ attributes based on 4 aspects; personalities, architectural context, working experience and architectural thoughts. Using hermeneutics as method to interpret interviews, speeches, writings and archival records. This is done by revealing the meaning of the words in the text in relation to its cultural and intellectual context. Reference made to seminal works by Juan Pablo Bonta (1979) on Architecture and Its Interpretation.
v. Analyzing buildings in order to study architecture identity and its corelation to meaning and value based on form and space. A semantic analysis of the building was done with an understanding that architecture; “a sign able to communicates possible functions through a system of conventions or codes (Eco, 1973).” An analysis framework established by Alice Sabrina Ismail (2007) was adapted to study 4 aspects; position and setting, facade, material and spatial organisation. Three buildings are analysed based on Alice Sabrina Ismail’s method (2007) which she adapted from Hillier’s method of spatial syntax analysis (2006) on building plans and Shatha’s method of analyzing facade and treatment of built form (2004).

c. Elaboration on factors that contribute to the thought and design principles in the creation of architecture identity for Malaya (later Malaysia) and its relation to political, economy and socio-cultural conditions in Malaya and later in Malaysia.

i. Identifying contributing factors among the principals partners to suggest MAC’s design principles. Information on architects was cross-referenced against development in political, economic and socio-cultural conditions at the time of growing up and practice. Theory of Existential Space (Norberg-Shulz, 1971) and Theory of Perceiving Space (Lawson, 2008) were referred to provide understanding on relationship between man and his environment.

ii. Identifying themes that represent MAC design principles based on triangulation of findings. By using interpretive architecture historical methodology, findings on architecture identity are linked with politic, economy and socio-cultural context to suggest influences on thoughts and design principles toward identity in architecture.

i. Results obtained from the above process on contributing factors and design principles are then identified to reveal which principles from the firm that can be implemented into the current context in order to address the needs for a national architecture identity.

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1.4 Research Questions

The following research questions are addressed in this study:

1. What are the design principles of Malayan Architect Co-Partnership (MAC)?
2. How did the Malayan Architect Co-Partnership's principles implemented into building design?
3. What are the principles from the Malayan Architect Co-Partnership that can be implemented into architecture design and expression within the Malaysian context in order to address the needs for a national architecture identity?

Table below provides summary of Research Questions, Data Collection Methods, Methodology and Methods.

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Collection Methods</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the design principles of Malayan Architects Co-Partnership (MAC)?</td>
<td>• Participant Observation. • Literature review • Interviews • Archives</td>
<td>Interpretive</td>
</tr>
<tr>
<td>2. How did the Malayan Architects Co-Partnership's principles implemented into</td>
<td>• Participant Observation. • Interviews • Literature review • Drawings, Photographs &amp;</td>
<td>Architecture</td>
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<td>building design?</td>
<td>Blueprints</td>
<td>Historical</td>
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<tr>
<td>3. What are the principles from the Malayan Architects Co-Partnership that can be</td>
<td>• Literature Review • Drawings, Photographs &amp; Blueprints</td>
<td>Methodology Case</td>
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<tr>
<td>implemented into the Malaysian context in order to address the needs for a national</td>
<td></td>
<td>Study</td>
</tr>
<tr>
<td>architecture identity?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1.1: Summary of Research Questions, Data Collection Methods, Methodology and Methods.

1.5 Research Methodology

This section presents a detailed description of the research design framework which governs research activities of this study. It focuses on research methodology
which establishes this research as historical research\(^4\) (Groat & Wang, 2013). Furthermore, it elaborates on case study method which is the tactic applied in the study. Based on literature review and observation during the early stage of the research, it was discovered that the methods are to focus on two main areas; the architects (A) and the works (B). The methods are influenced by 2 theories; hermeneutic\(^5\) and semiotics\(^6\). Hermeneutics are used to decode text for A and semiotics offer tactics for decoding ‘sign’ for B. Moreover, information on data collection and data analysis is explained. Findings from the analysis are discussed in chapter 6. And chapter 7 will focus on synthesis and discussion.

