



About the Culture Academy

The Culture Academy was established in 2015 by the Ministry of Culture, Community and Youth as a division of the National Heritage Board to groom the next generation of cultural leaders in the public sector. The Academy's vision is to be a centre of excellence for the development of culture professionals and administrators in the public sector and its work spans three areas: Education and Capability Development, Research and Scholarship, and Thought Leadership. Through these areas, the Culture Academy provides networking opportunities, platforms for exchange of creative ideas and organises professional development workshops, public lectures and publications to nurture thought leaders in Singapore's cultural scene.

Notes

This publication is the inaugural issue of *Cultural Connections*, a journal published by the Culture Academy to champion thought leadership in cultural work in the public sector.

The views and positions expressed in this publication are those of the authors only and are not representative of the editorial committee or publisher.

Editor in Chief: Thangamma Karthigesu

Editor: Marcus Ng

Editorial Assistant: Kathleen Ditzig

Design: Studio Vanessa Ban

Distributed by the Culture Academy, Singapore, a division of the National Heritage Board, Singapore

Published on May 2016 by Culture Academy, Singapore, 61 Stamford Road
#03-01 Stamford Court Singapore 178892

© 2016

The Culture Academy, Singapore, National Heritage Board all rights reserved.

The Culture Academy Singapore shall not be held liable for any damages, disputes, loss, injury or inconvenience arising in connection with the contents of this publication.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher. For all copyright matters please contact the Culture Academy.

ISBN 24249122



National
Heritage
Board



Cultural Connections

Volume I
2016

Contents

Foreword Rosa Daniel	(05)
Editor in Chief's Note Thangamma Karthigesu	(06)
A Fine Balance: The Many (and Changing) Roles of a National Museum Tan Tai Yong	(07)
Films, Facts and History: Interpreting the Past John Kwok	(13)
A Golden Opportunity: Revamping the National Museum of Singapore for the Golden Jubilee Year Angelita Teo	(19)
Singapore as a Key to Understanding Asia: The Asian Civilisations Museum as a Cross-cultural Institution Alan Chong	(27)
Re-writing a National Art History: National Gallery Singapore Eugene Tan	(36)
The Indian Heritage Centre: A Discourse on the Representation of Identity, Diversity and Aspiration Regarding The Indian Community's Heritage in Singapore Gauri Parimoo Krishnan	(41)
More Than A Garden: Singapore Botanic Gardens' Journey Towards Becoming Singapore's Inaugural UNESCO World Heritage Jean Wee	(52)
Retooling Collections Management: Tagging and Tracking Singapore's National Collection with Radio Frequency Identification (RFID) Tags Lee Huang Han, Sean and Darren Wong	(62)
Conservation Science: The Forensics of Cultural Connections Hanna M Szczepanowska	(72)
Getting Online and Staying Engaged: The National Heritage Board's Digital Engagement Journey Shaun Wong, Ian Liu and Cheryl Koh	(79)

Foreword

When Singapore gained independence on 9th August 1965, there were only two museums – The National Museum which showcased a mix of ethnographical and natural history items and The University Art Museum, now known as the National University of Singapore Museum – both legacies from the colonial era. The arts and culture scene then was small and nascent as our newly-independent nation-state prioritized and struggled to build a sustainable economy, provide good and safe homes for the people and build modern infrastructure.

Today, fifty-one years later, Singapore is home to more than fifty-four museums, state-run as well as private; big, small and medium in size and covering a whole range of topics from ethnography to Singapore history, Asian civilisations, World War 2 history, natural history, visual arts, city development, etc. Our past and heritage are preserved through our 72 national monuments and our well-loved Singapore Botanic Gardens which is now a World Heritage Site inscribed under UNESCO. This massive and speedy development of Singapore's arts and heritage scene should be recorded for posterity. The significant knowledge and know-how that we have accrued in developing our culture sector can benefit future generations of professionals in Singapore and abroad.

Research and scholarship plays a fundamental role in ensuring the sustainability and continued growth of the sector. Now more than ever, we, and our cultural institutions, need to actively research our cultural identity and shared heritage. Without good research and scholarship, knowledge developed in specialist areas as well as professional know-how can be irreparably lost, making it increasingly difficult for institutions to develop and innovate, and for individuals to maintain globally competitive international standards of professionalism.

Recognising these challenges, the Ministry of Culture, Community and Youth established the Culture Academy in October 2015 to be a centre of excellence for the development of culture professionals and administrators. The Culture Academy Singapore champions thought leadership and is committed to the development of a robust and local body of knowledge and resources, and the nurturing of a community of practice across specialisations and disciplines built on knowledge management and sharing. The Culture Academy Singapore also seeks to learn from and share Singapore's experiences with cultural institutions and thought leaders in the region and beyond.

Cultural Connections, the first arts and heritage journal to be produced within the public sector, is a result of the commitment from the Ministry and the leaders of our cultural institutions to build up professional capabilities and domain expertise, as well as to promote scholarship and nurture thought leadership. In focusing on the significant recent journeys that our cultural institutions have undergone in considering our 50 year history to re-vamp, revitalise and envision new trajectories for culture in Singapore, the inaugural issue of *Cultural Connections* provides insights into cultural work in Singapore.

I am confident this journal can be sustained through the comprehensive documenting and generous sharing of our rich experiences across the cultural scene in Singapore. This inaugural issue contributes towards excellence in our cultural discourse to inspire current and future generations in the arts and heritage.

Rosa Daniel (Mrs.)
Deputy Secretary (Culture)
Ministry of Culture Community and Youth

Editor in Chief's Note

Thank you for reading *Cultural Connections*, the arts and culture journal of Singapore's Culture Academy.

Cultural Connections is an annual publication that provides a platform for administrators and professionals in the arts and culture fields to publish their original research, reports or case studies of important cultural policies, best practices, events and projects, as well as connect with each other across the various disciplines so that diverse experiences and learning points can be shared and exchanged to promote thought leadership in this field. As such, we hope that this journal will provide our readers with an idea of the latest research undertaken by our culture professionals whether in their administrative roles, curatorial work, or as conservators, educators, programmers or communicators.

This inaugural issue is themed "New Beginnings". It refers to the fact that this is a new journal published at an exciting time in Singapore's arts and culture scene when exciting new chapters are being written for future generations. From articles on the new roles played by national museums in the twenty-first century, to the role of and challenges faced by a modern historian, to essays on the major revamp that took place in the National Museum of Singapore and the openings of the National Gallery Singapore and a new heritage institution, the Indian Heritage Centre, this inaugural issue contains articles that shared what worked and did not in the conceptualisation and design of the galleries and spaces, and the programming of the various institutions.

To complement these articles, we also have Singapore's Heritage Conservation Centre sharing its journey into RFID tagging and how this technology has improved its collection management. There is also a piece on how the HCC's new research laboratory and state-of-the-art equipment have helped to unveil new insights into conservation work and enabled their conservators to better assess and treat the national collection. This issue ends with a case study by National Heritage Board's Digital Engagement team on their foray into the digital world and how this has helped bring the National Collection and Singapore's history and heritage into an individual's mobile device, making such information easily accessible for research and edutainment.

