

HERITAGE IN SINGAPORE:

Saving History to Build a Nation

ICOMOS-National Museum of Singapore
World Heritage Day Symposium

Edited by Lim Chen Sian and Rachel Chew

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H E R I T A G E I N S I N G A P O R E :

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to Build a Nation*

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PREFACE

The International Council on Monuments and Sites (ICOMOS) was founded in 1965 in Warsaw, Poland, one year after the signing of the International Charter on the Conservation and Restoration of Monuments and Sites, known as the 'Venice Charter'. ICOMOS is an association of over 10,000 cultural heritage professionals present in over 100 countries throughout the world, working for the conservation and protection of monuments and sites – the only global non-government organisation of its kind. It benefits from the cross-disciplinary exchange of its members – architects, archaeologists, art historians, conservators, curators, engineers, historians, and planners, who foster improved heritage conservation standards and techniques for all forms of cultural properties: buildings, historic towns, cultural landscapes, and archaeological sites. ICOMOS is officially recognised as an advisory body to UNESCO, actively contributing to the World Heritage Committee and taking part in the implementation of the World Heritage Convention.

ICOMOS Singapore was formalised as a National Committee in May 2013, as part of non-state actors' nomination efforts for the Singapore Botanic Gardens' listing as a World Heritage Site. ICOMOS Singapore represents a professional group of heritage practitioners who have for many years worked closely with government and non-government projects pertaining to Singapore's heritage and sites. Each member of ICOMOS Singapore is a practising professional in the fields of anthropology, archaeology, architecture, architectural conservation, architectural history, conservation, cultural geography, heritage sites management, heritage policy, and history. ICOMOS Singapore members have been active in multifarious projects in the country – from the restoration of 19th century temples to the investigation of colonial period paintwork and pre-modern medieval archaeological sites, to advising government agencies on the preservation of the island's built heritage.

The UNESCO General Conference of November 1983 adopted the resolution commending all Member States to declare 18th April of each year as 'International Monuments and Sites Day'. 2015 marks the 50th anniversary of both Singapore and the International Council on Monuments and Sites (ICOMOS). In celebration of this dual golden anniversary, ICOMOS Singapore joins the National Museum of Singapore, and the National Heritage Board in celebrating World Heritage Day with a symposium on heritage in Singapore. Themed and titled 'Heritage in Singapore: Saving History to Build a Nation', the conference brought together Singapore's leading practitioners in the heritage scene, drawing from both ICOMOS members and colleagues from the National Heritage Board, Urban Redevelopment Authority and the Institute of Southeast Asian Studies. We are pleased to present the symposium papers in this volume.

ICOMOS Singapore

WHY DO WE CONSERVE? URA'S WORK IN CONSERVING SINGAPORE'S BUILT HERITAGE

Kelvin Ang

INTRODUCTION

The past decade has seen the topic of conserving built heritage come to the fore in public discussions on how we should protect an important part of Singapore's identity in the future. On the 50th anniversary of independent Singapore, it is timely to take a look both back at some of the milestones in our heritage protection programme, and also consider the challenges ahead.

While the Urban Redevelopment Authority (URA) has often been seen as the main driver for urban renewal through comprehensive rebuilding, we are at the same time, a key agent in realising South-East Asia's pioneering urban conservation programme. This programme was ground-breaking in that it was the first to identify and propose the protection of vernacular buildings beyond individual landmarks. To this end, we have a strong legal framework that has resulted in over 7,100 pre-WW2 buildings coming under conservation. The private sector has moved from being sceptical, to being quite enthusiastic, while the wider public has become more involved because of various consultation processes. These consultations, together with efforts by formal and informal heritage NGOs, has further raised public awareness and increased public expectations for our conservation programme. I would like to see these expectations as a happy problem. While it will make our work in delivery more challenging, it also holds the promise that building conservation (and doing the right thing) will be sustained in the long term because it is part of the DNA of our citizenry. Perhaps only then will Singapore also be branded as a 'Heritage City'¹ just like how we are now branded as a 'Modern City', 'A Green City' and 'A City in a Garden'. This should not be too much to hope for as we draw close to the very important year of 2019, when modern Singapore turns 200.

BRIEF HISTORY OF PROGRAMME

While most people take the date of 7 July 1989 as the official date when building conservation was 'achieved', it would be more accurate for this date to be seen as an important but just one of many milestones reached in an ongoing journey. It seems that the impulse to conserve the best of humanity's creations often comes as a result of these very creations being placed at risk, be it through natural or man-made disasters. For the countries in the Commonwealth, the legislation for protecting built heritage can be traced to the passing of the Ancient Monuments Act (1913) in England, which was the outcome of what we would now call a 'grassroots' move to save ancient Stonehenge. With the movement of people and ideas, as well as the massive destruction of human cultural heritage in both world wars, it was perhaps inevitable that such ideas of cultural protection would also make their way to Singapore eventually. The post-1945 period was a time of great stress and strain on Singapore. Even as the first Master

Plan was drawn up by the Colonial Government to address how the Crown Colony's growth should be managed, 32 sites were identified as being 'Ancient Monuments and Lands and Buildings of Historical and Architectural Interest'. Fortunately perhaps, we also had individuals – and here I would like to mention the late Marjorie Doggett, who had both an eye for overlooked beauty and on the future. She used photography to capture the buildings of her adopted home, both as a record and a means of persuading the wider public that these relatively older sites in our city were worthy of protection.²

This 1958 Master Plan is interesting in showing the first steps of thinking about keeping our built heritage. However, it is also equally interesting to note that the Plan only identifies individual buildings and sites and ignores the majority of the vernacular city and the omnipresent shophouses that now form the bulk of our conserved heritage stock. Perhaps this can be explained in the context of the severely dilapidated condition of the post-war city, where overcrowding was rife. What is perhaps less surprising is that the full list of 32

¹ In 2006, Singapore's Conservation Programme was internationally recognized when it received the Urban Land Institute Global Excellence Award.

² Marjorie Doggett, *Characters of Light: Early Buildings of Singapore* (Singapore: Donald Moore, 1957).

sites also reveal the multi-cultural and multi-religious nature of Singapore as a settlement.³ This plan also demonstrates amply that the understanding of what is of value changes with the passing of time. Can you imagine the former City Hall, Old Parliament House or even Clifford Pier not being protected heritage buildings today?

The game changed in 1959 with self-government. When independence was thrust upon us in 1965, the stakes were raised further. Economic and political survival was seen as being intertwined, and help was sought from international experts and programmes such as the United Nations Development Plan. This resulted in a proposal for comprehensive urban renewal. To be implemented in stages, the entire historic city would be rebuilt in total to support economic development, and more importantly – give our people an improved, decent living environment. While there were fears from some quarters that this would mean the wholesale destruction of the familiar cityscape, it seemed that the majority of the residents of the urban tenements and slums could not wait to move away from the crumbling shophouses into their new flats. Between these two extremes, planners were at work to create a different future. With the political support of Prime Minister Lee Kuan Yew who in 1967 queried Alan Choe,⁴ Head of the Urban Renewal Department, about whether conservation has been considered,⁵ and his colleagues such as Minister of Culture S. Rajaratnam and Minister of National Development Eddie Barker, policies to first protect key monuments after 1970, and then to stage the renewal plans to avoid the demolition of the most historic urban districts were set in motion. When the housing crisis was finally resolved in the 1980s, and with the completion of the reclamation of Marina East, Centre and South and the rethinking of Singapore as a city, as an economy and as a home, it was finally time to persuade the Minister for National Development, S. Dhanabalan, that it was possible to have urban conservation in Singapore. With the support of the then Singapore Tourism Promotion Board, and the reassurance that any development potential that might be ‘lost’ could be easily accommodated in the reclaimed Marina area, we could proceed with the creation of legal instruments to gazette our urban areas for conservation.

Compared to the 1958 Master Plan, the biggest difference was that it aimed to protect not just the grand civic landmarks of government buildings, community institutions and notable places of worship (all these would be covered under the Preservation of Monuments Act). Instead, it identified the shophouse that made up the bulk of the old city of Singapore, and which had been the often overlooked living environment of a majority of our people, as being of architectural and historical significance and thus, worthy of protection and conservation.

WHY DO WE CONSERVE?

So, why did we develop an urban conservation programme? While these vernacular buildings are not unique to Singapore and can be found in many of the other port cities of Southeast Asia, they “are crucial in shaping the city’s character (in contrast to modern buildings)... the Nation’s multi-ethnic roots are discernible in this record...”.⁶ The planners of URA had approached the subject from the point of making sure that there were sufficient tangible reminders of our history, and that as a city, these urban blocks of shophouses, would create a city that had variety in height, form, scale and texture. Together with the greening programme and modern districts, this would create a unique urban environment that had the best of the old and new, East and West. Our built history could then become an integral part of our national consciousness, sustaining our collective self-image. In the longer term, this will help us in our nation building project – as our citizens of various generations and communities can see that their own identity and history is part of something bigger, and that they have common touchstones with each other as part of a bigger family of citizens where Singapore is a tangible ‘home’. Here then it becomes clearer that our building conservation programme should be considered part of the overall three-pronged approach to sustainable development. It supports the following social aspects – nurturing community, equitable social environment and a sustainable built (and natural) environment.

WHAT ARE SOME OUTCOMES?

With the efforts taken in the past decades, we have reached an environment where we have over 7,100 buildings and structures conserved, protecting both whole districts and individual landmarks, colonial-era constructions, as well as major landmarks of our early nation building period. In particular, the developments and decisions of the past 15 years have been created in greater partnership and consultation with the general public. There is general and growing public support for conservation work and also for greater participation in the conversation. The stock of buildings is now integrated into the everyday life of our city, showcasing the cultural diversity of our country. They are also homes to a myriad of businesses and well-loved neighbourhoods for our citizens. They provide charm, beauty and a sense of history and memory to all who encounter them. Over 70% of respondents in a national survey reported being ‘satisfied’ or ‘very satisfied’ with conservation efforts. 50% of those surveyed visited our conservation areas at least once a month. Overall, “Conservation Areas and Old Buildings” ranked third (15%) in the top three places that

³ “Table XX – Master Plan Written Statement,” Urban Redevelopment Authority, accessed 1 May 2019, https://www.ura.gov.sg/dc/mp58/mp58map_index.htm

⁴ See Urban Redevelopment Authority, *Architectural Heritage: Singapore* (Singapore: URA, 2015).

⁵ The Urban Renewal Department was the predecessor of the URA, which was formed as an independent agency in 1974.

⁶ Gretchen Liu, *Singapore: A Pictorial History, 1819-2000* (Singapore, National Heritage Board & Archipelago Press, 1999).

left respondents with the fondest memories. Top of the table would be their “Housing Estate” (34%), followed by “National Icons and Destinations” (16%). For a programme that covers less than 1% of Singapore’s landmass, this should be considered a commendable outcome.

CHALLENGES AHEAD

Although the results are positive and encouraging, we are still in an environment where many people view the conservation landscape as a ‘half-empty’ glass, lamenting the loss of the National Theatre, National Library and other buildings that were demolished in the past decades. Yet, it may be more appropriate to see the conservation landscape as a ‘half-full’ glass as part of a continuing journey. We have made gains in the past decade since the demolition of the National Library. Just last year, we had another 75 buildings gazetted for conservation – ranging from pre-WW2 military buildings in Seletar, to the well-loved Queenstown Library. In the intervening years, we have made breakthroughs in other ways – the gazette of the former Asia Insurance Building, which was Southeast Asia’s tallest building at the point of construction. The Subordinate Courts and the former Jurong Town Hall – creations from our great drive towards modernisation in the 1970s have also been protected, while conserved buildings are now sought after in the property market – a pleasant reversal of the situation of the early years where they were rarely seen as economic assets.

The challenges that we face now will go beyond deciding what and how to conserve. We see greater concern and discourse surrounding the present and future social life and use of conserved buildings. How should they be used? And who should use them? What is the difference between an old coffee shop at the Tong Ah Building of Keong Saik Road and its current use as a modern eatery targeted at the international crowd? What is the future of the old Red House Bakery in Katong? Can we repeat the model of the old Hua Bee Coffeeshop in pre-war Tiong Bahru, where the local community worked with the potential investor to create what is today – the best of both worlds: a conserved interior with old world charm, that is during the day, still a local coffee shop, but which transforms into a Japanese restaurant at night.

Can we avoid looking at our past with rose-tinted glasses, such as romanticising the old Kreta Ayer street market – and expecting it to be full of traditional trades? After all, it was a great and popular market because it provided everyday items at good prices. Is it acceptable if it reverts to an “everyday” character in the way that Bugis Street market is today? Let me conclude by sharing the following questions concerning building conservation in Singapore that we face:

- (i) How do we make more of what we have already conserved?
- (ii) Is there anything wrong with a heritage area being a part of ‘ordinary’ life of the young and the old?
- (iii) How shall we manage the different demands and understanding of heritage – from both Western and Eastern lenses?
- (iv) What can we learn from the wide variety of building traditions in Singapore?
- (v) Multi-cultural heritage – everybody’s or nobody’s?
- (vi) What might be future heritage?

Only through careful examination, analysis, conversations and experimentation, might we find improved ways to address these questions so as to bequeath what we have inherited, in a better state, to the future generations of Singaporeans.⁷

⁷ More details of URA’s Conservation Programme can be accessed via www.ura.gov.sg. See also Lily Kong, *Conserving the Past, Creating the Future: Urban Heritage in Singapore* (Singapore: Urban Redevelopment Authority, 2011).

FIGHTING FOR AND ABOUT HERITAGE: STATE-SOCIETY ENGAGEMENTS IN SINGAPORE

Kevin Y. L. Tan

INTRODUCTION

The issues of 'heritage' and 'identity' are closely connected, if not inextricably linked. As such, debates about the preservation of Singapore's heritage began in earnest only after Singapore attained self-government – the next-to-last step towards full independence from the British – in 1959. Significantly, it was the victory of the People's Action Party (PAP) in the 1959 general election and the implementation of its socialist vision of housing the masses that led to the destruction of much of Singapore's nineteenth-century built-heritage, which in turn led to ground-up concerns about Singapore's identity as city, nation and home.

This is not to suggest that concerns about Singapore's heritage arose only after that time, nor that no civil society groups agitated for its preservation prior to independence. The Friends of Singapore (FOS), a civic group established in 1937, could be said to have been a forerunner of the Singapore Heritage Society which was established exactly fifty years later. The FOS was convened and started by noted lawyer and historian Sir Roland Braddell in June 1937 as 'a coordinating and directional force ... to aid the cultural development of the city and to preserve its history'.¹ A sharp observer, calling himself 'Anak Singapura' was sceptical of Braddell's enterprise:

... Dato Braddell is optimistic enough to believe that in a city like this, full though it is of Europeans and Asiatics who are merely living for the day when they will go on home leave or retirement, there is a solid core of local pride and patriotism, a sense of historic continuity and tradition, such as animate the civic life of towns in Europe and America.²

Despite the cynics, the FOS thrived and championed the cause of Singapore history, art and culture, agitated for performance venues and an art exhibition hall, organised photography and art exhibitions and even raised money to purchase artefacts for the Raffles Museum and commissioned paintings of British governors. It also agitated for the preservation of historic buildings. Its first effort in this regard came just three years after its establishment when it fought to preserve the old Malay Volunteer Headquarters Building in Bras Basah Road. Built in 1860 by convict labour, the building had been used as a prison till 1873 when it was turned over to the colonial authorities which then used it for various purposes, including the headquarters of the Malay Volunteer Force.³ The FOS's efforts to preserve parts of this historic building failed. After the Japanese Occupation, the FOS reorganised itself and started pushing for Marina Hill, near the Gap, at South Buona Vista Road, as well as the summit of Bukit Batok to be turned into public parks in order to commemorate their war-time significance.⁴ Although the FOS fought hard, it failed to save two other historic buildings. The first was No. 3 Coleman Street, the large sprawling bungalow which George D. Coleman had built as his own home back in 1828.⁵ The second was No. 3 Oxley Rise, which had been built by Dr. Thomas Oxley as his Dovecote residence in 1842.⁶ Both these buildings had been listed as historic buildings under the 1955 Master Plan, a matter to which we shall return shortly. Indeed, the FOS had been consulted on the finalisation of this list which had been put together by the authorities with the help of Michael Wilmer Forbes Tweedie and Carl Alexander Gibson-Hill, both post-War Directors of the Raffles Museum.⁷

¹ 'Friends of Singapore' *Singapore Free Press*, 29 Jun 1937, 8.

² Anak Singapura, 'Dollar Mad' *Straits Times*, 30 Jun 1937, 10.

³ 'Old Malay Volunteer HQ Building,' *Singapore Free Press*, 31 May 1940, 5; and 'This Building was Condemned 60 Years Ago,' *Singapore Free Press*, 17 Jun 1940, 5.

⁴ See 'The Jap Memorial,' *Straits Times*, 11 Oct 1947, 6; and 'New Park Planned,' *Straits Times*, 15 May 1948, 7.

⁵ 'Coleman House for Mr M?' *Straits Times*, 24 Jul 1955, 5; 'Coleman House art gallery?' *Straits Times*, 31 Jul 1955, 11; 'Oldest Building,' *Straits Times*, 14 Nov 1955, 6; 'Last Look at the House that Coleman Built,' *Straits Times*, 5 Dec 1965, 4.

⁶ 'This House with a past has an uncertain future,' *Straits Times*, 21 Jun 1956, 9; and 'Not so ancient monument,' *Straits Times*, 22 Jun 1956, at 8.

⁷ Kevin Blackburn & Tan Peng Hong Alvin, 'The Emergence of Heritage Conservation in Singapore and the Preservation of Monuments Board (1958-76),' *Southeast Asian Studies* 4, 2 (2015): 341 – 364, 345 [hereinafter 'Blackburn & Tan'].

Relations between the FOS and the colonial authorities were cordial and cooperative, rather than combative and confrontational. Indeed, the authorities viewed the FOS as collaborators rather than adversaries and in 1951, when an informal body was established to 'look after historic landmarks', the FOS was invited to send two representatives to the committee, which consisted of officials as well as staff from the Public Works Department.⁸ Lawyer K. T. Ooi and architect Frank W. Brewer represented the FOS. The FOS was also consulted by the Municipal Commission on the naming of streets in Singapore so that the names of 'eminent personages in the history of the Colony' could be perpetuated.⁹ So close was the collaboration between the FOS and the government that in 1955, Governor Sir Robert Black consented to be the FOS's Patron.¹⁰ Notwithstanding its cosy relationship with the colonial authorities, the FOS was concerned about plans to redevelop Singapore, and at its 20th anniversary dinner at the Raffles Hotel on 6 February 1957, its President, Ong Tiang Wee (T. W. Ong) warned:

We should not tear down historic buildings and monuments so quickly in order to put up some new brick and mortar building for it is difficult to replace some monuments.¹¹

Relations between the FOS and then Leader of the Opposition, Lee Kuan Yew, were rather less cordial. Lee, who attacked the FOS for commissioning a portrait of Governor Sir John Nicoll for which it could not afford, called the FOS 'a quaint society', 'one of whose objects is to entertain Governors, past and present.'¹² Lee's impatience with the FOS and its agenda, was to solidify into a prickly, trenchant 'either you are with us or you are against us' attitude the PAP government adopted towards civic advocacy groups in the first three decades of its rule. By 1959, when the PAP came to power, the FOS had become all but defunct.

This chapter chronicles the engagements between civil society and the state on heritage issues between 1959 and 2015. The nature of such engagements may broadly be defined as battles 'for heritage' and 'about heritage'. The first phase of engagement, from 1959 to 1983, was when civil society sought to convince the government that heritage was important and that too much of Singapore's built heritage was being sacrificed at the altar of urban renewal and development. This phase lasted just over two decades, and was finally over when in 1983, Second Deputy Prime Minister and Foreign Minister S. Rajaratnam 'heaved a public sigh of relief that the axe of urban renewal was stopped before it could wipe out more of Singapore's past.'¹³ The second phase of engagement, from 1983 onwards, concerned the substance and content of 'heritage'. Having determined that Singapore's heritage – however defined – was important, the battle lines were drawn between state and society over what aspects of culture and history were to be preserved, and in what manner. This phase of engagement continues to this day.

THE FIGHT FOR HERITAGE (1959–1983)

The Post-War Imperatives and Pressures

Cheap, affordable housing for the masses was Singapore's most pressing post-War need. This led to the formation of a Government Housing Committee headed by C. W. A. Sennett ('the Sennett Committee'). The task before the Committee was formidable – to re-house 50,000 of the Colony's poorer working classes.¹⁴ It was estimated that \$50 million would be needed for this task to be accomplished. The matter was so dire that it attracted the attention of and proposals from the Malayan Democratic Union¹⁵ and the Progressive Party,¹⁶ two of Singapore's earliest political parties. In August 1948,

the Committee submitted its report and recommendations to the Legislative Council. The report outlined a 20-year scheme to create eight satellite towns on the outskirts of the city, with 50,000 inhabitants each.¹⁷ The *Straits Times* welcomed the plan as 'a solution for the desperate congestion which has overtaken Singapore.'¹⁸ In its editorial, the *Straits Times* described the problem as follows:

The need is known. Almost three-quarters of nearly three-quarters of a million people in Singapore Municipal area are living in overcrowded conditions. One third of them are living in conditions so grossly overcrowded that the density rate of some areas of the city has risen to 1,000 persons per acre... There

⁸ 'Special Body to Look after Historic Landmarks' *Straits Times*, 1951, 8.

⁹ Ibid.

¹⁰ 'Friends' Patron' *Straits Times*, 26 Aug 1955, 7.

¹¹ 'Appeal to all Races' *Singapore Free Press*, 7 Feb 1957, 18.

¹² 'These Friends – by Lee' *Straits Times*, 8 Sep 1956, 5.

¹³ Chan Eng Cheng, 'Our short past is being preserved just in time' *Straits Times*, 20 Aug 1983, 48.

¹⁴ '\$50,000,000 Housing Plan for S'pore' *Sunday Times*, 15 Jun 1947, 1.

¹⁵ 'Master Plan Needed for Housing' *Singapore Free Press*, 20 Nov 1947, at 5; and 'Housing: need is urgent, says MDU' *Singapore Free Press*, 1 Dec 1947, 5.

¹⁶ 'Progressives' Programme' *Singapore Free Press*, 31 Aug 1948, 5.

¹⁷ 'Housing 400,000 in 20 Years' *Straits Times*, 18 Aug 1948, 5.

¹⁸ 'Housing: The Master Plan' *Straits Times*, 30 Nov 1948, 6.

are single rooms in this city, no larger than an ordinary lavatory and matching it in salubrity, in which 25 or more adults and children live and have their being. There are beds in which children are born while the separate family which occupies the space beneath the bed holds its peace if it can.¹⁹

By the end of 1949, the Government proposed a new Development Bill which would constitute the Singapore Development Board, which was responsible for the planning, development and control of all land in Singapore. Under the new law, the Board would take over the entire undertakings of the Singapore Improvement Trust (SIT) and had planning powers similar to those found in the UK's Town and Country Planning Act of 1947.²⁰ The first duty of the new Board would be to survey the Colony and draw up a Master Plan for its future growth. The Master Plan would be reviewed every five years.

The Development Bill was debated and then sent to Select Committee but was ultimately withdrawn for a number of reasons.²¹ It was later resurrected and passed as two separate bills in 1958, the Housing and Development Act and the Planning Act. In the meantime, the need for a Master Plan was urgent and the Singapore Improvement Trust Ordinance was amended in 1951 to empower the City Planning Authority to carry out a 'diagnostic survey' of the island in preparation for a comprehensive Master Plan to guide the future growth and development of Singapore.²² Sir George Pepler (1882–1959), a noted town planner, was appointed the Singapore Government's planning consultant from 1950 to 1954, while D. H. Komlosy²³ was appointed chief of the Singapore diagnostic survey team. After four years of preparation, Singapore's first Master Plan was completed at the end of 1955.²⁴

Under this Master Plan, the proposal was to reduce overcrowding in the city by building three new towns in Bulim in Jurong, Woodlands and Yio Chu Kang.²⁵ This plan was only approved in 1958²⁶ by which time Singapore was on the road to self-government and the old Singapore Improvement Trust was soon to be abolished to make way for the Housing and Development Board. The Planning Ordinance replaced the Singapore Improvement Ordinance in 1959, and a Planning Department was created within the Prime Minister's Office to take charge of central planning for Singapore.

Significantly, the Master Plan of 1958²⁷ lists in an appendix, some 32 churches, temples, mosques and other buildings as places of historic interest worthy of protection (see Appendix A). This is the first time that the colonial authorities publicly listed certain buildings and sites as being worthy of preservation although this was not the first such list. According to Blackburn and Tan, the colonial authorities had established an Ancient Monuments Committee in 1954 'to compile a list of historic buildings and monuments' for the purpose of installing historic markers rather than to prevent them from being demolished.²⁸

Urban Renewal in a Developmental State

Despite the efforts of the colonial authorities to develop a comprehensive and workable solution to Singapore's housing problems, things moved slowly and by 1959, when the PAP came to power, much of Singapore's population still lived in dank, squalid, overcrowded tenements in the centre of the city. The PAP made the task of housing the people a major priority and acted quickly to solve the housing shortage. This was done by creating suitable legislative vehicles to carry out its mass public housing agenda, chief of which was the Housing and Development Act, which was passed in 1959. The Act created the Housing and Development Board (HDB) in 1960 and armed it with tremendous powers to effect the PAP's housing programme. The plan was for the HDB to build 50,000 units of flats within five years. This was an incredibly ambitious programme, given that the HDB's predecessor, the SIT, only managed to build 32,000 units in the 32 years of its existence, from 1927 to 1959.

While the HDB was well on its target to deliver on its promise of building 10,000 units of flats a year, development of the city centre needed to be addressed. Overcrowded as it was, the city centre – the oldest built-up parts of Singapore – would eventually be hollowed out as residents moved to the new public housing estates outside the city. At the same time, many of the buildings in the area – most of which were built in the 19th century, were in a serious state of disrepair and neglect. The urban centre of Singapore would need to be revitalised and in 1962, the Singapore Government sought the assistance of the United Nations (UN) to formulate a long-term framework for urban development.²⁹

¹⁹ Ibid.

²⁰ 'New Master Plan for Colony' *Straits Times*, 11 Dec 1949, 9.

²¹ 'Many Plans, Few Houses' *Straits Times*, 7 Sep 1953, 6.

²² N. Khublall & Belinda Yuen, *Development Control and Planning Law in Singapore* (Singapore: Longman, 1991) at 12; see also 'Master Plan' *Straits Times*, 18 Dec 1951, 8.

²³ 'Master Town-Planning Scheme in View' *Straits Times*, 12 Jun 1953, 10.

²⁴ Khublall & Yuen, *ibid.*, at 13; and 'Master Plan is Complete' *Straits Times*, 8 Nov 1955, 4.

²⁵ Patricia Morgan, 'Secrets of the Master Plan Out Today' *Straits Times*, 3 Jan 1956, 2; and 'Three new towns – with all the mod cons' *Straits Times*, 3 Jan 1956, 2.

²⁶ 'Master Plan gets approval of Govt' *Straits Times*, 8 Aug 1958, at 7.

²⁷ *Colony of Singapore Master Plan 1* (Singapore Government Printing Office, 1958).

²⁸ Blackburn & Tan, 345.

²⁹ On the United Nations Renewal and Development Project in Singapore, see Henry Wardlaw, 'Planning in Singapore: The United Nations Urban Renewal and Development Project,' *Royal Australian Planning Institute Journal* 9, 2 (1971), 45–47.

The first UN-appointed expert to arrive was Erik Emil Lorange, Professor of Architecture and Planning at the Oslo School of Architecture in Norway. Lorange spent six months – from February to August 1962 – studying problems in the Central Area of Singapore's Master Plan.³⁰ Lorange recommended the demolition and extensive redevelopment of the Central Area but that such work begin on 'the fringes of the Central Area and gradually move towards its centre so that much could be learnt from experimenting on the periphery of the old city area.'³¹

Lorange's study was followed by that of a second team of experts – Charles Abrams, Susumu Kobe and Otto Koenigsberger³² – appointed under the UN Technical Assistance Programme to help the Singapore Government in its long-term urban development. In their special report entitled *Growth and Urban Renewal in Singapore*,³³ the team set out the objectives of urban renewal as follows:

In framing objectives, it is important to know the purpose of urban renewal. It is more than simply tearing down sections and rebuilding them. Urban renewal is a movement from negative and restrictive planning to actual implementation. It not only calls for planning but conditions it. It is now generally accepted that the three indispensable elements of urban renewal are (1) conservation (2) rehabilitation and (3) rebuilding. In vesting these three responsibilities in an urban renewal agency and giving it the power to fulfil them, the planning function is automatically highlighted and the need for expanding it into a positive force for change is at once emphasized. It is no longer traditional private enterprise plus some public works that are depended upon to create the environment but the public authority in a more active and more inclusive role.³⁴

Far from proposing the wholesale destruction of large swathes of Singapore's old town and settlement, the team suggested the retention of Chinatown and the Central Business District:

With all its confrontations, the question that an urban renewal programme must face and resolve is whether to make a commitment to the retention of some of its areas or to raze them and create something different in their place. We recommend that a commitment be

made to identify the values of some of Singapore's existing areas as well as their shortcomings and build and strengthen these values while planning to remove some of their shortcomings. A city of predominantly Chinese people for example, without a Chinatown would be an anachronism. The Chinatowns of cities are among the most attractive features and they have evolved out of their own travail rather than out of planned models. Too many people derive their livelihoods from such areas to be uprooted en masse. Many prefer to continue living in them rather than in the housing projects. The reasons include lower rent, proximity to work, availability of food and services, closeness of parents and friends and a preference for the environment. Chinatown can also become a main focus of tourism and the locus of better restaurants and shops as well as provide a contrast in a big city that needs divergences between old and new, between the superimposed and the spontaneous. Every big city needs escape hatches from sameness and order and areas like Chinatown can emerge into important examples – if they are treated with something more subtle than the steam-shovel.³⁵

... The Central Business District is another special problem requiring special treatment. It is the life and pulse of the city, the hub of its enterprise, finance and employment, and the fountainhead of its economic growth and potential. One of the main concerns of urban renewal is increasing the economic efficiency of the Central Business District. Here too, conservation coupled with selective improvement are the keys. Traffic and parking are two of the main obstacles to its sound growth and every effort must be made to improve traffic conditions so that easier ingress and egress are possible.³⁶

The United Nations consultants' various reports culminated in the establishment of the State and City Planning division within the Ministry of National Development and the Urban Renewal Unit within the HDB in 1964. This Unit became the Urban Renewal Department (URD) in 1966 and then a statutory board – the Urban Redevelopment Authority (URA) – in 1974. Its priorities, as geographer Lily Kong puts it were as follows:

³⁰ 'Master Plan Review Now with Government,' *Straits Times*, 21 Aug 1962, 4.

³¹ Blackburn & Tan, 348.

³² Charles Abrams was Professor at the Massachusetts Institute of Technology; Dr Otto Koenigsberger was Deputy Principal of the Architectural Association School of Architecture in London; while Susumu Kobe was Professor of Economics at Waseda University in Tokyo. See 'UN experts' "go ahead" for big city face-lift,' *Straits Times*, 13 Aug 1963, 4.

³³ See Charles Abrams, Susumu Kobe, and Otto H. Koenigsberger, *Growth and Urban Renewal in Singapore: Report Prepared for the Government of Singapore* (New York: United Nations Programme of Technical Assistance, Department of Economic & Social Affairs, 1963).

³⁴ *Ibid.*, 121.

³⁵ *Ibid.*, 122–123.

³⁶ *Ibid.*, 124.