Linda Groat and David Wang (2013) defined methodology as strategies; “the skilful management and planning of anything.” It was referred to the overall research plan or structure of the research study which it provides ‘action plan’ on how to go about in doing the research based on research questions. The plan is directed through systematic set of ‘steps and procedures’ that might have been pre-planned or developed during the course of research. For architectural research, seven research strategies were identified. They are historical, qualitative, correlational, experimental and quasi-experimental, simulation, logical and case studies and combined research (Groat and Wang, 2013). Since architectural researches are conducted for various reasons and in different contexts, each strategy could be applied independently or merged.

This study uses historical research strategies as its methodology due to its focus on ‘a setting or circumstances from the past.’ It attempts to provide meaning of human actions conducted from encounters with the subject of investigation or derived from ‘textual-archival or artifactual sources’ and fieldwork (Groat & Wang, 2013).

\(^4\) Labeled it as Interpretive Historical Research in 2002 edition (Groat and Wang, 2013)  
\(^5\) Hermeneutic is a method or principle of interpretation (Merriam-Webster, 2013)  
\(^6\) Semiotics is the study of signs and symbol and how they are used; a general philosophical theory of signs and symbols that deals especially with their function in both artificially constructed and natural languages and comprises syntactic, semantics and pragmatics (Merriam-Webster, 2013)
"Historical research depends on a constructed logic of interpretation, but that interpretation is based on documents and artifactual evidence, and typically entails a narrative structure."\footnote{Groat \& Wang, 2013, p18}

Diagram below provides the research design framework of this study highlighting methodology and methods employed.

In constructing knowledge on identity in architecture it is assumed that ‘realities’ are interpreted and created socially based on certain condition and
'context'. The explanation is subjective as it was drawn from socio-cultural engagement (Groat & Wang, 2013). This approach is known as Constructivism or naturalistic approach to social science. It accepts knowledge as an emergent outcomes as the “researcher/s and respondent co-create understandings of the situation or context being studied (Groat & Wang, 2013).” In addition, the constructivist clarifies extensive comprehensions and analyses of a particular event based on the perspectives of the individuals who experience that environment. Sattrup (2012) highlighted that a research that employ this worldview focuses not to “prove or disprove a hypothesis. Instead of formulating a hypothesis, the aim is rather to describe the complexities of a dilemma.” Furthermore, this approach allows for reinterpretation as it considers knowledge as ‘temporarily or provisionally established (Groat & Wang, 2013).

“In the social sciences of the humanities, this version of constructivism often takes the form of in-depth textual analyses of either documents or interview materials; “hegemonic” interpretations are reconsidered in the light of what is or is not stated in the text. In architectural or environmental design research, artifacts, buildings, and settings are often the “texts” that are the subject of interpretation and reinterpretation. In its most radical form, reinterpretations are always provisional and fluid; no shared or common understanding can be established.”

This notion of identity as an active interpretation rather than static was emphasized by Trant (2012) derived from cultural, historical aspects of meaning advocated in the works of Pierre Bourdie (1993, 1997, 2002), Michael Foucault (1989, 2009) and Roland Barthes (1977).

“These ideas of meaning open up a dynamic notion of built environment which allow architectural identity to be understood as an unstable construct that forms and alters according to historically

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8 Groat & Wang, 2013, pg79.
specific socio-cultural, perceptual and contextual conditions across time."

For historical research, 3 components are essential; data-gathering, narration (description-emplotment-story) and evaluations (data comparisons) which normally would proceed simultaneously as research progresses. Evidences are to be evaluated based on “textual authentication, validity of factual reference and weighing alternative interpretations (Groat & Wang, 2013).” One the main verification methods is Triangulation that requires cross-checking various aspects of data for validity.

1.5.1 Case Study as Method (Tactics)

In contrast to methodology which encompasses the overall planning of ‘everything’, methods are “more detailed deployment of specific techniques, such as data collection devices, response formats, archival treatment, analytical procedures, etc (Groat & Wang, 2013).” Generally, case studies are associated with the social sciences and humanities, and referred to students and researchers in the Social Sciences, Health Sciences, Business and Management Studies, Education, Nursing and Public Health, Public Administration, Anthropology, Sociology, Political Sciences and Humanities (Thomas, 2012; Yin, 2009; Creswell, 2007). As of late, however, this research method has been widely adapted to architectural research particularly by those engage with historical and theoretical study (Groat & Wang, 2013).