This inaugural issue is only the beginning; in the future, the editorial team intends to develop this publication into a peer-reviewed journal that will be a thought leader and key reference for culture administrators and professionals not only in Singapore but the region as well.

Thangamma Karthigesu
Director, Culture Academy

A Fine Balance:

The Many (and Changing) Roles of a National Museum

Prof. Tan Tai Yong
Executive Vice-President (Academic Affairs),
Yale-NUS College, Singapore

This essay was originally presented as the keynote address at the fifth Asian National Museums Association (ANMA) Meeting and Conference held on 25-27 November 2015 at the Asian Civilisations Museum, Singapore.

The National Gallery Singapore, which is dedicated to showcasing Singapore and Southeast Asian art, officially opened on 23 November 2015. The unveiling of this visual arts museum that was ten years in the making brings the number of national museums on the island to six in total.¹ Why does a country as tiny as Singapore have this many national museums, you may ask. What purpose do they serve? Would it not suffice for a relatively young country like Singapore to have just one or two national museums telling the story of its birth and development as a nation-state?

Singapore's experience is perhaps indicative, and a recognition of not only the continued relevance of museums in nation-building, but also of their continuing relevance in educating citizens, not just for the country, but for an increasingly globalised world. As nations continue to build and invest in museums as a means of distinguishing their history, heritage and culture, it is timely to examine how national museums are responding to a growing awareness for more nuanced and critical approaches to their varied and evolving roles.

The origins of national museums

The prototype of what we recognise today as national museums emerged in Europe in the eighteenth century. The British Museum in London and the Louvre in Paris, both iconic cultural institutions and bastions of history, opened in the mid-to-late 1700s. "Motivated by the Enlightenment, the encyclopaedic spirit, world exploration, trade, and developing industrialisation,"² these institutions were projections of English and French wealth, power and identity. These museums became symbols of national achievements and imperial power.

The museum evolved and spread throughout the world in the nineteenth century at the height of western imperial expansion. As European colonial powers conquered new territories and, in the process, encountered people, cultural practices, belief systems and natural environments that were vastly different from what they were familiar with, they developed the practice of collecting objects and specimens, and displaying these as artefacts in museums. The British Empire, for instance, yielded ample material for British and colonial museums in terms of ethnographic, natural history and botanical collections.³ Although current research has shown that these collections were sometimes assembled under haphazard, chaotic and unsystematic conditions,⁴ they were then thought to represent a mastery over things unknown through scientific endeavour, rational thought and industrialisation. It was also the empire's way of "knowing" their subjects, through collection, study and codification.⁵

A second global boom in museums took place in the post-colonial period, after the Second World War. The rising tide of nationalism saw liberation movements and armed insurgencies waged against incumbent colonial governments all across Africa and Asia. This led ultimately to the dismantling of European empires and the creation of new nation-states. National museums started emerging as nations embarked on the process of nation-building. Many of these museums were inherited from the colonial state, and were of a similar typology. But they took on the national agenda, with their exhibitions and collections geared towards a nationalist narrative. Many would highlight the achievements of the new state, often linking their genealogies to a golden, pre-colonial past.

The development of each nation's national museums is shaped by local conditions such as nation-building needs, economic wealth, the degree of state involvement and state sponsorship, international and diplomatic connections, individual and corporate interests and so on.⁶ It is also crucial to acknowledge the imprint of curatorial direction, something that is often overlooked.

Classification of national museums

Given such diversity, how can we go about classifying national museums in a way that is useful?

We could start by quoting from a report by the Smithsonian Institution, which was published in 2005:

- a. “Monolithic museums [are the] great public collections that were created as or became national museums, with the intent of presenting a universal view of humanity’s achievements and knowledge.”⁷ They do this through their rich and varied collections, and vast reservoir of scholarship and expertise. The British Museum and the Louvre are classic examples of these sorts of museums.
- b. State museums of national culture that present the histories and aspirations of their countries and serve as important vehicles for building or reconstructing national identity, particularly for emerging nations.”⁸
- c. Specialist national museums which provide high level academic and technical support for scholarship that serves national and international audiences – a prime example would be the National Gallery in London, which has one of the world’s premier collections of European paintings.⁹

Most national museums might fall into category b. As a means of buttressing their international status, national museums often claim the cultural inheritance of major civilisations such as China, India and ancient Greece. The Asian Civilisations Museum in Singapore serves as a good example. Its mandate perfectly illustrates its nation-building role: *“the [museum] is devoted to preserving the cultural heritage of Asia, especially the ancestral cultures of Singaporeans. These include China, Southeast Asia, India, and the Islamic world. More recently, the museum has focused on the long*

*historical connections between cultures. As one of the National Museums of Singapore... we seek to promote a better appreciation of the rich history that has created Singapore’s multi-ethnic society.”*¹⁰ The National Gallery Singapore probably falls into categories b and c.

The role of national museums

Whatever category they might fall into, national museums – as institutions that are created and funded by a central government – typically have educational and overt political aims, particularly in fostering national consciousness. Their collections are often used to represent the history and heritage of the nation (or empire), and to “reflect the aspirations of the nation, and even shape and define a common interest.”¹¹

As national museums came to be regarded as public institutions which foster knowledge through their collections and exhibitions, they developed a preoccupation with amassing distinctive and “complete” collections to distinguish the nation’s history and cultural heritage. In this regard, I would like to mention how the National Gallery Singapore, which is said to have the largest collection of Southeast Asian art in the world, aims to fulfil these purposes.

In his speech at the official opening of the museum, Singapore’s Prime Minister Lee Hsien Loong (b. 1952) said:

“The National Gallery is ‘nowhere near the scale and riches’ of the Louvre in Paris or the Metropolitan Museum of Art in New York. [...] You don’t find baroque capitals or gold leaf all over the place. It’s quiet, it’s plain and simple but it’s historic and if you come in, you know this is a special place.”

He also noted that

“The measure of success is not how many tourists come, or how our museum ranks internationally, but whether Singaporeans feel the Gallery belongs to them, visit it to enjoy what

it offers, and in time come to love the Gallery.”¹²

Let me now turn to the nature of national museums and the limitations they face. Here is an excerpt from an edited volume on national museums:

“For a museum to be effective we must buy into its offerings: art history, national narratives, the unassailable logic and authority of science, and so on. In doing so, we believe that museums contribute to our sense of a knowable and reproducible reality through which we can grow our personal knowledge. But this museum reality does not come without performance. The two can never be disassociated. All who enter the museum are, however, deceived by the illusion that the museum’s authority rests on its objective representation of the world. It does not.”¹³

There are many strands of thought packed into the above quote, but the points that need to be highlighted here are the similar tensions and impulses behind the interpretation and representation of “knowledge” in museums and the writing of history, namely narratives bound to the nation-state.

The future role of the national museum

There are two other issues that need to be discussed in relation to the future role of a national museum. The first issue whether it is useful for national museums to attempt to move beyond national narratives to focus on new broader conceptual frameworks? And secondly, whether there is such a thing as a trans-Asian identity based on networks and cross-cultural exchanges? And how can national museums play a part in shaping this identity?

The use of the nation-state as the framework for curatorial interpretation of national collections is limiting and problematic. As is the case with historical narratives, there will always be omissions and challenges to the narratives presented in national museums.