The priorities were bread-and-butter issues to reduce the development intensity (there were 11,000 persons per square kilometre in the urban areas in 1970, compared to 8,800 in 2010); to clear the slums and squatter population (there were 783,000 then, and none now); and to increase the amount of commercial and industrial space to support economic growth (there were 1,200 hectares of industrial land then and 11,600 hectares now).³⁷

Architect and urban planner, Alan Choe, who was appointed manager of the URD in 1964 adopted an instrumental and purely economic approach to this task, paying scant regard for the historical value of the old buildings. Choe saw many of Singapore's older settlements as useless slums, and saw no alternative to urban renewal, which to him meant the wholesale demolition of these precincts as they were 'of no economic value, and moreover posed a danger to health and life if not demolished.'³⁸ For Choe, the three tenets of urban renewal – (1) conservation (2) rehabilitation and (3) rebuilding – did not apply in equal force in the case of Singapore:

Unlike England or Europe, Singapore does not possess architectural monuments of international importance. There are therefore few buildings worthy of preservation. In addition many of the buildings in the Central Area are overdue for demolition. Hence to preach urban renewal by conservation and rehabilitation alone does not apply in the Singapore context. There must also be clearance and rebuilding.³⁹

Slum clearance was thus necessary 'to check urban sprawl and deterioration of the city centre caused by traffic strangulation and the parking problem' as well as 'for arresting crime and delinquency which is bound to come about unless slum clearance is launched.'⁴⁰ This attitude and approach to urban renewal would thus dominate Singapore's development plans for almost two decades, from 1964 to 1982. As a result, many historically and architecturally significant buildings were lost. As Lily Kong noted:

The years of stirring consciousness were long ones, and during those years, many beautiful buildings with historical and architectural significance were demolished. For example, the Bukit Rose, home to four generations of a prominent local Chinese family

in Bukit Timah, and the setting of British author Noel Barber's novel *Tanamera*, was demolished for the Casa Rosita condominium. Old China Building, best remembered for its stained glass panels depicting Chinese mercantile activities, made way for the OCBC Centre; and the Old Arcade, built with beautiful Moorish domes in 1909 by the Alkaff family, was razed and replaced by The Arcade in the 1970s.⁴¹

Most of the buildings that were on the 1958 Master Plan list were not demolished although one of the first 'victims' of slum clearance was Coleman's old house at 3 Coleman Street, which was demolished at the end of 1965 to make way for the Peninsula Hotel and Shopping Centre. In 1968, in the run-up to the 150th anniversary of Singapore celebrations, a committee within the Ministry of National Development – comprising representatives from the Ministry of Culture, the National Museum and the Tourist Promotion Board – was established to consider how best to safeguard Singapore's built heritage. The following year, plans were announced that a 'national trust' would be established and be responsible 'for preserving buildings, monuments and sites of historical or architectural interests as abiding reminders of the past.'⁴² This culminated in the creation of the Preservation of Monuments Board (PMB) through the enactment of the Preservation of Monuments Act, in 1971.⁴³

In addition to Singapore's built heritage, moves had also been afoot since at least 1966, to establish an archive for records, and in 1967, the National Records Centre Act was passed. Moving the Bill, Minister for Culture and Social Affairs, Othman Wok said:

The care and the maintenance of these unique documents, which are public property, is considered to be a public obligation and have been enacted into legislation in several Commonwealth countries, including Malaysia in 1966. The Singapore archives which comprise a prominent and substantial series of historical documents, some dating back as far as 1800 and which are part and parcel of Singapore's national heritage providing data, facts and historical information concerning the whole of Southeast Asia, corresponding with the focal position of Singapore in this region in the 19th and 20th century...⁴⁴

³⁷ Lily Kong, *Conserving the Past, Creating the Future: Urban Heritage in Singapore* (Singapore: Urban Redevelopment Authority, 2011), 28–29 [hereinafter 'Lily Kong'].

³⁸ 'Choe: Slums in city centre block progress,' *Straits Times*, 18 Apr 1967, 6.

³⁹ Alan F. C. Choe, 'Urban Renewal' in *Modern Singapore*, ed. Ooi Jin Bee & Chiang Hai Ding (Singapore: University of Singapore, 1969), 165.

⁴⁰ 'Choe: Slums in city centre block progress,' *Straits Times*, 18 Apr 1967, 6.

⁴¹ Lily Kong, 34.

⁴² William Campbell, 'Singapore plans to save its history,' *Straits Times*, 7 Feb 1969, 12.

⁴³ 'Team to help preserve our heritage,' *Straits Times*, 10 Sep 1970, 6; 'Law to reserve special relics of the past,' *Straits Times*, 5 Nov 1970, 7; 'Board formed to preserve monuments,' *Straits Times*, 22 Apr 1972, 11; see also generally, Blackburn & Tan.

⁴⁴ 'Centre to be set up for Govt archives' *Straits Times*, 9 Sep 1967, 8.

Under the Act, records, which had hitherto been kept in the National Library were transferred to a new National Archive at Lewin Terrace.⁴⁵

Voices from The Ground

SPUR

The first organised group to weigh in on the rapidly changing urban landscape of Singapore was the Singapore Planning and Urban Research Group (SPUR) which had been established in 1964 by a group of architects, planners and intellectuals.

SPUR is the brain-child of no particular person. It actually grew out of a discussion on the Singapore Master Plan among a group of architects. It dawned on us then that the uni-disciplinary approach was inadequate in dealing with the problems of planning and urban development. We find it necessary to develop a pan-island perspective, and on this basis study and comment on special projects and the concomitant socio-economic problems.⁴⁶

The core-group consisted of Chee Soon Wah, Koh Seow Chuan, Edward Wong, Tay Kheng Soon and William S. W. Lim, who served as its first chairman.

SPUR, a 'non-profit making group consisting of architects and planners and persons interested in promoting planning and urban research in Singapore',⁴⁷ was not concerned with heritage issues per se but rather with the urban condition of Singapore. Active between 1965 and 1975, the group engaged critically with the state authorities on many issues relating to urban planning, including traffic problems, regulation of pirate taxis, and even on the relocation of Paya Lebar Airport to Changi.⁴⁸ SPUR's inaugural chairman, William S. W. Lim explained the palpable link between urban development and heritage:

In the process of urban development, we should ask ourselves: who carries the main burden for the change, who benefits from the change, can we not minimize the adverse effects to the urban poor, what needs to be done, and how and why it is being done?

In the name of progress, urban development and slum clearance are taking place at a fantastic pace. We seem to have forgotten the desirability of maintaining a degree of historical continuity in our environment and the necessity of allowing time for ourselves to pause and think. We have adopted the theories and ideas of urban development and slum clearance mostly generated in the 1950s. These ideas have not provided a single satisfactory solution for any of the major cities of the world.

If the present policy of urban development is to continue in the next decade, traffic problems will become immeasurably worse and the essential character of the central area will be substantially destroyed. In the process, the central area will become a soulless concrete jungle devoted to the gods of commerce and economic growth.⁴⁹

At first, the group included senior civil servants and government technocrats. But when some of SPUR's activities were 'unfavourably received by the bureaucracy', all of them resigned, along with some other members.⁵⁰ The bureaucracy saw SPUR's attempts at dialogue as being confrontational and critical and started labelling them 'armchair critics'. For example, the group called for the government to make known all public projects and engage the public in active discussion, for only in this way can great civic pride and responsibility be fostered.⁵¹ This proposal, made by SPUR's chairman, Edward Wong, was rebuffed stiffly by the government:

Mr. Wong suggests that before the Government accepts any planning proposal not only must such a proposal, but all the relevant information which guided the making of a decision of such a proposal and all other alternative proposals that may be relevant, should be put to the public for discussion.

An elected representative of the Government given the mandate to carry out declared policies does not need to go back to the people every time it adopts a proposal for implementation. Decisions on policy are rightly made by the elected representatives of the people acting on the advice of professional officers in the Government.

⁴⁵ See Gloria Chandy, 'Herein lie "secrets" of our heritage ...' *New Nation*, 30 Nov 1978, 10 – 11.

⁴⁶ Ivan Lim, 'SPUR keeps a watching brief on things,' *New Nation*, 24 Jan 1972, 9.

⁴⁷ 'Probe team told to license "pirates"' *Straits Times*, 6 May 1966, 4.

⁴⁸ "'Develop Changi airfield" call by SPUR,' *Straits Times*, 24 Feb 1971, 7.

⁴⁹ William S. W. Lim, 'What sort of Singapore do we want for our children?' *New Nation*, 8 Mar 1971, 9.

⁵⁰ 'SPUR to publish 2nd book,' *New Nation*, 26 Mar 1971, 3.

⁵¹ Ibid.

... It would be naïve to expect the Government to invite comments from a group of individuals without any of them bearing any responsibility whatsoever. Planning for urban renewal is a full-time job, exacting in its demands and deserving of the efforts and talents of highly-trained professional officers in many disciplines. It is not an activity where the views of armchair critics can be taken seriously.⁵²

More significantly, SPUR was anxious to instill a 'feeling of urbanity' and sense of belonging in the community by planning and developing a city that people could live comfortably with their space and their roots. One fascinating activity which SPUR embarked on was its 1968 'Know Your Singapore' exhibition at the Esplanade. Billed as the 'first of its kind', the exhibition was 'aimed at stimulating public interest in the inherent qualities of the environment Singaporeans live in.'⁵³ The theme of the exhibition was 'Our Country is Our Home; Our City is Our House', and it featured self-contained sections on: 'Singapore: The Unique Marine City'; 'Outdoor Living – Our Way of Life'; 'Nature and Our City'; 'Singapore From the Air'; and 'Historical Singapore'.⁵⁴ Speaking in 1971, SPUR Chairman Tay Kheng Soon said:

It is just as vitally important to have a beautiful, delightful and more human Singapore city – a city in which every human value is catered for – as it is important to achieve economic take-off. There is a need to create an atmosphere where people feel that they belong here and nowhere else.⁵⁵

The Singapore Society

Around the time when the Government announced the establishment of the PMB, the Singapore Institute of Architects and the History Association of Singapore sponsored a meeting to establish the Singapore Society, a civic body to 'stimulate public interest in the Republic's cultural heritage'.⁵⁶ This Society appears to have been rather short-lived as there is no further news of its existence after October 1971. The Society had its premises at the National Archives and Records Centre at the National Library and was to 'preserve records and buildings and initiate research, evaluation, documentation, publication, collection, display and restoration of items of historical importance'.⁵⁷ Its President was George Bogaars, head of the Civil Service.

One thing the Society did was to compile a 46-item list on the preservation of significant buildings and sites in Singapore for the soon-to-be constituted PMB.⁵⁸

Architects and Planners

One of the first local architects to address the importance of heritage in urban planning was Raymond Kuah Leong Heng, who had been a member of the State and City Planning division. In an address to the Singapore Society at the National Library on 9 May 1971, entitled 'The Challenges Posed by Urbanisation', Kuah argued for the inclusion of 'all such features of a viable society as are essential to its culture, healthy growth and flourishing' in comprehensive urban planning.⁵⁹ This approach should:

... bring into balance, physically and economically, such highly intertwined fields of basic endeavour as agriculture, transportation, pattern of urbanisation, the development of power and harnessing of water resources, health control, sanitation, industrialisation, public control of air and water pollution and the *preservation of those features of our heritage that it is mandatory to preserve and conserve for their intrinsic, architectural, aesthetic, historic, scenic, human and recreational qualities and merits* – in short, creative thinking broadens the field of the public well-being and welfare to the maximum. [emphasis added]⁶⁰

One of the problems of urban renewal, Kuah highlighted, was where 'economic pressures get out of hand to the point where the value of land greatly exceeds the properties on it'. The impetus to simply tear down such buildings becomes compelling. Kuah argued that in such cases, 'adaptive reuse' – finding new uses for old buildings – was the best solution. It would in such cases, be necessary 'to manipulate forces in favour of an old building so as to give it a new lease of life'.⁶¹ Finally, he called upon institutions such as the Singapore Society, and the Singapore Institute of Architects 'and all thinking citizens at large' to 'come out strongly in favour of urging our Government to take positive steps to preserve our heritage before it is too late'.⁶²

Professor Seow Eu Jin was another strong advocate for preservation. As an insider (being a member of the PMB) as well as an outsider (being the Head of the Department

⁵² 'Urban development plans by expert,' *Straits Times*, 18 Aug 1967, 10.

⁵³ 'Know your Singapore show at Esplanade,' *Straits Times*, 8 Jul 1968, 4.

⁵⁴ Ibid. See also, 'Travelling display of S'pore environment,' *Straits Times*, 27 May 1968, 6.

⁵⁵ Ivan Lim, 'SPUR keeps a watching brief on things,' *New Nation*, 24 Jan 1972, 9.

⁵⁶ 'Singapore Society to be formed,' *Straits Times*, 25 May 1969, 8.

⁵⁷ 'Body to preserve old buildings,' *Straits Times*, 23 May 1969, 8.

⁵⁸ 'Team to help preserve our heritage,' *Straits Times*, 10 Sep 1970, 6.

⁵⁹ Raymond Kuah Leong Heng, 'The challenges posed by urbanization: Daring approach is a "must" to meet problems,' *New Nation*, 10 May 1971, 7.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Ibid. See also 'Planning: "Not by costs alone" appeal,' *Straits Times*, 10 May 1971, 7.

of Architecture at the University of Singapore), he was often quoted in the press for his thoughts on heritage and preservation.⁶³ In 1981, Seow published a list of what he called 'Singapore's Other Monuments' in *Planews*, the journal of the Singapore Institute of Planners in which he offered a list of buildings that were worthy of preservation other than those already gazetted as monuments by the PMB. Buildings on Seow's list included: the Assembly House (now Old Parliament House); the cluster of government buildings in Empress Place (now Asian Civilisations Museum); Victoria Memorial Hall; Singapore Cricket Club; Fort Canning; the Istana Kampung Gelam; St Joseph's Church and the Goodwood Park Hotel. He also argued that places like Chinatown, Emerald Hill and Joo Chiat, Kandang Kerbau and Serangoon Road ('the "Little India" of Singapore') and the Malay settlement in Arab Street and Jalan Eunos could all be developed, each with its own theme and flavour.⁶⁴

Another academic architect, Peter Keys, who arrived in Singapore from Australia in 1974,⁶⁵ wrote extensively on architecture,⁶⁶ conservation, preservation⁶⁷ and on the stories behind many of Singapore's most historically significant buildings,⁶⁸ streets,⁶⁹ and places,⁷⁰ sharing his views on their architectural and historical merits and advocating their preservation. Keys, a native of Sydney, became heavily involved in the preservation movement in his native city and wanted the same for Singapore:

I can sense the history of Singapore. I know its achievements and I can see the built environment which a pioneering people made for themselves over the years. I see a nation steeped in a tradition of which it has every right to be proud. I see the opportunities that exist to further enhance the qualities of the place by judicious conservation – and I want to help and be part of it.

... It is never too late – just as it's never too late to fall in love. Even with the lamentable demolition of so many old buildings over the past few years, I could still identify hundreds and hundreds of worthy and capable of preservation and ready, willing and able to be loved.⁷¹

The most significant architect and civil society advocate of heritage preservation was William S. W. Lim. A pioneering architect, Lim had been founder Chairman of SPUR back in 1965 and was to go on to be founder President of the Singapore Heritage Society in 1987. Even after the dissolution of SPUR in 1975, Lim continued advocating a more holistic approach to urban renewal. Such an approach necessarily includes the preservation of Singapore's architectural heritage. For Lim, the wholesale implementation of 'outdated planning theories from developed countries' was 'dangerous' and could 'severely damage and even destroy the entire urban fabric and historical heritage of our cities'.⁷² Speaking at the convention of the Royal Australian Institute of Architects on 18 June 1982, Lim said:

As the basic material needs in Singapore are generally satisfied, we should turn our attention towards developing a better quality of life which has a richer cultural, social and physical environment. Preservation of our architectural heritage is one of the elements which will enrich our cultural background.⁷³

As a collective, the Singapore Institute of Architects (SIA) also contributed to the campaign to save Singapore's built heritage by proposing lower taxes and development charges for projects which involve preserving buildings of historical and architectural interest.⁷⁴ In 1981, it also came up with an innovative proposal to use the Armenian Church as its professional headquarters. This plan fell through when the trustees of the Church raised objections to the proposal, arguing that the Church should never be used for secular purposes.⁷⁵

⁶³ See for example, Judith Holmberg, 'Case of balance,' *Straits Times*, 12 Aug 1976, 10 – 11; Gerry de Silva, 'Govt to preserve these houses,' *New Nation*, 8 Sep 1976 4; and 'Find new uses for landmarks and preserve them: Prof,' *Straits Times*, 14 Nov 1978, 24.

⁶⁴ 'List of Buildings worthy of preservation,' *Straits Times*, 13 Aug 1981, 12.

⁶⁵ See 'Time and Place,' *Straits Times*, 16 Oct 1982, 1.

⁶⁶ See for example, Peter Keys, 'Terrace Houses,' *Straits Times*, 14 Jun 1981, 4.

⁶⁷ Gretchen Mahbubani, 'Keeping a part of our heritage,' *Straits Times*, 6 Dec 1980, 8.

⁶⁸ See for example, Peter Keys, 'This Great Heritage,' *Straits Times*, 12 Jul 1981, 8; 'Past lives on amidst bustle,' *Straits Times*, 19 Jul 1981, 4; 'Those lovely black and white houses,' *Straits Times*, 13 Sep 1981, 8; 'Classic in design, rich in history,' *Straits Times*, 10 Jan 1982, 10; 'Villa with an illustrious history to boast of,' *Straits Times*, 16 May 1982, at 10; and 'The Villa and more,' *Straits Times*, 30 May 1982, 8;

⁶⁹ See for example, Peter Keys, 'Looking up the street with a past,' *Straits Times*, 7 Jun 1981, 4; 'That long and winding road,' *Straits Times*, 4 Oct 1981, 8; 'Orchard Road 0923: What history lies here?' *Straits Times*, 1 Nov 1981, 10; and 'The area around Race Course Road,' *Straits Times*, 4 Apr 1982, 8.

⁷⁰ See for example, Peter Keys, 'Nothing like a walk in the gardens,' *Straits Times*, 9 Aug 1981, 4; 'The gardens with many a tale to tell,' *Straits Times*, 16 Aug 1981, 4; 'Where there is still time to stand and stare,' *Straits Times*, 30 Aug 1981, 10; 'Going down to those Anglo-Orient warehouses,' *Straits Times*, 25 Oct 1981, 38; 'Grand buildings ... with food and medicine too,' *Straits Times*, 27 Dec 1981, 10; 'I know a place ...' *Straits Times*, 24 Jan 1982, 8; 'Memories of some fine country houses,' *Straits Times*, 7 Mar 1982, 8; 'An urban scene to remember,' *Straits Times*, 13 Jun 1982, 8; 'Popular then ... and now,' *Straits Times*, 27 Jun 1982, 8; 'The quay to our history,' *Straits Times*, 2 May 1982, 8; 'Facelift,' *Straits Times*, 13 Nov 1982, 6; 'Hill of varied delights,' *Straits Times*, 27 Nov 1982, 10; 'Haven-ly quiet,' *Straits Times*, 11 Dec 1982, 9; and 'The house of ...' *Straits Times*, 16 Mar 1983, 10.

⁷¹ Peter Keys, 'Time and place,' *Straits Times*, 16 Oct 1982, 1 & 13, 13.

⁷² 'When a city is not home,' *Business Times*, 25 Sep 1978, 2.

⁷³ 'Call for fresh approach to urban development,' *Business Times*, 19 Jun 1982, 3.

⁷⁴ 'Lower taxes on old buildings urged,' *Straits Times*, 26 Nov 1980, 17.

⁷⁵ Catherine Ong, 'Setback for efforts of Institute of Architects,' *Business Times*, 11 Apr 1981, 5.

In March 1981, the Singapore Institute of Planners organised a major conservation forum which was attended by over a hundred architects and planners from the government and the private sector. At this forum, every speaker emphasised the importance of conservation and argued that the time was now ripe for the state to take a more proactive part in preserving Singapore's built heritage. At this meeting, Fan Kai Chang, deputy general manager of the URA, announced that a working group had been formed under the Ministry of National Development as government agencies were now 'more aware of the need for preserving historically important and architecturally significant areas of the city.'⁷⁶ Participants were so anxious about the further destruction of Singapore's old cityscape that they called for a one-year moratorium on demolitions of old buildings in Singapore while a study was carried out. Impossible as this resolution was to implement, it signalled a major shift in the thinking and mood of the Government towards heritage preservation. In August 1981, the Institute proposed two 'urban trails' along which Singaporeans could literally 'walk into the past'. The two routes were drawn up by the Institute to show off buildings of historical and architectural interest as well as symbolic landmarks.⁷⁷

Individuals

In the meantime, a 'slow stirring conservation consciousness of the value of Singapore's architectural heritage grew.'⁷⁸ It was, as Lily Kong explains, 'a consciousness that grew in widening circles, first confined generally to an expatriate population (perhaps looking for the "exotic East"), and then extending beyond different groups of interested professionals and the media to the ordinary citizen.'⁷⁹ Other than the work of the Friends of Singapore, between 1937 and 1959, individuals also contributed to the campaign to help preserve Singapore's built heritage. One early effort was by animal-

rights activist and photographer, Marjorie Doggett whose passion for recording the old buildings in Singapore led to the publication of her *Characters of Light*, a book of beautiful photographs of many of Singapore's pre-War buildings.⁸⁰

Another group of individuals who alerted the public to the importance of Singapore's built heritage were journalists. Writing between the 1950s and 1970s was expatriate journalist William Campbell, who was one of the earliest journalists to write and report on historical matters. While reporting on news, Campbell covered various history-related topics in his columns, including the history of the Borneo Company,⁸¹ the death of Edwina Ashley (Lady Mountbatten),⁸² the fate and development of Pulau Blakang Mati (now Sentosa),⁸³ the urban renewal of the city centre,⁸⁴ the work of the State and City Planning division,⁸⁵ the establishment of the PMB,⁸⁶ heritage for tourism,⁸⁷ the demolition of Raffles Institution,⁸⁸ and the fate of old British military barracks.⁸⁹ Campbell's articles were in the vein of well-crafted reports and were not opinion nor advocacy pieces.

Starting in the 1970s, journalists began to take a more active stance in advocating the preservation of Singapore's heritage.⁹⁰ Ismail Kassim who had a regular column, 'Singapore Notebook' in the *Straits Times*, wrote about buildings like the Old Parliament House,⁹¹ Istana Kampung Gelam⁹² and the Telok Ayer Market.⁹³ Later, when he wrote for the *New Nation*, Ismail Kassim continued to keep a vigilant eye on matters affecting Singapore's monuments.⁹⁴ Other journalists writing in the late 1970s and 1980s that concerned themselves with heritage matters were Quek Peck Lim, who feared the erosion of Singapore's heritage in the face of globalisation;⁹⁵ and Nancy Chng, who argued for the adaptive reuse of old buildings and conversion of spaces along the lines of what the Americans did with Pier 39 in San Francisco.⁹⁶

⁷⁶ Gretchen Mahubani, 'Plea to preserve old buildings gains urgency,' *Straits Times*, 29 Mar 1981, 5.

⁷⁷ "'Urban trails" for S'poreans to stroll into the past,' *Straits Times*, 13 Aug 1981, 12.

⁷⁸ Lily Kong, 30.

⁷⁹ Ibid.

⁸⁰ Marjorie Doggett, *Characters of Light: A Guide to the Buildings of Singapore* (Singapore: Donald Moore, 1957). This book was reprinted by Times Books International in 1985.

⁸¹ William Campbell, '100 Years Young: The Borneo Company is still expanding everywhere,' *Straits Times*, 25 Oct 1956, 3.

⁸² William Campbell, 'Countess with the Common Touch,' *Straits Times*, 28 Feb 1960, 9.

⁸³ William Campbell, 'A new life planned for an old fortress,' *Straits Times*, 1 Aug 1967, 10.

⁸⁴ William Campbell, 'Halting 100-year-old decay in a city's heart,' *Straits Times*, 13 Oct 1967, 10; and 'A facelift for the city's ugliest spots,' *Straits Times*, 25 Mar 1969, 10.

⁸⁵ William Campbell, 'Building the Singapore of 1988 ... NOW,' *Straits Times*, 22 Mar 1968, 10.

⁸⁶ William Campbell, 'Singapore plans to save its history,' *Straits Times*, 7 Feb 1969, 12; 'Preserving our Heritage: Wayang Street is the focal point,' *Straits Times*, 2 Aug 1973, 12; 'Ancestors' memory saves a temple,' *Straits Times*, 3 Aug 1973, 10; 'When a temple stands in the way of progress,' *Straits Times*, 18 Nov 1973, 10.

⁸⁷ William Campbell, 'Preserving history of the byways of Singapore,' *Straits Times*, 28 Mar 1969, 11.

⁸⁸ William Campbell, 'It's Auld Lang Syne for the last time tomorrow,' *Straits Times*, 4 Jun 1971, 17; 'When RI moves house,' *Straits Times*, 5 Jun 1971, 11; and 'Preserving bits of the old RI at its new site,' *Straits Times*, 10 Nov 1972, 14.

⁸⁹ William Campbell, 'New Lease of Life ...' *Straits Times*, 12 Feb 1972, 14; and 'An industrial complex to be built on old British army conclave,' *Straits Times*, 12 Apr 1972, 13.

⁹⁰ See for example, Ilsa Sharp, 'Winds of Change Constantly Blowing,' *Business Times*, 8 Aug 1978, 27.

⁹¹ Ismail Kassim, 'Existing in Silence,' *Straits Times*, 2 Nov 1974, 15.

⁹² Ismail Kassim, 'Reminder of the Past,' *Straits Times*, 21 Dec 1974, 15.

⁹³ Ismail Kassim, 'Blending the Old with the New,' *Straits Times*, 11 Jan 1975, 13.

⁹⁴ Ismail Kassim, 'Our Heritage: A relic of the past is spared by builders,' *New Nation*, 27 Apr 1973, 9.

⁹⁵ Quek Peck Lim, 'Holding fast to our heritage in new society,' *Business Times*, 15 Sep 1979, 7.

⁹⁶ Nancy Chng, 'New things to do with old buildings,' *Straits Times*, 21 Apr 1979, 1.

Singapore's English press – through their editorials – was also quite vocal in articulating its concerns about Singapore's disappearing historic buildings. When the 110-year old Adelphi Hotel was torn down, the *New Nation* lamented its demolition and gently criticised the PMB's lack of powers to stop it. At the same time, it lamented Singaporean's lack of concern with the destruction of its monuments:

... it would be comforting if Singaporeans displayed a greater sense of awareness for their heritage as embodied not only in their inherited cultures but also the buildings and sites that form our past. So much of Singapore has been torn down in the last decade and yet there have been few murmurs of regret from Singaporeans.⁹⁷

And fearing the demolition of the old Colonial Secretariat building in Empress Place, the *New Nation* quipped:

But a nation cannot survive on modernisation and urbanisation alone. Just as it has to be forward-looking to progress, a nation has also to preserve its past and its heritage if it is to stand the test of time. This includes the preservation of historic monuments and edifices in the country.

There is therefore this dilemma in all modernising and developing countries – which part of the past should be kept as historical heritage and which part should be given up for the sake of progress and change? Particularly in a small and new nation like Singapore where land is limited and history is short, unless urban renewal is carefully regulated, we may, as Mr. EW Barker, the Minister for Law and National Development, put it some time ago, 'wake up one day to find our historic monuments either bulldozed or crumbling to dust through neglect.'⁹⁸

On learning of The Arcade's impending demolition, Ting Hi Keng of the *New Nation* wrote: 'Like a scythe cutting down grass when the time is due, urban renewal has mowed down many buildings that made Singapore history.'⁹⁹ Ting also

highlighted a problem inherent in the scheme of preservation under the Preservation of Monuments Act – the tension between state and building owners in the preservation of non-public buildings. It is one thing to preserve religious buildings and civic buildings as they are either unlikely to be torn down completely as in the former case, and the cost of maintenance can be passed on to the state in the latter. By gazetting private property for preservation, the building owner potentially loses out on the commercial gains if the building had been torn down and the land redeveloped. Ting recalls his conversation with the building's former owners Alwee Alkaff:

'The building was very old and posed a fire risk. The Government had relaxed the law evicting tenants in the area which indicated that it might acquire the place,' he said.

'Perhaps the Government was intending to preserve it as a national monument with historical and cultural interests, I said.

'Then where would that leave us? Was the immediate rejoinder from Mr. Alkaff, a property valuer and estate agent who also runs the family business. 'It was only bringing in about \$18,000 a month in rent before we sold it. Now we are getting \$22,000 a month letting out the Alkaff Building in Market Street which we bought three years ago with only one-third the money we got by selling the Arcade.'¹⁰⁰

In the ensuing decade, articles, letters and editorials lamented the loss or potential loss of historically and architecturally significant buildings: Eu Villa (in 1978);¹⁰¹ the Central Police Station and the Hongkong and Shanghai Bank Building (1978);¹⁰² Maritime Building (1980);¹⁰³ Raffles Hotel (1979-1980);¹⁰⁴ St. Joseph's Institution (1981);¹⁰⁵ historic residences,¹⁰⁶ and even old shophouses.¹⁰⁷ At the same time, the PMB was constantly challenged to do more to protect some of these historic buildings.¹⁰⁸ In November 1978, the Board announced its intention to launch a series of campaigns to 'stimulate more widespread support for the monuments and

⁹⁷ 'It's goodbye to the old Adelphi,' *New Nation*, 23 Jun 1973, 6.

⁹⁸ 'Preserving our national monuments,' *New Nation*, 3 Mar 1973, 6.

⁹⁹ Ting Hi Keng, 'Splendour that was the Arcade,' *New Nation*, 30 Mar 1978, 10 – 11.

¹⁰⁰ Ibid.

¹⁰¹ Editorial 'Save Eu Villa,' *Business Times*, 2 Sep 1978, 6.

¹⁰² Editorial 'A Stake in the Old,' *Sunday Times*, 20 Aug 1978, 12.

¹⁰³ Filomina D'Cruz, 'Waterfront landmark to be torn down,' *Straits Times*, 4 Dec 1980, 12; and Editorial, 'Not so Unique,' *Straits Times*, 5 Dec 1980, 20.

¹⁰⁴ Editorial, 'Born 1886, going, going ...?' *New Nation*, 19 Apr 1979, 8; and Jacob TL Tan, 'We, not foreigners ought to save Raffles,' *New Nation*, 5 Jun 1980, 8.

¹⁰⁵ Peter Keys, 'An institution to preserve,' *Straits Times*, 2 Aug 1981; 'School landmark of effort for formal education,' *Straits Times*, 16 Aug 1981, 11; and 'If nothing else, let's keep its face,' *Straits Times*, 16 Aug 1981, 11.

¹⁰⁶ 'Townhouses of ancient Chinese towkays,' *Straits Times*, 29 Nov 1981, 48.

¹⁰⁷ Teng Juat Leng, 'Living with the splendid past,' *Straits Times*, 29 Jan 1981, 8; see also Betty Khoo, 'The unique old shophouses of Singapore,' *New Nation*, 15 Sep 1972, 9.

¹⁰⁸ Editorial, 'More Verve Please,' *Straits Times*, 29 Sep 1978, 16; and Peter Keys, 'Preserved for the benefit of the nation,' *Straits Times*, 29 Nov 1981, 47.

to support their preservation and upkeep.’¹⁰⁹ Banker Lien Ying Chow, who was PMB Chairman, explained that ‘the extent and effectiveness of measures to preserve the old heritage of Singapore will depend on the moral and financial support from the people’ since the Government ‘cannot, in fairness, be expected to hold the entire responsibility for the preservation of monuments’.¹¹⁰

Readers also started writing in to the press to express their concerns about the destruction of Singapore’s old buildings.¹¹¹ One ‘M. Salleh’, reacting to an article about regional tourism and Jakarta’s plan to become the ‘Vienna of Asia’, argued that Singapore could benefit tremendously from tourism if its old buildings were preserved: ‘Let us not kill the goose that lays the golden eggs! Once destroyed, our heritage cannot be replaced.’¹¹² Another reader, going by the pen-name ‘Feelings’ argued passionately that the PMB had made ‘grave mistakes’ in ‘choosing what to preserve and what to be steam-rolled under the ruthless wheels of the bulldozers.’¹¹³ He pleaded:

Let us not destroy old buildings of historic value just because there is a shortage of cash or because the walls are all crumbling down or because it does not compare with the pyramids of Egypt. It is all we have left of our past.... It is not the sole right of modern buildings to monopolise the whole of the central district. Are we to become a society without feelings for our past heritage but have fat bank accounts?¹¹⁴

Dr. George Caldwell, a regular writer to the press, and who goes by the pen-name, R. Mortis or Rigor Mortis, called for mature thinking on matters of heritage, and argued for a contextual approach to preservation:

We are generally too young to appreciate the need to conserve our heritage of buildings and townscape and we will continue to destroy the old, wherever or whatever it might be, in order to make money out of ‘development’. It is a part of this attitude of mind which makes us blind to the intriguing and unique features of the Singapore townscape. The Preservation of Monuments Board is not interested in townscape but only in selected buildings.