Groat and Wang (2013) provides meaning to case study based on Yin’s ‘empirical inquiry’ definition (2009) to make case study relevant to architectural inquiry. Groat and Wang replaced the word ‘contemporary’ with the word ‘setting’

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9 Trant, Jennifet (2012).
connoting the inclusion of "historic phenomena and both historic and contemporary settings as potential foci of case studies." The notion of focus as the main element in any case study is supported by other scholars (Thomas, 2012; Stake, 2005).

"The Case Study is not a method in itself, rather, it is a focus and the focus is on one thing, looked at in depth and from any angles."  

Thomas (2012) in his definition of case studies provide broader scope of the focus to include "analyses of a person, events, decisions, periods, projects, policies, institutions or other systems which are studied holistically by one or more methods." He highlighted meaning of the case that is "the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame - an object - which within the study is conducted and which the case illuminates and explicates (Thomas, 2012)." In addition, a case study to him is driven by a 'purpose' which is something that needs to be found through formulation of question and become the "heart of the research (Thomas, 2012)." Stake (2005) supported the idea of concentration on specific point of study, by highlighting that case study "is not a methodological choice but a choice of what is to be studied (i.e. a case within a bounded system) by whatever methods we choose to study the case. We could study it analytically or holistically, organically or culturally, and by mixed methods- but we concentrate, at least for time being, on the case (Thomas, 2012)."

In his explanation, Stake (2005) included another element to be included in the definition of case study which is the boundary. He further emphasised that "case study is the study of the particularity and complexity of a single case, caring to understand its activity within important circumstances (Stake, 1995)." The 'boundaries' was highlighted by Hammersley and Gomm Ragin (1992, cited by Thomas, 2012) as places and time periods. Therefore Thomas (2012) concluded that the importance of understanding the meaning of the word 'case' in case study as container that emphasises "containment as situation or event that focus on particular instance, as event, a happening, and the set of circumstances that surrounding this

\footnote{Bob Stake, 2005}
Therefore case study is about a set of circumstances in its completeness and the case is described—marked out—by those circumstances. Case selections can either due to firstly, familiarity of the ‘case’ (subject) and the interest to know more about it (object), secondly, due to it significant as a model of something, or lastly, by studying the subject, it will enlighten researcher on something interesting due to its uniqueness (Thomas, 2012). The purpose would be defined by the reason for doing a case study which forms the analytical frame of the research in selecting the best approach or approaches as the researcher is free to pick and mix, determined by the questions and purpose. The process is determined by the way the researcher is planning to go about doing the research (Thomas, 2012).

As summary, definition by Creswell (2007) is viewed as the most comprehensive in defining case study taking consideration of its stance on research inquiry, approach, methods and outcomes. Creswell chooses to view case study a “qualitative approach in which the investigation explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in depth data collection involving multiple sources of information (e.g. Observations, interviews, audio visual material and documents and reports) and reports a case description and case-based themes (Creswell, 2007).” This echoed definition by Groat & Wang (2013) as a strategy in which ‘a particular setting or circumstances is investigated holistically using a variety of data collections and analysis tactics’. Creswell’s summary of the case studies was comprehensive for non-architectural studies. For architectural research, Groat and Wang (2013) explored the existing approaches to make them relevant to architecture and architects. They look at multiple connections between human experiences and built forms which they believe were missing from many approaches offered by other disciplines.