Moving beyond national narratives

How can national museums avoid being straitjacketed by the narrow confines of national and political narratives? One way is to examine transnational networks and cross-cultural exchanges that date back to the colonial and pre-colonial period before the emergence of nation-states and modern political boundaries.

The study of such connections has opened up new scopes in academia, especially in the area of colonial studies. The following quote is from an article examining the networks that shaped the British empire in the nineteenth century:

“[...] there have been growing calls for trans-national histories and many historians have insisted that the construction of new analytical models that recover the movement of people, ideas, ideologies, commodities and information across the borders of the nation-states are urgently needed in this age of global moment.”¹⁴

National museums can adopt the same approach. Many museums in Asia are custodians of colonial collections, their histories inextricably linked to these trans-national networks. The material culture that emerged from cross-cultural exchanges can offer fertile ground for research by museums. Fuelled largely by trade and forged by the extensive circulation of people, ideas, information and commodities, these exchanges offered immense possibilities for creative adaptation and innovation.

A good recent example is an exhibition curated by the Asian Civilisations Museum (ACM) in Singapore in 2013. Titled *Devotion and Desire: Cross-cultural Art in Asia*, this exhibition showcased the museum’s new acquisitions which consisted of cross-cultural art pieces. In his introduction for the exhibition catalogue, Dr Alan Chong, Director of ACM and the Peranakan Museum, addressed the idea of challenging national narratives through new curatorial frameworks:

“The history of Asian art has traditionally been seen as a series of individual cultures – China, Japan, Korea, India, Cambodia, Thailand, for example – connected by streams of influence, but essentially retaining individual national identities. This may be useful and indeed convincing, but we are hopeful that new approaches might shed light on other systems that connect these cultures, beyond the expected narrative of the influence of Buddhism throughout Asia.”

He went on to argue that

“In this regard, the role of colonial powers in artistic exchange should not be segregated as an entirely separate category of ‘export’ or ‘trade art’, but perhaps seen as more organically connected to the cultures that produced

the objects for the West. The trading patterns within Asia might also be usefully incorporated into the narratives of museums and scholarship.”¹⁵

So, as museums traverse their roles between “nation-building” and “education” – and collections should aim to fulfil these distinct yet connected roles – the question of balancing political history, ethnography and art might not have to be problematic.

In conclusion, while we can all recognise that there will be limitations to what the national museum can represent and how they will tell their stories, we can all appreciate that museums will constantly need to fulfil and juggle multiple roles. The key perhaps is to continue looking for more nuanced and critical approaches to the national museum’s ever-evolving roles.

Notes

1. Singapore’s national museums are: the National Museum of Singapore, Asian Civilisations Museum, Peranakan Museum, Singapore Philatelic Museum, Singapore Art Museum (which focuses on the contemporary art of Singapore and the region) and National Gallery Singapore.
2. Smithsonian Institution 2005, pp. 24–25
3. Longair and McAleer 2012, pp. 2–3
4. Keurs 2007, pp. 1–15. See also Singapore 2009
5. MacKenzie 2009, pp. 1–8
6. Knell et al. 2011, p. 6
7. Smithsonian Institution 2005, p. 28
8. Ibid.
9. Ibid., p. 29
10. Asian Civilisations Museum, Singapore website: <http://acm.org.sg/about-us/story-of-our-museums>
11. Smithsonian Institution 2005, p. 37
12. *The Straits Times*, 24 November 2015
13. Knell et al. 2011, pp. 4–5
14. Ballantyne 2001
15. Chong 2013, p. 11

References

Tony Ballantyne. "Race and the Webs of Empire: Aryanism from India to the Pacific" in *Journal of Colonialism and Colonial History*, Volume 2, no. 3, (2001)

Alan Chong. "Introduction: Crossing Borders in the Arts of Asia", in *Devotion and Desire: Cross-Cultural Art in Asia*. Exh. cat. Asian Civilisations Museum. Singapore 2013. By Alan Chong, Pedro Moura Carvalho, Clement Onn, et al.

Hunters and Collectors: The Origins of the Southeast Asian Collection at the Asian Civilisations Museum. Exhibition catalogue, Asian Civilisations Museum, Singapore, 2009. By Clement Onn.

Pieter ter Keurs. "Introduction: Theory and Practice of Colonial Collecting" in Pieter ter Keurs, ed., *Colonial Collections Revisited*. Leiden, 2007

Simon Knell. "National Museum and the National Imagination", in Simon Knell, Peter Aronsson, Arne Bugge Amundsen, eds., *National Museums: New Studies from Around the World*. New York, 2011

Sarah Longair and John McAleer. "Curating Empire: Museums and the British Imperial Experience", in Sarah Longair and John McAleer, eds., *Curating Empire: Museums and the British Imperial Experience*. Manchester, England; New York, 2012

John M. MacKenzie. *Museums and Empire: Natural History, Human Cultures and Colonial Identities*. Manchester, 2009

Smithsonian Institution. *Concern at the Core: Managing Smithsonian Collections*. Washington, D.C., 2005

Films, Facts and History:

Interpreting the Past

Dr John Kwok
Assistant Director (Research),
National Heritage Board, Singapore

On 16 May 2011, the *Today* newspaper in Singapore published a commentary by its principal correspondent Paul Gilfeather on the filmmaker Oliver Stone (b. 1946), who had given a talk at the Lee Kuan Yew School of Public Policy, and his interview with the acclaimed American director. Stone had revealed to a packed auditorium that he was making a ten-part documentary series called the *Untold History of the United States*, which he called “the most important thing I have ever done.”¹¹ Stone said that his new series would “re-examine the likes of the Japanese in WWII and Russian tyrant Joseph Stalin (1878 – 1953) more sympathetically than ever before.”¹² When the interview ended, Stone told Gilfeather to “be careful on the history quotes... get them right for me.”¹³

A few days later, a Singaporean historian wrote to the same newspaper and pointed out that if a famous filmmaker like Oliver Stone were to make a documentary series with the premise of challenging traditional history, it would draw considerable interest.⁴ To be sure, Stone’s documentary series was based on the work of a professional historian, Peter J. Kuznick (b. 1948) of The American University in Washington, D.C. But it was Stone who gave the talk in Singapore, not Kuznick. The point that the historian was making was that when a leading film-maker positions his work as history, “it sets off alarm bells”⁵ because to the less informed, his work would be accepted as historical truth. The Singaporean historian’s letter was discussed a few days later in another letter from a member of the public who argued that Stone deserves more credit than to be called a “film-maker” and that history is ultimately subjective and interpretative.⁶ Indeed these discussions raise the question, who should interpret the past?

Facts about the past versus historical facts

The work of historians shares many similarities with film-makers in that the historian is “able to manipulate time and space in ways they could never manage as normal people.”⁷ But there is one key difference: “artists don’t normally expect to have their sources checked. Historians do.”⁸

When historians write about the past, the facts presented must be accurate and reliable. This is the same for anyone using information about the past. However for the historian, their work does not stop at having their sources checked for historical accuracy. The historian E.H. Carr (1892–1982) reminds us in his book *What is History?* that to praise a historian for his accuracy “is like praising an architect for using well-seasoned timber or properly mixed concrete in his building.”⁹ Instead, the historian can call upon an architect for his views on building timbers, or an archaeologist for his data if the building timber was part of an ancient structure.