Surely it must be realised that such buildings removed from their context may as well be removed altogether. For instance the whole of Telok Ayer Street on the old beach-front side should remain intact. To leave the temples isolated would raise the question in any visitor’s mind as to why they are there at all.¹¹⁵

State Responses

By the end of the 1970s, the Government had broken the back of the housing problem in Singapore, and while it still looked upon organised civil society in adversarial terms, its stance on heritage and urban renewal had softened, and by 1981, the tide had turned. It is difficult to know to what extent public calls for preservation contributed to this change of heart. What we do know is that already, there were internal debates within Government concerning these matters. For one, the Singapore Tourist Promotion Board (STPB) – predecessor of today’s Singapore Tourism Board – argued forcefully for the retention of old buildings. K. C. Yuen, Director of the STPB, argued in 1980 for the preservation of older parts of the city, such as Chinatown, and a good tourist infrastructure built around it to entice tourists to visit Singapore. Yuen feared that Singapore was in danger of losing its ‘exotic’ charm because many parts of the old city were disappearing:

We have to make a concerted effort to preserve parts of Chinatown, not just one or two streets but the full city block, not just the building but the city life-style, e.g. Arab Street, Serangoon Road and the Muslim quarters. If Chinatown cannot be preserved, then at least we should try and replace it with something similar ... and give ourselves that kind of ambience not only for the tourists but also for locals.¹¹⁶

Whatever the main impetus for the change, the URA put together a team of professionals in January 1981 to deliberate how historical parts of Singapore can be preserved. The team, which was made up of URA officials under the chairmanship of Fan Kai Chang, URA’s deputy general manager, included Christopher Hooi (Director of the National Museum) and Pamela Chong Lee (Divisional Director (Marketing) Singapore Tourist Promotion Board). By June 1981, it had completed a ‘confidential report on preservation of historical buildings’ in Singapore and submitted it to the Government.¹¹⁷ The following year, the URA dispatched architect Lim Eng Khoo to Sydney University to undertake a one-year course on

¹⁰⁹ ‘Support sought for historical buildings,’ *Straits Times*, 11 Nov 1978, 9; see also ‘Drive to boost support for monuments?’ *Straits Times*, 25 Jun 1979, 13.

¹¹⁰ Ibid.

¹¹¹ See for example, ‘Preserving our monuments,’ *New Nation*, 8 Jun 1973, 8.

¹¹² ‘Let’s see to it that our heritage is preserved,’ *Straits Times* 21 Aug 1972, 21.

¹¹³ ‘Grave errors have been made in choosing what to preserve,’ *Straits Times*, 6 Aug 1979, 17.

¹¹⁴ Ibid.

¹¹⁵ R. Mortis, ‘Age no excuse for pulling down our heritage,’ *Straits Times*, 21 Apr 1979, 17.

¹¹⁶ ‘Need to preserve Singapore’s past,’ *Business Times*, 17 Jun 1980, 1; see also Yeo Mei Sin, ‘All-out effort to preserve our buildings,’ *Singapore Monitor*, 29 Dec 1983, 1; and Salma Khalik, ‘Preserve “old Singapore” for tourists says STPB,’ *Straits Times*, 30 Dec 1983, 9.

¹¹⁷ Siow Li Sen, ‘Preservation of old buildings,’ *Business Times*, 12 Jun 1981, 1.

building conservation.¹¹⁸ This team, which included Koh-Lim Wen Gin (later Chief Planner), carried out a comprehensive review of the city centre and developed a plan that included the conservation of the historic areas:

This plan recommended locations for intensive developments, major green spaces, and significant historic districts to be served as the lungs that breathe life into the city. After four years of hard work, we obtained the government's approval in 1986 to conserve seven historic districts, comprising 3,200 buildings. This makes up 4% (55 hectares) of our total developable land area within the city centre, a small but very significant part of our city.¹¹⁹

This Conservation Master Plan was unveiled at an exhibition staged by the URA. Among other things, it designated seven areas for conservation: Chinatown, Kampong Gelam, Little India, Boat Quay, Clarke Quay, Cairnhill and Emerald Hill.

In the meantime, the Singapore Tourist Promotion Board also undertook a review of Singapore's tourist attractions in its development of a Tourism Product Development Plan for Singapore. Among other things, its consultants recommended elective conservation of certain old districts and buildings:

... for the city to be truly great, it cannot rely only on modern architecture and it is inevitable that new developments suffer the fate of looking like the new buildings in other cities of the world. The only way that gives the city a distinct personality is its historic past through the selective conservation of old districts and buildings. It is therefore timely that you reassess its architectural heritage and commence action for the conservation of its historic areas.¹²⁰

Among the places recommended for conservation were Raffles Hotel, Chinatown, Kampong Gelam-Arab Street, Little India, Bugis Street, Singapore River, Heritage Link (bounded by Singapore River, Queen Elizabeth Walk, Fort Canning Park and Bras Basah Road) and Empress Place.¹²¹ With the confluence of so many sites for conservation, it was time for action.

By 1983, the state had come around to the belief in preserving Singapore's built heritage, but the problem that remained was that many Singaporeans were ignorant about their country's past and the significance of many of the buildings being earmarked for preservation. The Preservation of Monuments Board then embarked on a series of education programmes,

such as talks to schools and historical exhibitions. In June 1983, the URA announced that the Convent of the Holy Infant Jesus Chapel on Victoria Street would be preserved for historical reasons. The following month, it was announced that the old Shaws Building (formerly Namazie Mansions) and Stamford House would also be preserved, and a row of 10 two-storied shophouses on Bukit Pasoh Road restored.¹²² The fight for heritage was officially over.

THE FIGHT ABOUT HERITAGE

In 1984, Second Deputy Prime Minister S. Rajaratnam offered yet another reason why preservation of Singapore's built heritage was crucial. Speaking at an urban planning seminar on 28 April 1984, he stated:

We must preserve as much as possible of our transplanted cultures embodied not only in the language, culture and beliefs of the diverse peoples of Singapore *but also in their temples, churches, mosques, house, street names and localities*. These constitute a people's collective memory; an awareness of their history, brief though it may be. A sense of a common history is what provides the links to hold together a people who came from the four corners of the earth. [emphasis added]¹²³

Having now determined that it was necessary for Singapore to preserve its built heritage – whether for the tourist dollar or to give Singaporeans a palpable sense of home – the question now moved to *what* should be preserved, and *how* the preservation should be undertaken. The first and obvious battleground was Chinatown, especially since it had been mentioned in practically every discussion about preservation. Not only was Chinatown an important historical precinct, it was also a 'must see' stop for all tourists. Magdalene Lum, of the *Straits Times* summed up the contours of the debate as follows:

Should the authorities preserve the buildings? Or should they preserve the historical characteristics and social peculiarities of the community like the lifestyle of the people? Does preservation include the people as well?¹²⁴

The debate over the preservation of Chinatown ranged far and wide with numerous experts being brought in to study the space and recommend measures for its conservation. Indeed, the authorities spent many years consulting various experts

¹¹⁸ 'Moving to build up pool of people,' *Straits Times*, 7 Aug 1982, 13.

¹¹⁹ Lily Kong, 39.

¹²⁰ Lily Kong, 41.

¹²¹ *Ibid.*, 43.

¹²² "'Save our past" call of the present,' *Straits Times*, 19 Aug 1983, 1.

¹²³ 'The sense of history that holds S'poreans together,' *Singapore Monitor*, 29 Apr 1984, 2.

¹²⁴ Magdalene Lum, 'Keep the essence and spirit of Chinatown,' *Straits Times*, 6 Apr 1983, 18; see also Editorial, 'Chinatown, a way of life ...' *New Nation*, 7 Jul 1978, 8.

and it was not until 1998 that the Singapore Tourism Board (STB) publicly announced its blueprint for its conservation.

One upshot of this debate led to the *Business Times* newspaper organising a forum to develop a blueprint for saving Chinatown. Panelists included three architects, a banker, a property owner, and an environmental planner.¹²⁵ One proposal that came out of the discussions was that there should be a body to organise the disparate voices on the subject of preserving Chinatown: 'What is needed, the panelists agree, is for these voices to come together, in a Heritage Society, or a National Trust, or some such organisation.'¹²⁶ This suggestion was taken up seriously by architect William Lim – who was a member of the panel – and led eventually to the founding of the Singapore Heritage Society (SHS).

The Singapore Heritage Society

With the demise of the Friends of Singapore (FOS), some time in the 1960s, there existed in Singapore no civic group or organisation dedicated to issues of Singapore's history and heritage. Indeed, Professor Seow Eu Jin, former Head of the Department of Architecture at the University of Singapore, and Head of the PMB's Research and Publicity Committee lamented in 1976:

Unfortunately the public does not show enough interest in our historical buildings ... At one time, during the 70s, there was a small private society which called itself the Friends of Singapore. These people tried to preserve some of Singapore's monuments, but after the board was formed, it petered out. We need people like this to help us discover which of Singapore's buildings are worth preserving, and why; and to help us find funds for the preservation of these buildings.¹²⁷

In September 1986, following the proposal by the *Business Times* panel on Chinatown's conservation 'to form a heritage society which will channel public opinion and start a dialogue with the authorities on how best to give our children a sense of their history' William S. W. Lim and a group of concerned Singaporeans – including Rafiq Jumabhoy, Sharon Siddique, Maria Abdullah, Kwa Chong Guan, Geraldene Lowe-Ismail and Brother Joseph McNally – held two informal meetings and decided to register the SHS.¹²⁸ The Society's registration was approved by the Registrar of Societies in March 1987.

¹²⁹ Inaugural President, ¹³⁰ William Lim told the press that the time was 'right to form this society as the government has now given the impetus for conservation.'¹³¹ The object of the Society is to identify and foster the rich legacy of Singapore 'to transmit it to future generations.'¹³² At its inaugural meeting on 25 April 1987, Lim told the 30-odd members present that the Society was dedicated to consciously preserving, restoring and recording 'images and events to heighten our awareness of our rich and varied past' and that it hoped to 'establish a good working relationship and to have joint programmes with both public agencies and private groups'.¹³³ This was to be achieved by the organisation of lectures, talks, forums, and exhibitions and the publication of books.

Since its inception, the SHS has been the primary heritage civic organisation in Singapore. Over the years, the SHS was engaged in several high-profile advocacy campaigns which saw it locking horns with the state. The first of these was with the Singapore Tourism Board (STB)'s final proposal to redevelop Chinatown in 1998. The following year, the Society found itself up against the state when it advocated the retention of the old National Library building on Stamford Road. These two encounters epitomised the nature of state-society engagements in the 1990s and early 2000s.

Revitalising Chinatown Debate

Just as the URA was embarking on its comprehensive review of its urban renewal plans in 1981-1982, the Chinatown precinct was at the same time being hollowed out. In September 1983, some 500 street hawkers and vendors were moved off the streets. At the same time, all the lighters or tongkangs were removed from the Singapore River and operators were relocated to Pasir Panjang. Many of the hawkers and street vendors relocated to the new Kreta Ayer Complex, but others – mostly those who were unlicensed – simply vanished. The wet markets were also moved to Pasir Panjang and by the end of 1983, what Singaporeans knew to have been 'Chinatown' became a pale shadow of itself. The hustle and bustle of its vibrant street life – which made Chinatown an exciting shopping experience – was gone, a good three years before the URA decided to gazette the precinct for conservation. By the time the STB came up with its plan to revitalise Chinatown, some 15 years had elapsed, and the Chinatown of old was gone forever. The idea behind STB's proposal, was to redevelop the precinct and revitalise it

¹²⁵ Margaret Thomas, 'A blueprint for heritage,' *Business Times*, 18 Apr 1986, 4.

¹²⁶ Ibid.

¹²⁷ Judith Holmberg, 'Case of balance,' *New Nation*, 12 Aug 1976, 10 – 11.

¹²⁸ Lim Soon Neo, 'Conservationists seek to form society,' *Business Times*, 27 Dec 1986, 1; and Tong Suit Chee, 'Society to preserve Singapore's heritage launched,' *Business Times*, 28 Apr 1987, 16.

¹²⁹ 'April date for Heritage Society,' *Business Times*, 30 Mar 1987, 1.

¹³⁰ The first Executive Committee of the SHS comprised: William SW Lim (President); Brother Joseph McNally (Vice-President); William Hui (Hon Secretary); Rafiq Jumabhoy (Hon Treasurer); Arun Mahizhnan, Kwa Chong Guan, Haji Shaari Tdin, Margaret Thomas (Members); and Gertrude Heng (Secretariat). See *Roots*, Jun 1988, 8.

¹³¹ Ibid.

¹³² Ibid.

¹³³ Tong Suit Chee, 'Society to preserve Singapore's heritage launched,' *Business Times*, 28 Apr 1987, 16.

by bringing back elements of what made the area so attractive back in the 1980s.

The STB's plan was made known in article by Evelyn Yap in the *Straits Times*, on 26 September¹³⁴ which revealed a scheme to build five theme gardens 'stretching from Tanjong Pagar to Upper Pickering Street and Pickering Street' and the construction of a 'new village theatre complex housing a Chinese temple and theatre flanking an open courtyard for outdoor events.' Finance Minister and Member of Parliament for Kreta Ayer, Richard Hu, explained that the plan was not 'an attempt to re-create Chinatown' but rather to revitalise 'the Chinatown spirit so fondly remembered by Singaporeans and visitors alike, and in the process, bringing forth those attributes that made this area so unique and special in our heritage.'¹³⁵

A month later, Mo Yiping, a businessman who grew up in Chinatown wrote a long op-ed in the *Lianhe Zaobao* criticising STB's scheme, arguing that thematic development was an outdated tourism strategy that was incompatible with the uniqueness of Chinatown and that any development should be sensitive to its history and context and not descend into homogenisation and kitsch.¹³⁶ This sparked off a series of letters in which readers argued for authenticity and the retention of heritage in STB's revitalisation moves. The STB replied, on 16 November, stating that readers had misunderstood the STB's plans and assured the public that the development would not make Chinatown artificial. On 21 and 22 November, the SHS weighed in on the topic. Its response, 'Chinatown as theme park?' was published in Chinese in the *Lianhe Zaobao* a day before the English version appeared in the *Straits Times*.¹³⁷ The SHS's primary attack was on the STB's wantonly touristic perspective in the crafting of the plan:

While the STB's plan is to revitalise our dislocated Chinatown, we need to consider carefully its aim to turn it into a place more Chinese than it ever was. There will be distinct districts with 'themed streets', 'elemental gardens' and 'streetscapes' designed to provide visitors with 'visual cues' that will 'give the feeling that they are in a special [Chinese] place'. Chinatown is thus perceived primarily to be an area with empty physical structures to be simply re-engineered culturally.... The Board's emphasis on the touristic dimensions

of Chinatown has led it to gloss over and discard, in favour of creating a new district that is distinct, not only for its sharp delineation of boundaries, but also for its uniformity and superficiality.¹³⁸

The SHS's attack on the scheme was launched on several fronts — the artificiality of the boundaries marked out by STB; the use of Mandarin names for streets and places which discards the multi-ethnic and multi-lingual nature of Chinatown's past inhabitants; the 'Freeze-Frame Theme Park' approach to development which eschews organic development and authenticity in the space. However, the SHS's second plank of attack, which was much more general, was the authorities' lack of consultation and dialogue with stakeholders:

... Any major plan for renewal is a serious issue that warrants the participation and input of all Singaporeans.... Given Chinatown's importance, we stress again that the STB need conscientiously to consult interested community groups before embarking on an ambitious renewal project. There has been little evidence of that to date.¹³⁹

It was this lack of public consultation and dialogue that got the public hot under the collar. Despite the STB's assurance that its plans were the result of extensive consultation, the public was not assuaged. Nonetheless, the STB did promise to organise dialogue sessions:

The plans were worked out carefully by specialist consultants in historical research, business and market studies, architectural design, environmental design, landscaping, lighting, transportation and museum design. We also met people who had personal interests in Chinatown. This process of consultation and dialogue over the Chinatown enhancement plans is on-going even as implementation work proceeds. Constructive ideas are always welcomed.... The vision for Chinatown and the plans that have been proposed were arrived at after much discussion with the stakeholders of Chinatown and relevant government agencies. The process of consultation is on-going. We welcome readers to share their ideas and insights with us at dialogue sessions that we will be holding soon.¹⁴⁰

¹³⁴ Evelyn Yap, '\$97.m plan to revitalise Chinatown,' *Straits Times*, 26 Sep 1998, 3.

¹³⁵ Ibid.

¹³⁶ 莫一平, 《保留传统文化是发展牛车水的关键》, 联合早报, 26 Oct 1998.

¹³⁷ 《新加坡传统文化学会: 不要刻意打造牛车水》, 联合早报, 21 Nov 1998; and 'Chinatown as theme park?' *Sunday Times*, 22 Nov 1998, 37.

¹³⁸ 'Chinatown as theme park?' *Sunday Times*, 22 Nov 1998, 37.

¹³⁹ Ibid.

¹⁴⁰ Michael T. H. Lim, 'Plans to enhance Chinatown,' *Straits Times*, 12 Dec 1998, 81.

On 22 January 1999, the STB organised a closed-door consultation to collect the views of the many readers of the *Lianhe Zaobao* who had written in to offer their opinions on the STB revitalisation plan. It was chaired by the Revitalisation of Chinatown Committee. There is no record of these proceedings. The only public forum which the STB organised was at 7.30 pm on 1 February 1999 at the Kreta Ayer Community Centre. An announcement of the forum was made in the *Straits Times*, in which the Board stated that it hoped that those attending would 'not just give criticisms' but provide 'dynamic, attractive proposals for the enhancement of Chinatown.'¹⁴¹ If the STB was expecting a genteel, consultative meeting in which points would each be taken and rebutted, they were in for a big surprise.

The hall overflowed with people and emotion, and participants, including members of the SHS, took the STB to task for their plan. Many were extremely critical and emotional and some exchanges were heated. Scheduled to end at 10.30 pm, the forum lasted for an additional two hours past midnight. Such was the raw energy fuelled by anger, disgust, and disenchantment. Seldom in such state-society engagements had there been such unbridled anger and emotion, and this shocked the policy-makers. It was not an encounter in which pure economic and pragmatic reality reigned. The topic touched such a raw nerve that the public shed its usual inhibitions and articulated their feelings with such force and vitality. This made the authorities sit up and realise that the argument could not be won without an appeal to the hearts of the citizenry. It represented a key turning point in the state's perception and approach to public engagement.

Towards the end of February 1999, the STB had backtracked and stated publicly that it was now collaborating with the SHS on the enhancement plans. They had established a common ground with the Society on many issues but were continuing with their consultative process, and were prepared to question fundamental assumptions of the Plan. Minister for Information and the Arts, George Yeo put a positive spin on the process even though the furore had caused the board 'some inconveniences'. It was, on the whole, a positive reflection of the Singaporean polity:

In fact, if Singaporeans had shown no interest in the way Chinatown was being re-developed, then we should worry because it would then mean that we are just a hotel for Singaporeans. It would mean that Singaporeans are rootless citizens with no sense of where they come from and who they are.¹⁴²

The SHS documented the entire controversy and published it in a book entitled *Rethinking Chinatown and Heritage Conservation in Singapore*.

The National Library

According to the URA, the plan to demolish the old National Library building at Stamford Road had been in been part of its Cultural District Master Plan from 1988. While this had certainly been proposed, the feedback that the URA received at the dialogue between planners, architects, real estate developers and property consultants with the Minister for National Development held on 28 May 1988 was largely negative.¹⁴⁴ Subsequently, although plans were announced to move the National Library to new premises, there was no further talk about demolishing the old building. Indeed, the building underwent a \$2.6 million facelift in April 1997.¹⁴⁵ It was Kelvin Wang's 8 December 1998 letter to the Forum Page of the *Straits Times* triggered off a series of events that – as in the case of Chinatown – kindled Singapore's normally passive citizenry to public protest.

On 6 December 1998, an article appeared in the *Straits Times* detailing the siting of the Singapore Management University's (SMU) new campus at Bras Basah.¹⁴⁶ The fact that the campus, which would occupy six parcels of land, included the site of the National Library at Stamford Road led Wang (who wrote from London) to surmise that the building would be demolished:

While I believe that the re-introduction of institutional activities in the city centre is both correct and overdue, I do not think that it is right for the proposed university buildings to replace existing civic and institutional functions which are part of what makes Bras Basah a 'historic civic area'. I agree that there is a need for our National Library to expand to meet the needs of Singaporeans in the future. But does that necessarily have to mean the abandonment and sale of the existing building to a private enterprise?

I suspect it would mean that the current library building will be demolished to make way for the new university's campus. The modest brick-and-concrete library may not be architecturally outstanding, but its historic and cultural importance are great. Not only should it be preserved, but it should also remain as part of the expanded National Library.

¹⁴¹ 'Forum on Chinatown: Public invited to give views on facelift,' *Straits Times*, 23 Jan 1999, 56.

¹⁴² 'Chinatown furore "shows rootedness"' *Straits Times*, 13 Mar 1999, 43.

¹⁴³ Kwok Kian Woon, CJ Wee Wan-ling & Karen Chia (eds), *Rethinking Chinatown and Heritage Conservation in Singapore* (Singapore: Singapore Heritage Society, 2000). See also, Lily Kong, at 77–102.

¹⁴⁴ 'Professionals share views on Heart of Singapore,' *Straits Times*, 29 May 1988, 11.

¹⁴⁵ Claudett, 'National Library's \$2.6m facelift,' *Straits Times*, 12 Mar 1997, 2.

¹⁴⁶ Sandra Davie, 'New campus at Bras Basah Road,' *Straits Times*, 6 Dec 1998, 2.

... in connection with the continuing discussions on what makes Singapore 'home' and not just a hotel and also the debate on turning Chinatown into a 'theme park' ... surely one important criterion must be the presence of collective memory and history which are not in the remote past but are functioning and accessible to all Singaporeans.

... Bras Basah has lost too many unique buildings already, and we should not lose the National Library because it would mean that Singaporeans will not only lose another part of their history, but also part of what forms their collective memory, which helps make Singapore 'home'.¹⁴⁷

The next day, the SMU responded, stating that it has not decided what to do with the building, but assuring the public that they had a role in determining the fate of the National Library building.¹⁴⁸ On 13 March the SMU organised a public symposium at the Singapore Art Museum to gather feedback on the campus master plan. The symposium was packed with some 300 people, almost all of whom were visibly upset with the plans to demolish the building. Again, like in the Chinatown debate, state officials tried to win the argument by presenting hard-nosed rational arguments about traffic congestion and irregular and difficult plots for development, but the audience was simply not interested. What was at stake was not a building as such, but the memories it represented. Most of the speakers at the symposium spoke personally of their links to the National Library and of their cherished memories of the space and how it helped define them as Singaporeans. It was only at this meeting that the URA publicly announced that it had decided to demolish the National Library building as it 'was not of great architectural merit and should not be conserved.'¹⁴⁹ This announcement made the front page of the *Straits Times*, and the public was livid. The groundswell of dissent was far greater and ranged across a much larger segment of the public than at the debates over Chinatown's revitalisation.

Despite widespread public unhappiness over the impending demolition of the National Library building, the URA remained intransigent, repeating in different guise, the same arguments it advanced earlier: that the building had no architectural or historical merit; that its demolition was necessary for the construction of the traffic tunnel that would smooth traffic flow; and the irregular land parcel could be amalgamated with other parcels to give SMU a better plot on which to build its new buildings. On 15 January 2000, the SMU chaired a technical workshop to obtain feedback on three alternative proposals put forward by three master planners. All three proposals included the demolition of the National Library.

Well-known architect Tay Kheng Soon, who was present at the workshop, objected to these proposals, and on 24 January 2000, called a press conference at the Substation to unveil his own alternative SMU master plan which preserved the Library building. Tay then wrote to Prime Minister Goh Chok Tong, asking him to reconsider the master plan, and his proposal was then sent to the Ministry for National Development which determined that its original proposal was superior to Tay's. In the meantime, many members of the public wrote in support of Tay's proposal or in favour of preservation of Singapore's built heritage.

On 7 March 2000, Minister for National Development Mah Bow Tan announced in Parliament that the National Library would be demolished, and that the decision had been taken after much public debate and consultation. This statement angered many Singaporeans who felt that the authorities had been extremely high-handed and that the so-called 'consultation' and dialogue that ensued was nothing more than a perfunctory procedural tipping of the hat to true civic engagement.

CONCLUSION

State-society engagements over issues of heritage preservation – at least in so far as the preservation of Singapore's built heritage is concerned – has evolved over the past 50 years. In the colonial era, civic organisations such as the Friends of Singapore worked closely with state authorities and more often than not found themselves on the same side of the fence. Relations were cordial and generally, the authorities treated the civil actors – most of whom were prominent in their own right – with respect and courtesy. This changed quite significantly during the period from 1959 to 1981 when the PAP Government grew impatient with any obstacle – big or small – to its developmental plans and agenda. In the PAP era, the state grew large and debates over policies were cast as debates on politics. With an enlarged political arena, the PAP government took an adversarial and confrontational approach to civil actors, treating them as political opponents who were out to wrest power from them. This tough, knuckle-dusters to the fore approach saw the shrinking of the public square and a corresponding diminution of civil society.

On the heritage front, things began to change in 1981 when the state began to realise that the wholesale and unthinking demolition of large swathes of old Singapore was detrimental to its attempts to turn Singapore into a major tourist destination. This change in bureaucratic thinking led to the development of a conservation plan, and this coincided with the public's increasing clamour for the protection of Singapore's past. By this time, the years of doubt – over Singapore's survival

¹⁴⁷ Kelvin Wang, 'Let's not lose National Library too,' *Straits Times*, 8 Dec 1998, 43.

¹⁴⁸ 'Public will have a say in building's fate,' *Straits Times*, 9 Dec 1998, 159.

¹⁴⁹ M. Nirmala, 'National Library to go,' *Straits Times*, 14 Mar 1999, 1.

and viability – were over and Singaporeans began to think much more seriously about their identities and their place in the world. And since ‘heritage’, ‘memory’ and ‘identity’ are invariably connected, the loss of large chunks of Singapore’s built heritage made the call for preservation both urgent and palpable.

The formation of the Singapore Heritage Society in 1987 was largely a response to the sentiments. It was an organisation whose time had come. Unlike its colonial predecessor – the Friends of Singapore – the Singapore Heritage Society looked upon the state’s developmental initiatives with a much more critical and questioning eye. Members of the SHS were, like those of FOS, respected and prominent members of the public, but their relationship with the state were far from cosy. The high calibre and prominence of its members and leadership meant that the authorities tended to take its stance and position on matters quite seriously. This is not to say that relations between state and society were always cordial. Government authorities have long been accustomed to dealing with individuals behind closed doors, or by co-opting them into the policy-making process. They are much more wary of organised groups which they feel are used to ‘pressure’ the government into taking populist decisions.¹⁵⁰ This suspicion and wariness – no doubt a hangover from the 1960s when subversives infiltrated open front organisations – continue to linger in various circles.

Part of this attitude to civic organisations like SHS stems from the narrow view of politics adopted by the PAP, which sees legitimacy emanating purely from the electoral process. Unelected persons have no standing to speak for others, and societies like the SHS do not speak for the masses, but only for its members. Yet, without organisations like the SHS, public debate becomes disparate and there is no organisation capable of galvanising opinion for or against state policy. Since the early 2000s, the climate has changed somewhat, especially after the engagements over Chinatown and the National Library. Recent engagements over the Rail Corridor and Bukit Brown have seen public authorities attempting to engage civil society actors much earlier in the process and seriously attempting to find solutions to unfavourable policies. At the same time, heritage issues have become so wide-ranging that many other civil groups and individuals – beyond organised groups like the SHS – have emerged to contest the state. This next chapter of state-society engagements will be an exciting one and remains to be made.

¹⁵⁰ On a personal note, when I was elected President of the Heritage Society in 2001, Ho Peng Kee, the Senior Parliamentary Secretary for Law and my former colleague at the NUS Law Faculty asked me why I would want to head up a ‘pressure group’ like SHS.

APPENDIX A

List of Ancient Monuments and Land and Buildings of Architectural and/or Historical Interest

The list was not originally divided into categories. The 1955 list included 30 buildings and sites. The Sri Srinivasa Perumal Temple and the Sun Yat Sen Villa were added to the list in the 1958 Master Plan, making the total 32.

Religious Buildings and Sites

1. Armenian Church (1835–1836)
2. Cathedral of Good Shepherd (1847)
3. St Andrew's Cathedral (1856–1863)
4. Keramat Habib Nor, Palmer Road (1890)
5. Hajjah Fatimah Mosque, Java Road (1840–43)
6. Sultan Mosque Arab Street (1830)
7. Thian Hock Keng Temple, Telok Ayer Street (1839–1842)
8. Heng Shan Ting Temple, Silat Road (1825) ¹⁵¹
9. Yueh Hai Ching Temple, Phillip Street (1852–1855)
10. Foot Tet Soo Khek Temple, Tanjong Malang (1830)
11. Geok Hong Tian Temple, Havelock Road (1888)
12. Al-Abrar Mosque, Telok Ayer Street (1827)
13. Nagore Durgha Mosque, Telok Ayer Street (1828–1830)
14. Sri Mariamman Temple, South Bridge Road (1827)
15. Sri Layan Sithi Vinayagar Temple, Kreta Ayer
16. Sri Sivan Temple, Orchard Road (circa 1850) ¹⁵²
17. Sir Thendayuthpani Temple (Chettiar Temple), Tank Road (1856–1858)
18. Sri Srinivasa Perumal Temple, Serangoon Road (1855)

Public Buildings

19. Raffles Institution (1837–1841) ¹⁵³
20. Victoria Theatre (1856–1862)

Residential Buildings

21. GD Coleman's House, 3 Coleman Street (1828) ¹⁵⁴
22. HC Caldwell's House (now part of CHIJMES) (1840–1841)
23. Sun Yat Sen Villa
24. Istana Kampung Gelam (1850)
25. Killiney Home or Belle Vue, Oxley Rise (1842) ¹⁵⁵
26. Commercial Buildings
27. Ellenborough Building (1846) ¹⁵⁶

Sites and Monuments

28. Fort Canning
29. Gateways to Fort Canning (1833)
30. Keramat Iskandar Shah, Fort Canning
31. Tanah Kubor Temenggong, Telok Blangah
32. Radin Mas Graveyard, Mount Faber
33. Indian Graveyard, off Lorong 3, Geylang ¹⁵⁷

¹⁵¹ Destroyed by fire in 1992.

¹⁵² This temple had originally established in Potong Pasir before moving to Dhoby Ghaut, and then Orchard Road in the 1850s. It was demolished in 1983 to make way for the Dhoby Ghaut MRT station and relocated to Geylang.

¹⁵³ Demolished in 1972 to make way for Raffles City development.

¹⁵⁴ Demolished in December 1965 to make way for Peninsula Hotel and Shopping Centre.

¹⁵⁵ Demolished in 1982 to make way for condominium development, also called Belle Vue. This five-block condominium was sold enbloc in 2005 and redeveloped as Belle Vue Residences.