Lara (2008) employed case study and combined strategies approach in his research in 2001 to understand (how and why) the popularity of modern architecture

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11 Prof. Fernando Luiz Lara, Brazilian architect, BArch (the Federal Uni of Minas Gerais, 1993) PhD (the University of Michigan, 2001).
in Brazil\textsuperscript{12}. The research was driven by 3 research questions that compare and question acceptance of modern architecture in Brazil and United States, its dissemination in the working and middle-class houses of the 1950s and legitimacy as modern architecture. He investigated reasons for using modern architecture in the city; economy, culture and politics. Based on extensive data attained, Lara narrated the how and why modernism was implanted in the buildings. In the case of Izziah Hassan\textsuperscript{13} research, she employed the case study within an explorative approach. Her research focuses to examine the issue of architectural identity in the Region of Aceh, Indonesia and the relationship between Acehnese architecture and local Indonesian culture. Selection of her subject was due to concerns over the loss of ‘local character due to rapid modern and urban transformations under the pressure of globalization (Izziah Hassan, 2009).” She based her primary sources firstly, on pre-modern narratives and chronicles, reports of travellers, modern historical studies and modern theoretical studies, and secondly, built form which includes extant and non-extant from pre-colonial to the postcolonial periods. Izziah Hassan’s case study methodology allowed her to engage the critical analysis of historical and theoretical material in analysing her data. She underlined two levels of analyses based on her research questions that focus on historical development and architecture, urbanity and cultural identity within the scope of pre-colonial to post-colonial periods. Her rich and detailed collection of data supported her narration as she explained the development of Aceh architecture history and identity from pre-colonial to post-colonial periods. Her argument then validated by her thorough analysis of political aspirations and policies imposed during the periods by political leaders.

\subsection*{1.5.2 Data Collection}

Data collection is primarily from interviews, archival records, documents, publications by Pertubuhan Akitek Malaysia, Singapore Institute of Architects

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1.5.3 Data Analysis

For this particular study, two theories have been adopted in decoding two distinct cases which provide knowledge on the subject of national architecture identity in Malaysia. The two theories; Hermeneutics and Semiotics, provide tactics for analysis based development in linguistic analogy on notion that architecture can be seen as a visual language (Nesbitt, 1996). Due to its scale and physical nature, buildings are focus of attention and regarded as permanent ‘artefact’ of the place where they stand. Johansson (2000) reiterate Collingwood’s explanation on how ‘story’ of the past could be immortalized in buildings.

"An artefact is a carrier of its history. That is what the philosopher and archaeologist Robin George Collingwood calls his "first principle of a philosophy of history: that the past which an historian studies is not a dead past, but a past which in some sense is still living in the present" (1939/ 1978:97) The context of design and the context of use may be separated in time, but are often equally important to the understanding of the case of an artefact. In architectural research, when the case is a physical artefact, case studies often become more or less historical case studies."\(^{14}\)

As building embodies certain values and meaning; identity, it would communicate them directly to viewers. Nesbitt (1996) stressed the use of linguist analogy in architecture.

\(^{14}\) Johansson, 2000a
"Architects studied how meaning is carried in language and applied that knowledge, via the linguist analogy to architecture."\textsuperscript{15}

Case A: Hermeneutics

Carr\textsuperscript{16} (2001) stated that a human is inseparable from his or her surroundings. “Every human being at every stage of history or prehistory is born into a society and from his earliest years is moulded by the society (Carr, 2001). His expression echoed Donne’s famous poem,

“No man is an island; entire of itself, every man is a piece of the continent, a part of the main.”\textsuperscript{17}

Subsequently, according to Carr (2001), human would ‘speaks’ with language that was acquired from the group he grew up with rather than inherited. Ever since birth, “the world gets to work on us (human) and transform us (human) from merely biological into social units (Carr, 2001).” He concluded that both language and environment contributed to the development of person thoughts in which his most basic ideas were derived from others around him. To him, “the individual apart from society would be both speechless and mindless (Carr, 2001).” Consistent with Carr’s thoughts, this study employs the theory of Hermeneutics in decoding texts of the architects (case); Lim Chong Keat, William Lim Siew Wai and Chen Voon Fee, to enlighten on principles and ideologies of MAC that shaped architecture with