The work of antiquarians emphasises historical accuracy. The historian, on the other hand, deals with the use of facts about the past. It is the historian “who decides to which facts to give the floor, and in what order,”¹⁰ because facts do not speak for themselves.

On the other hand, not all facts about the past are historical facts. There are, according to Carr, “facts about the past” and “historical facts”. The former is a collection of events that took place in the past while the latter are events that historians regard as historically significant. He gave the example of Roman general Julius Caesar’s (100–44 BCE) crossing of the Rubicon River in 49 BCE, which marked a point of no return in Caesar’s route to power, as a historical fact, whereas the millions of people who crossed the stream before and after Caesar represent a fact about the past that is ignored by historians.¹¹ The historian therefore decides which sources and facts to use to influence his account of the past.

The writing of history

In Singapore, the distinction between facts of the past and historical facts is not often well understood. Paul Cohen’s (b. 1934) book *History in Three Keys* can help to illustrate the issue better. The writing of history, according to Cohen, can come in three forms; history as an event – a particular reading of the past; as experience – a reconstruction of the past based on the collective experiences of individuals who made up the history; and as myth – a selective reading of the past.

A historical event, according to Cohen, is a coalescence of individual experiences in the past.¹² A participant's account or recollection could at best provide a vivid idea of what the past was like, but it cannot, however, give us the past. The historian's role is central in the process of transforming individual experiences into a historical event. E.H. Carr uses a more simple analogy: the historian's working material is like "a fish on the fishmonger's slab [and] the historian collects them, takes them home, and cooks and serves them in whatever style that appeals to him."¹³ What historians reconstruct from the "fishmonger's slab" then becomes a framework – a historical event that enables other historians to further analyse "what happened".¹⁴ Once fixed, historical events, however, can serve many purposes.

"History as experience", as the term suggests, involves the examination of experiences of individuals from a particular time period or event. An understanding of events in history is achieved through analyses of the recollections of individuals, giving historians and students of history an idea of "what happened" in the past. A good example of Cohen's "history as experience" is found in the work of Australia's official historian of the First World War, Charles Bean (1879–1968), who examined and used the Australian soldiering experiences at Gallipoli and on the Western Front to reconstruct war narratives in the official Australian histories of the First World War.¹⁵ Bean believed that the history of Australia in the Great War should be told by the narratives of the men who fought it.¹⁶ And he achieved it by putting the experiences of the ordinary soldier in his "official history"¹⁷ and by providing names and biographical footnotes to the accounts of the 8,000 soldiers¹⁸ whom he had included in the text.¹⁹

What Bean had created was a war narrative genre that had been described as "a personalised history written in a distinctive style."²⁰ This was a marked departure from traditional war narratives that were "shorn of critical comment, devoid of controversy and describing events from the single viewpoint of the high command".²¹ Bean's methodology and characteristic style of writing have been

adopted subsequently by Australian historians commissioned to produce Australia's official histories of the Second World War. His methodology and style is also found in recent war films like Steven Spielberg's (b. 1946) *Band of Brothers* (2001) and *The Pacific* (2010) where the soldiering experiences in the Second World War in Europe and the Pacific were central in the grand visual narratives about the war. The style was also found in Philipp Kadelbach's (b. 1974) film *Generation War*²² (2013) where the wartime experiences of young Germans were told through five characters from 1941 to 1945. *Generation War* was criticised, however, for pushing Nazism and death camps far into the background. But the criticism levelled at Kadelbach's work bears out Cohen's third key, "history as myth".

According to Cohen, a mythologised past often begins with an assumed understanding or notion of the past that is not unlike a romanticised version of a historical event, an individual or groups of individuals. In other words, "mythologisers" begin with a conclusion that they sincerely believe to be "correct" and work their way back to create or recreate a sequence of events that look like history but may not be necessarily such. In other words, "history as myth" is a reconstruction of the past, seldom based on the actual experiences of those who experienced it, but on an assumed idea of the past to satisfy a reading of the present. In the case of the film *Generation War*, the historian Nicholas Stargardt's (b. 1962) work on the war in Germany, *The German War*,²³ indeed showed that Germans suffered and survived the war with Nazism and death camps in the background of their lives.

The Singapore context

To use a similar wartime example in Singapore's context, in 1995 a book on the wartime experiences of local people in Singapore was published. Its title was *The Price of Peace* and the book inspired the creation of a top-rating Chinese drama series shown on Singapore television in 1997 titled *He Ping de Dai Jia* (*Price of Peace*). Ten years later, it was re-screened on television in Singapore and

again, it was popularly received. Institutions in Singapore have gone one step further by making *The Price of Peace* an authority on the war in Singapore. The book is listed in the National University of Singapore Library's *A Sense of History: A Select Bibliography in the History of Singapore*, a bibliography that also included works by notable historians. In 2002, Singapore's Nanyang University of Technology placed it in an exhibition that showcased the value of National Education in a national crisis.²⁴

When historians took a closer look at the book, the accounts featured were problematic. The Battle of Singapore is a historical event that took place from 8 to 15 February 1942. In one battle account featured in the book, on 6 February 1942, a group of local Chinese volunteers defending Jurong Road was hit by machinegun fire and "a fierce battle erupted as Japanese troops charged towards us [and] both sides suffered casualties".²⁵ The fighting continued well into 9 February and together with the Australians, the volunteers launched a combined counter-offensive that broke the Japanese morale and chased the enemy back "for a good five miles".²⁶ The problem with this account is that no Japanese troops could have been on Singapore on 6 February; they landed on 8 February and well away from Jurong Road.²⁷ The Australian unit's war diaries on 9 February record that the Diggers was re-establishing a new line of defence after withdrawing from the initial main Japanese assault.²⁸ None spoke of a counter-offensive that chased the Japanese five miles all the way back to the coast. Yet such narratives in the book would command widespread popularity in a country looking for authentic local eyewitness accounts during the defence of Singapore in its search for historical identity. The positioning of *The Price of Peace* as an authoritative historical text demonstrates "history as myth". Indeed, "history as myth" is not too dissimilar to Whig history and post-colonial national histories that emphasise the contrast between a nation's colonial past with political, social and economic achievements after independence. It bears out Cohen's "history as myth" when a version of the past is reconstructed from a set of events to "serve the political, ideological, rhetorical, and/or emotional needs of the present."²⁹

There is no professional historians' association in Singapore and as the last newspaper letter discussed at the beginning of this article suggests, it appears that in Singapore, anyone can interpret the past. The increasingly voiced anxiety over development works in Singapore that may impact historical elements of a site would better illuminate the question of who should interpret the past in Singapore. The heritage versus development conundrum is a common one across the world, and one that often influences changes in society. In Hong Kong for example, in 2006, the demolition of the Star Ferry Pier to make way for land reclamation to expand the waterfront saw large public demonstrations in protest against the development. Although the demonstration did not save the historical landmark, it led the Hong Kong administration to review its policy and processes, and created greater public awareness and appreciation of Hong Kong's built heritage.