¹⁵⁶ Destroyed by fire in 1968.

¹⁵⁷ The old cemetery, consisting of some 56 Hindu graves was exhumed in 1985.

IDENTITY & BELONGING: HERITAGE RESEARCH & DOCUMENTATION INITIATIVES

Yeo Kirk Siang

INTRODUCTION

Heritage plays an important role in shaping a nation's identity and fostering a sense of belonging amongst the people and their affinity to the nation. Historical buildings and sites, as well as intangible aspects of our heritage provide the emotional connections that anchor people to a place and time. It is important that our heritage is preserved and celebrated, to enable future generations to develop a sense of shared heritage and collective memories of the country. At the same time, there is a need to seek a balanced approach to the development and the preservation of our heritage, given the island's physical constraints and developmental needs. This paper will consider these challenges in the discussion of the links between heritage and identity, and the National Heritage Board's (NHB) initiatives on research, documentation and the commemoration of Singapore's tangible and intangible heritage.

HERITAGE AND IDENTITY

Heritage has the ability to sharpen our sense of identity and purpose as individuals and as a community.¹ It has the ability to strengthen our commitment and determination to protect what we have, and ignite the passion of many. Heritage can also create emotional bonds and reactions among people, as it is an integral part of our living experience and can create a sense of belonging. UNESCO has affirmed the importance and relevance of heritage as follows:

*"There are things that we regard as important to preserve for future generations..... they create a certain emotion within us, or because they make us feel as though we belong to something – a country, a tradition, a way of life. They might be objects that can be held and buildings that can be explored, or songs that can be sung and stories that can be told. Whatever shape they take, these things form part of a heritage, and this heritage requires active effort on our part in order to safeguard it."*²

The above description by UNESCO points to the importance of heritage, which defines many of the emotional ties and connections between individuals and communities. The different forms of heritage define communities by giving them their identity and shaping their beliefs and preferences. In

Singapore's context as a global city-state, heritage anchors our sense of place and identity in a rapidly changing world of increased globalisation and mobility across nations. Public interest and involvement in heritage has been particularly strong in the past few years. This is particularly so in 2015 as we celebrate SG50 – Singapore's Golden Jubilee. There have been many discussions arising on issues related to the sense of belonging to Singapore, the sense of identity and what it means to be Singapore.

Beyond positive influences and connections between people, heritage can also trigger emotions of anger, disappointment and a sense of loss when people or communities lose part of their heritage, be it an object or a place familiar to them. This is evidence that heritage is an important part of our identity, culture and memories. The profound sense of loss or distress that can be associated with the destruction or loss of heritage was aptly summed up by Margaret Drabble, an English writer, who in her book on landscape in literature wrote that:

*"The landscape also changes, but far more slowly; it is a living link between what we were and what we have become. This is one of the reasons why we feel such a profound and apparently disproportionate anguish when a loved landscape is altered out of recognition; we lose not only a place, but ourselves, a continuity between the shifting phases of our life."*³

¹ Heritage is defined in many different facets, including cultural heritage (i.e. tangible and intangible heritage) and natural heritage (UNESCO, 2015). For the purposes of this article and unless otherwise stated, heritage would be referred to the broadest sense to encompass its many different aspects. See *Definition of the Cultural Heritage*. <http://www.unesco.org/new/en/culture/themes/illicit-trafficking-of-cultural-property/unesco-database-of-national-cultural-heritage-laws/frequently-asked-questions/definition-of-the-cultural-heritage/>. Accessed on 2 Jun 2015.

² UNESCO, Report on "What is Intangible Cultural Heritage?" (UNESCO, 2011).

³ Margaret Drabble, *A Writer's Britain: Landscape in Literature* (Thames & Hudson, 1987).

CHALLENGES IN PRESERVING HERITAGE

Given that heritage is an important part of our lives, as individuals, as a community and as a nation, it is a precious resource that should be treasured by all. Nevertheless, there are various challenges in physically preserving our heritage in Singapore. Physical constraints on our land area remain a major challenge for Singapore. With a land area of 718 sq km, there is a need to balance our range of competing needs, from housing, transport, industries to recreational spaces, and also plan for the long-term needs of the country.⁴ Such competing needs imply that the preservation of heritage in its physical form (e.g. as a building or a site) could result in trade-offs in terms of social or economic needs, and hence a balanced approach towards the retention of heritage is important.

Despite the pressures of development and economic growth, and the limitations of land in Singapore, much effort has been devoted to the protection of our heritage since the early years of Singapore's independence. These included the formation of the Preservation of Monuments Board (currently a division within the National Heritage Board) in 1971 to identify and preserve monuments that serve as important reminders of our nation's history and cultural heritage. In addition, the 1970s and early 1980s saw efforts to rehabilitate state-owned historic buildings. 1989 would be a watershed – ten city districts were designated as conservation areas, protecting many historic buildings of architectural, historical and cultural significance in Singapore. These early efforts laid the foundation for these historic areas to become the hubs of cultural vibrancy that reflect the multi-ethnic and multi-cultural aspects of Singapore. Today, a total of 70 National Monuments have been preserved, including the former Supreme Court and City Hall buildings, the Raffles Hotel, Sultan Mosque, Sri Mariamman Temple and Thian Hock Keng Temple. In addition, more than 7,000 buildings have been conserved and protected, many of which are located in the historical areas of the Civic District, Chinatown, Little India and Kampong Glam. These buildings help to form part of the history and identity of our nation.

Beyond the physical changes, there are also the social, economic and technological changes that could pose as challenges to the preservation and safeguarding of our heritage, particularly in the form of intangible heritage. Patterns of consumption and lifestyles have changed, altering the way we live, work and play. For example, in the realm of music, the mode and presentation of music has evolved dramatically in the past few decades due to the advancements of technology.

The cassette tape was still a common format for listening to music in the 1980s and 1990s, but was rapidly replaced by CDs. Today, the CD is being replaced by digital recording formats and digital downloads and content streaming have become the predominant platform for the consumption of music. The development and proliferation of computers and the widespread use of the internet have changed the way we work, live and communicate. A more globalised economy has also meant that many traditional trades face challenges to be economically sustainable due to the competition from lower cost manufactured products that can be imported from the region and beyond. Other traditional businesses have evolved over time, and adopted mechanised approaches, with the aim of reducing cost or enhancing productivity. It is against these challenges and many others that we have to find ways to safeguard and preserve our heritage for future generations of Singaporeans.

ON-GOING EFFORTS TO SUPPORT RESEARCH AND DOCUMENTATION

At NHB, our mission is to preserve and celebrate our shared heritage through many various channels. These include the showcasing of the heritage through our national museums, such as the National Museum of Singapore and the Asian Civilisations Museum, and the display of items from the national collections. Conservation efforts enable artefacts of importance to Singapore's history to be safeguarded and presented to highlight our history and heritage to the people. Beyond objects and exhibitions, efforts have also been made to commemorate our history through historic markers that commemorate important buildings, sites, events or personalities. These serve as reminders of our history and heritage.

Outreach is an important component of NHB's work, and we are constantly finding new ways to share our heritage with the public, and especially the younger generation. Major annual cultural festivals and events provide the platform to promote greater awareness of heritage. The Singapore Heritage Festival is an annual event that celebrates different aspects of Singapore's built and intangible heritage, showcasing traditional trades, performing arts, rituals through performances, events, exhibitions, workshops and symposiums. The Festival is also a platform that involves the community in the promotion of heritage. Into its 12th year, the 2015 festival took place over five weeks in April and May, during which a total of 80 community groups and partners came together to collaborate and create over 150 programmes that celebrated Singapore's heritage, traditions and culture.

⁴ Statistics Singapore, Singstat (2014). Data on population and land area. <http://www.singstat.gov.sg/statistics/latest-data> Accessed on 29 Apr 2015.

To promote greater awareness of our history and heritage, various heritage trails across Singapore have been developed. These heritage trails are part of NHB's on-going efforts to document and promote the different areas that Singaporeans live, work and play, and share our rich historical or social memories with a wider audience. In developing the trails, NHB works with the respective communities, schools within the community and the private sector to document their community's heritage for posterity.

Heritage needs to be owned by the community as it is integral to its sense of identity. To support ground-up efforts by the community, NHB has introduced the Heritage Project and Participation Grants that provide funding support for community groups and individuals who are keen to promote Singapore's heritage. Launched in 2013, the scheme promotes community participation in the creation of heritage content, through research, documentation and presentation. It has attracted a good number of applications from individuals and community groups, with projects ranging from publications to community events, exhibitions, games, and mobile applications to celebrate and commemorate our heritage.

NEW INITIATIVES ON RESEARCH AND DOCUMENTATION

With a growing awareness of heritage and as Singapore continues to grow, pressures of development will continue. At the same time, there are also increased expectations for more to be done to protect and preserve the memories and physical spaces that people feel a connection with. In this regard, the NHB has increased its efforts to research and document the different facets of Singapore's heritage.

The main focus in the short term is to systematically document and build up a comprehensive knowledge of Singapore's heritage. Over the past one to two years, research and documentation of various buildings and sites in Singapore have been conducted and shared with the public, including the 'Forgotten Reservoir' at Keppel Hill, and the old Lunatic Asylum wall at the Singapore General Hospital (SGH). Studies have also been conducted on various districts or areas around Singapore. These include Pulau Ubin, where a cultural mapping project has been commissioned to document the heritage of the island through the social memories of Ubin's residents and builds on past efforts to research Ubin's history. Another example is the future Bidadari housing estate, where research and documentation of the area was carried out and incorporated into the planning of the estate. To commemorate the rich heritage of the area, the housing estate will feature a pedestrianised Heritage Walk where residents can learn more about the area's heritage. The Bidadari Memorial Garden will also be integrated with parks or green spaces that will be developed as part of the housing estate.

A major initiative that has been launched by NHB is the nationwide survey on tangible heritage. Launched in Aug 2015, the survey covers buildings, structures, sites and landscape features of architectural, historical and/or cultural interest. This survey is a step forward to enhance capabilities in research, documentation and commemoration. The survey will cover buildings, structures, sites and landscape features of architectural, historical or cultural interest, including structures or sites completed before 1980, those associated with historical events which influenced the development of the nation or local community, and/or those with social, cultural or educational significance, amongst others.

Through this survey, which is the most comprehensive survey to be conducted to date, NHB hopes to obtain a more complete understanding of Singapore's tangible heritage and its value, and expand NHB's existing research and documentation efforts. The same research and data will be made available to other public agencies so that heritage considerations can be incorporated during planning and decision making phases.

Beyond efforts to document physical buildings and sites, NHB has also conducted research and documentation on intangible heritage. For example, a series of documentaries on traditional or disappearing trades, such as rattan furniture making, songkok making and many others were launched by NHB for public viewing to promote a better understanding and appreciation of our heritage. A survey on intangible heritage is currently being planned (at the time of writing). This survey will document information from a wide range of intangible heritage that is still practised in Singapore, covering oral traditions, social practices, rituals and traditional trades and businesses.

USE OF TECHNOLOGY FOR HERITAGE DOCUMENTATION

Technology is central to NHB's efforts to document and promote Singapore's heritage in new ways. In recent years, NHB has prototyped new documentation technologies, such as the use of drones to photograph and record buildings, structures and landscapes. For example, it deployed aerial drones to document heritage sites such as the remaining lookout towers in Singapore.

NHB has also worked with Google to feature virtual walkthroughs of historical places, such as the Chinese Gardens, the Sungei Road flea market, Pulau Ubin and many other areas, and will continue to explore new and innovative ways of heritage documentation using other technologies. In addition to the virtual walkthroughs of heritage sites, NHB has also worked with Google to pilot the use of Google Glass to create first person perspective videos. In addition to the 'Forgotten Reservoir', Google Glass technology was also used for the documentation of the Marsiling Tunnel and the last remaining perimeter wall of the old Lunatic Asylum.

CONCLUSION

Heritage is an important aspect of our individual, community and national identity, and is an integral part of our lives. It can be the physical buildings that we see, or the intangible aspects of our rituals, traditions and festivals that bind us together. The many programmes and new initiatives that have been rolled out by NHB seek to retain, safeguard and promote our heritage. These efforts demonstrate how heritage is an important part of our identity and a resource for building our nation. The celebration of SG50 is a significant milestone, as it symbolises our journey and celebrates the long way our country has come. Improvements in infrastructure, education levels and standards of living have meant that many of our basic needs, according to Maslow's Hierarchy of Needs have been met, and that people are looking towards the fulfilment of higher order needs of esteem and aspirations. It is important that we build a sense of identity and belonging through heritage in order for us to achieve this. Heritage is a precious resource that needs to be safeguarded and commemorated. More of our tangible and intangible heritage and collective memories should be preserved so they can bind us together as one people. As S. Rajaratnam observed in a speech in 1984:

"A nation must have a memory to give it a sense of cohesion, continuity and identity. The longer the past, the greater the awareness of a nation's identity."⁵

These words continue to be relevant to us today in the year that we come together to celebrate SG50 and our nation's heritage.

⁵ S. Rajaratnam, Speech by Mr. S. Rajaratnam, Second Deputy Prime Minister (Foreign Affairs), at a Seminar on "Adaptive Reuse: Integrating Traditional Areas into Modern Urban Fabric", 28 April 1984.

AN ESSAY ON THE DEVELOPMENT OF CEMETERY RESEARCH AND DOCUMENTATION IN SINGAPORE

Hui Yew-Foong

INTRODUCTION

This essay is based on a talk I was invited to give on World Heritage Day, 18 April 2015, at a symposium entitled “Heritage in Singapore – Saving History to Build a Nation”, co-organized by the International Council on Monuments and Sites (Singapore) and the National Heritage Board, Singapore. I was asked to speak on the topic of “Documenting Chinese Cemeteries in Singapore”, which, if we think about it, is somewhat of an oddity.

The topic is an oddity because until recently, the study of cemeteries does not figure in the popular discourse on heritage in Singapore. But now, in the context of a World Heritage Day symposium, cemetery research sits snugly next to archaeology, the conservation of temples and other historic buildings, and debates on heritage in Singapore. Why and how the study of cemeteries became a mainstay of the heritage-scape in Singapore demands a more comprehensive account of the development of the heritage scene in Singapore than I am prepared to attempt in this essay, and in any case, is not the main question this essay will address. However, in outlining how cemetery research has evolved over the years in Singapore, which is the focus of this essay, the articulation of cemeteries as heritage cannot be ignored.¹

In seeking to trace how the methods of cemetery research and documentation have evolved, I employ a narrower definition of cemetery studies, focusing on projects that apply on-site documentation methods to the study of cemeteries. This is not to discount the important work of contributors like Richard Olaf Winstedt, Brenda Yeoh and Lily Kong,² but to bring into sharper focus a particular approach in cemetery studies that is founded on the impetus to document graves or cemeteries.

In what follows, I outline three phases in the evolution of cemetery research and documentation in Singapore. The first phase, ranging from the early 20th century to the 1990s, follows the “scattered efforts” of people like H. A. Stallwood, Alan Harfield and David K. Y. Chng, who engaged in field documentation of tomb inscriptions and left a record of some of those who found their final resting place in the cemeteries of Singapore. The second phase sees the emergence of a “fraternal glow” in the early 2000s, where heritage enthusiasts and activists came together to consider the heritage value of Biddadari Cemetery upon the announcement of its impending exhumation. The third phase is marked by “civic and multidisciplinary engagement” in the late 2000s and 2010s, where concerns over the disappearance of cemeteries from Singapore’s landscape prompted broader community efforts in documenting and preserving the cemeteries. There are overlaps in the time frame of the three phases, but we will see an approximate evolution in the way documentation work was organized and carried out. Moreover, in most of the cases I will discuss, the motivation behind documentation is quite consistent – to rescue neglected pieces of Singapore’s social and cultural history before they are discarded as the debris of development.

¹ On the growing importance of cemeteries on the heritage scene in Singapore, see Joan C. Henderson, ‘The Loss of a Cultural Heritage and Tourism Resource: Singapore’s Disappearing Burial Grounds,’ *South Asia Journal of Tourism and Heritage* 5, no. 2 (2012); Terence Chong & Chua Ai Lin, ‘The Multiple Spaces of Bukit Brown,’ in *Public Space in Urban Asia*, ed. William S.W. Lim (Singapore: World Scientific, 2014).

² See Richard Olaf Winstedt, ‘Karamat: Sacred Places and Persons in Malaysia,’ *Journal of the Malayan Branch of the Royal Asiatic Society* 2, no. 3 (1924); Brenda S.A. Yeoh and Lily Kong, ‘Place Making: Collective Representations of Social Life and the Built Environment in Tiong Bahru,’ in *Portraits of Places: History, Community and Identity in Singapore*, eds. Brenda S.A. Yeoh and Lily Kong (Singapore: Times Editions, 1995).

FIRST PHASE – SCATTERED EFFORTS

Arguably, the earliest efforts in documenting cemeteries in Singapore was undertaken by H.A. Stallwood, who was commissioned by the colonial government to re-compile the burial register of Fort Canning Cemetery as the original register was lost.³ The re-compiled burial register was put together with data collected from field documentation of tombstone inscriptions and was published in 1912 by the Journal of the Straits Branch of the Royal Asiatic Society. Based on this work, Alan Harfield expanded the study of Fort Canning Cemetery and did further research on other early cemeteries when he was resident in Singapore later in the 1950s, 1970s and 1980s.⁴ His method was to photograph and copy inscriptions from headstones, followed by archival research that elaborated on the history of the cemeteries and the lives of those interred in them. This led to the publication of *Early Cemeteries in Singapore* in 1979. It was then revised in 1981 and updated again in 1988.

In terms of local efforts, one key pioneer focusing on the documentation of Chinese tomb inscriptions is David K.Y. Chng (Zhuang Qin Yong). His foray into grave documentation and research was inspired by the work of noted German sinologist Wolfgang Franke and Chen Tieh Fan,⁵ who published their seminal three-volume *Chinese Epigraphic Materials in Malaysia* from 1982 to 1985. Chng saw how epigraphic materials were used as a form of invaluable empirical data for elucidating the history of the Chinese overseas and wanted to contribute to this effort by bringing to the fore more epigraphic materials from headstones and ancestral tablets.⁶

Chng's efforts were not limited to Singapore, having made numerous fieldtrips to explore and document grave inscriptions in Chinese cemeteries in Malacca, such as the famous Bukit Cina, between 1984 and 1997. His work on Singapore cemeteries also began in the early 1980s, but was carried out on an ad-hoc basis, that is, he hurried to document graves whenever it was announced that a cemetery was going to be exhumed in order to rescue whatever epigraphic materials he could.⁷ It was only in 1997, when he became a Research

Associate at the Centre for Chinese Language and Culture of the Nanyang Technological University, that Chng documented Singapore graves more systematically, focusing his efforts on Bukit Brown Cemetery, Seh Ong Hokkien Cemetery, Bidadari Christian Cemetery and the Japanese Cemetery. Chng's efforts resulted in the volume *Maliujia, Xinjiapo Huawen Beiwén Jilu* [A Collection of Chinese epigraphic materials in Malacca and Singapore] published in 1998, which not only recorded the inscriptions on important historical graves and ancestral tablets in Malacca and Singapore, but also drew on the author's expansive and meticulous research to provide the background to largely forgotten historical figures.

Chng's legacy lies in the application of the tradition of Chinese epigraphic studies to the field studies of graves and cemeteries.⁸ In the process, he refined methods relating to the collection of epigraphic data, the interpretation of tomb inscriptions, and the use of such data for historical research. In the collection of epigraphic data, beyond the tedious process of developing gravestone rubbings, the method of chalking and photographing, complemented by the copying of inscriptions in-situ, continues to be used today. In terms of interpreting tomb inscriptions, Chng's introductory section in his volume is now an indispensable primer on how to read tomb inscriptions.⁹ Finally, through his annotations, Chng demonstrates how the dots provided by epigraphic data can be linked to draw biographical outlines of those who lie beneath the headstones and paint a social history of the region. In this way, cemeteries, by their presence, serve as incidental kaleidoscopes to a past that we have forgotten too conveniently in our relentless march towards the future.

Though valuable, the study of Chinese tomb inscriptions was strenuous and tedious. For decades, it was an outlier in academic research. There are two main reasons for this. First, traipsing about cemeteries and moving among graves outside of the festivals such as Qing Ming, are taboo for the Chinese. This is especially so for those who subscribe to Chinese religious beliefs. Second, the study of cemeteries and grave inscriptions in particular, was not yet linked to heritage discourse and therefore not recognised as part of "national history", whether in official or popular discourse. As we shall see, this began to change in the early 2000s.

³ H. A. Stallwood, "The Old Cemetery on Fort Canning, Singapore". *Journal of the Straits Branch of the Royal Asiatic Society* 61 (1912), 77.

⁴ Alan G. Harfield, *Early Cemeteries in Singapore*, (British Association for Cemeteries in South Asia, 1988), v – vi.

⁵ Wolfgang Franke was Professor at the Department of Chinese Language and Culture at Hamburg University. He spent time as a guest professor at the University of Malaya in Kuala Lumpur (1963–66) and the University of Singapore (1969–70). Chen Tieh Fan taught at Singapore's Nanyang University and then at the University of Malaya's Department of Chinese Studies (1963 – 1975).

⁶ Zhuang, Qin Yong. "Maliujia, Xinjiapo Huawen Beiwén Jilu" [A Collection of Chinese Epigraphic Materials in Malacca and Singapore]. *Field Materials Institute of Ethnology, Academia Sinica* 12 (1998), 2 – 4.

⁷ Part of this work was published in Chinese newspapers in Malaysia and Singapore and in the journal *Asian Culture*.

⁸ See Rao Zong Yi, 'Xinma Huaren Beimin Xinian (Jilue),' [Chinese Epigraphic Materials in Singapore and Malaysia (An Outline)] *Xinjiapo Daxue Zhongwen Xuehui Xuebao* 10, (1969); Chen Jing He & Chen Song Yu, *Xinjiapo Huawen Beimin Jilu* [A Collection of Chinese Inscriptions in Singapore] (Hong Kong: The Chinese University of Hong Kong, 1970); Lin Xiao Sheng et. al., *Shile Guji* [Historical Monuments in Selat] (Singapore: The South Seas Society, 1975). These works exemplify the tradition of studying epigraphic materials. However, Chng was the one who applied this tradition extensively to the study of tomb inscriptions.

⁹ Zhuang, *ibid.*, 9–35.

SECOND PHASE – A FRATERNAL GLOW

In 2001, the Singapore government announced that Biddadari Cemetery was going to be exhumed. The cemetery, which was opened in 1907, had become the largest Christian cemetery in Singapore by the time the last burial took place in 1972. Resting in its grounds were notable figures of Singapore's colonial society, such as Dr. Lim Boon Keng, Sir George Oehlers, first Speaker of the Singapore Legislative Assembly, and even a member of Sun Yat-sen's revolutionary alliance (Tongmenghui), Low Chit Hui.¹⁰ Augustine Podmore Williams, whose scandalous story on the high seas inspired Joseph Conrad's novel *Lord Jim*, was also buried in there. On the material plane, the cemetery's landscape was dotted with beautiful tomb statuary and impressive masonry, as well as epitaphs that narrated slices of Singapore's social history. To discuss issues related to the exhumation of this cemetery, the Singapore Heritage Society, on the initiative of Liew Kai Khiun and Kelly Fu, organized a forum entitled "Spaces of the Dead: A Case from the Living" on 22 September 2001, which attracted more than 70 participants and resulted in the publication of a volume of the same title 10 years later.¹¹

There are a few points worth noting from this episode. First, it was the first time that cemeteries were seen through the lens of heritage in public discourse in Singapore. This created discursive space for the articulation of cemeteries as part of Singapore's heritage-scape. 10 years later, the exhumation of Bukit Brown Cemetery resonated because of this discursive space. Second, that such a forum was possible and drew interest implied the presence of a community who considered cemeteries to be of heritage value. Granted that those concerned were mainly English-educated heritage enthusiasts and activists, and members of Singapore's expatriate community who were undeterred by the taboos usually associated with cemeteries, this still constituted a "fraternal glow" that suggested wider societal interest and involvement as compared to the "scattered efforts" earlier.

Third, the volume that was published indicated the various intuitive directions that cemetery research could take once it began to be couched within heritage studies. Conventionally, cemetery research is taken on from the historical perspective, as is evident in the chapters by Williams et al., and Blackburn

and Lim.¹² One common approach is to weave together certain aspects of the region's social history through the biographies of those interred. We see this being adopted by Williams et al.'s.¹³ contribution on the Bidadari Christian Cemetery as well as the work of scholars such as David Chng.¹⁴ But once cemeteries are considered through the lens of heritage, diverse perspectives related to culture,¹⁵ nature¹⁶ and others, enter the picture and expand the study of cemeteries into a multidisciplinary enterprise. We shall see this development gain further traction in the next phase.

THIRD PHASE – CIVIC AND MULTIDISCIPLINARY ENGAGEMENT

The most recent phase of cemetery research and documentation is related to the exhumation of Kwong Hou Sua (KHS) Teochew Cemetery, Bukit Brown and Seh Ong Cemeteries, which were announced in 2008 and 2011 respectively. In what follows, I will elaborate on the research and documentation work associated with these three cemeteries.

Kwong Hou Sua Teochew Cemetery

The KHS Cemetery, which was opened in the 1920s, was one of eight Teochew communal cemeteries managed by the Ngee Ann Kongsi in Singapore. While the land was acquired by the Singapore government in January 1982, it was only in February 2008 that the government announced that the cemetery would be exhumed. The exhumation was to take place in two phases. Phase 1, managed by the Land Transport Authority (LTA), would see around 2,000 graves make way for a Mass Rapid Transit depot for the new Downtown Line. Under Phase 2, another 1,000 graves would be cleared by the Singapore Land Authority.

In May 2008, I learnt of the planned exhumation of KHS, then the last Teochew cemetery remaining in Singapore. Although I am not Teochew, I felt that it would be quite a loss to Singapore if all these graves and their inscriptions were removed without a record being made. (Through my fieldwork among the Chinese in West Kalimantan, Indonesia, I had begun to appreciate the value of epigraphic materials on

¹⁰ Ibid, 148-149.

¹¹ Kevin Tan (Ed.), *Spaces of the Dead: A Case from the Living* (Singapore: Singapore Heritage Society & Ethos Books, 2011), 4.

¹² Sue Williams et al., 'The Biddadari Christian Cemetery,' in *Spaces of the Dead: A Case from the Living* (Singapore: Singapore Heritage Society & Ethos Books, 2011); Kevin Blackburn & Edmund Lim, "Singapore's 'Little Japan' and its Japanese Cemetery" in *Spaces for the Dead: A Case from the Living*, ed. Kevin Tan (Singapore: Singapore Heritage Society & Ethos Books, 2011).

¹³ Williams et al. ibid.

¹⁴ See Zhuang Qin Yong, 'Maliujia, Xinjiapo Huawen Beiwen Jilu,' [A Collection of Chinese Epigraphic Materials in Malacca and Singapore] *Field Materials Institute of Ethnology, Academia Sinica* 12 (1998).

¹⁵ Elizabeth McKenzie, 'Bukit Brown: A Garden of History & Heritage,' in *Spaces for the Dead: A Case from the Living*, ed. Kevin Tan (Singapore: Singapore Heritage Society & Ethos Books, 2011).

¹⁶ Ho Hua Chew, 'Bukit Brown: Nature in an Old Cemetery,' in *Spaces for the Dead: A Case from the Living*, ed. Kevin Tan (Singapore: Singapore Heritage Society & Ethos Books, 2011).

tombstones.) I began to entertain the idea of documenting the 3,000 graves through digital photography, and on a reconnaissance trip to KHS in June, met with a group of interested friends to discuss the prospects of pursuing such a project. In the end, with support from the Genealogical Society of Utah and volunteers from their local Family History Centre, as well as friends and members of the public who learned of the project, we started work on documenting graves from Phase 1 of KHS exhumation in August 2008.

We did not have much time to document the first 2,000 graves under Phase 1, as the area would be closed to the public from October, with exhumations scheduled to be completed by December 2008. Over the course of two months, we spent our weekends, and sometimes weekdays, at KHS with teams of 10 to 20 volunteers, snapping away with our digital cameras to capture a photograph of the graves and their inscriptions.

While digital photography had made image documentation of graves and their inscriptions more efficient (with immediate verifiability) and affordable when compared to David Chng's earlier work, when he had to work with film cameras, some basic challenges remained. Besides the fact that the terrain of the cemetery was undulating and physically demanding, graves were usually overgrown with vegetation and these had to be cleared before the graves could be photographed. Another challenge was the illegibility of some of the inscriptions, which could be resolved in some cases with the technique of chalking. However, it is not uncommon to come across cases where even chalking could not produce clearly legible images, and so it was still necessary to resort to the most fundamental documentation practice of copying by hand in-situ. In short, even with technological advances such as digital photography, the work of documentation was not as easy and straightforward as I had initially presumed.

Nevertheless, the digital revolution was beginning to expand the scope of what we could document. That we were not constrained (by cost) in the number of photographs we could snap meant that we could take as many pictures as we liked of each grave. This allowed to capture the grave inscriptions through close-ups and also to consider other aspects of the graves, such as statuary, design and architecture, through wide-angle shots. For example, because of the existence of both Teochew and Hokkien-style graves at KHS, we became cognizant of the differences between them, both in terms of design and inscription style.

The convenience of digital photography also let us go beyond the graves to document the cemetery temple, cemetery rituals, as well as exhumations and reinterments. At the same time, a team from the Centre for Culture and Communication of Republic Polytechnic, led by Dr Gan Su-lin, also became interested in documenting the ritualistic and cultural aspects

of the cemetery through digital photography and videography. Thus, at the beginning of the third phase of cemetery research and documentation, there was spontaneous involvement from more quarters of Singapore society, and the scope of interest was expanding beyond grave inscriptions and social history to incorporate cultural aspects of the cemetery.

Bukit Brown and Seh Ong Cemeteries

The cultural turn in cemetery research and documentation developed in tandem with a shift in the unit of inquiry from individual graves to entire cemeteries. To study cemeteries as part of the socio-cultural life of Singapore calls for a multidisciplinary approach. In the case of Bukit Brown and Seh Ong cemeteries, this was facilitated by the civic engagement of a much broader cross-section of Singapore society, which in turn let professionals and non-professionals of different disciplinary backgrounds engage in the work of cemetery research and documentation.

The Urban Redevelopment Authority (URA) had announced in May 2011 that Bukit Brown Cemetery had been slated for housing development, and in September 2011, the LTA announced the construction of a new dual four-lane road through the cemetery to ease traffic congestion. This would affect an estimated 5,000 graves out of 100,000 graves at Bukit Brown Cemetery and the adjoining Seh Ong Hokkien Cemetery. This time, the public outcry was more vociferous, and a public forum attracted more than 250 people,¹⁷ far surpassing the 70 participants that attended a forum on Bidadari Cemetery a decade earlier. By January 2012, both the Nature Society (Singapore) and the Singapore Heritage Society had both issued position papers urging the government to consider alternative plans.

Such heritage activism was only the tip of the iceberg at that time, but I will focus on the implications of this widening interest in Bukit Brown Cemetery as a heritage site on cemetery research and documentation. First, the government had anticipated public resistance to the exhumations, and as a compromise (whether accepted by civil society groups or not), had agreed to fund a project to document the affected graves. Upon the recommendation of Dr. Kevin Tan, president of the Singapore Heritage Society, I was asked to lead the documentation project. Based on my experience with KHS cemetery, I proposed a plan to document the cemetery holistically, and the key elements of the plan were:

i) Documentation of graves

Documentation of grave inscriptions; digital photography of grave characteristics and design; measured drawings and 3D laser scans of selected graves; and collection of Global Positioning System (GPS) coordinates of graves so that they could be mapped.