\textsuperscript{16} E.H.Carr, a Fellow of Trinity College at the University of Cambridge and an Honorary Fellow of Balliol College, Oxford, famous for his influential works on foreign policy and history, His revised edition of “What is History?” was incomplete at the time of his death in 1982 was resumed by Richard J. Evans, Professor of Modern History at the University of Cambridge in 2001.
\textsuperscript{17} Donne, John (1624). No Man Is an Island - Devotions upon Emergent Occasions: MEDITATION XVII. A poem emphasizes a person’s connections to his or her surroundings. An English poet, satirist, lawyer and a cleric in the Church of England, well known as metaphysical poet 1572[1] – 31 March 1631)
particular meanings and value identified as Malaya (later Malaysian) architecture identity. Hermeneutic, an art of interpreting text, directs text analysis to attain comprehensible explanation of situation against its contextual background. Its application allows for “historical retrieval and reconstruction of the historical context of scientific and literary works (Hale, 2000)” for the purpose of understanding a problem that engrosses the present. Philosophical hermeneutics primarily to the theory of knowledge initiated by Martin Heidegger and developed by Hans-Georg Gadamer in his work Truth and Method.

In addition, seminal works by Juan Pablo Bonta (1979) provides direction for text analysis which expounded further by other studies (Unwin, 2014; Zuraini Md Ali, 2013; Alice Sabrina Ismail, 2007; Lawson, 1994; Laseau and Tice, 1992). The text analysis focuses on 4 aspects; personal character, architectural climate and context, working experience and architectural thoughts, treated as indicators which constructed to shape thoughts on architecture identity. The indicators are scrutinized against political, economic and socio-cultural developments to provide coherent interpretation of meanings and values.

**Case B: Semiotics**

In the process of decoding the text, the study found lack of available primary text sources regarding the case due to many factors; no previous study and record on the architects, restrictions on documents that are considered confidential and not accessible to public and poor record keeping due to time. There were also challenges with interviews due to interviewees unable to recall details of certain events and unwillingness to share ‘sensitive’ information due to bad past experiences among the partners. Moreover, the demise of a partner (Chen Voon Fee) and unavailability of another partner for interview limited access to primary oral sources.

Consequently, the study focuses to study on architecture as evidence of thought based on linguistic paradigm of Semiotics. Among the semioticians,
Umberto Eco, a novelist and critic, wrote on ‘architecture as a semiotic system of signification’. His book titled “Function and Sign: Semiotics on Architecture”, presented architecture as “signs (morphemes) able to communicate possible functions through a system of conventions or codes.” Also, according to Nesbitt (1996) semiotics emphasized that “architectural object has no inherent meaning, but can develop it through cultural convention.” Agrest and Gandelsonas (1973) and Broadbent found semiotics as an approach to reading architecture that culminated to production of knowledge.

"Semiotics is the science of the different systems of linguistic signs. It is concerned with the nature of signs and the rules governing their behaviour within a system. Semiotics is thus involved with signification, or the production of meaning, which is accomplished via the relation between the two components of the sign: the signifier (such as word) and the signified (the object denoted)." 

Thus, architecture is studied as communicative mean of sign that explain thoughts on architecture identity. (Unwin, 2014; Davies, 2011; Amer & Kamariah, 2009; Zulkifli Hanafi, 2001; Baker, 1991, 1996; Weber, 1995; Bachelard, 1994; Kamaruddin Md Nor, 1991; Antoniades, 1986, 1992; Jencks, 1987). An analysis framework established by Alice Sabrina Ismail (2007) was adapted to study on 4 aspects; position and setting, façade, material and spatial organisation. Out of 21 buildings by MAC, 3 are chosen for this study. The three buildings are Nooraihan Ali House in Petaling Jaya (1960 – 1964), Singapore Conference Hall and Trade Union Office (1962 – 1964) and Negeri Sembilan State Mosque (1963 – 1967). These three buildings were selected because they represents three phases of MAC works in response to political, economic and socio-cultural changes in formerly Malaya then Malaysia (Appendix B: List of Documents on Buildings).

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18 Nesbitt, Kate, 1996, p111
Table below elaborates on analysis tactics of architectural elements employed in this study.