On a related note, on 31 March 2004, Singapore's first National Library building along Stamford Road was demolished. Opened in 1960, this was a historical landmark that held many different fond memories for more than two generations of Singaporeans. This incident led to greater popular awareness of Singapore's heritage even if some of it was underpinned by nostalgia. This historical event in 2004 has since led to efforts by the government and the community to document the histories of various sites and structures across Singapore, bearing out the notion in Singapore that anyone can interpret the past as history.

In November 2012, Oliver Stone released his ten-part documentary series, *Untold History of the United States*. The series re-examined the United States' history from the First World War through the Cold War and concludes with the Obama administration. It was accompanied by a 750-page companion book written by Stone and Kuznick, whose work was featured in the series. The series presented a revisionist perspective of the time period that argued that the United States did not end the Second World War in Europe (the Soviet Union did) and President Harry Truman's (1884–1972) decision to drop the atomic bombs on Japan was to impress

the Soviet Union. The United States was also responsible for starting the Cold War.

The series received much praise and criticism. The historian Ronald Radosh (b. 1937) criticised Stone and Kuznick for manipulating evidence and ignoring evidence that does not fit their predetermined thesis, a thesis that had already appeared in print as early as 1952.³⁰ The historian Sean Wilentz (b. 1951) also pointed out that there was nothing “untold” about the series because the interpretation presented “have appeared in revisionist histories of American foreign policy written over the last

fifty years”³¹; the series was at best “a skewed political document” not a work of history.³² However, the series also received much praise from reviewers, with one calling it “solid, highly watchable (thanks to all the terrific archive material), thought-provoking, necessary and in the end [with the soundtrack]... rather moving.”³³ It was probably a good thing that Stone did not follow-up with a sequel to the series to make a film on the Fall of Singapore in 1942. Perhaps the Singaporean historian who started the debate in Singapore in May 2011 would have said, “I told you so.” Well, “I told you so.”

Notes

1. *Today*, 16 May 2011
2. *Ibid.*
3. *Ibid.*
4. *Today*, 19 May 2011
5. *Ibid.*
6. *Today*, 21-22 May 2011
7. Gaddis 2002, p. 17
8. *Ibid.*, p. 18
9. Carr 1986, pp. 10–11
10. *Ibid.*, p. 11
11. *Ibid.*, p. 11
12. Cohen 1997, pp. xi–xv
13. Carr 1986, p. 9
14. Cohen 1997, p. 65
15. Charles Bean started out as a journalist before he became the official historian.
16. *Winter* 1992, pp. 1–2

17. Thompson 1994, pp. 144–145. Charles Bean faced opposition from the military who did not agree with his style and sought to bar his work from being an 'Official History' of the war.
18. Thompson 1994 gave the figure 8,000 but Winter 1992 stated there was “6,550 of them and each with a footnoted biographical sketch”, p. 2
19. Thompson 1994, pp. 144–145
20. Winter 1992, p. 2
21. Ibid., p. 1
22. Known in Germany as *Unsere Mütter, unsere Väter*, translated to mean “*Our mothers, our fathers*”.
23. Stargardt 2015
24. *NTU Library Bulletin*, Vol. 11, No. 2 & 3, November 2002, pp. 6–9
25. Hu 1995, p. 267
26. Ibid., p. 272
27. Frei 2004, p. 82
28. War Diary Australian 2/29 Infantry Battalion, AWM52-8-3-29-007, Australian War Memorial
29. Cohen 1997, p. 213
30. *The New York Times Magazine*, 22 November 2012
31. *The New York Review of Books*, 21 February 2013
32. *The New York Review of Books*, 21 February 2013
33. *The Guardian*, 11 July 2013

References

J. L. Gaddis. *The Landscape of History, How Historians Map the Past*. Oxford, 2002

E. H. Carr. *What is History*, (second edition). London, 1986

P. A. Cohen. *History in Three Keys, The Boxer as Event, Experience, and Myth*. New York, 1997

D. Winter. *Making the Legend, The War Writings of C.E.W Bean*. St Lucia, 1992

A. Thompson. *ANZAC Memories, Living with the Legend*, Melbourne, Oxford, Auckland, New York, 1994

N. Stargardt. *The German War, A Nation Under Arms, 1939 – 1945*. New York, 2015

T. J. Hu. “An Account of the War Fought by the Singapore Overseas Chinese Volunteer Army” in *The Price of Peace*. Singapore, 1995

H. Frei. *Guns of February, Ordinary Japanese Soldiers' Views of the Malayan Campaign and the Fall of Singapore 1941-42*. Singapore, 2004

A GOLDEN OPPORTUNITY:

Revamping the National Museum of Singapore for the Golden Jubilee Year

Angelita Teo
Director, National Museum of Singapore

With contributions from the National Museum
of Singapore's Curatorial and Exhibitions team:
Iskander Mydin, Priscilla Chua, Sharon Lim,
Jervais Choo and Stephanie Yeo

In 2015, the momentous milestone of 50 years of Singapore's independence was celebrated nationwide as the Golden Jubilee Year. This year-long celebration was also known as "SG50". The contributions of the Pioneer Generation (a term used to describe Singaporeans who were 16 years or older in 1965) were recognised and celebrated alongside the achievements and aspirations of a new generation of Singaporeans born after the early nation-building years of the 1960s and 1980s. Perhaps at no other time over the last 50 years was there such widespread public awareness of local historical and heritage matters as in the past year. With the prevalence of museums and galleries reaching out to diverse audiences, history and heritage in the age of social media became something to be acknowledged, cherished and shared beyond mere recall or reminiscence.

Creating a connection

In this landscape, the National Museum of Singapore (NMS) underwent a major revamp of its permanent exhibition galleries, which subsequently re-opened in September 2015. The revamp was an inclusive process as it involved not only the museum team and consultants but also external parties from the SG50 sub-committees and academics in advisory panels. As a result, a guiding narrative of how the museum would shape its presentation of Singapore's history in its permanent galleries was conceptualised. This "seed narrative" also served to facilitate the content and development of the galleries.

The aim of the narrative was to create an emotional and personal connection with Singapore's history among museum visitors. As narratives are inherently stories, the presentation of Singapore's history in the galleries was approached in a similar manner. In telling the story of our nation, it also helped to define a sense of national identity and connectedness with our roots and legacies. It was also value-driven, since narratives can be viewed as enclosing moral imperatives or moral tales. Our values arising from the lessons and experiences drawn from Singapore's history include beliefs or principles such as being adaptable, pioneering, creative, tenacious, cherishing our families, embracing the spirit of

gotong royong ("mutual help" in Malay), fair play, protecting what we had built and being open to cultural and religious diversity.

Maintaining historical continuity

Although much of the focus of the revamp was on the post-independence period from 1965 to the 2000s which coincided with SG50, it was imperative that we also included the earlier pre-colonial, colonial and wartime periods of Singapore's history, which were covered in the galleries during the previous major revamp in 2006. These sections have been re-aligned to present a sense of historical continuity with the later post-independence period.