¹⁷ Feng Yen, 'Lively Debate over Fate of Cemetery,' *Straits Times*, 20 November 2011.

ii) Documentation of history, memory and rituals

Archival research with respect to historical documents, maps and photographs associated with the history of the cemetery; oral history interviews with caretakers of the cemetery and former residents of the kampongs in the vicinity; and photo and video documentation of rituals conducted at the cemetery, whether during Qing Ming, the Seventh Month Hungry Ghost Festival or other occasions.

iii) Documentation of exhumations

Recording of rituals and processes associated with exhumation and re-interment; documentation and cataloguing of burial artifacts unearthed.

The extensive scope of this project was made possible by conditions that were absent in earlier phases of cemetery research and documentation. First, a far wider spectrum of Singaporeans (and non-Singaporeans) had become concerned with the heritage value of Bukit Brown and Seahoon cemeteries. This groundswell of concern and support for documentation efforts made it easier to recruit volunteers and hire staff to conduct the research and documentation work in a limited span of time. Meanwhile, scholars and experts of different disciplinary backgrounds – history, geography, architecture, communications studies, visual sociology, archaeology and anthropology – willingly contributed their expertise to the enterprise. At the same time, the higher level of civic engagement has led to the emergence of what I call “citizen historians”, who were concerned about what these heritage spaces meant to Singaporeans. On their own accord, they delved into historical research on the cemeteries and disseminated their knowledge through blog sites, Facebook and books.¹⁸ In short, the discursive formation of cemetery studies (as part of heritage studies) was developing in a way that encompassed multiple disciplines as well as professionals and non-professionals.

Second, growing civic engagement with cemeteries as part of Singapore’s heritage-scape had garnered government support for cemetery research and documentation, most notably through funding and cooperation from government agencies. In the context of the Bukit Brown documentation project, the government provided funds through the LTA and the URA. The LTA also facilitated documentation work on the ground and furnished data such as the GPS coordinates of graves.¹⁹

Third, advances in technology had significantly extended the scope and depth of what we can document. Besides digital photography, the project had employed technologies such as GPS, aerial photography and laser scanning. Having access to GPS coordinates with centimetre-level accuracy was very useful in determining the exact position of graves and also their position in relation to each other. This ultimately allowed us to organise our data within a Geographic Information System (GIS). Aerial photographs allowed us to visualize graves and their layout, especially those with exceptional *fengshui* (geomancy) features.²⁰ Laser scanning captured the characteristics of graves in three-dimensional detail. This data could be processed into digital images or used to produce models through 3D printing. Many of these technologies are readily available, easy-to-use, affordable and accessible.

A REFLECTIVE NOTE

The three phases that I have outlined in the course of this chapter suggest that cemetery studies have been attracting an increasing following over the years, including both academics and non-academics. This flourishing of cemetery research and documentation in recent years is reflective of significant changes in our society. Cultural taboos related to cemeteries no longer seem to matter for a significant cross-section of our population. The digitization of our newspapers has made our history accessible to citizen historians and democratized historical research. Anyone can now document a Chinese or Bugis grave and its inscriptions with a digital camera, even if the person reads no Chinese or Buginese. Individuals sharing an interest in a cemetery can form communities through social media and share such information freely.

However, the removal of obstacles to research and documentation work are hardly sufficient conditions for such work to flourish. Perhaps our society is experiencing the “acceleration of history” in such a way that our past is slipping away from us faster than we can let go.²¹ In all three phases, this “slipping away” of the past was felt most keenly with the clearing of cemeteries – the remaining cemeteries became *lieux de mémoire* “where memory crystallizes and secretes itself”.²² This valorisation of memory and knowledge of our past is, it seems, premised on an economy of loss. And so it remains to be seen if our ability to peer into cemeteries as kaleidoscopes to our past will ironically be perfected at the point when they disappear altogether.

¹⁸ The generation of such knowledge was greatly facilitated by the digitization of Singapore’s historical newspapers, such as *The Straits Times*, which were made available through a searchable online database by the National Library of Singapore from March 2009 onwards.

¹⁹ More recently, the government had extended funding to the study of Muslim cemeteries, namely, the Jalan Kubor Cemetery and the Kubur Kassim Cemetery.

²⁰ *Fengshui* or geomancy associated with graves refers to Chinese folk beliefs dictating that the layout and characteristics of the ancestral grave can affect the fortunes of descendants.

²¹ Pierre Nora. “Between Memory and History: Les Lieux de Mémoire,” *Representations* 26 (1989).

²² *Ibid.*, p. 7.

A SHORT HISTORIOGRAPHY OF SINGAPORE ARCHAEOLOGY

Lim Chen Sian

INTRODUCTION

In 2014, the small fraternity of archaeologists in Singapore quietly celebrated thirty years of the discipline in the country. Since the first archaeological excavation was conducted in 1984, some thirty archaeological sites have been investigated here. Over the years, archaeological work in Singapore has expanded to include the recent and contemporary past, and explored sites where living memories and archival records complement the known historical environment. Sites such as cemeteries, World War Two battlefields, military fortifications, temple complexes, village homesteads, and townhouses were added to the repertoire of archaeological investigations.

Many of these projects were highly urbanized, development-driven and rescue-focused in nature. Apart from the rising number of excavations, Singaporean archaeologists were increasingly addressing important aspects of public archaeology – engaging in the revision of educational curriculum, lobbying for impact assessments and evaluations prior to development, curating archaeological finds, and taking custody of the artifact collection and caring for their long-term archiving. This paper provides a brief review of the historiography of archaeology in Singapore – where it was, where it is, and what it seeks to be.

ANTIQUARIANISM & THE BIRTH OF SCIENTIFIC INQUIRY

The arrival of the East India Company (EIC) in the 19th century saw some antiquarian interest in the island's past. There are European accounts that observe the evidence of early remains, such as old pottery remains scattered on the surface of Government Hill;¹ a defensive earthen rampart surrounding the core Singapore settlement;² and a large sandstone stele inscribed with weathered inscriptions, at the mouth of the Singapore River.³

Thomas Stamford Bingley Raffles, the East India Company representative who planted the British flag on Singapore, was an antiquarian, like many of his contemporaries. He collected exotica from the new world unfolding before him in the Malay Archipelago. Raffles wrote back to his friends and sympathisers in Britain, perhaps exaggeratedly, about his discovery of Singapore based on his studies of ancient

Malay history and the region, and how he was reviving a great trading empire that had fallen into ruin.⁴ Apart from Raffles' romantic and literary notions about ancient remains on the Malay capital of Singapura, John Crawfurd's journal account of February 1822 was the earliest known record of archaeological materials encountered. Crawfurd described the fragments of pre-European remains in the likes of architectural ruins, Chinese pottery sherds, Chinese coins from the 10th to 11th century, and the Singapore Stone.

Serious scientific inquiry into the natural history and historical environment of the island and the region came into being with the establishment of the Botanic Gardens (c.1859) and Raffles Museum (c.1874). The curators of these two institutions, typically natural historians, botanists or zoologists, despite their non-archaeological backgrounds, made occasional forays to investigate the ancient past. Henry Ridley, the director of the Botanic Gardens reportedly conducted a pedestrian survey on the beaches of western Singapore for Neolithic remains in the 1890s.⁵ Later, curators from the Raffles Museum conducted

¹ In Singapore, the earliest record suggesting a pre-colonial settlement on the island was through the discovery of Chinese ceramic sherds by EIC administrators. See John Crawfurd's journal entry of 4th February 1822 in John Crawfurd, *Journal of an Embassy from the Governor General of India to the Courts of Siam and Cochin China* (Henry Colburn and Richard Bentley, 1830). See also John Miksic, 'Research on Ceramic Trade within Southeast Asia and between Southeast Asia and China,' in *Southeast Asian Ceramics: New Light on Old Pottery*, ed. John Miksic (Singapore: NUS Press, 2009).

² Crawfurd *ibid.* See also Ke Zhongyuan, 'What was it Crawfurd saw on Fort Canning?' *Heritage: Journal of the National Museum of Singapore*, no. 6 (2014). See also Lim Chen Sian, 'The Earliest Landward Map of Singapore Preserved in The Bute Collection at Mount Stuart, Isle of Bute, Scotland,' in John Bastin, *The Founding of Singapore 1819* (Singapore: National Library, 2012).

³ J. W. Laidlay, 'Note on the Inscriptions from Singapore and Province Wellesley Forwarded by the Hon. Col. Butterworth and Col. J. Low,' *Journal of the Asiatic Society of Bengal* 17, no. 2 (1848); William Bland, 'Inscription on the Jetty in Singapore,' *Journal of the Asiatic Society of Bengal* 6, (1837).

⁴ See for example his letter to Colonel Addenbrooke of 19 June 1819 published in Sophia Raffles, *Memoir of the Life and Public Services of Sir Thomas Stamford Raffles* Vol. II (James Duncan, 1835), 18.

⁵ Henry N. Ridley, 'Discovery of Stone Implement in Singapore' *Journal of Straits Branch of the Royal Asiatic Society*, no. 23 (1891).

several excavations across the Tebrau Strait at Tanjong Bunga and uncovered Neolithic stone tools.⁶

A major discovery of antiquities was made at Fort Canning in 1928 during the construction of a service reservoir atop the hill. A cache of medieval gold jewellery, comprising a gold armlet and rings, was accidentally discovered during excavations. We have the presence of the British engineer, a certain Mr. Butler to thank as he was the one who spotted 'the gold ornaments (that) were exposed, being dragged down by a blow of the changkol' by Chinese coolies. Butler immediately took charge of the ornaments and protected them from being otherwise pocketed, sold and melted down.⁷ Today these take pride of place in the collection displayed at the National Museum of Singapore.⁸

Intriguingly, for over a century and a half, apart from a few casual and cursory collecting of chanced artifacts, no serious archaeological inquiry took place in Singapore. There was however some work in the 1930s, when the Raffles Museum conducted several expeditions to Malaya, excavating prehistoric sites in Kedah and Perak. 1938 saw the museum hosting the 'Third Congress of Prehistorians of the Far East' and many leading scholars and archaeologists convened in Singapore.⁹ In the 1940s, a few trial trenches were undertaken by Raffles Museum curators on Pulau Ubin island prospecting for Neolithic stone tools, but they failed to find anything of note.¹⁰ The next decade in the 1950s saw the Archaeological Society of the University of Malaya (then based in Singapore) active in central Kedah.¹¹

BIRTH OF SINGAPORE ARCHAEOLOGY AND THE FIRST TWO DECADES

It was only in 1984 that the first academic and systematic archaeological investigation took place on Singapore island

proper. Under the initiative of Singaporean historian Kwa Chong Guan, the director of the Oral History Department and later the National Museum, a ten-day archaeological excavation was conducted on Fort Canning Hill. The excavation's research objective was straightforward: to determine any material culture evident of a settlement prior to the arrival of the Europeans and to make sense of the myths surrounding the history of pre-modern Singapore.¹² These early excavations addressing the pre-colonial past were led by foreigners and expatriates such as American archaeologist John Miksic and Greek museum consultant Alexandra Avieropoulou Choo.¹³

The subsequent archaeological finds indicated an occupation period that dated from the 14th century. This encouraged further excavations in 1985, 1987 and 1988.¹⁴ One of these expeditions was the 1987 'SPAFA Consultative Workshop on Conservation and Archaeology' hosted in Singapore for three weeks. The ASEAN participants undertook excavations on Fort Canning and surveyed several of the southern islands in the Singapore Straits.¹⁵ Success from these excavations in the 1980s encouraged archaeologists to explore more of the old colonial quarter in the civic district by the Singapore River.

In the 1990s and early 2000s, several sites along the north bank of the river were investigated during renovations and redevelopment of the Old Parliament House (1989 and 2002), Parliament House Complex (1994), Empress Place riverbank (1998), and Colombo Court (2000).¹⁶ All these sites revealed extensive material culture remains from the 14th to 16th centuries, demonstrating that pre-modern Singapore was a thriving settlement and port some five hundred years prior to the arrival of the Europeans and the East India Company. Two other sites in the vicinity of the Singapore River – the Singapore Cricket Club (2003)¹⁷ and St. Andrew's Cathedral (2004)¹⁸ – were also investigated.

⁶ See Appendix III 'The Excavation at Tanjong Bunga' in M. W. F. Tweedie, 'The Stone Age in Malaya,' *Journal of Malayan Branch of the Royal Asiatic Society* 26, no. 2 (1953).

⁷ R. O. Winstedt, 'Gold Ornaments Dug Up at Fort Canning, Singapore,' *Journal of the Malayan Branch of the Royal Asiatic Society* 6, no. 4 (1928).

⁸ *Treasures from the National Museum Singapore* (Singapore: National Museum of Singapore, 1987).

⁹ F. N. Chasen and M. W. F. Tweedie (eds.), *Proceedings of the Third Congress of Prehistorians of the Far East Singapore 24th January – 30th January 1938 Held Under the Auspices of The Government of the Straits Settlements at the Raffles Museum* (Singapore, 1940).

¹⁰ P. D. R. Williams-Hunt, 'Recent Archaeological Discoveries in Malaya (1945-1950),' *Journal of Malayan Branch of the Royal Asiatic Society* 24, no. 1 (1951).

¹¹ See for example Wang Gungwu, 'The University of Malaya Archaeological Society's Survey of Central Kedah,' *Journal of Malayan Branch of the Royal Asiatic Society* 31, no. 1 (1958).

¹² See chapters one to six of C.C. Brown (trans.), 'Sejarah Melayu: Malay Annals from M.S. Raffles No. 18,' *JMBRAS*, no. 28 (2009).

¹³ John Miksic, *Archaeological Research on the 'Forbidden Hill' of Singapore: Excavations at Fort Canning 1984* (Singapore: National Museum Singapore, 1985); Alexandra Avieropoulou Choo, *Report on the Excavation at Fort Canning Hill Singapore* (Singapore: National Museum Singapore, 1986).

¹⁴ John Miksic, 'Beyond the Grave: Excavations North of the Keramat Iskandar Shah, 1988,' *Heritage: Journal of the National Museum Singapore*, no. 10 (1988).

¹⁵ *Fourth Intra-ASEAN Archaeological and Conservation Workshop Singapore, 1 November – 21 November 1987*.

¹⁶ While no excavation site reports were published for these early sites, a general synthesis of the work can be found in John Miksic, *Singapore & the Silk Road of the Sea 1300-1800* (Singapore: NUS Press, 2013). There are also a number of academic exercises and Master theses that examined a subset of finds from these sites. See, Omar Chen, *Earth to Earth: An Investigation into the Occurrence of Earthenware Artefacts at the Parliament House Complex Site*, Thesis (M.A.), Dept. of Southeast Asian Studies, National University of Singapore, 2001; Shah Alam Zaini, *Metal Finds and Metal-working at the Parliament House Complex Singapore*, Thesis (M.A.), University of Michigan, Ann Arbor, 1997.

¹⁷ John Miksic, *Southeast Asian Archaeological Site Reports No. 1* (Singapore: NUS Press, 2003), <https://doi.org/10.25717/7w0e-3n3c>.

¹⁸ John Miksic and Lim Chen Sian, *Archaeological Research on the Padang and in the St. Andrew's Cathedral Churchyard: St. Andrew's Cathedral Archaeological Research Project Progress Report Summary September 2003 – June 2004* (Singapore: Asia Research Institute, 2004); Lim Tse Siang, *14th Century Singapore: The Temasek Paradigm*, Thesis (M.A.), Department of History, National University of Singapore, 2012.

While the primary focus in the early days of local archaeology had been on pre-modern and pre-European contact, some colonial era archaeology was also conducted in 1987. A surface collection of materials on Pulau Saigon, an islet located in the upper reaches of the Singapore River, was the first attempt to look into the socio-economic life of the colonial and modern period through artifacts.¹⁹ This was followed by a few other projects initiated and sponsored by local grassroots organizations such as the Citizen's Consultative Committees at Duxton Hill (1989) and Fort Tanjong Katong (2004),²⁰ and the Malay Heritage Foundation for the excavations at Istana Kampong Gelam (2000 and 2003).²¹

The first two decades of archaeological work from 1984 to 2004 was very much dependent on volunteers and contingent on sympathetic developers. The latter permitted some limited excavation on their construction sites. The handful of archaeologists involved in these local projects were typically from the National University of Singapore's history department, Southeast Asian Studies Programme, or Asia Research Institute. These institutions did not employ archaeologists per se but rather engaged them to teach and engage broadly with Southeast Asian history. Archaeology was seen as an incidental exercise of academic interest rather than a necessity.

THE LAST DECADE: 2006-2016

Since 2006, Singaporeans have spearheaded archaeology work and staffed the project field crew in entirety. In the last decade, some 20 new sites have been investigated and contributed to our understanding of the country's past. The team has progressively explored sites from the colonial periods and more recent history such as the Second

World War and the post-independence period.²² Studies of historical period sites include: Palmer Road (2006), a mid-19th century Chinese temple;²³ Neil Road House (2006), a late 19th century townhouse;²⁴ Jacob Ballas Children's Garden (2014) where several 19th century tombs were located;²⁵ and Bukit Brown Cemetery (2014).²⁶ Within the subfields of historical archaeology, several military specific projects – comprising Fort Serapong (2006), a coastal artillery battery and emplacement erected in 1879 that later became part of the Second World War defences,²⁷ and Adam Park (2010, 2011, 2013), a major battlefield site²⁸ – were conducted.

Archaeologists also became active in surveying potential sites with aboveground architectural remains, with a particular focus on military installations. These sites ranged from the mid-19th century to the British military withdrawal from the Far East in 1971. Coastal fortifications and their ancillary installations were surveyed on Mount Faber (2007), Pulau Ubin (2008), Pulau Tekong (2008), Pulau Brani (2008), and Ulu Pandan (2011). As these surveys were dedicated to creating an inventory of visible remains, no excavations were conducted.

The rampant pace of development and construction in Singapore saw the increase of pre-development evaluations and development-led rescue excavations over the past decade.²⁹ This was partly due to more aggressive lobbying by Singaporean archaeologists and also due to changes within state agencies, particularly the National Heritage Board, which created an Impact Assessment and Mitigation Division in 2012.³⁰ As a result, evaluations and archaeological impact assessments were conducted prior to the development of the Sentosa Island Integrated Resort (2007), Indian Heritage Centre (2012), the Cathedral of the Good Shepherd (2013), Singapore Management University (2014), and Mount Palmer (2016).³¹

¹⁹ Koh Lian What, 'Artefacts From Pulo Saigon,' *Heritage, Journal of the National Museum Singapore*, no. 10 (1988); Cheryl-Ann Low, *Uncovering Pulau Saigon*, Academic Exercise, Department of History, National University of Singapore, 1996; Jennifer Berry, *Pulau Saigon: A Post-Eighteenth Century Archaeological Assemblage Recovered from a Former Island in the Singapore River* (Stamford: Rheidol Press, 2000).

²⁰ John Miksic, 'Archaeology in the City: Digging at Duxton Hill,' in *Tanjong Pagar: Singapore's Cradle of Development* (Singapore: Tanjong Pagar Citizen's Consultative Committee, 1989); Lim Chen Sian, *Fort Tanjong Katong Raising History Planting Roots Project: Preliminary Site Report submitted to the National Parks Board and National Heritage Board* (2005).

²¹ No archaeological site report was produced for this project. However the artifact assemblage collected was studied by Jennifer Barry who privately published her findings. See Jennifer Barry, *Istana Kampong Glam: Archaeological Excavations at a Nineteenth Century Malay Palace Singapore* (Stamford: Rheidol Press, 2009).

²² For discussion on archaeology's contribution to the study of the colonial period, see Lim Chen Sian, 'Archaeology as a Critical Source in Reconstructing the Colonial Past,' in *New Insights to Singapore History: Perspectives of Emerging Scholars*, ed. Derek Heng (Singapore: National Library Board, 2006).

²³ Lim Chen Sian, 'Palmer Road Fook Tet Soo Khok Temple Archaeological Research Project Preliminary Site Report,' in *The Living Heritage: Stories of Fook Tet Soo Khok Temple* (Singapore: Char Yong (Dabu) Association Singapore, 2006).

²⁴ Foo Su Ling, Lim Chen Sian et. al. *NUS Baba House: Architecture and Artefacts of a Straits Chinese Home* (Singapore: Editions Didier Millet, 2016).

²⁵ Lim Chen Sian and Hui Yew-Foong, *Report on the Archaeological Survey at the Jacob Ballas Children's Garden: submitted to the National Parks Board and National Heritage Board* (2015).

²⁶ Lim Chen Sian, *Archaeological Investigations at Bukit Brown Cemetery: Excavation, Protocols, and Recommendations* (Forthcoming).

²⁷ Lim Chen Sian, *Archaeological versus Historical Records: The Fort Serapong Case Study*, Thesis (M.A.), Dept. of Southeast Asian Studies, National University of Singapore, 2007.

²⁸ Jon Cooper, *Tigers in the Park: The Wartime Heritage of Adam Park* (Singapore: The Literary Centre, 2016); Lim Chen Sian et. al., *Adam Park Archaeological Research Field Report: Report submitted to the National Heritage Board* (2011).

²⁹ Lim Chen Sian, 'Development-led Archaeology in Singapore' paper presented at the *Workshop on the Heritage of Ancient and Urban Sites: Giving Voice to Local Priorities 14-16 March 2016 Singapore*, ISEAS (2016).

³⁰ In 2014, the unit was rebranded as 'Heritage Research and Assessment Division'.

³¹ Lim Chen Sian, *Pre-development Archaeological Investigations at the Indian Heritage Centre: report submitted to the National Heritage Board* (2013); Lim Chen Sian, *Singapore Management University Archaeological Evaluation: Report submitted to the National Heritage Board* (2015); Aaron Kao and Lim Chen Sian *Mount Palmer Archaeological Survey: Report submitted to the National Heritage Board* (2016).

Large-scale rescue excavations were determined to be necessary for development projects at the National Gallery Singapore (2009, 2010),³² Victoria Concert Hall (2010, 2011),³³ and Empress Place (2014, 2015).³⁴ These three sites are the largest archaeological excavations in Singapore to date, yielding a total of more than four tons of archaeological artifacts. All three sites sit within the compounds of important colonial era buildings. The National Gallery Singapore is made up of two gazetted national monuments – the Old Supreme Court (b.1937) and the former Municipal Hall (b.1927). Similarly, the Victoria Concert Hall (b.1905) is also a gazetted national monument. However, despite their protected status as gazetted national monuments, any legal protection afforded to these sites is limited to aboveground build heritage and strictly architectural. Despite the large reservoir of archaeological remains beneath the buildings, these are beyond the remit of existing legislation and are therefore not accorded any legal protection.

The last ten years witnessed intense lobbying and an increasing number of development-led archaeological excavation.³⁵ Archaeologists emphasized and focused on the necessity of archaeological intervention, particularly in a development-driven environment. The decade saw the rise of Singaporean-led archaeology, with the archaeology team on field projects made up entirely of Singaporeans. In order to build a professional Singaporean team with strong competencies in archaeological work, all field projects relied on a core of full-time Singaporean staff employed for the duration of the project. While volunteers are still welcome, they are typically engaged as supplementary auxiliaries in the field or in post-excavation work.

In 2010, an Archaeology Unit was formed and became an active research section within the Institute of Southeast Asian Studies Nalanda-Sriwijaya Centre (ISEAS).³⁶ However the unit was initially staffed by part-timers. Only in late 2014 were full-time professional archaeological staff engaged. At the time of writing, the Archaeology Unit has one Associate Fellow and three Research Officers on its staff.

THE FUTURE

Looking to the future, there are several important areas that archaeologists need to address. These center predominantly on the institutionalizing of archaeology and the development of relevant and appropriate legal frameworks to support archaeology and related work. Existing legislation is ambiguous about archaeology, particularly relating to development. It is also ambiguous about the ownership of archaeological finds.³⁷ No archaeological impact assessments or evaluations are currently required by law in Singapore.

Beyond ownership issues, care for the excavated artifacts is one area that requires urgent attention. Since 1984, the responsibility for storing and safekeeping of archaeological finds has resided with the archaeologists. However, the bulk of these artifacts have yet to be processed and analysed. This backlog is largely due to inadequate resources to conduct the necessary post-excavation work. A plan is urgently needed to address this backlog. With this in mind, the Singaporean archaeology team has started on a programme to process and catalogue some five tonnes of material from excavations in 2006 that are currently housed temporarily at ISEAS. This is contingent on available personnel, resources and funding. If these conditions are met, the programme is envisioned to be completed by 2025.³⁸

Another important area is the publication of past site reports. Many of these are in the form of grey literature that were submitted to the developing agencies and funding bodies. Archaeological data are a crucial part of understanding Singapore's history and archaeologists will have to ensure that their reports are available as public records. Over the next few years, the archaeology team based at ISEAS hopes to systematically publish their reports for both public and academic consumption.³⁹

³¹ Lim Chen Sian, *Pre-development Archaeological Investigations at the Indian Heritage Centre: report submitted to the National Heritage Board* (2013); Lim Chen Sian, *Singapore Management University Archaeological Evaluation: Report submitted to the National Heritage Board* (2015); Aaron Kao and Lim Chen Sian *Mount Palmer Archaeological Survey: Report submitted to the National Heritage Board* (2016).

³² Lim Chen Sian, *Preliminary Report on the Archaeological Investigations at the National Gallery Singapore*, NSC Archaeology Unit Report Series No. 5 (2017).

³³ Lim Chen Sian, *Preliminary Report on the Archaeological Investigations at the Victoria Concert Hall*, NSC Archaeology Unit Report Series No. 9 (2019).

³⁴ Lim Chen Sian, *Empress Place Rescue Archaeology Excavation Project Preliminary Report: Report submitted to the National Heritage Board* (2015).

³⁵ See Lim, 'Development-led Archaeology in Singapore' (2016), for a list of sites investigated.

³⁶ In 2015, ISEAS was renamed the ISEAS-Yusof Ishak Institute.

³⁷ See Jack Lee, 'A Presence of the Past: The Legal Protection of Singapore's Archaeological Heritage,' *International Journal of Cultural Property* 20, part 3 (2013).

³⁸ For detailed discussions on issues pertaining to archaeological post-excavation work and long-term archiving of the archaeological collection see Lim Chen Sian et al. *Archiving Archaeological Materials*, NSC Archaeology Unit Archaeology Report Series No. 7 (2017).

³⁹ See NSC Archaeology Unit Archaeology Report Series. To date, some nine titles have been published, three of which are devoted to Singapore archaeology.

CONCLUSION

Singapore is not unique in the evolution of its archaeological journey. As with many countries in Southeast Asia and the world, it began with antiquarian interests that eventually grew into more systematic and academic investigations. Early archaeological efforts in Singapore for the first two decades were largely expatriate-driven and volunteer dependent. Over the last ten years, we have eschewed the use of volunteers for the deliberate development of professional archaeological capabilities staffed by Singaporeans. Apart from this, archaeologists are also increasingly in the forefront lobbying relevant state agencies on matters pertaining to archaeological regulations and the ownership of artifacts. The role of the antiquarian explorer who is curious about his natural and cultural environment has evolved and morphed into one that encompasses the roles of field scientist, project administrator and public lobbyist.

CONSERVATION OF CHINESE TEMPLES IN SINGAPORE: A HISTORICAL OVERVIEW

Yeo Kang Shua

INTRODUCTION

A Hokkien-styled temple – Thian Hock Keng – and a Cantonese-styled community based medical institution – Old Thong Chai Medical Institution – were part of the first group of buildings protected legally in post-independence Singapore as National Monuments in 1973. Since then, 13 more Chinese or Chinese-influenced structures have been protected as National Monuments and 11 such structures have been protected as conserved buildings. These are apart from the thousands of Chinese-influenced shophouses which make up the bulk of buildings in conservation areas. Many of these historic Chinese or Chinese-influenced structures experienced extensive changes in building materials, especially from timber to concrete, between the 1970s and 1980s before their legal protection or gazetting. The push for architectural conservation by the authorities in the 1980s saw the advocacy for the rudimentary conservation principles of ‘maximum retention, sensitive restoration and careful repair’ or the ‘3R’ principle. This set of principles did not address the inherent conflict of conservation approaches on the issue of authenticity but the subsequent issuance of International Charters and Documents, such as *The Nara Document on Authenticity* (1994) and the *Principles for the Preservation of Historic Timber Structures* (1999), led to a shift in the understanding of the conservation of Chinese architecture.¹ More than 40 years have passed since 1973 and it is useful to look back and reflect on the conservation practices of traditional Chinese architecture in Singapore.

BRIEF ACCOUNT OF CHINESE ARCHITECTURAL CONSERVATION

In 1919, Zhu Qiqian [朱启铃], a former Minister of Public Works and Deputy Premier of the Republic of China, republished a thirteenth-century manual, *The Construction Methods of Building* (*Ying Zao Fa Shi* 《营造法式》), which he had chanced upon in a library in Nanjing the year before. This event precipitated an interest to research the architectural history of building methods and systems in China.

However, it was not until 10 years later in 1929 that a formal organization was established to research Chinese architecture. This society, the *Society for Research in Chinese Architecture* (hereinafter, the Society) was founded in Beijing by Zhu Qiqian. Formal documentation research activities began and numerous officials and scholars participated.

Having participated in the conservation efforts for the Forbidden City from 1910 to 1920, as well as in other conservation activities in Beijing, Zhu Qiqian was acutely aware of the importance of contemporary architectural and archeological knowledge, as well as traditional craftsmanship,

to society. He invited two young professors, Liang Sicheng [梁思成] and Liu Dunzhen [刘敦镇] to be Deputy Directors of the Society’s two sections, and also established research principles to direct future work.

Through the efforts of Liang Sicheng and his team, the Chinese government passed a comprehensive heritage law – *Provisional Regulations on Protection and Administration of Cultural Relics* 《文物保护单位暂行条例》 – in 1961. This was superseded in 1982 by the *Law of the People’s Republic of China on the Protection of Cultural Relics* 《中华人民共和国文物保护法》. In 1993, ICOMOS China [国际古迹遗址理事会中国国家委员会] was established. The following year, the *Nara Document on Authenticity*, which argued for a broader understanding of heritage concerning their conservation approaches, was promulgated by ICOMOS. This document is pertinent where heritage structures are mainly constructed out of organic material such as timber that need to be replaced in totality if it has degraded. Subsequently, in 2002, an updated and holistic set of principles, *Principles for the Conservation of Heritage Sites in China* 《中国文物古迹保护准则》, was issued by ICOMOS China and approved by the State Administration of Cultural Heritage.

¹ Yeo Kang Shua, ‘Bridging Positivist and Relativist Approaches in Recent Community-Managed Architectural Conservation Projects in Singapore,’ *SOJOURN: Journal of Social Issues in South East Asia* 33, no. 3 (2018), DOI: 10.1355/sj33-3e.

OVERVIEW OF THE ARCHITECTURAL CONSERVATION MOVEMENT IN SINGAPORE

Having gained independence in 1965, the imperative needs of Singapore as a rapidly developing young nation to provide housing, transport infrastructure, and employment dictated the planning agenda in the 1960s and 1970s, and rebuilding, rehabilitation and conservation were recognized as the three indispensable elements of urban renewal. There was little consideration for conservation in the urban renewal and redevelopment programme at the time. Preservation and conservation were to be undertaken by the Preservation of Monuments Board (PMB), a statutory board formed in January 1971 under the Ministry of National Development to gazette and protect national monuments.² The earliest and limited efforts to protect built heritage were carried out by PMB in 1973 when eight buildings were gazetted as National Monuments,³ with Thian Hock Keng and Old Thong Chai Medical Institution as part of this initial batch of monuments.⁴ These were the harbingers of architecture conservation.