<table>
<thead>
<tr>
<th>Architectural Elements</th>
<th>Details and criteria of analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Context and surrounding (App. C1)</td>
<td>To established building location as an island site or disintegrated from the urban site - reflection of domination or submission</td>
</tr>
<tr>
<td>Scale and relation to site context (App. C2)</td>
<td>To investigate vertical height and horizontal length for overall building scale in comparison to its context (macro level) and between building elements (micro level) - suggesting conflict / admission</td>
</tr>
<tr>
<td>Relationship between approach, entrance and main space (App. C3)</td>
<td>To determine accessibility and circulation which indicate well-ordered / disordered pattern of movement - illustrate systematic or unsystematic passage - welcoming / undesirable</td>
</tr>
<tr>
<td>Details of entrance and gateway (App. C4)</td>
<td>To determine accessibility and circulation which indicate well-ordered / disordered pattern of movement - illustrate systematic or unsystematic passage - welcoming / undesirable</td>
</tr>
<tr>
<td>Planning Layout (App. C5)</td>
<td>To investigate the overall spatial layout – relationship between primary and ancillary spaces and movement inside and between spaces – suggesting level of control on activities – free / constraint</td>
</tr>
<tr>
<td>Plan Shape and spatial arrangement of the main space (App. C6)</td>
<td>To investigate the overall spatial layout – relationship between primary and ancillary spaces and movement inside and between spaces – suggesting level of control on activities – free / constraint</td>
</tr>
<tr>
<td>Organization of form and space (App. C7)</td>
<td>To investigate overall building organization in comparison to its context (macro level) and between building elements (micro level) - suggesting conflict / admission</td>
</tr>
<tr>
<td>Structural and sectional arrangement (App. C8)</td>
<td>To examine structural arrangement for closure / opening of a space in determining relationship within internal spaces and between inside and outside spaces. It will suggest authority/ subjection, governing/ trivial arrangements.</td>
</tr>
<tr>
<td>Façade Treatment (App. C9)</td>
<td>To investigate all 4 sides of the building for architectural language, façade treatments and detailing - impressive / unassertive, intricate/ simple which indirectly portrays and signifies status – imposing/ delicate</td>
</tr>
<tr>
<td>Interior Treatment (App. C10)</td>
<td>To investigate interior of the building for architectural language, internal façade treatments and detailing - impressive / unassertive, intricate/ simple which indirectly portrays and signifies status – imposing/ delicate</td>
</tr>
</tbody>
</table>
Layering of Façade (App. C11)
To study composition of façade through systematic layering reflecting expression of building massing and detailing – transparent / opaque – truthful / deceitful, showy / modest, dramatic/ natural.

Table 1.2: Details and criteria of analysis of architectural elements (Alice Sabrina Ismail, 2007)

In summary, diagrams below illustrate relationship between architects and architecture and thoughts on architecture identity, and relationship between MAC thoughts on architecture identity and architecture in Malaysia.

**Figure 1.2:** Relationship between architects and architecture and thoughts on architecture identity.

**Figure 1.3:** Relationship between MAC and thoughts on architecture identity and architecture in Malaysia.
1.6 Significance of research

Eventhough there have been studies that describe the development of modern architecture ideas in Malaysia, there are no studies that look into Malayan architecture firm and its design ideologies related to the construction of a viable national architecture identity. The significance of the study therefore can be appreciated from three distinct aspects. Firstly, this study is significant as it will enrich literature about Malayan architecture identity.

Secondly, a study on issues of identity in architecture will provide an insight on how to design a more appropriate architectural design to local political, economy and socio-cultural contexts. Thirdly, a comprehensive documentation of Malayan Architect Co-Partnership’s works and design ideologies will provide a major reference to one of the first Malayan architect firms which is not available locally and internationally.

1.5 Outline of the thesis

This thesis consists of seven chapters. A summary of each chapter is outlined below.

Chapter One introduces the research question, objectives, purpose of research, research scope, methodology and significance of the research.