This sense of continuity is expressed in the revamped galleries on the two levels of the museum. The Singapore History Gallery (SHG) on Level One presents the main narrative of Singapore's history from the pre-colonial period to current times through the perspectives of key events, milestones and personalities. Chronologically, it covers the following sections: Singapura (1299—1818), Crown Colony (1819—1942), Syonan-To (1942—1945), A Nation in the Making (1945—1960s), Building an Economy (1960s—1970s), Building a Home (1970s—1980s), and Transforming the Landscape (1980s—2000s). Together, they capture the nation's defining moments, challenges and achievements from its earliest beginnings 700 years ago to the independent, modern city-state it is today.

On Level Two, four other galleries present snapshot narratives of Singapore's social and cultural history, using personal perspectives to complement the main narrative on Level One. Known collectively as the Life in Singapore: The Past 100 Years galleries, the individual galleries are named Modern Colony (1920s—1930s), Surviving Syonan (1942—1945), Growing Up (1950s—1960s) and Voices of Singapore (1970s—1980s). They take a closer look at social modes of living in the colonial era, personal struggles during the war, a generation's dreams and aspirations, and self-expression and creativity in the formation of a Singaporean identity respectively. Collectively, they provide visitors with glimpses into a century of Singaporean lives, manners, behaviour, values

and dreams, adding a multi-dimensional layer to the singularity of the mainstream narrative in the SHG. In short, they present the evolution of a nation's "character and soul" over the years. In keeping with the nature of snapshots, these galleries have been conceived as semi-permanent to be rotated in the future to cover other thematic snapshots exploring Singapore society and culture.

Throughout Levels One and Two, the seed narrative sought to address the following questions:

- a. What is the story to be told?
- b. How is the story to be told?
- c. What is the setting of the story?
- d. What is the experience? How will visitors be engaged?
- e. What is the key take-away for visitors?

Each of these questions had different implications on the form and function of the exhibit designs, particularly when the galleries are intended as experiential encounters with Singapore's history. Visitors are encouraged to explore and discover for themselves what has collectively helped to shape and define Singaporeans over the years. As no amount of gallery space can feasibly accommodate a comprehensive coverage of 700 years of Singapore's history, it is essential that key stories are told in the galleries through contextual settings and "visitor magnets" which form the mode of display, and visitor engagement and "take-aways" are shaped by sensory media (sight, smell and sound) as well as accessible captions and labels.

Connectivity and visitor experience

Singapore's rapid transformation from Third World to First over the past 50 years is a remarkable and well-documented achievement. The museum's narrative seeks to establish a platform of common experiences, memories and beliefs evolving from Singapore's historical development that can be shared among visitors. The presentation of these events and experiences also have to be sustainable in terms of maintaining their legacy for future

generations, particularly for those with no living memory of the past or who are indifferent to it.

With so many compelling stories to tell, the National Museum's curators have distilled the defining moments of each era of Singapore's post-independence history by selecting key artefacts to highlight certain milestones. More importantly, our curators worked together to identify common experiences that brought together Singapore's multi-racial, multi-religious society. The galleries provide an ideal platform to tell the story of Singapore's history in a way that will create a strong personal and emotional connection with both Singaporeans and foreign visitors.

Visitor experience is key to the narratives' ability to connect with their audiences. Traditionally, objects are placed in a showcase with an accompanying label that provides a description or explanation of how they were used. Rather than just having our visitors "look into" the showcases and observe the physical qualities of an object from an earlier time period, the National Museum recognises the need to do more to engage our audience in a meaningful way. Unlike the early period since the museum building first opened in 1887, today we have to compete for the attention of visitors with many other attractions from retail malls to the integrated resorts. It is thus especially important for us to create a unique experience for visitors and to change the perception that the museum is solely for niche audiences or high society.

The process of enhancing the visitor experience began, quite literally, from the start. Previously, visitors began their journey to the galleries at Level Two and descended to Level One via an external ramp, before continuing to the Singapore History Gallery (SHG). As part of the revamp, the new entrance to the SHG offers direct access to the exhibition, where visitors are greeted by a giant animated map of the Southeast Asia region, modelled after a 1570 map by Flemish cartographer Abraham Ortelius (1527–1598).

The overarching focus of the revamp was to adopt an immersive approach in bringing the artefacts to life. Our curators took various

factors into consideration, such as a richer selection of artefacts and engaging multimedia interactive displays, as well as ambient sounds and contextualised displays that provide a more realistic setting. Exhibition designers were consulted to create a “theatre set” in our galleries, where replicas and props were added to contextualise the objects in a physical space and evoke a certain time period in Singapore’s history. This allows our visitors to go beyond simply “observing” the objects to feeling that they have been transported back in time to another era, creating an emotional connection which in turn generates historical understanding.

Objects of significance

Regular visitors in Singapore’s museum scene will note that most of the objects in the National Museum belong to the folk-life category with little commercial value. However, these objects – many of which were contributed by ordinary Singaporeans – are often the ones that local visitors connect and resonate with emotionally. Among the new artefacts displayed in the galleries are personal implements and objects of national significance, as well as family heirlooms that hold a special significance to the people or institutions who donated or loaned them to the museum. These include a 1959 flexidisc recording of *Majulah Singapura* before it became the national anthem, a full set of the first National Service uniform, a Singapore National Registration Identification Card first issued in 1966, as well as a sewing machine used during the Second World War. In this aspect, our curators can be seen as “directors on theatre sets” who facilitate a contextual display that allows a seemingly ordinary artefact such as an A&W glass to become a powerful symbol of Singapore’s economic status and lifestyle in the 1970s.

This humble A&W glass – a piece of memorabilia from the first fast food restaurant that opened in Singapore – can be found in the “Building a Home” section of the Singapore History Gallery. The section takes a closer look at the experiences of Singaporeans in the 1970s as they moved into Housing Development Board (HDB) flats¹ from *kampongs* (villages) and overcrowded shophouses² in the city-centre.

The A&W glass is situated in a space inspired by the design of a typical HDB kitchen at the time. Alongside it are other kitchen and household appliances such as a rice cooker and mixer. These were regarded as prized possessions of Singaporean families as they were often the first appliances they owned, purchased only when they could afford it.

Unlike a Peranakan *kerosang* brooch, for example, there may be hardly any commercial value attached to the A&W glass or noted physical qualities about it. However, the museum functions as a powerful transformer that resituates former objects of domestic utility in a carefully arranged heritage context, allowing the A&W glass to acquire new meaning as a way to connect the public to a certain era in Singapore’s history. The value of the A&W glass is thus embodied in experiences and associations external to the object.

Entering “theatre set”

The HDB kitchen setting was very popular among participants on preview tours of the gallery, who were observed to have spent a longer time in this section examining the displayed household appliances in detail. One visitor used the term “nostalgia overload” to describe his experience, while other common responses in the feedback forms included “we used to have this at home” and “my mom is still using this”. While our curator did not intentionally seek to replicate a HDB flat in the 1970s, she has successfully created a space that generates an effective engagement with the past, particularly for local visitors.