By the early 1980s, there was growing concern that preserving the occasional structure was but a token concession. On 28 March 1981 at the 'Conservation Forum' organized by the Singapore Institute of Planners, Pamela Chong Lee of the Singapore Tourist Promotion Board (STPB) championed the retention of 'beautiful old temples, churches, mosques as well as our living cultures as presently found in places like Chinatown, Arab Street, and Serangoon Road'.⁵

In order to ensure that the retained structures remained relevant in the new time and a delicate balance between the protected buildings and new development was maintained, conservation had to become an integral part of urban planning. This resulted in the 1985 *Central Area Structure Plan*, which proposed the conservation of several historic districts in the city centre. With growing interest in the built heritage, URA carried out a comprehensive study to mark significant historic areas for conservation, which resulted in the completion of the 1988 *Master Plan for the Civic and Cultural District*, recommending historic buildings in the central area for conservation and subsequent adaptation for culture-related uses. More importantly, 1989 *Conservation Plan* was completed. And in March 1989, the Planning Act was

amended in March 1989 to govern all aspects of conservation in Singapore.⁶

The areas designated for conservation in the 1989 Conservation Plan fall under the categories of 'Historic, Residential Historic, Secondary Settlements and Bungalow'. Historic districts like Chinatown, Little India, Kampong Glam, Singapore River - including Boat Quay and Clarke Quay - as well as residential areas like Emerald Hill, Cairnhill, Blair Plain, and secondary settlements like Joo Chiat and Geylang were designated for conservation.

By 1989, much of the 1971 *Concept Plan*, which had provisions for the renewal of the central area, had been executed. In 1991, a major review of the 1971 *Concept Plan* was undertaken. A decade later, the 2001 *Concept Plan* aimed 'to create a distinctive city alive with rich heritage, character diversity, and identity'. This effort to strengthen our identity continued and led to the formulation of the 2002 *Identity Plan*, which aimed to conserve districts that might not be of great historic interest but possessed the quality of 'old world charm'.

ARCHITECTURAL CONSERVATION PROFESSIONALS

It is not difficult to surmise that coordinated efforts by the authorities in conservation only emerged in the mid-1980s. Such a development also saw the entry of professionals working in the field of conservation in Singapore. As there were no architectural conservation professionals at that point, the STPB brought in foreign professionals to advise on conservation projects. Didier Repellin, one of the Chief Architects of Historic Buildings in France, was engaged as a consultant to assess the historic buildings in the Civic District in 1986. He was also appointed as a conservation consultant for the restoration of a government building into the Empress Place Museum (currently the Asian Civilisations Museum).⁷ In 1987, he led a pilot project at No. 53 Armenian Street, a shophouse, to train local craftsmen.⁸ In the 1990s, he was again appointed consultant for conversion of the Convent of the Holy Infant Jesus (CHIJ). During the same period, Garth Sheldon, an American conservation consultant, was also brought in. He worked on the Telok Ayer Market restoration project from 1986 to 1989, and the Alkaff House (Mansion)

² PMB was transferred from Ministry of National Development (MND) to Ministry of Information and the Arts (MITA) on 1 April 1997 as a statutory board. It then became a statutory board of the Ministry of Information, Communications and the Arts (MICA), now Ministry of Culture, Community and Youth (MCCY). It was subsumed under the National Heritage Board (NHB) in 2009, ceasing to be an independent statutory board and becoming a division under the NHB. It was renamed the Preservation of Sites and Monuments on 1 July 2013.

³ Namely Old Thong Chai Medical Institution, Armenian Church, St Andrew's Cathedral, Telok Ayer Market, Thian Hock Keng Temple, Sri Mariamman Temple, Hajjah Fatimah Mosque and Cathedral of the Good Shepherd.

⁴ P. Chia, 'Govt. to keep eight landmarks,' *Straits Times*, 8 July 1973.

⁵ Boey Yut Mei, 'Urban Conservation in Singapore,' in *Planning Singapore: From Plan to Implementation*, ed. B. Yuen (Singapore: Singapore Institute of Planners, 1998), 162. The STPB is the forerunner of the current Singapore Tourism Board (STB).

⁶ Planning (Amendment) Act 1989 (No. 12 of 1989).

⁷ Anon, 'STPB taps French Expertise,' *The Business Times*, 17 October 1986.

⁸ Anon, 'Back to its old glory - in just 10 days,' *Straits Times*, 17 April 1987.

restoration project in 1987.⁹ Being the sole conservation consultant in private practice in Singapore, Sheldon continued to work on numerous projects throughout the 1990s and a large part of the 2000s.

Chan Yew Lih, then Senior Lecturer in the School of Architecture, National University of Singapore, and Wong Hooe Wai, an architect in the Public Works Department were pioneers who obtained degrees in conservation studies in the late 1980s and early 1990s.¹⁰ Both were graduates of York University's Conservation Studies master's programme. Like most countries, the architectural profession is the main driver for the conservation of historic buildings in Singapore. Several architects and architectural practices, such as Liu Thai Ker, Richard Ho, Mok Wei Wei, Liu & Wo Architects Pte Ltd, Peter How of the Public Works Department and subsequently CPG Consultants Pte Ltd, etc., became associated with projects involving historic buildings – these were primarily adaptive reuse projects.¹¹

Only in the latter part of the 2000s were more Singaporeans engaged professionally in architectural conservation: Yeo Shuyuen who graduated from York University's Conservation Studies master's programme in 2006; Ho Weng Hin who graduated from University of Genoa's School of Specialization for Architectural Heritage in 2008; and Ian Tan Yuk Hong from University of Edinburgh's Architectural Conservation programme in 2012. The author, architecturally trained and a Doctor of Philosophy in architecture, works and specializes in conservation as well as in conservation management policies. He became involved in the field in 1999, initially while working in architectural practice and subsequently at the Preservation of Monuments Board from 2007–2010 where he was tasked with setting up its Inspectorate office.

NASCENT STATE OF THE TRADITIONAL CHINESE ARCHITECTURE 'CONSERVATION' MOVEMENT

The development of Singapore's traditional Chinese architecture mirrors the development of modern Singapore. The earliest Chinese structures were religious buildings, many of which were constructed post-1820s in the area around the Singapore River, especially on its southern banks. It is generally acknowledged by scholars that these buildings were constructed by travelling craftsmen from China.

When the People's Republic of China (PRC) was established on 1 October 1949, official relations and communications between China and Singapore virtually ceased. The number of skilled craftsmen from the PRC engaged in the construction and repair of Chinese buildings in Singapore were in short supply. Consequently, some of these buildings, especially Chinese temples, were built with reinforced concrete and simplified timber roof trusses that did not require specialist knowledge in traditional Chinese construction methods and techniques. One such example is Sian Keng Tong Temple [仙宮堂] along Changi Road which was constructed in 1965 by locals. Some later examples went even further to mimic Chinese architectural components, such as the timber *dougong* or bracketing system, casting them in reinforced concrete and using them as decoratively to demonstrate their 'Chinese-ness'.

Despite the establishment of unofficial relations between Singapore and China in the 1970s, exchanges remained limited and it was still almost impossible for these skilled craftsmen to travel to Singapore. This eased only in 1985 when commercial air services commenced between the two nations.¹² Due to these circumstances, many of these Chinese temples had turned to using reinforced concrete out of necessity.

⁹ L. Lee, 'A new look in store for old Telok Ayer Market,' *The Business Times*, 30 January 1986; Anon, 'Million-dollar facelift for house on the hill,' *Straits Times*, 19 May 1987.

¹⁰ Wong Hooe Wai pursued studies at York University, UK, under the United Nations Development Plan, and obtained an MA degree in Conservation Studies in 1990.

Anon, Centre of Liveable Cities Lecture Series: Urban Transformation of Singapore Part 1 of 4 Transcript (Singapore: Centre of Liveable Cities, 2014).

Liu Thai Ker, who was then a government official, was instrumental in the initial conservation efforts in the 1980s. Subsequently when in private practice, he worked as the Qualified Person (architect) for the restoration of the House of Tan Yeok Nee and the initial phases of the restoration of Lianshan Shuanglin Monastery.

Richard Ho is well known in Singapore for his adaptive reuse conservation works. He has been awarded 5 consecutive Urban Redevelopment Authority's architectural heritage awards from 2009–2012, with two awards in 2010. He was also awarded 4 Singapore Institute of Architects' Design Awards in the Conservation category in 1995, 2001, 2010 and 2012. Richard is also recipient of the 2000 Architects Regional Council Asia (ARCASIA) Gold Medal for his conservation project. In addition, he also served on the URA's Conservation Advisory Panel.

Mok Wei Wei has served as a board member of the Preservation of Sites and Monuments and its predecessor, PMB since 1999. He is the architect for the restoration and extension of the National Museum in partnership with CPG Consultants Pte Ltd., as well as the recent restoration of Victoria Theatre and Concert Hall.

Liu & Wo Architects Pte Ltd, set up by Liu Kah Teck and Wo Mei Lan, is recipient of 9 Urban Redevelopment Authority's architectural heritage awards since 1994. The firm has worked on more than 100 conservation projects, most of which are shophouses. See L. Ong, The saviour of shophouses, Urban Redevelopment Authority, accessed 1 July 2015, <http://www.goingplacessingapore.sg/people/2013/WoMeiLan.aspx>.

Peter How Kim Lai is the former Assistant Chief Architect of the Public Works Department (PWD) and currently a Director at CPG Consultants Pte Ltd. Peter led his team on many conservation projects while in PWD and later in CPG. His team was awarded 9 Urban Redevelopment Authority's architectural heritage awards. All these projects are state owned properties, including the National Museum project in partnership with Mok Wei Wei.

¹² Anon, 1985.



Figure 1. Sian Keng Tong Temple. (Courtesy of the author)

However, this is not to say that there were no structures using traditional methods and materials built during this period. Completed in 1979, the Kiew Lee Tong Temple [九鯉洞] is one of the last temples to be built using traditional methods and material. Nonetheless, the trend of using a combination of modern and traditional materials and methods continues. One

of the most recent examples is the Buddha Tooth Relic Temple [佛牙寺] completed in 2007. A combination of reinforced concrete and traditional timber *dougong* or bracketing system was used in its construction. However, the *dougong*, despite being constructed using the traditional mortise and tenon method, it is purely decorative and non-structural.



Figure 2. Kiew Lee Tong Temple. (Courtesy of the author)

Building	Typology	Function	Construction Date	Gazette Date
Thian Hock Keng [天福宫]	Hokkien – Quanzhou style	Religious	–	28 Jun 1973
Old Thong Chai Medical Institution [旧同济医院]	Cantonese style	Institutional	1891 – 1892	28 Jun 1973
Former House of Tan Yeok Nee [资政第]	Teochew style	Residential	1882 – 1885	19 Nov 1974
Tan Si Chong Su [陈氏宗祠 (保赤宫)]	Hokkien – Quanzhou style	Religious	1876 – 1878	19 Nov 1974
Hong San See [凤山寺]	Hokkien – Quanzhou style	Religious	1908 – 1913	10 Nov 1978
Lianshan Shuanglin Monastery also known as Siong Lim Temple [双林寺]	Hokkien – Fuzhou style	Religious	1904; 1905	14 Oct 1980
Telok Ayer Chinese Methodist Church [卫理公会直落亚逸礼拜堂]	Modern	Religious	1924 – 1925	23 Mar 1989
Yueh Hai Ching Temple [粤海清庙]	Teochew style	Religious	1895 – 1897 (extant buildings)	28 Jun 1996
Ying Fo Fui Kun [应和会馆]	Teochew with modern influence	Institutional	1844	18 Dec 1998
Former Nanyang University Library and Administration Building, Memorial and Arch [南洋大学]	Modern	Educational	1954 – 1955; 1958	18 Dec 1998
Chinese High School Clock Tower Building [华侨中学钟楼]	Modern	Educational	1923 – 1925	19 Mar 1999
Tou Mu Kung Temple [斗母宫]	Hokkien style	Religious	1919 – 1921	14 Jan 2005
Former Keng Teck Whay Building (Yu Huang Gong) [旧庆德会; 现玉皇宫]	Hokkien – Quanzhou style	Religious	1847 – 1856 (?)	11 Nov 2009
Lim Bo Seng Memorial [林谋盛纪念碑]	Modern	Memorial	1954	2010
Chung Cheng High School (Main) Administration Building and Entrance Arch [中正总校]	Modern	Educational	1965 – 1968	10 Jul 2014

Table 1. List of Chinese and/or Chinese-influenced architecture gazetted as Singapore's National Monuments under the Preservation of Monuments Act.

INTERNATIONAL COLLABORATION FOR THE CONSERVATION OF TRADITIONAL CHINESE ARCHITECTURE

With the initial gazetting of traditional Chinese buildings in 1973 as national monuments, an important question arose. What should be done when these historic Chinese buildings require restoration and conservation work?

The Thong Chai Medical Institution was probably the first building to undergo such works. Acquired by the State and vested in the PMB after its gazette, it was subsequently restored by the Board at an initial estimated cost of \$350,000,¹³ a sum which later ballooned to almost half a million dollars.¹⁴ Unfortunately, there is little information about this restoration which was completed only in 1980, apart from 'a new glaze-tiled roof (and) modern flush toilets to replace the old bucket-type sanitary system and new electrical wiring'.¹⁵

¹³ W. Campbell, 'Preserving our heritage: Wayang Street is the focal point,' *Straits Times*, 2 August 1973.

¹⁴ Anon, 'Monuments Board limited by lack of funds,' *Straits Times*, 23 August 1978. The Preservation of Monuments Board found it onerous to fulfil the role of a building owner. The building was vested back to the State in 1979 and the Urban Redevelopment Authority was engaged as the managing agent in 1982. In 1993, the building was put up for sale by the State.

¹⁵ G. Tang, 'Thong Chai gets a new lease of life,' *Straits Times*, 15 June 1979. In 2000, a second restoration was completed by then owner, Thong Chai Ke-Yip Pte Ltd, and executed by the same contractor for Lianshan Shuanglin Monastery, LAEC Construction Pte Ltd.

In this early stage in the development of conservation in Singapore, there is reason to believe that works carried out during this period were, strictly speaking, neither restoration nor conservation. Works were essentially limited to the roof to rectify the water leakage problem, repainting or re-decorating works, and ad-hoc repairs. These were usually carried out by local craftsmen who did not necessarily have the required knowledge to deal with traditional Chinese timber framing or related materials and techniques. This could plausibly compromise the integrity of the building and is perhaps a disaster waiting to happen.

Lianshan Shuanglin Monastery (Siong Lim Temple)

In 1989, the Public Works Department issued an order for the structural safety of Lianshan Shuanglin Monastery, to be checked after the PMB expressed concern over its structural integrity due to a termite infestation in the timber framing system.¹⁶ The temple, which was gazetted as a national monument in 1980, subsequently formed a restoration committee headed by temple supervisor Reverend Weiyan [监院惟严法师].

A measured survey was commissioned and carried out by China's Comprehensive Institute of Geotechnical Investigation and Surveying [综合勘察研究院]¹⁷ using photogrammetry surveying technique, which was then cutting edge technology.

The conservation strategy and master plan were formulated by the Beijing Municipal Administration of Cultural Heritage's Institute of Cultural Relics [北京文物局文物研究所],¹⁸ while the preliminary conservation plan was formulated by the renowned Professors of Traditional Chinese Architecture, Wang Qiheng [王其亨], and Yang Changming [杨昌鸣] of Tianjin University.

In 1992, Fang Yong [方拥], a professor at Quanzhou's Huaqiao University was appointed the traditional Chinese architecture designer for the restoration project. The following year, Liu Thai Ker, the architect heading the temple's restoration project submitted the restoration proposal to the Urban Redevelopment Authority (URA) and the PMB.

In 1994, a Taiwanese professor, Lee Chien-lang [李乾朗], was appointed the overall traditional Chinese architecture designer and planner. An architectural firm from Taiwan, HCF Architects [样算房工程顾问有限公司], was entrusted with the draughting the plans required.

Chan Yew Lih from the National University of Singapore was also involved in researching and documenting of the restoration process. The restoration work commenced on 17 June 1994 and still continues due to the number of buildings in the monastery.¹⁹ This is considered to be the first comprehensive restoration and adaptive reuse project, and certainly the most ambitious to date.



Figure 3. Lianshan Shuanglin Monastery. (Courtesy of Mr. Lim Shao Bin)

¹⁶ G. Kwek, 'Safety check of temple ordered,' *The New Paper*, 6 July 1989. Lianshan Shuanglin Monastery was among the first batch of buildings to receive PWD orders for safety checks after the Building Control Act (1989) came into effect on 1 May 1989, after the collapse of the Hotel New World building in March 1986. On 16 November 1991, parts of the termite-infested temple were declared unsafe and over two-thirds of the temple building was ordered to close by the Public Works Department. See Anon, 'Parts of termite-infested temple declared unsafe and closed,' *Straits Times*, 18 November 1991.

¹⁷ This institute was then under the charge of the Ministry of Construction [北京建设部属下综合勘察研究院]. Xue Xiongjian [薛雄坚] was responsible for the measured survey.

¹⁸ The conservation strategy and master plan was prepared by Li Zhujun [李竹君] and Song Sencai [宋森才].

¹⁹ Anon, 'Siong Lim Temple to be restored to former glory,' *Straits Times*, 18 June 1994.

House of Tan Yeok Nee and Thian Hock Keng Temple

Continuing with the model of collaboration adopted at the Lianshan Shuanglin Monastery, the restoration of the House of Tan Yeok Nee was completed in 1999. This project was headed by Liu Thai Ker, with Fang Yong as the conservation consultant.²⁰

Likewise, the restoration of Thian Hock Keng Temple which was completed in 2000, was undertaken by local architecture firm, James Ferrie and Partners with renowned Professor of Traditional Chinese Architecture Conservation, Luo Zhewen [罗哲文], and Professor of Traditional Chinese Architecture, Ma Ruitian [马瑞田] as conservation consultants. The restoration was executed by specialist contractor Wang Zhongyi [王忠义] of East Art Design and Engineering Pte Ltd.²¹ This restoration project received an Honourable Mention at the UNESCO Asia-Pacific Awards for Cultural Heritage in 2001.



Figure 4. House of Tan Yeok Nee. (Courtesy of the author)



Figure 5. Thian Hock Keng Temple. (Courtesy of the author)

²⁰ The author worked on the Lianshan Shuanglin Monastery project and the House of Tan Yeok Nee project as an architectural associate in 1999 under Liu Thai Ker in RSP Architects, Planners and Engineers Pte Ltd. See Chan Y. L. et. al., *The House of Tan Yeok Nee: The Conservation of a National Monument* (Singapore: Winpeak Investment & Wingem Investment, 2003).

²¹ 杜南发 L.H. Toh, *南海明珠天福宫 [Thian Hock Keng's Special Publication of the 170 Years of History]* (Singapore: 新加坡福建会馆, Singapore Hokkien Huay Kuan 新加坡福建会馆, 2010).

Current State of Conservation and Conclusion

The URA's fundamental conservation principles of 'maximum retention, sensitive restoration, and careful repair', or the '3R's', is a simple reduction of international conservation standards. International standards aside, the URA's preservation and conservation guidelines are skewed to focus on the physical appearance of structures, much like the stylistic restoration movement that started in late 18th century Europe.²² This is exacerbated by the plurality of the concept of authenticity.²³ While the URA encourages in-depth research as part of the conservation process, this is limited by the lack of historical records. Also, despite having garnered more than forty years of conservation experience, Singapore is still lacking in its understanding of historical building materials and construction methods. It must be mentioned that while its progress looks slow, Singapore is gradually moving towards uncovering its knowledge of built heritage material culture. This movement is led from the bottom up by academics and non-governmental organisations.²⁴

Starting from the mid-1990s, questions regarding the knowledge gap in our understanding of built heritage were raised on a series of small-scale but significant pre-development archaeological investigations carried out by university academics to document sites before construction works took place.²⁵ In the late 1990s, scientific analyses were conducted on the historic parget of several major restoration projects,²⁶ to produce a modern plaster mix that replicated the technical qualities and character of the original lime-based plaster.²⁷ Such analyses were performed mainly

out of practicality as builders had lost their know-how in historic construction which in this case was the handling of lime-based plaster. Apart from this, only a small number of local skilled craftsmen dealing with uncommon (and rare) historical building materials remain. As such, the skilled craftsmen engaged in restoration works are predominantly foreigners. The inability to retain skilled craftsmen working on heritage structures is a major issue faced by conservation practitioners.²⁸

In 2008, the completion of the NUS Baba House, a Straits Chinese Townhouse along Neil Road, heralded a new phase of conservation for traditional Chinese architecture.²⁹ Beyond the usual pre-restoration photographic records and measured drawings,³⁰ artifact inventories, historic documentary, and photographic records, architectural research, dilapidation surveys, as well as structural and geotechnical analysis were also carried out, all of which are in line with developments in local architectural conservation capabilities. This project was perhaps the most comprehensive, if not the first, detailed multi-disciplinary study undertaken for a conserved building in Singapore. In addition to the building's history, research into its architecture, archaeology,³¹ as well as a material conservation assessment,³² were carried out.³³

More recent projects, namely that of Hong San See Temple and Wak Hai Cheng Bio (also known as Yueh Hai Ching Temple), also had to deal with understanding and deciphering more accurately the successive works previously carried out on the buildings. The Hong San See Temple project, completed in 2009, also set the benchmark for approaching restoration through methodical decision-making processes

²² Mérimée and Viollet-le-Duc systematically defined the restoration of the unity of style in the mid-nineteenth-century. The movement gained momentum through the pragmatic and positivistic attitudes of architects who emphasised the need to make use of historic buildings rather than just preserving them as documents. They essentially advocated the 'adaptive reuse' of built heritage. See J. Jokilehto, *A history of architectural conservation* (Oxford: Butterworth-Heinemann, 1999).

²³ Yeo Kang Shua, 'Bridging Positivist and Relativist Approaches in Recent Community-Managed Architectural Conservation Projects in Singapore,' *SOJOURN: Journal of Social Issues in South East Asia* 33, no. 3 (2018), DOI: 10.1355/sj33-3e.

²⁴ Yeo Kang Shua et. al., 'Bringing into the open: the study and use of architectural paint research information within the context of Singapore,' in *Architectural Paint Research: Sharing Information, Sharing Decisions*, ed. Sue R. T. Faulding (Archetype Publications, 2014), 134.

²⁵ It is important to note that the bulk of archaeological investigations in Singapore are salvage in nature and conducted under limited time constraints. See Lim Chen Sian this volume.

²⁶ Some noted projects are the Sun Yat Sen Villa (1997–2001) and the House of Tan Yeok Nee (1999). Recent major restoration projects, such as the National Museum of Singapore (2003 – 2006), also underwent historic plaster analysis with pargetting carried out by Indian plasterers.

²⁷ The modern cement mix must match or have similar thermal expansion coefficient to that of the historic plaster in order to minimise cracks caused by thermal stress.

²⁸ Yeo et. al., *ibid*, 134 – 135.

²⁹ This townhouse was gazetted a conserved building on 25 October 1991 and is located within the Blair Plain Conservation Area.

³⁰ Associate Professor Chan Yew Lih from the Department of Architecture, National University of Singapore undertook this study from 2005 to 2006.

³¹ Pre-development (restoration) archaeological investigation was carried out in 2006. See C. S. Lim & S. T. Wee, *Preliminary Report on the Archaeological Investigations at 157 Neil Road Singapore* (2007).

³² In 2007, the Baba House also had the honour of having the first detailed pre-condition material conservation assessment extending to immovable artifacts within the site, which include but is not limited to architectural components, iconographic study of artifacts and scientific analysis of architectural paint by colour scrape test and cross-section analysis. Some of the paint samples were also analysed for their chemical composition. This is clearly an improvement since the first known paint colour scrape test carried out on the House of Tan Yeok Nee in 1999. Conservators from the Heritage Conservation Centre also carried out paint scrape and cross-section analysis for Clifford Pier in early 2008. No analysis, however, was carried out for this project to determine the constituent of pigments.

See Chan A. H. and F. Chan, *Conservation Assessment Report for 157 Neil Road Townhouse: A Case Study of the Adaptive Reuse of a Townhouse into the 'Tan Cheng Lock Baba House'* (Singapore, 2007); C. S. Lim & S. T. Wee, *Preliminary Report on the Archaeological Investigations at 157 Neil Road Singapore* (2007); L. Chin and A. Tee, *Report on the Technical Analysis of Architectural Paint Schemes at 157 Neil Road, Singapore* (Singapore: Heritage Conservation Centre, 2007); L. Chin & A. Tee, Addendum to (2007) *Report on the Technical Analysis of Architectural Paint Schemes at 157 Neil Road, Singapore* (Singapore: Heritage Conservation Centre, 2007); Chan Y. L. et. al., *The House of Tan Yeok Nee: The Conservation of a National Monument* (Singapore: Winpeak Investment & Wingem Investment, 2003).

³³ Yeo et al. *ibid*, 135.



Figure 6. NUS Baba House. (Courtesy of Mr. Darren Soh)

guided by a restoration strategy based on the adaptation of international conservation charters and guidelines, namely the *Nara Document on Authenticity*, the *Principles for the Conservation of Heritage Sites in China* as well as the *Burra Charter*, in Singapore's context. A foreign consultant, Wang Shiwei [王时伟] of the Palace Museum [故宫博物院], was part of the project from the onset. The author's initial involvement was in the capacity of a government official with the PMB Monuments Inspectorate. He continued to be part of the team as a conservation consultant after leaving the PMB. In 2010, the project was awarded an Award of Excellence, the highest honour, at the UNESCO Asia-Pacific Awards for Cultural Heritage Conservation. This accolade came almost

a decade after the Honourable Mention for Thian Hock Keng in 2001.

Beyond the honour of an award, the Hong San See temple project also had a catalytic effect on the perception of conservation and heightened the standard for works carried out on historic traditional Chinese architecture. The next project was the Wak Hai Cheng Bio which ran from 2009 to 2014. It adopted the same clear and methodological approach, guided by international conservation charters and guidelines. Due to the inherent complexities, high standard of craftsmanship and the density of architectural ornamentalations in, technical affordances – for example, 3D scanning using light detection



Figure 7. Hong San See Temple. (Courtesy of Mr. Neoh Kee Leng)

and ranging (LiDAR) and structured light technologies for documentation, resistography and tomography analysis for timber degradation, scanning electron microscopy analysis for paint samples – were deployed. In recognition of its conservation efforts, the project was recognised with

an Award of Merit at the UNESCO Asia-Pacific Awards for Cultural Heritage Conservation in 2014. This brought the total number of UNESCO awards that Singapore's conservation has won to a total of 5.³⁴ And of these 5 projects, 3 are historic traditional Chinese architecture.



Figure 8. Wak Hai Cheng Bio (also known as the Yueh Hai Ching Temple). (Courtesy of Mr. Lim Shao Bin)

³⁴ Thian Hock Keng Temple received an Honourable Mention in 2001; the Convent of the Holy Infant Jesus (CHIJMES) received an Award of Merit in 2002; the Old St Andrew's School received an Honourable Mention in 2007; Hong San See Temple received an Award of Excellence in 2010 and Wak Hai Cheng Bio Temple received an Award of Merit in 2014. Apart from these, 733 Mountbatten Road received the Award for New Design in Heritage Contexts in 2008 and Lucky Shophouse received the Jury Commendation for Innovation in 2014. In 2017, the Cathedral of the Good Shepherd and Rectory Building received an Honourable Mention.

All of these cases trace the developmental trajectory in the domain of traditional Chinese architectural conservation in Singapore, with its beginnings in the 1970s and through its formative years starting in the 1980s which saw international involvement and collaboration. In the last decade, we are well underway with the use of new technologies and the adoption of higher international conservation standards. The use of new technologies is a potential game-changer, especially in terms of how documentation is carried out with the use

of digital data acquisition (LiDAR, etc), computer modelling, and new prototyping and fabrication techniques. With such technologies becoming more accessible, there is greater scope for them to be used in conservation. Nonetheless, there remains room for improvement and advancement where conservation work is concerned, and much knowledge to be harnessed from Singapore's limited stock of built heritage with the assistance of such technology-based investigative techniques.

Building	Typology	Function	Construction Date	Gazette Date
River House [涟漪轩] (part of Clarke Quay Conservation Area)	Teochew style	Residential	1880s	7 Jul 1989
37 & 45 Club Street (part of Chinatown – Telok Ayer Conservation Area)	Modern	Residential & commercial	Early 20 th Century	7 Jul 1989
Siang Cho Keong [仙祖宫] (part of Chinatown – Telok Ayer Conservation Area)	Hokkien style	Religious	1969	7 Jul 1989
Church of the True Light [圣公会真光堂] (part of Little India Conservation Area)	Modern	Religious	1952	7 Jul 1989
Holy Trinity Church [圣公会圣三一堂] (part of Jalan Besar Conservation Area)	Modern	Religious	1941	25 Oct 1991
Cundhi Gong [準提宫] (part of Chinatown – Bukit Pasoh Conservation Area)	Hokkien style	Religious	1928	25 Oct 1991
Former Wui Chiu Fui Kun [惠州会馆] (part of China Square Conservation Area)	Cantonese style	Institutional	1903	18 Jan 1997
Former Chui Eng Free School gateway [翠英书院] (part of China Square Conservation Area)	Hokkien style	Institutional	1854	18 Jan 1997
Fuk Tak Chi [福德祠] (part of China Square Conservation Area)	Hokkien and Cantonese style	Religious	1824	18 Jan 1997
Hoon San Temple [云山宫]	Hokkien style	Religious	1903	13 Mar 2003
Tang Gah Beo Temple [东狱庙]	Teochew and Hokkien style	Religious	1908	6 Jun 2014
Sian Keng Tong Temple [仙宫堂]	Hokkien style	Religious	1965	6 Jun 2014
Kiew Lee Tong Temple [九鲤洞]	Hokkien style	Religious	1979	6 Jun 2014
Ban Siew San Temple and Koon Seng Ting Temple [万寿山 & 堃成堂]	Teochew and Hokkien style	Religious	1880s	6 Jun 2014

Table 2. List of Chinese and/or Chinese-influenced architecture (not including the numerous shophouses and townhouses) gazetted as Singapore's Conserved Structures under the Planning Act.

HISTORY AND MATERIALITY: A RESEARCH-INTENSIVE APPROACH TO THE CONSERVATION OF SINGAPORE'S COLONIAL BUILT HERITAGE

Ho Weng Hin

INTRODUCTION

Historical building materials embody not just aesthetic and stylistic preferences of the past, but also knowledge about technology, industry, commerce, culture and society. The architectural material palette of a bygone era imparts colour and texture, bringing forth vivid imageries and memories of the period, and are distinctive markers of the buildings' architectural and historical pedigree. The ambience and character of historic architecture are often a result of craftsmanship by tradesmen of a past age. These are often not replicable as many building materials are out of production, while skill traditions and workmanship have declined.

Yet historical materiality is also an elusive quality in building conservation. The beauty of form, colour, composition, and layout can be gleaned from old photographs, descriptions and drawings. But materiality, like space and light, has to be experienced in its totality to be fully appreciated. It comes with an element of time, acquiring layers of patina, changing subtly through use and weathering. It has to be seen, touched – and engaged with as part of a space through which one moves.

More often than not, conservation projects are undertaken as renovation jobs, with little understanding of the edifices, their materials and technologies. A lack of awareness and conservation knowledge has often led to blasé alterations of materiality during conservation. Carefully laid mosaic or terrazzo are 'upgraded' to marble, or traded for homogeneous tiling for easy maintenance. Rather than restoration cleaning, painstakingly crafted granolithic render or fair-faced brickwork are painted over to cover weathering stains. The preference for expedience in conservation projects has caused a loss of less obvious, but no less critical, heritage values.

Further, the paucity of pre-conservation documentation and research has led to sub-optimal adaptive reuse of historic spaces, and loss of heritage materiality along with the knowledge embodied, and much of the building's character. A systematic documentation, survey, and research process, prior to design brief formulation, is thus necessary to unearth much vital information about the building, in order to facilitate sensitive, informed decision-making about conservation, and design and new uses.