Chapter Two reviews literature on identity and its role in architecture, its type and approaches that define the Malaya (later Malaysian) context. The chapter highlights the different types of identity and discusses the relationship of identity and architecture through the role of form and space. It also clarifies how form and space symbolizes building identity. The chapter, then, examines several approaches employed that define architectural identity in the Malaysian context; revivalism, modernistic expressionism, regionalism, functionalism and metaphor.
Chapter Three examines Malaysian architecture historical development and factors that contributed to the formation of different kinds of modern architectural identities in Malaysia. It begins by reviewing the development of modern Malaysian architecture and then, focuses on 3 contributing factors; politic, economy and socio-culture as conditions that directly affect building design in Malaya (later Malaysia) in 1960s. The chapter then moves on to study 4 main factors that influence the formation of identity in architecture; climate, material and technology, topography and culture and heritage.

Chapter Four examines architects' ideology and philosophy in reshaping Malaya (later Malaysian) architecture identity in the 1960s and establishes the need for research. It reviews architecture professional institutes development in Malaya during the post independence period. Then, it discusses efforts to reshape architecture identity in Malaysia and elaborates on the development of architectural firms in 1960s. A case study for this particular research, Malayan Architect Co-Partnership is examined to provide background information for analysis in chapter 6. Finally, the chapter identifies a gap in the available literature in establishing the need for this study.

Chapter five presents examination of design principles of founders of MAC; Lim Chong Keat, Chen Voon Fee and William Lim Siew Wai and analysis of MAC's works. The chapter discusses development of principles and philosophies of the firm through examination of the three partners' personal character, architectural climate and context, working experience and architectural thoughts. Then, it elaborates on 3 selected buildings that represent MAC works from 1960 to 1967.

Chapter Six synthesises and discusses MAC design principles towards a Malaysian national identity in architecture and its impact on future Malaysian architecture. It refers to the three main research questions and presents interpretation and explanation based on findings derived from all of the chapters.

Chapter Seven provides conclusion and recommendation for future study.
REFERENCES


Competition project for the Singapore Conference Hall and Office for Trade Union Congress in Singapore (1965, 2 July) Straits Times.


PAM (2012). The Urban Redevelopment of Sentul. *MA* 4:12


Runah (1962). Competition project for the University Malaya Great Hall and Administration Building in Kuala Lumpur. RUMAH 5, 40.


The Unveiling of the war memorial (1967, February 16). The Eastern Sun, 1.


Yong, K.P (1956). *Chinese Building in Malaya, Towards a Malayan Architecture*, *PETA*, vol 1, Number 3, 2 – 12.


**Documents from the National Archive**


Malaysia, February 1966, Negeri Sembilan Mosque, 15.


Malaysia, November 1965. Malaysia’s Education Program, Malaysia, 12

Malaysia, August 1965, Abdul Razak Husein, The Public Debate, 9

Malaysia, February 1964, Supreme Ruler’s New Year Message, 11.

Malaysia, February 1964. Strong Protest by Malaysia, 11 - 14
Malaya, 1964, News from Malaya.
Malaya, March 1962. Memorandum on Malaysia, 11- 21
Annual Report for Education for 1967, Federation of Malaya, Government punters
Kuala Lumpur.
Demographic background, The People Historical Outline, Chapter 11, Malaysia Year
Malaysia,
The Memorandum on Malaysia, 1962
The Malaysia Year Book, 1966.

Special Publication
Kuala Lumpur Today & Tomorrow, DBKL, 1991
The PAM Annual Report 68/69
The PAM Annual Report 67/68
The University of Manchester Year Book, 1958.

Internet
research example. Retrieved 10 June 2013 from
http://orbit.dtu.dk/ws/files/54007887/Peter_Andreas_Sattrup_Architectural_R
esearch_Paradigms_rev.pdf
Shenton Way, Singapore the Encyclopedia Retrieved 18 April 2011
Yau Tet Shin Market and Shopping Centre. Retrieved on 10 march 2011 from
http://www.ipohworld.org/search8/result.asp?strid=1625
Speech
Lee Kuan Yew (1966). The opening of People’s Association Conference at the
Singapore Conference Hall on Saturday, January 8 1966 at 11am.
Lee Kuan Yew (1965). The Opening of the Singapore Conference Hall and Trade
Union House on 15th October 1965
18.
Jawaharlal Nehru (1952). The Opening Address, Proceedings of Symposium 1952
Language Month at the Singapore Conference Hall, on 12th November 1965