Taking reference from images found in the *Our Home* magazines published by HDB from the 1970s till mid-1980s, our curator worked with the designers to choose a colour palette that was reminiscent of that era, including minute details such as the design motifs of the graphic floor tiles. Returning to the “theatre set” analogy, our visitors become “actors” who are free to move around in the space, to the extent of sitting on a sofa set that would be commonly found in HDB flats of that time. The inclusion of such props allows visitors to go beyond the limitations of physical showcases and “step back” in time,

as well as provides opportunities for them to interact with and take photos within the setting. While the gallery is a space that exists in the present, the HDB setting expresses an affective sense of the past reality, which allows visitors to generate historical understanding and meaning.

The above case study is an example of the National Museum's response to current trends and our efforts to remain relevant to our visitors in today's global era. While the traditionalist approach of displaying artefacts will always be at the forefront of curating, it is equally important for the museum to engage with visitors rather than simply presenting an expansive showcase of the past. As part of the revamp, we also explored other immersive display techniques to bring to life the stories and significance behind the artefacts. Visitors can relive the day when Singapore's independence was declared, be greeted by the aroma of afternoon tea on entering an old colonial bungalow, watch a new film in a drive-in cinema from the 1980s, and experience a sense of what life was like during the Japanese Occupation of Singapore (1942 – 1945). These are just some of the interactive experiences visitors will discover in the new galleries, which use exhibition design, scents, multimedia and technology to contextualise artefacts and evoke moments or the atmosphere of an era.

Digital enhancements for a social experience

One of our key strategies for the revamp was to reconsider the use of multimedia and technology in the galleries. Previously, visitors to the Singapore History Gallery were guided by an audio companion device, which featured eight hours of multimedia content ranging from archival video footage and audio clips, to narrated stories and interviews with curators, historians and regular Singaporeans. While functioning as an “electric docent”, the device presented a quandary for the museum as the visitor experience became very much a solitary one. While this was acceptable and even preferred back when visiting the museum was thought to be a scholarly and academic activity, today's visitors are more vocal and demanding.

Beyond visiting an exhibition for educational purposes, visitors are often also seeking opportunities for social bonding, and view the museum as a leisure destination where they can be entertained.

In order to remain relevant and reach out to a broader audience, museums need to be able to connect not just cognitively with a select audience, but allow multiple connections to be made at different levels. They must also be outward-looking, engage with society and attract a broader audience base. The museum-going experience has changed from a personal one to a social activity, and the National Museum seeks to bring our visitors through a range of emotions, from moments of quiet self-reflection to fruitful exchanges of stories and memories.

The use of technology in the galleries was thus a careful consideration, in that technology and digital enhancements should serve the purpose of adding layers, texture and content, but not to define and overwhelm the experience. Our curators worked together to ensure that the technological options cater to a range of visitors from tech-savvy millennials (those born from the late 1980s to the early 2000s) to 80-year-old veterans, as well as allow visitors to determine the extent of additional information they wish to access. The introduction of digital “timeline kiosks”, for example, provides additional content at strategic points throughout the gallery, allowing visitors to connect historical events to what they are experiencing in the galleries, without information overload.

Our curators also worked with the Singapore Memory Project³ (an initiative of the National Library Board) to incorporate personal memories captured in video and audio at various multimedia kiosks within the galleries. Here, technology and digital media are used to lead visitors from the larger narrative of Singapore's history to a more personal and relatable exchange. This approach encourages visitors to internalise the stories that they hear and read about, and promotes the exchange of stories and encourages in our visitors a curiosity to delve into their own personal and family experiences. Visitors are also invited to submit their own stories or share their knowledge of Singapore's

international connections on an interactive map in the Singapore History Gallery's Global City section for other visitors to enjoy. By leveraging on digital media, we hope to stimulate discussions and encourage visitors to continue the museum experience even after they have left the building.

Another highlight for visitors is the commissioned multimedia art installation *GoHead/GoStan: Panorama Singapore* by Singaporean artists Brandon Tay and Safuan Johari, which takes visitors on an audio-visual expedition of the various periods in Singapore's history. This is the first time that the museum has commissioned and included an art installation within the gallery's narrative. *GoHead/GoStan* (the colloquial terms for "Go ahead" and "Go astern") unveils a non-chronological tapestry of familiar images derived from the nation's historical, geographical and social memories

that explore the Singaporean consciousness, articulated through its changing landscape of the past and present. This artwork concludes the Singapore History Gallery experience and invites visitors to ponder Singapore's evolving identity and history over the years to its present SG50 milestone.

Conclusion

The National Museum's revamp in the Golden Jubilee Year opens a path towards an understanding of the relevance of museums dealing with national history in the contemporary global world. At the heart of the revamp is a greater focus on creating personal and emotional connections with our visitors, to excite them to discover more about Singapore's history and heritage, and hopefully to inspire them to seek their own ways and means of contributing to the Singapore story over the next 50 years.

Notes

1. The Housing and Development Board was established in 1960 to tackle a lack of affordable housing and poor living conditions in *kampongs*, by constructing simple and standard flats for low-income families.
2. A shop that opens out onto the pavement, often also used as the owner's residence.
3. The Singapore Memory Project is a nation-wide movement that aims to capture and document moments and memories related to Singapore from individual Singaporeans, organisations, associations, companies and groups.



Singapore History Gallery at the National Museum of Singapore
Image courtesy of the National Museum of Singapore, National Heritage Board.



(Left) “Building A Home” section of the Singapore History Gallery
(Right) Multimedia art installation *GoHead/GoStan: Panorama Singapore* in the Singapore History Gallery
Images courtesy of the National Museum of Singapore, National Heritage Board.



Interactive map in the “Global City” section of the Singapore History Gallery
Image courtesy of the National Museum of Singapore, National Heritage Board.



Voices of Singapore Gallery at the National Museum of Singapore
Image courtesy of the National Museum of Singapore, National Heritage Board.

Modern Colony Gallery at the National Museum of Singapore. Image courtesy of the National Museum of Singapore, National Heritage Board.



Growing Up Gallery at the National Museum of Singapore. Image courtesy of the National Museum of Singapore, National Heritage Board.



Surviving Syonan Gallery at the National Museum of Singapore. Image courtesy of the National Museum of Singapore, National Heritage Board.



SINGAPORE AS A KEY TO
UNDERSTANDING ASIA:

The Asian Civilisations Museum as a Cross-cultural Institution

Dr Alan Chong
Director, Asian Civilisations Museum

The Asian Civilisations Museum is simultaneously an old and new institution, and one which has remade itself periodically to respond to changes in the cultural environment, not just in Singapore but regionally. The latest renovation and repositioning of the museum, which opened in November 2015 and April 2016, should be seen in this long scheme of development.

The museum traces its roots to the Raffles Library and Museum, which began to collect, if on a small scale, in 1849. The museum was at first located in rooms on the second floor of the Town Hall, a theatre which was later absorbed into the Victoria Memorial Hall (now Victoria Theatre and Concert Hall). The beginnings of the museum were thus immediately adjacent to the present site of the Asian Civilisations Museum (ACM). The Raffles Museum moved into a purpose-built structure at Stamford Road in 1887, and it is the core building of the present National Museum of Singapore. The collection policy for the earlier part of the twentieth century focused on ethnology (“objects of native art”) and archaeology. In 1991, the National Museum was split into three museums based on curatorial departments within the museum: the Singapore History Museum, the Singapore Art Museum, and the Asian Civilisations Museum.