AN EXAMPLE IN HISTORICAL MATERIALITY: THE FORMER SUPREME COURT OF SINGAPORE

Notwithstanding its seemingly "European" appearance, Singapore's colonial heritage is in fact a rich repository that showcases local materials, craftsmanship, and construction

know-how. The former Supreme Court of Singapore, completed in 1939 and the subject of the author's conservation postgraduate thesis,¹ is one of the best examples. Artificial stone, or Shanghai Plaster, was extensively used for its Neo-Renaissance facades to convey gravitas, antiquity and balance, belying the lightness of its modern steel frame and concrete slab construction system. Shanghai Plaster has its origins in Europe as a substitute material for natural stone,

¹ Ho, Weng Hin. *The Former Supreme Court and its Artificial Stone: Documentation, Analysis and Conservation Guidelines for A National Monument*. Academic Thesis Submitted for the Title of *Specialista in Restauro dei Monumenti*, School of Specialisation in Restoration of Monuments, University of Genoa, Italy, A.A. 2007-08.

comprising finely crushed granite aggregates bound in a cement matrix, resulting in visual vibrancy not found in normal render. Over a century, this attractive, durable and economical material became widely used as a prestigious architectural finish, eventually spreading to Asia, notably in the Shanghai concessions – hence the name.²

The immaculate workmanship of the colossal Corinthian columns and tympanum statuary of the former Supreme Court were executed by the workshop of Cavaliere Rudolfo Nolli, a Singapore-based Italian sculptor, with a highly skilled team of Foochow craftsmen.³ Nolli was the specialist contractor for all the external artificial stone works, as well as the interior in-situ terrazzo rendering and precast terrazzo columns. It is a common misconception that colonial buildings are poor quality copies of “originals” in Europe. In fact, the tight workmanship and fine details seen at the former Supreme Court are of an exceptional standard, rivalling the best in Europe. The internal decorative rendering and precast columns evoke the elegance and sophistication of natural sandstone, an effect enhanced through the subtle scattering of diffused daylight off embedded mother-of-pearl chipping. The granite aggregates used were most likely from local granite quarries on Pulau Ubin and in Bukit Timah. Nolli’s intimate knowledge of his craft and its application to the local context, as well as the refined handiwork of his artisans, shows through how well the exterior artificial stone surfaces have weathered the tropical climate.⁴

Built contemporaneously alongside modernist landmarks such as the Singapore Aerodrome (former Kallang Airport), the former Supreme Court was constructed using a plethora of “high-tech” modern materials. Many were firsts in the region or locally such as the ‘Crittall’ steel windows and ‘Eldorado’ cork flooring. A number are in fact local innovations, such as: the ‘Cressonite’ rubber flooring in marbleised effect, the varied ‘Spuncrete’ terrazzo floor tiles, and the ingenious ‘Solo-Air’ air-exchange system.⁵

In particular, one of the most underrated innovations in early local material engineering is the “Cressonite” rubber tile. Set in geometric patterns, it is an integral design element of the Art Deco architectural interiors of the former Supreme Court, where it is the primary flooring material in the main public galleries. Patented in the U.S. and the U.K, the tiles were developed by local-born Lionel Cresson, then Chief Chemist

of Singapore Rubber Works in the 1930s. Before this, standard rubber tiles were homogeneous, made entirely of the material. Cresson innovated a composite product where expensive rubber was only a thin layer of facing material sitting atop a base – this resulted in huge material cost savings. It was selected by the colonial Public Works Department architects due to its acoustic performance, economy and design versatility.⁶ Manufactured using Malayan rubber that fuelled the interwar colonial economy, they narrated Singapore’s important role as a global distribution centre for this sought-after material.

CONSERVATION OF HISTORICAL MATERIALITY IN PRACTICE

Despite the high heritage value and embedded knowledge of historical building materials, very little targeted research has been carried out in Singapore. In view of the lack of ready information, the conservation approach described here integrates the research, documentation, evaluation, and ultimately the conservation of historical materiality through a rigorous and iterative process. This involves extensive archival research, site investigation fieldwork, in-depth studies of historical construction technology and building materials. In turn, this establishes a solid knowledge base that informs decision-making in the complex process of architectural conservation to conserve the materiality and character of historic architecture and ensuring the continuity of these unique qualities in the building’s new lease of life.

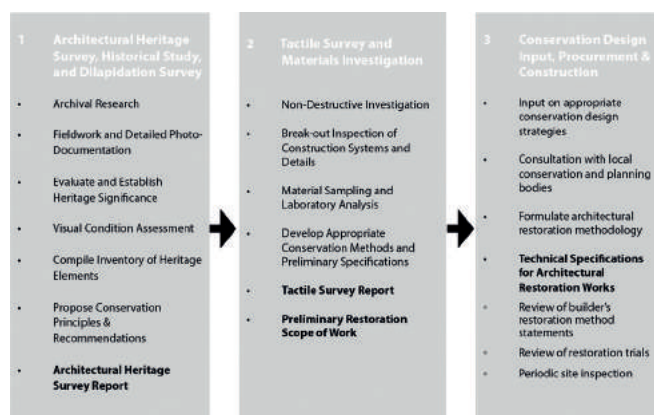


Figure 1. Conservation practice and the central role of research and investigation (Image courtesy of Studio Lapis).

² *Ibid.*, p110. The First Opium War in the early 19th century ended with the 1842 Treaty of Nanjing, which saw the treaty ports, Shanghai included, opened for international trade. An influx of European officials and merchants resulted in the construction of exclusively European city quarters within the foreign concessions area. By the late 1930s, after nearly 90 years of occupation, Shanghai became known for its distinctive urban landscape – a cosmopolitan juxtaposition of European mercantile architecture and Chinese terraced houses. The introduction of European building techniques, and its innovation by local builders, clients and architects, and its subsequent exportation to different parts of Southeast Asia warrants further in depth research.

³ Lim, Jon, “Cavalieri Rudolfo Nolli: a Sculptor & Entrepreneur,” in *Architectural Journal* 1985, Singapore: School of Architecture, National University of Singapore, 1985.

⁴ Author’s oral history interview with Mrs. Lina Brunner, daughter of Cav. Rodolfo Nolli, in 2007.

⁵ “The New Supreme Court - Singapore - Details - F. Dorrington Ward,” in *The Malayan Architect* (TMA), Apr 1937 Vol IX No 4, pp 99-116. See also “The New Supreme-Court, Singapore,” in *The Malayan Architect*, Vol. XI. No. 7, July 1939, pp. 153-167.

⁶ Ho, Weng Hin. *The Former Supreme Court and its Artificial Stone: Documentation, Analysis and Conservation Guidelines for A National Monument*. Academic Thesis Submitted for the Title of *Specialista in Restauro dei Monumenti*, School of Specialisation in Restoration of Monuments, University of Genoa, Italy, A.A. 2007-08., p29.

Archival Research: Images, Drawings, Textual Sources

Vital information on a historic building can be extracted from a variety of archival media, such as old photographs, building plans, contract documents, correspondence, and so on. These primary sources allow a precious glimpse into a building's past lives and provide clues that enable the reconstruction of a chronology, from the time when it was first completed, subsequent changes and modifications, to its current state. For instance, a casual photograph of an event taking place within the building could reveal a flooring material different from the present-day. Or, an old building plan could show that existing enclosure walls were in fact latter-day additions.

However, the purpose of this research activity is not to establish what was 'original', nor try to return to that state. Rather, the key objective is to establish the sequence of building, transformation, and evaluate the significance and impact of these on its heritage character. Most of the time, the key phases of extensions, additions and alterations coincide with certain milestones in the building's history; for example, change of ownership, usage, institutional reorganization, or simply a need for more space. By matching this information with the physical building fabric that one confronts today, it is then possible to tease out how, when and why these changes occurred, assess the heritage significance of each layer of alteration, and establish conservation priorities. Doing so would also help identify opportunities for sensitive interventions to give new relevance to a historic building and meet present-day requirements.

Fieldwork: Measured Survey, Photo-documentation, Materials and Deterioration Mapping

In conservation projects, the largest source of information may well be the historic building itself. This involves 'deep reading' and analysis of the entire structure as well as its components, from the spatial schema, construction technology, architectural elements, to minute building details such as joinery and fixture mechanism. Where conclusive visual and textual evidence is lacking, fieldwork may help fill in the gaps about the building's properties and its past transformations. Knowledge of historical construction techniques and materials coupled with familiarity of past design trends are required for this 'forensic investigation' that is also termed 'Building Archaeology'. Relative dating techniques such as building stratigraphy and chronology are employed to derive more accurate hypotheses of development phases of a historic building, which may be disguised beneath an architecturally consistent appearance given by latter-day renovations.

In the field, the measured survey and photo-documentation are the most common and effective recording methods. In addition to traditional topographical and longimetric survey methods, advanced techniques such as photogrammetry, and in recent years, 3D laser scanning can capture the highest level of detail enabling further analytical work. Documentary photography – be it an orthogonally rectified image of a building façade, or detail photography of architectural components and assemblies – plays a 'front line' role in historical preservation as a visual inventory. Well-presented interior photography to document spaces, elements and finishes, sometimes even under the poor lighting conditions of dilapidated buildings, is critical for conservation ground work.

A series of analytical mappings can be carried out to document the distribution pattern of different types of materials and their existing condition. Sometimes, by mapping different materials dating from different time periods, the building's construction history can be deduced. An example is the comparison of different brick dimensions and degree of firing which corresponds to manufacturing methods at a given point in time. Similarly, comparison of timber floor planks of varying widths and quality can inform us if the timber was logged from ancient forests or regenerated ones. The possible causes and effects of deterioration phenomena are also recorded and investigated to inform appropriate conservation strategies and treatments.

Building Diagnostics

Where called for, non-destructive tests and material sampling are done to penetrate beneath the visible surface. Tools such as video-endoscopy, infrared spectroscopy, thermography and scanning electron microscopy, reveal at a microscopic level the composition of materials and pathogens that are causing deterioration. Beyond this, such findings can also provide clues of wider histories beyond the building itself. For example, petrographic analysis of a lime plaster sample can reveal the likely provenance of the constituent ingredients, such as quartz sand from its dimension, shape and granulometry. Paint seriation studies can reveal the changing decoration schemes, type of paint used, as well as general aesthetic trends of the past.

Oral History and Intangible Heritage Values

Oral history can be undertaken to document and evaluate the intangible heritage values of a building or site, such as its social and cultural significance. According to the ICOMOS Burra Charter, social significance "embodies the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group"⁷. The first step to establishing social significance of a historic site is identifying the key groups or communities

⁷ The Australia ICOMOS Charter for Places of Cultural Significance, *The Burra Charter*, 2013 (Burra Charter).

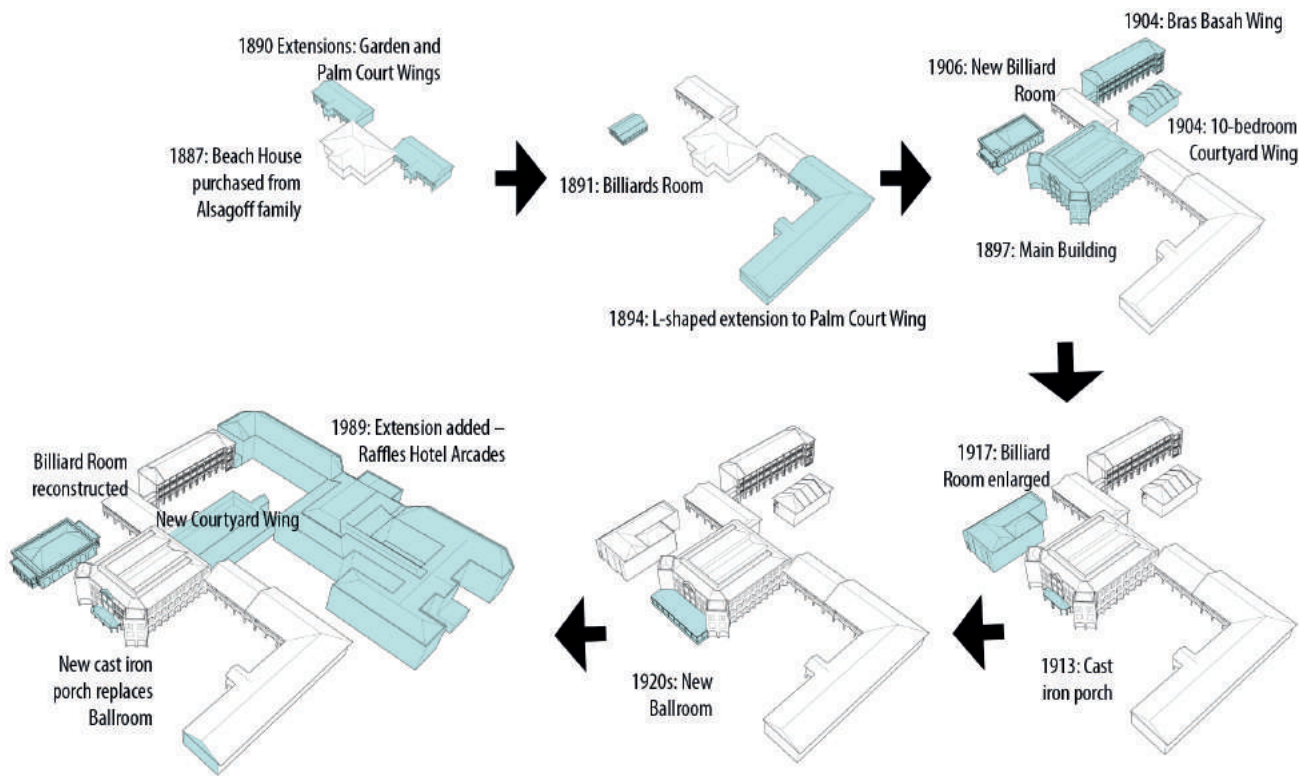


Figure 2. Building chronology of Raffles Hotel complex established utilizing archival documents and fieldwork findings, charting significant phases of its development over a century (Image courtesy of Studio Lapis).

associated with it. Following this, qualitative and quantitative research on meanings, values and associations can be extracted through consultation with these groups via oral history interviews, or written replies to questionnaires. These personal recollections, though anecdotal in nature, are nevertheless invaluable to understanding the historic building through its past usage and its inhabitants, and enables other archival and fieldwork data to be closely corroborated.

Establishing Site and Building Chronology, Conservation Principles and Intervention Strategies

Detailed analysis and high level synthesis of research, fieldwork and diagnostic results are carried out to establish the building and site chronology. These are arguably key outcomes of the investigative process described in the preceding sections of this paper, to narrate an “objective history” of the monument as far as possible. This particular type of history provides a holistic appreciation and description of the constructional, historical, artistic, cultural, technological and material attributes to establish a clear and rational basis for conservation priorities. On the other hand, latter-day ad hoc modifications resulting in the loss of historical features or legibility, slated for removal or modification, may present opportunities for new interventions. On another level, site chronology are particularly important for projects that involve several historic buildings in close proximity, where the sequence of site development may not be easily discernible

due to a relatively short timeframe, similar architectural design language, or building technology.

Key Conservation Principles and Intervention Strategies

A set of conservation principles has been gradually distilled from current and past projects undertaken by Studio Lapis, the author’s conservation practice. The emphasis is on safeguarding historical materiality and character, with the aim of perpetuating these unique qualities as much as possible, in a building’s new lease of life.

Preserving the layers of history

Eschewing a ‘freeze-frame’ approach, and taking the cue from the ICOMOS Burra Charter instead, this premise recognises the significance of architectural elements of different eras and styles, and to devise appropriate conservation strategies to meaningfully preserve, adapt and showcase them.

Dialogue between old and new

In accordance with the ICOMOS Venice Charter,⁸ new insertions shall be a contemporary stamp of current-day technology and designed to engage the historic in a responsive and meaningful dialogue in terms of form, material, detailing, space, and function.

⁸ ICOMOS, *International Charter For The Conservation And Restoration Of Monuments And Sites – The Venice Charter*, 1964.

Salvage, re-use and up-cycling of historic elements

Rather than total replacement or disposal, this is a good conservation practice that establishes historical continuity, while promoting environmental sustainability. It also encourages creative design solutions for meaningful insertions or new finishing utilizing these salvaged materials, giving these an added layer of history and authenticity.

Compatibility and reversibility

This approach ensures that restoration methods and new interventions are aesthetically and materially compatible with the existing historical fabric and do not compromise its long-term building performance. A light-touch 'reversible' construction approach allows for new interventions and design revamps but ensure that these will not cause irreversible heritage impact, which will enable a restoration to the original condition if needed in the future.

Customized solutions and design enhancement

Unlike a new building, engineering interventions such as new mechanical and engineering (M&E) works, or structural strengthening, must be customised to cater to the particularities of a heritage building, instead of a 'one-size-fits-all' solution. A mindful balance has to be struck between preservation and present-day requirements. Historic construction details with inherent design flaws would also call for sensitive modification to improve building performance without compromising heritage character.

The aforementioned principles are applicable to the main categories of conservation and intervention works, namely – restoration and strengthening of existing elements; reinstatement of missing, modified or severely damaged elements; or new intervention in place of missing or modified elements, as discussed briefly in the following examples. They are drawn from projects involving Studio Lapis.

Former NAAFI Britannia Club – Reinstatement of Façade Design and Materials

The Navy, Army and Air Force Institutes (NAAFI) Britannia Club was completed in 1953 in a distinctive postwar modernist architectural language, a counterpoint to the late Victorian style of Raffles Hotel across the road. Its distinguishing feature was its brick and travertine facades. It later became the Singapore Armed Forces (SAF) Non-Commissioned Officers (NCO) Clubhouse, and subsequently underwent a major façade makeover in the 1990s. Obscured by latter-day 'PoMo' façade additions, it became almost unrecognizable and had faded from the public consciousness by the mid 2000s.

Conservation guidelines required the original architecture of the former NAAFI Clubhouse to be uncovered and reinstated. The conservation intent was thus to carefully remove the incompatible architectural accretions that included rusticated plasterwork, faux columns, and most challenging of all, thick coats of an elastomeric paint that muffled the façade material character of the building. Through research and site investigation, a significant discovery was made, that special textured brick tiles had been used originally – a rare intact local example of the early use of thin brick veneer. After numerous site trials, a non-corrosive paint remover revealed the rich warm hues and combed texture of the brick finish. Fortunately, the latter-day additions were found to be thin appliques on mild steel frames bolted onto the facades. These were carefully dismantled and the voids and damages were skilfully patched and filled by artisans.

The restoration of the travertine panels posed another major challenge. Having been subjected to weathering, pollution and accidental impact for decades, the original stonework was found to be covered with longitudinal and transverse cracks, heavy staining, and perforations. The elastomeric paint had also seeped deeply into the pores of the travertine panels, giving it a pale, bleached appearance as well as a powdery surface. The same non-corrosive paint remover stripped away the coating, while light buffing was done out to reveal the original colour and tonality of the stone. A team of skilled artisans was engaged to carry out the meticulous restoration work that demanded the sensitivity and discernment of an artist, to treat each panel as a unique piece that required different restoration techniques and degrees of intervention, to attenuate the effects of the deterioration.

Rectory of the Cathedral of the Good Shepherd – Preserving the Floor Finishes

Completed around 1911-1912, the Rectory was designed in an eclectic style with Edwardian and Neo-Gothic influence. The elaborate two-storey house features a stair hall and turret finished in alternate bands of fair-faced brick and plasterwork. Also known as 'Blood and Bandage', this style was popular in colonial buildings of early 1900s, such as the Central Fire Station (1908) along Hill Street. Besides its striking exteriors hidden beneath latter-day paintwork, it was little known that the building possesses an astounding variety of intact encaustic cement tiles from Europe rarely seen in historical residences today. To manufacture these tiles, a brass mould was used to pour dust clays of different colours into each section. The mould was then removed. Cement was then pressed into the coloured clay, yielding a compacted tile that could be easily handled and fired.

Due to ground subsidence caused by nearby construction activity some years ago, the house suffered from differential settlement, resulting in structural distress. The floor slab had to be reconstructed to restore the structural integrity of the

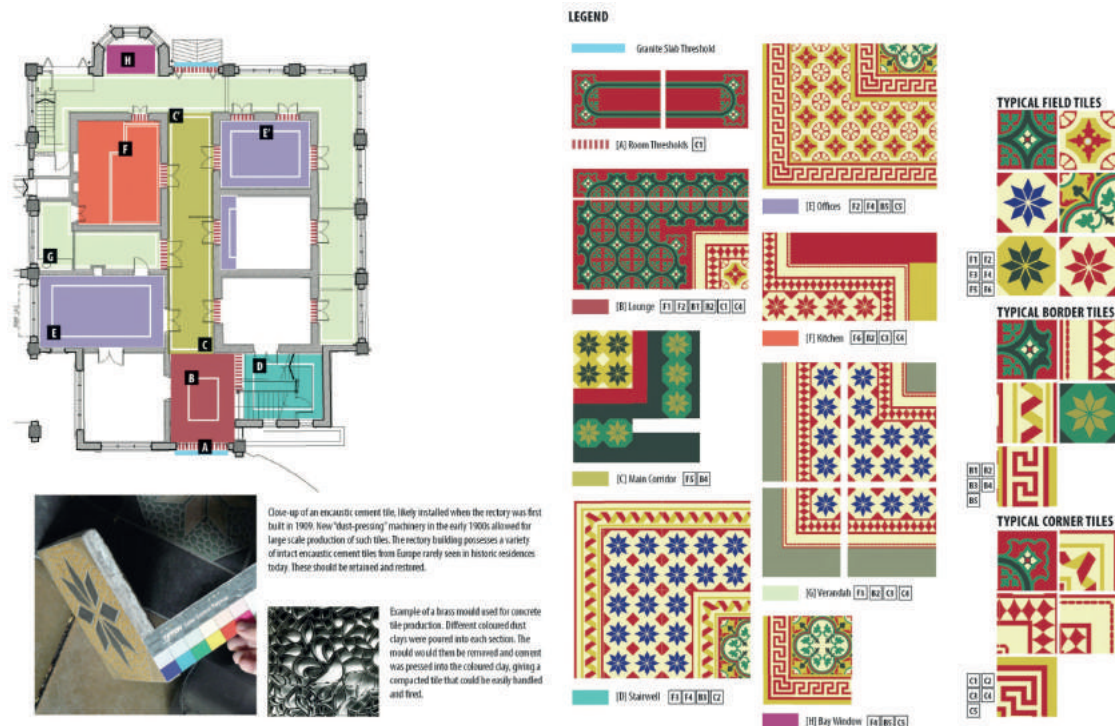


Figure 3. Mapping and geometric study of historic encaustic floor tiles on the ground floor (Image courtesy of Studio Lapis)

building – typically, this would have meant that the tiles had to be demolished in the process. However, since the tiles were arguably the most significant heritage asset of the house interiors, options were explored to find a way to preserve these tiles, instead of replacing them with replicas. Detailed documentation and analysis, heritage interpretation and presentation of the tiles were carried out to raise the profile of this underappreciated feature, and advocate for their preservation. The project team was finally convinced that these should be preserved. The final decision was taken to carefully document, individually tag, remove, store, repair and reinstall these tiles, after the new floor slab had been cast.

Capitol Theatre – Restoring the Art Deco Interiors

Completed in 1931, Capitol Theatre is the only surviving pre-war Art Deco cinema and live performance venue in Singapore today. The retention of its original use, together with the restoration of its historical interiors, were two unusual conditions in URA's conservation stipulation for the building.

The main conservation challenge was the restoration of the auditorium interiors. When latter-day acoustic panelling was removed, historical architectural ornamentation was



Figure 4. Capitol Theatre prior to removal of latter-day acoustic panelling (Photograph by Jeremy San Tzer Ning, image courtesy of Studio Lapis)



Figure 5. Capitol Theatre now, after years of painstaking restoration work (Image courtesy of Studio Lapis).

uncovered. These had suffered extensive damage due to invasive methods used when installing the acoustic panelling. A thorough condition audit was carried out. The ornamentation was classified according to design, size, material, precast or in-situ construction, fixing method to the walls and ceiling, and intactness. It became obvious that the main focus of the work would be the accurate replication of missing features and careful repair of those remaining. Breakout inspections were carried out to study the original construction methods, as well as identify if any strengthening of these elements were necessary.

Replicated elements included the ‘reed bunch’ ornaments that adorned every bay of the side walls, employing both

conventional silicone moulds as well as a hand-held light scanner to capture the profile as accurately as possible. A new lightweight material – Glass Fibre Reinforced Gypsum (GFRG) – was selected to replace the original precast concrete in order to lighten the structural stress on the walls. On the ornamented ceiling, the original coffer profiles were likewise restored in a new material – a combination of acoustic rockwool and rigid panels – that fulfilled important functional requirements for the auditorium, which will serve as a multi-purpose screening hall and live performance venue and conference hall. The profile and dimensions of these new ceiling coffers were based on archival photographs, as well as remnants of the historical ones.

On another level, a historical colour study was carried out, involving paint seriation, archival descriptions, paint catalogues of the 1930s, and comparisons to contemporaneous cinemas in the US and Europe. As a result, architectural accents are now gilded using gold leaf – as described in newspaper reports on Capitol's opening day, as well as extracted samples. Elsewhere, although the vividly contrasting Art Deco colours were not adopted in the end, the team accepted that the historic four-tone scheme needed to be reinterpreted in another more contemporary colour palette, while respecting their original designation on respective ornament types. The successful final outcome shows the merits of using a research-intensive approach towards architectural conservation in order to safeguard historical materiality while still meeting current-day demands.

CONCLUSION

This paper affords a glimpse into the methods and workings behind architectural conservation, with a focus on Singapore's colonial built heritage. The approach discussed here is based on intensive research, fieldwork, and diagnostics, to establish a rational and systematic roadmap for navigating the sometimes messy and always ambivalent process from design to construction stages. In the archives, records are scoured for construction origins and building transformations through time. In the field, the building itself is scrutinised, with heritage spaces, elements and finishes identified and mapped. Deterioration phenomena are also studied and diagnosed. These information underpin the conservation vision, and form the basis for technical specifications tailored to the particularities of each building.

INVESTIGATIVE TECHNIQUES FOR THE RESTORATION OF HERITAGE BUILDINGS

Wong Chung Wan and Rynanne Tang Hui Shan

INTRODUCTION

Before any restoration works can be carried out on a heritage building, it is imperative that adequate investigation and survey be carried out to better understand the historical construction details and materials, and conditions of the building. Such investigative works typically entail visual dilapidation survey, tactile investigation, non-destructive testing and material sampling and analysis. These activities seek answers for the design of subsequent intervention works needed to maintain, preserve, restore, conserve and repair the heritage buildings or part of the historic buildings. Amongst the questions that need to be addressed when deciding on the types and extent of investigation works are:

- What is the current condition?
 - How did it degrade?
 - What caused it to deteriorate?
 - How was it constructed?
 - What was it made of?
 - How will it continue to perform under the present or future condition?
 - Does the intervention treatment, including those in the past, work?
 - How did it perform after intervention?
-

SAMPLING

Visual dilapidation survey is the very first step to establish the presence of visible defects and deteriorations. Though simple as it may seem, a trained eye is needed to fully recognize not only the various forms of deterioration and materials, but more importantly the pattern which the deterioration had manifested. In another word, pattern recognition. Material sampling and tactile survey on the other hand provides further insight into the construction details, composition and condition of the materials used in the building which are not immediately visible or apparent. These however requires extraction and removal of samples, some of which are often valuable to and forms an intricate part of the building, for laboratory analysis. This unavoidable step is destructive and as such thorough considerations will need to be given to select the appropriate samples, with minimal but yet adequate amount to provide reliable results in accordance with the various analyses and purposes.

Attention should be paid to locations with different symptoms, building orientation where the defects are found,

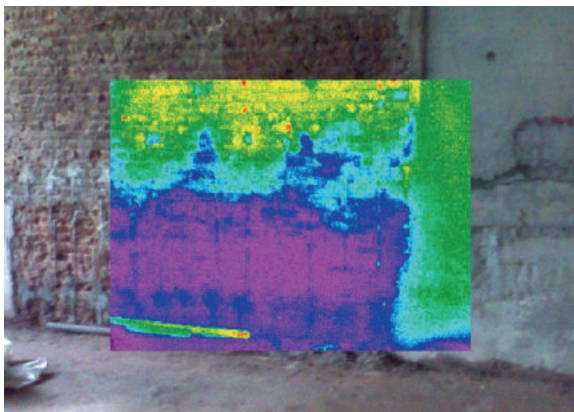
distribution and extent of defects and condition of weather exposure. All these factors may affect the quantity of samples to be taken, sample size and even sampling depth. In addition, sampling may also be necessary to cover different construction and materials. Thus, the sampling locations are often well distributed across the building covering the various conditions, elements and materials of concern.

Depending on the types of analyses, different forms of samples are required which in turn affect the sampling method. For example, salt analysis requires powder sample which can be obtained by drilling, while petrographic examination needs bulk samples, including delaminated layers, extracted from the site by hacking or coring. Certain in-situ tests provide instant results, whereas others can be carried out in the laboratory. In-situ tests can be performed over larger areas to give a global but more superficial assessment. On the other hand, laboratory analyses give in-depth understanding of the material's condition at the expense of time and cost and are limited to the size of the sample extracted. A delicate balance is needed and this is often made difficult under the influence of commercial pressure.¹

¹ Wong, C. W., Tang, H. S. and Pramesh, K., "Diagnostic Condition Assessment of a 180 Year Old Church in Singapore for the Purpose of Restoration," International Conference on Sustainable Building Restoration and Revitalization 2013, Shanghai, China.

MAKING THE INVISIBLE VISIBLE

In order to minimize the amount of destructive intrusive inspection, state of the art techniques are available that allow broader scanning and inspection of the building to identify hidden features, faults, defects, cavities, installation details, quality and uniformity, and even moisture distribution non-destructively or with minimal damages. Hardly will there be a detailed investigation into a heritage building that is completely non-destructive. Traditional methods are often cumbersome, tedious and slow, and produce large amounts of data to crunch. With advanced technologies, such data can be quickly processed into images, or the output presented with better resolution to make what was invisible visible. Investigations can then be made over larger areas and at multiple depths with greater efficiencies. Some of the commonly employed emerging technologies include the ground (surface) penetrating radar, infrared thermography, pulse echo tomography, moisture microwave tomography and resistography. Though powerful, these technologies require highly skilled interpretation and experience to render the results meaningful and reliable. A brief introduction into their principles and applications is as follows:



Infrared Thermography

Infrared thermography is based on the principle that sub-surface anomalies below the surface finishing affect or change the rate at which heat flows through the structure. These anomalies could either be due to sub-surface voids, delamination, poor bonding, water/moisture retention, deleterious materials etc. (Figures 1 and 2) or a combination. The technique can also be used to identify variations in the construction materials installed or constructed details and detect embedded services or objects. The changes in the heat flow can cause localized differences in surface temperature. Thus, by measuring surface temperature under conditions of heat flow, one can determine the location of the sub-surface features.²

With a relatively high differential heat transfer between the mediums (i.e., paints, moisture, trapped air, plaster, etc.), certain conditions will need to be present in order for the anomalies to be detected by the infrared thermography. The values of temperatures indicated on the thermograms are typically regarded as 'apparent temperatures'. Typically for building applications, passive thermography is adopted

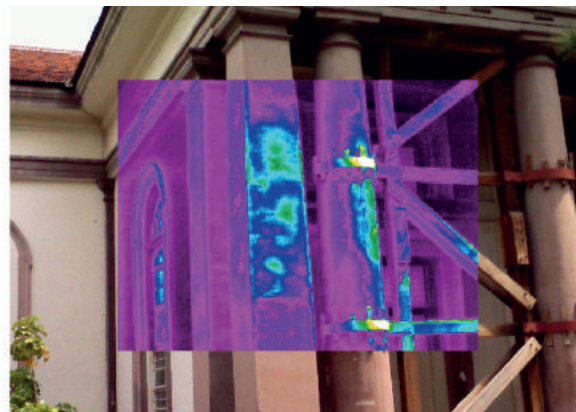


Figure 1. The thermogram on the left shows rising damp problem whilst that on the right indicates sub-surface anomalies, probably debonding of render.

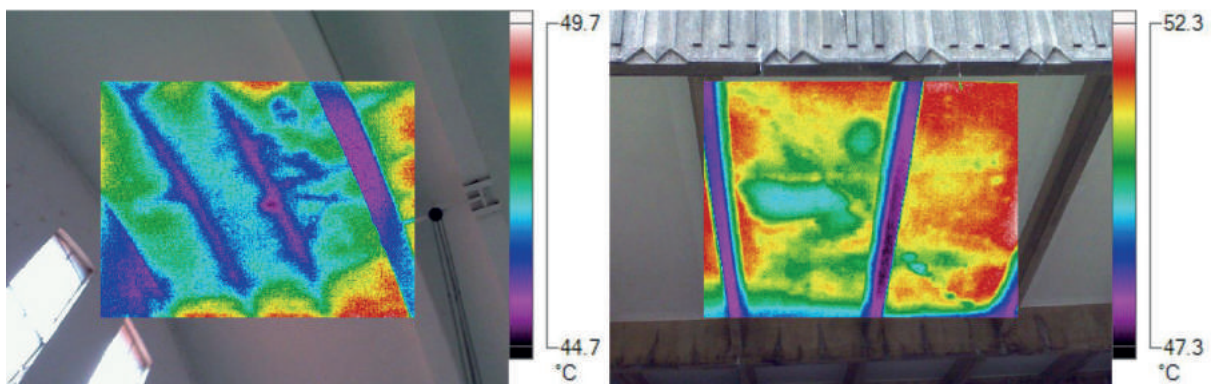


Figure 2. The left thermogram shows embedded features or elements above the concrete ceiling whereas in the right thermogram, crack lines and water seepage could be seen in the roof.

² Raluca Plesu, Gabriel Teodoriu, and George Taranu, "Infrared Thermography Applications For Building Investigation," Bulletin of the Polytechnic Institute of Jassy, Tomme LVIII (LXII), Fasc.1, 2012; Ermanno Grinzato, "IR Thermography Applied to the Cultural Heritage Conservation," 18th World Conference on Nondestructive Testing, Durban, 2012.



Figure 3. The tomograph on the left indicates rising damp on a masonry wall. Localised spot of dampness could be picked up within a wall as seen in the right tomograph with the damp wall shown in the centre.

when the heat source is solar radiation. The tropical climate in Singapore, coupled with a dense urban environment, however, affects the effectiveness of thermography. To overcome such problems, the survey can be carried out at different times during the day and different weather conditions. Time-lapse recording can also be used to capture changes in the apparent temperatures over time.

Microwave Moisture Tomography

This technique involves transmitting microwave energy to the surface of the materials via a microwave sensor head. Since water has a very high dielectric constant, the electric field generated by the microwave will cause water molecules trapped inside the materials to vibrate and shift in position. Spots with trapped moisture can thus be detected because of differences in the dielectric constant between the dry spots and those with moisture. Probes with varying depth of measurements are usually employed to determine the moisture level at different depths. After all readings are collected, the measurement points are mapped to generate a tomographical matrix showing the moisture distribution and locations of trapped moisture at varying depths. This has the advantage of investigating large sections of a wall non-destructively as compared to the conventional approach that requires drilling a wall for powder to be used in laboratory gravimetric testing. From the resulting tomographs, the source and extent of moisture ingress or entrapment can be established (Figure 3). Though other non-destructive methods are available commercially such as the electrical resistance (2-pin method) and capacitance method, these are limited by the depth of measurement and can be affected by the presence of soluble salts like chlorides. Moreover, these

alternative methods do not report the actual moisture content in the wall. Through calibration with the actual materials in the wall, the microwave technique can provide a reasonably accurate measure of the moisture content. This is useful if the technique is to be applied to assess the effectiveness of subsequent interventions to address the moisture problem.

Drill Resistance Measurement System (DRMS)

In this technique, a penetrative drill bit is used with suitable force to drill a hole in the target material. The degree of force used is continuously measured. During the test, both rotation speed and penetration rate are kept constant. The system continuously measures both the penetration force and the actual drill position. This test is primarily used to assess the extent of deterioration of the masonry, namely clay bricks, plaster/render, stone and mortar, from the surface. It can thus determine the presence of weak, soft or friable substrate, voids or cavities and relative strengths of the different layers (Figure 4). It is also possible, with proper calibration and sufficient number of bricks of various strengths, to establish a correlation between the drill resistance force and the compressive strength of clay bricks. This can then be used to estimate the strength of a large number of clay bricks for structural analysis (Figure 5). During restoration of masonry construction, this technique is commonly employed to identify poor quality masonry units, stones and finishes for treatment and strengthening. It can also be used subsequently to verify the effectiveness of any strengthening and consolidating treatment.³

³ Tiano P., Filareto C., Ponticelli S., Ferrari M., Valentini E., "Drilling Force Measurement System, A New Standardisable Method to Determine the Stone Cohesion: Prototype Design and Validation," *Int. J. Restorat. Build. Monum.*, 2000, Vol. 6, P115-132; Tiano P., Delgado Rodrigues J., De Witte E., Vergés-Belmin V., Massey S., Snethlage R., Costa D., Cadot Leroux L., Garrod E., Singer B., "The Conservation of Monuments: A New Method to Evaluate Consolidating Treatments," *Int. J. Restorat. Build. Monum.*, 2000, Vol. 6, P133-150; P. Tiano et al., "Effects of the Weathering on Stone Materials: Assessment of Their Mechanical Durability (GRD3-2001-60001)," McDUR-ACOUTHERM-EC Project, Annex to deliverable 15- Draft of recommended methodologies for Stone Durability Qualification, 2005; Wong CW and Dai S, "Restoration of Shanghai Plaster – An Example from the Singapore Ministry of Foreign Affairs Headquarters," 2nd International Symposium on Building Pathology, Durability and Rehabilitation, Portugal, 2003.

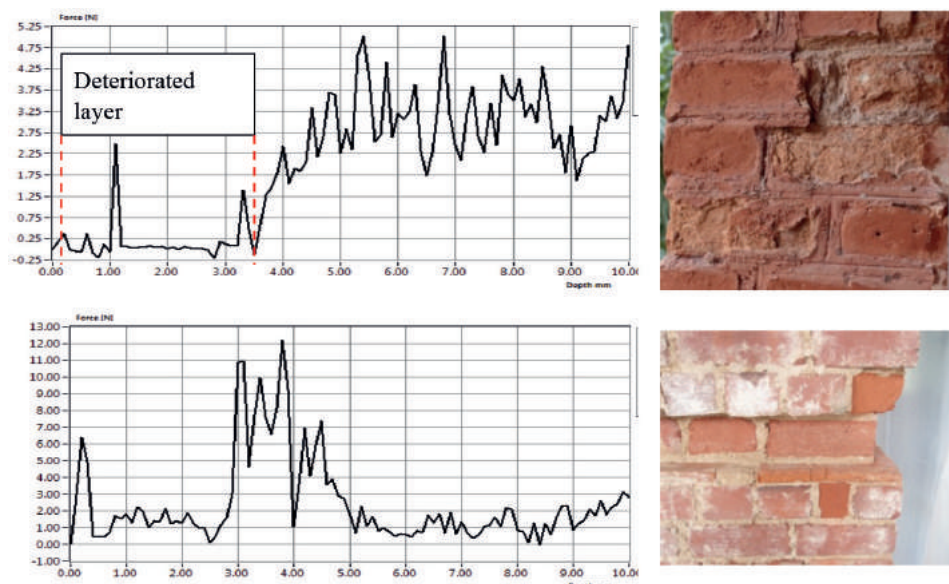


Figure 4. Weak surface of a brick due to for instance salt attack (top graph and photo) and underfired brick (bottom graph and photo) could be identified through the DRMS.

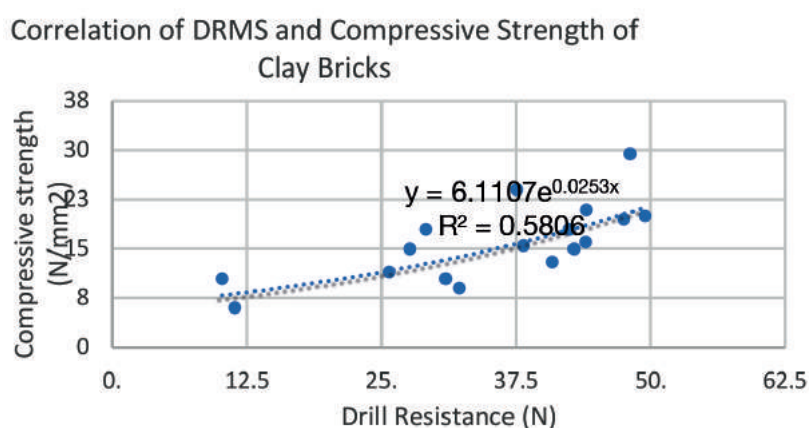


Figure 5. Example of a correlation between drill resistance and compressive strength of clay bricks.

Ground Penetrating Radar (GPR)

GPR generally works on the principle of reflective energy. A handheld unit consists of a transmitting antenna and a receiving antenna. The transmitting antenna sends out a diverging beam of electromagnetic wave energy pulse in the range of 500Mhz to 1Ghz through the structure, and the receiving antenna detects the reflected energy pulse from materials of different dielectric properties. The electrical properties of the subsurface layers/materials influence the speed and attenuation of the signal. For instance, the electrical permittivity determines the signal velocity, whereas the electrical conductivity affects signal attenuation. Signals returning to the receiving antenna are analysed to determine depth or pattern of reinforcement or any embedment below

ground or in the concrete, construction details of the slabs and masonry wall, identify presence of cavities, trapped moisture and embedded services (Figure 6).⁴ However, analysis and interpretation of the receiving signals requires experience in filtering and removal of unwanted signals or noise, and an in-depth understanding of the electrical properties of different materials. Some third-party software, such as GPR, Slice can aid in the analysis. However, verification is often necessary. This requires intrusive breakouts to expose the suspected artefacts. Three dimensional (3-D) scanning can also be carried out which can reveal far greater information of subsurface features (Figure 7). This technique is one of the most effective tools for uncovering hidden construction details of old buildings, of which drawings are not available.

⁴ "Guidance on Radar Testing of Concrete Structures," Concrete Society Technical Report 48, The Concrete Society, 1997; Maierhofer, C., Borchardt, K., Henschen, J., "Application and Optimisation of Impulse-radar for Non-destructive Test in Civil Engineering," Int. Symp. Non-Destructive Testing in Civil Engineering, eds G. Schickert and H. Wiggenhauser, Deutsche Gesellschaft für Zerstörungsfreie Prüfung (DGZfP), Berlin, 1995, Vol. 1, p663-672.

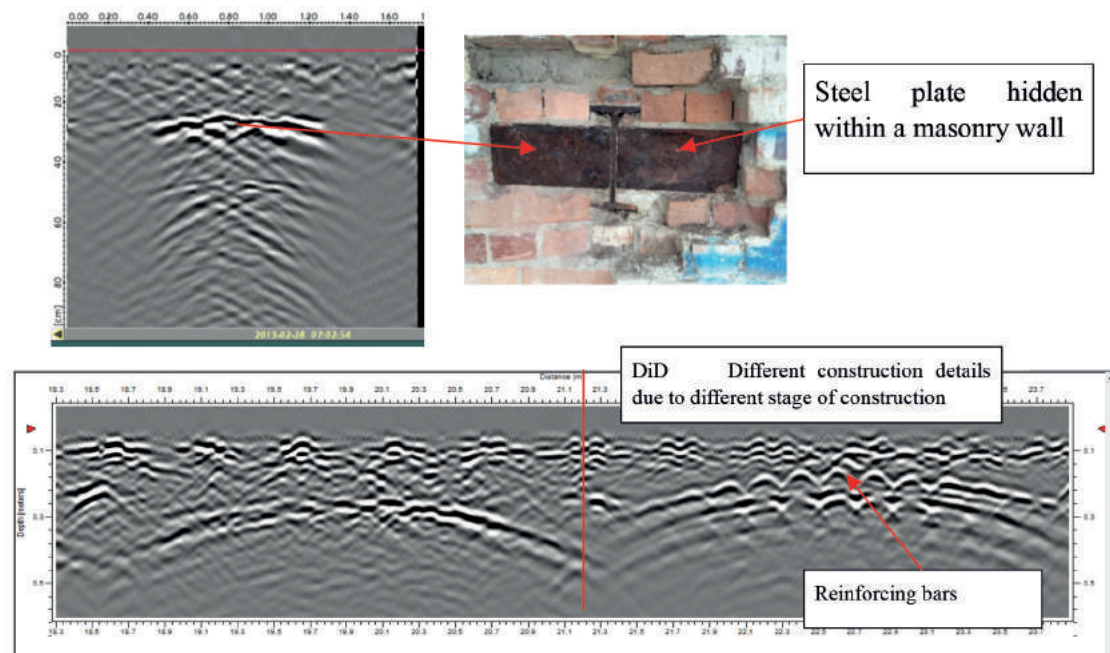


Figure 6. Embedded metal and different construction details could be revealed through the use of ground penetrating radar as seen above.

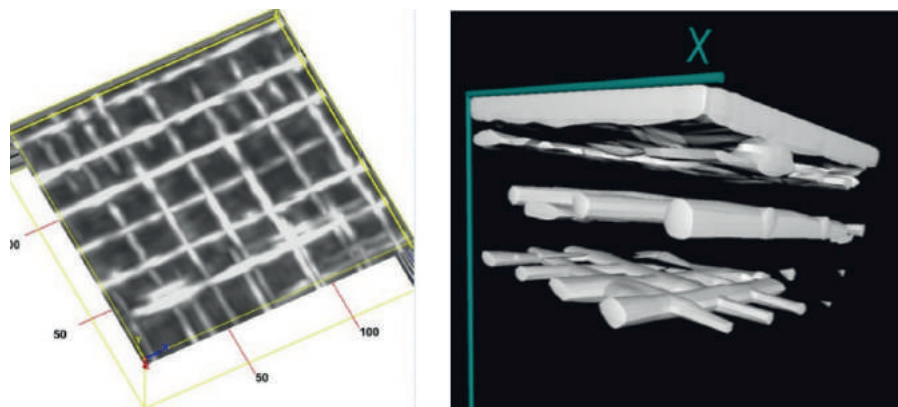


Figure 7. 3D images from the radar scanning.

Pulse Echo Tomography

This technique is based on the detection and analysis of reflected ultrasonic pulse through dry contact transducers. Shear waves are employed for their easier spread and deeper penetration into the material. With the use of bundled transducers, the multiple reflections are collated and analysed by “Synthetic Aperture Focusing Technique” to build 3D images and 2D cross sections of the material’s interior. This technique is used to generate images to show internal disturbances that are not visible at the surface such as voids, cracks, honeycombing, thickness of members, embedded structures etc. (Figure 8). Whilst this technique has mainly been employed, with good results, for the investigation of concrete structures,⁵ its application for masonry construction has been fraught with difficulties due to the largely heterogeneous nature of such construction arising from the interfaces of masonry units and mortar joints. Such

interfaces result in multiple echoes, which can mask other features of interests such as voids and embedded objects. Recent trials on structural timber members however revealed that this technique can be used to check for rot and termite infestations.

PETROGRAPHY

In any programme to restore historical mortar, renders and plasters, the characteristics of these historic materials often need to be determined. This serves numerous purposes. To some, it is simply to understand the history of the building and its traditional construction. To others, it helps in the development of strategies for restoration of the materials. This is usually done with a combination of different tests, from in-situ tests to laboratory analyses of extracted samples. The type of in-situ tests can range from pull-off adhesion test of plasters and renders to pendulum rebound hammer on

⁵ D. M. McCann, M. C. Forde, “Review of NDT methods in the assessment of concrete and masonry structures,” NDT&E International 34 (2001) 71–84.

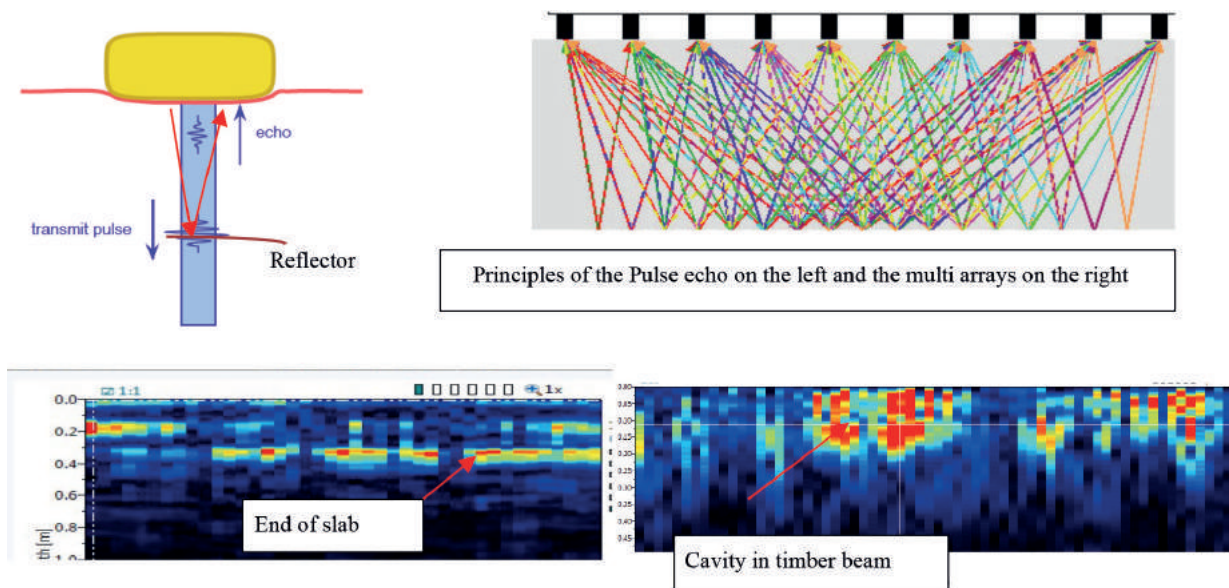


Figure 8. Principles of Pulse Echo and typical tomograms showing the end of a floor and the presence of cavity.

mortars, flat jack and capillary absorption. Extracted samples can be subjected to chemical composition analysis, porosity analysis, strength test and dimensional stability determination.

Petrography has long been used to complement chemical and physical methods, to determine the composition and texture, from a material's mineralogy to its strength and volume sensitivity. When systematically applied, the techniques of petrography will be able to identify the process and the sequence of production, composition and internal structure to allow classification into type, original and existing conditions and the future performance or serviceability of these historic materials. All these are made possible in the light of research and practical experiences as well as comprehensive collection of standard references.⁶

A systematic approach for petrographic examination is usually adopted and the procedure is based on recommendations in ASTM C1324 – Standard Test Method for Examination and Analysis of Hardened Masonry Mortar. Quantitative analysis of the mortar can also be made by point counting based on RILEM (International Union of Laboratories and Experts in Construction Materials, Systems and Structures) Recommendations to complement or replace wet chemistry analysis. This has an added advantage as the latter weighs heavily on the veracity of assumptions made. An understanding of the traditional material, its preparation and production, its constituents and its behaviour, is imperative though this will be challenging given that such knowledge may no longer be easily obtained. Besides examination of samples in the laboratory, field inspection of these materials

on site would greatly assist the examination and interpretation of the observations made. The work of the petrographer should start with site inspection, selection of samples to be extracted, participation in extraction of samples, and not merely confined to examination of samples in the laboratory after extraction. This would help to optimise the effort made in the investigation.

The petrographic examination involves multiple stages of examination with increasing magnification and complexity commencing from macroscopic analysis to stereo zoom and digital microscopic examination and finally to thin section microscopy. At times, complementary methods such as the scanning electron microscopy-energy dispersive X-ray spectroscopy are also used. For the thin section microscopy, sections of about 20 to 30 μm thick, which have been impregnated with epoxy with a fluorescence dye are prepared for examination with a polarizing fluorescent microscopy. Through such series of examinations, the following can be unearthed (Figures 9 to 11):

- Colour of the binder paste matrix
- Distribution of the aggregates and their sizes
- Evidence of bleeding and segregation
- Voids, cracks, entrained air and pore characteristics such as capillary pores
- Different layers and their likely make-up and interlayer bonding
- Types of binders such as cement, lime or a blend of cement and lime, including mineral admixtures such as pozzolanic slag, pulverized fly ash
- Paint seriation including colour scheme of each paint layer

⁶ Leslie A. B., Eden M., "A Code of Practice for the Petrographic Examination of Mortars, Plasters, Renders and Related Materials," Applied Petrography Group, 2008; Dr. Callebaut K., "State of the Art of Research/Diagnostics of Historical Building Materials in Belgium," Belgian Building Research Institute (BBRI); Jeremy P. Ingham, "Investigation of Traditional Lime Mortars – The Role of Optical Microscopy," STATS Limited; Wong CW, et al, "Petrographic examination as a tool in Diagnosis of Building Materials Failure – Singapore Experience," 8th Euroseminar on Microscopy Applied to Building Materials, Greece, 2001.

- Secondary reaction for example ettringite and chemical attack such as alkali silica reaction
- Types of finishes, treatment and protection to the plasters and renders such as lime wash, cement based skim coat etc.

The fluorescence light permits the examination of the amount of capillary porosity and micro cracking. All these are important characteristics to determine the condition of the existing render, plaster and mortar and to select compatible system for restoration works.

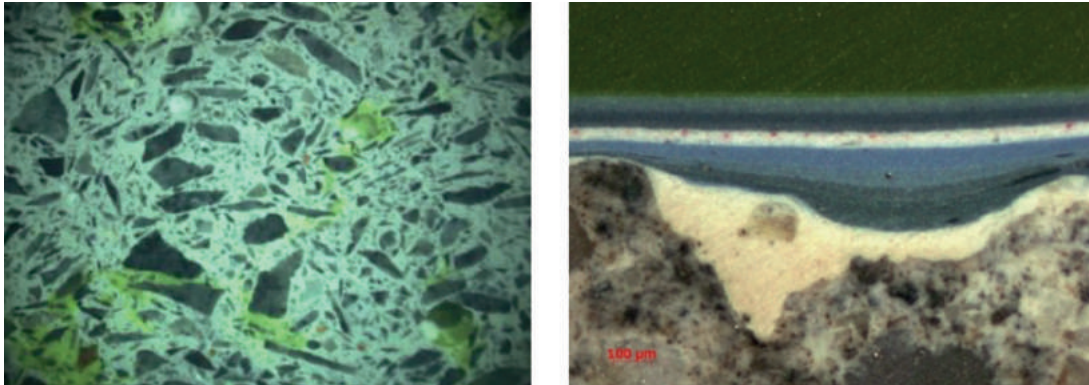


Figure 9. The photo on the left shows a typical section of a Shanghai Plaster displaying the type, shapes and distribution of the aggregates within a white Portland cement matrix. The right photo illustrates the colour schemes of the historic paint as part of the paint serration. The quality of the coating interlayer adhesion can also be assessed here.

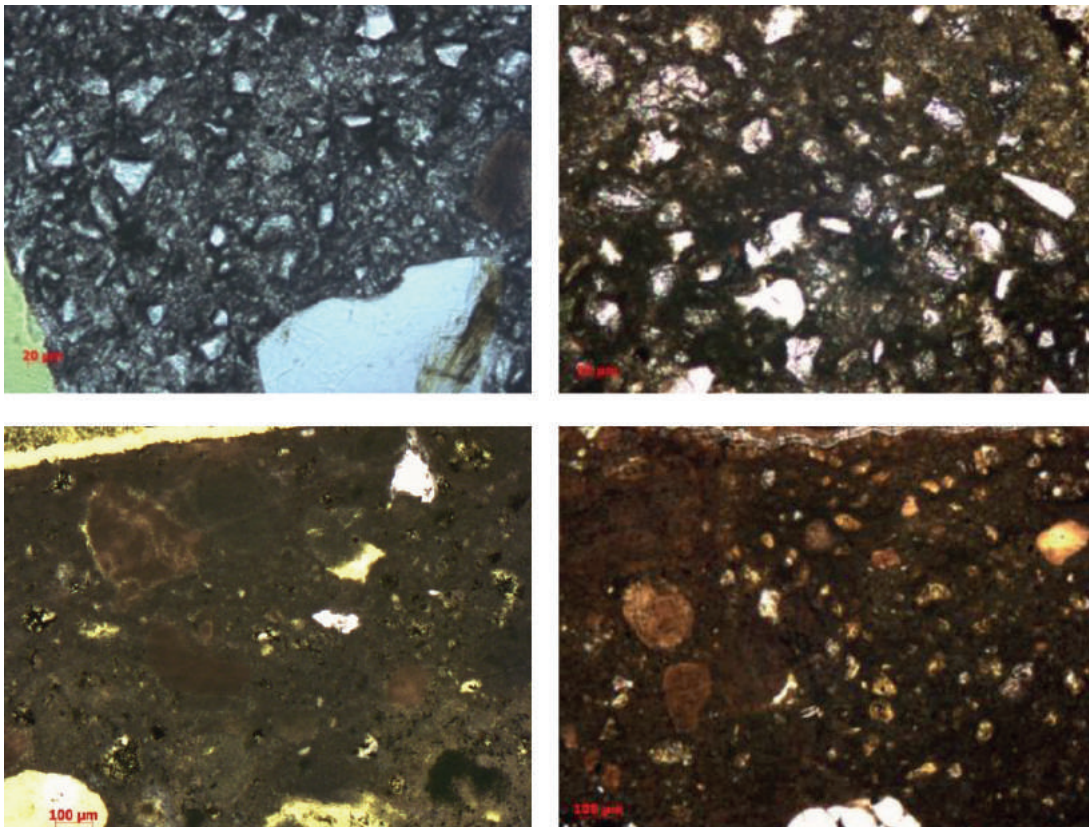


Figure 10. The types and composition of the binder for mortars can be determined via petrography – from top right clockwise: presence of shard like pozzolanic slag in the hydrated lime paste binder; White Portland cement; mixture of lime and grey Portland Cement; lime and white Portland cement binder.

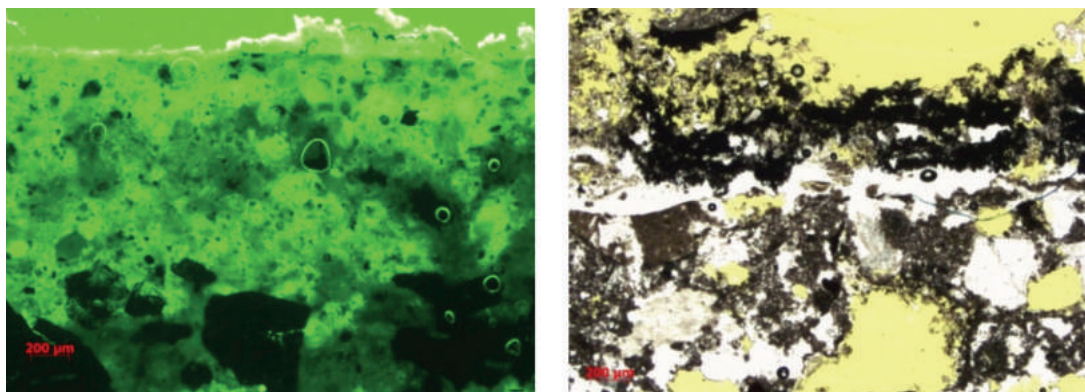


Figure 11. Left photomicrograph show a very porous surface layer of the historical render casting concerns with regards to the long term durability of the render. In the right photomicrograph, massive salt could be seen within the render layer which had caused the render to disintegrate.

CONCLUSION: BACK TO BASICS

It must be appreciated that the list of investigative techniques for historical buildings as discussed above is neither complete nor comprehensive. It merely covers some of the latest emerging trends and most practical methodologies. There are indeed other approaches, some of them are undoubtedly traditional but still remain relevant and useful. They include dust sampling, wet chemical analysis, and strength and absorption tests. These should continue to be employed in conjunction with the state of the art techniques discussed.

Whilst the discussion thus far has weighed in heavily as an approach for pre-restoration investigation, the very same tools are equally suitable as a means to check the efficacy of restoration works and investigate problems arising during the

restoration exercise. These include for instance verifying the rising damp treatment, consolidation and strengthening, and crack sealing.

Perhaps the most powerful and essential tool amongst all, and one which is truly non-destructive, is none other than our very own knowledge and expertise. These cover our basic understanding of the fundamentals of the various techniques and how the results can be interpreted, our comprehension pertaining to the behavior and properties of traditional materials and our discernment of past construction technologies. The application of the state of the art techniques discussed demands skilled interpretation which needs to be made in conjunction with knowledge of historic construction practices. Simply knowing one without the other will not be able to complete the equation. In a nutshell, we will need a good understanding of the basics of restoration and exploit new technologies to solve problems of the aged.

POSTSCRIPT

Johannes Widodo

Singapore has come a long way in the area of heritage conservation since independence. This first ICOMOS-NMS World Heritage Symposium focusing on “Heritage in Singapore – Saving History to Build a Nation” is a big milestone in that journey, giving us an opportunity to reflect on the past 50 years and project into the future.

The “top-down” urban conservation in relation to the ambitious urban redevelopment policy and plan in Singapore has triggered various reactions from both academics and the general public. It has been criticised as biased towards tourism, focusing mainly on the physical aspect of the building stocks while giving little attention to the intangible aspects of cultural heritage.

Civil society organisations focusing on cultural heritage conservation issues have been active for the last fifty years. The Singapore Heritage Society was founded in 1987 as a non-governmental organisation and registered charity dedicated to the preservation, transmission, and promotion of Singapore’s history, heritage, and identity. It has played an active advocacy role in advancing civil society viewpoints on many issues in the rapidly developing and changing urban landscape of Singapore. The Singapore Nature Society, which traces its roots back to 1954, was established to promote nature awareness and nature appreciation, to advocate the conservation of the natural environment in Singapore, and to forge participation and collaboration in local, regional, and international efforts in preserving earth’s biodiversity. ICOMOS Singapore National Committee was formed in 2013, and registered as a non-profit organisation. It has worked closely with local government agencies such as the National Heritage Board, the National Museum of Singapore, as well as international organisations and networks.

The June 2015 listing of the Singapore Botanic Gardens in the UNESCO World Heritage not only generated positive impact towards urban heritage conservation policy in Singapore, but also changed the perception and attitude of the general public towards the active conservation and preservation of Singapore’s heritage, including its modern heritage. The momentum was further enhanced by the celebration of the 50th anniversary of the nation in 2015, and the passing of Singapore’s founding father Mr. Lee Kuan Yew. The announcement of his wish that his former home should be demolished after his demise triggered debates among Singaporeans, from ministers to ordinary people on the streets. Heritage conservation has suddenly become the country’s interest and concern.

The involvement of governmental and civil societies like the National Heritage Board, Urban Redevelopment Authority, ICOMOS Singapore, and independent researchers in this symposium, all sitting together to educate the public and discuss pertinent issues on various aspects of heritage in Singapore, is unprecedented and positive. It is very heartening to witness a full-house, comprising a wide spectrum of Singaporeans, from youths to seniors, actively engaging in conversation at the symposium. This is a clear indication of the maturity of Singaporeans in the open discourse of Singapore’s common heritage. The ICOMOS-NHB World Heritage Symposium has become a middle platform - a roundtable for open conversation on things that really matter in saving our histories and narratives for future generations – that must be regularly organised and perpetually continued.

In Singapore, both land and heritage are scarce. These constraints should drive better and more effective conservation strategies, methods, and implementation by all stakeholders, so that the full positive impact of conservation may contribute to strong economic development, nation-building, and a sense of home. In working towards these ends, it is essential to form a civic coalition, a community network and an alliance among all stakeholders to maintain a balance between conservation and development, so as to ensure an orderly and healthy evolution of the built environment and the community that lives within it. The retention of identity through preservation and conservation of natural and cultural heritage will become more important as more of urban Singapore becomes developed and redeveloped to cater to the needs of our growing population and rapid economic growth – in order to keep the memory and identity of the nation for future generations.

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