This policy was based on a new collection development strategy and projections for the long-term needs of museum spaces in Singapore.¹ With the century-old National Museum as a base, the Museum Precinct Master Plan 1991 mandated the conversion of historic buildings in the centre of the city to serve as museums. In part, this was meant to address criticism of the widespread destruction of much of Singapore’s architectural heritage in the preceding decades. This scheme set into motion the significant expansion of Singapore’s state museum sector. The Singapore Art Museum moved into the elegant former Saint Joseph’s Institution building; the National Gallery was spun off from it and is now in the former Supreme Court and City Hall. The Asian Civilisations Museum first occupied the Tao Nan School at Armenian Street and then moved into the colonial administration building

on Empress Place in 2003. A section of ACM became the Peranakan Museum at the old Tao Nan School.

New collection policy

Strategic planning is rarely a linear or controlled process for public institutions, as many fortuitous considerations come into play which might involve donors, political considerations, and changes in audience needs. In 2009, the ACM secured funding for a new wing from the Hong Leong Foundation, long-time supporters of the museum (Figure 1). The following year, government funds became



Figure 1. Kwek Hong Png Wing of the Asian Civilisations Museum. Designed by GreenhillLi. Image courtesy of the Asian Civilisations Museum.

available to expand the museum’s collection. These two factors led to an accelerated analysis of the future needs of the museum, and the development of a new collection policy.

A new collection policy was developed by the author after his arrival as director in July



Figure 2. Virgin and Child, Sri Lanka, 16th century. Ivory.
Image courtesy of the Asian Civilisations Museum.



Figure 3. Kundi, China, late 17th century. Silver.
Image courtesy of the Asian Civilisations Museum.



Figure 4. Incense burner. Porcelain: China, early 18th century; Gilded bronze mounts: France, early 18th century.
Image courtesy of the Asian Civilisations Museum.

2010, in close consultation with the CEO of the National Heritage Board, Michael Koh, and the chairman of the museum's board, Lee Suet Fern. The museum's curators had completed a major installation of the museum a few years previously, and were understandably reluctant to begin a new planning process immediately, so external experts in their fields were consulted. It was noted that the museum's collection as of 2009 did not reflect Singapore's status as a multicultural trading port, but rather tended to reinforce the divisions between the heritage cultures. The collection policy was thus realigned to focus on art forms that expressed cultural exchanges brought about by trade, migration, and pilgrimage.²

Under the leadership of chief curator Pedro Moura Carvalho, and advisors Peter Lee and William R Sargent, the museum created new collections dedicated to trade by acquiring major works of Indian art made for Europe (Figure 2), Chinese export porcelain and silver (Figures 3 and 4), and other hybrid forms. In South Asia, attention was focussed on Sri Lanka, the Himalayas, and ancient Gandhara (Peshawar in present-day Pakistan). This built upon a major collection of Indian cotton textiles made for Southeast Asia that the museum had acquired in 2009. The Peranakan collection was also expanded to include related objects from Jakarta and the Indian Ocean region. In a larger sense, Peranakan culture as a mixed cross-culture entity was used as a means of looking at the rest of Asia. Rather than a late community appendage, the Peranakan Museum is central to the conceptualisation of the Asian Civilisations Museum.

Success and challenges

At the same time, an analysis of the museum's galleries was conducted. The museum was a major success, and had garnered international attention at the time of its opening, and was well-received by visitors. It was understood that there was no immediate need for revising the galleries, but rather a new overall vision should be articulated, tested in exhibitions and smaller displays, and then implemented in the future.

While the museum told an interesting and immersive story, several problems were noted. The dark and dramatic galleries were engaging for many visitors, but did not permit individual objects to be seen and understood. The screens and projections, ground-breaking when launched, were difficult and expensive to maintain, and quickly became victim to rapid technological change. Surveys of visitors demonstrated high levels of approval, but the design of the galleries did not encourage return or repeat visits. There was also a feeling that the galleries had a single pathway and did not encourage choice. Visitors were led on a controlled path, often in maze-like schemes, through contained sections of the museum. Most visitors failed to visit the ground floor galleries of Indian art, which contained many of the finest objects in the collection.

In more practical areas, it was noted that the restaurant, while generating income for the museum, was almost totally unconnected with the museum as it had an entirely separate entrance. The museum's advisory board felt strongly that the restaurant and café should reinforce the identity the museum, while concurrently drawing new visitors.

A revised mission

The museum's original mission was "to explore and present the cultures of Asia, and to interpret the civilisations that created them, so as to promote awareness of the ancestral cultures of Singaporeans and of the heritage of the Southeast Asian region". This statement reflected the multiracial nature of Singapore, which was enshrined at the very founding of the Singapore colony in 1819, with the establishment of separate quarters for ethnic groups, and by the multilingual inscriptions on major monuments.

In the early planning stages, the museum was meant to focus on the artistic highpoints of these cultures, that is, to exhibit "the rare arts of East, South, West and Southeast Asia and interpret the cultures which produced these rare arts".³ But funding was not available in the 1990s to build a major collection, and the museum focused on acquiring representative

cultural examples. The major exception to this was in Indian Hindu and Buddhist sculpture, where the museum was able to acquire world-class objects. The strategy for Chinese art was to encourage loans and eventual gifts from Hong Kong collectors. It was believed that "uncertainties over the handover of Hong Kong to the Chinese" would enable ACM to "attract Hong Kong collectors to part with their collections on a long-term basis".

In the museum's new home at Empress Place, which opened in 2003, the Chinese, Malay, Indian, and Others scheme was carefully reformulated as geographic regions: East Asia, Southeast Asia, South Asia, and West Asia (the "others" being represented by the Arab traders and more generally by Islam of the Middle East). As befits academic and museum practice of the late twentieth century, the focus was on the uniqueness and individuality of the separate cultures.

The arrangement created a number of difficulties, starting with the inaccuracy of the labels. East Asia included only China,⁴ while South Asia had scant representation of Sri Lanka and the Himalayas. West Asia is a confusing term that is often taken to mean Turkey and the Holy Land; most residents of the region themselves use the term Middle East. Eventually, this gallery was given the subtitle "Islamic world".

Given the complexities of history and the specific nature of collections, no single scheme can organise any museum's collection. Most museums have used cultures as a means of dividing Asian art, with the exception of Islamic art, which is often a stand-alone section, if not actually a separate institution. The difference is that Singapore is surrounded by these cultures and religions; moreover, institutions dedicated to Malay, Indian, and Chinese heritage already existed or were being planned. And the museum had launched highly successful exhibitions based on international surveys of the spread of Buddhism and the *Ramayana* epic.

In 2013, the board of the ACM approved a revised mission and vision that emphasised the connections between the heritage cultures of

Singapore. While continuing to concentrate on the artistic highpoints of individual cultures, the museum would develop its collection and galleries to help audiences understand the long connections between Asian cultures, and between Asia and the world. Trade, religion, and art would be presented in a broad international context. In addition, the long historical role of Europe in Asia would be integrated into the museum narrative.

This approach was not without controversy, as some stakeholders were reluctant to abandon the standard narrative of separate constituent cultures. Strong endorsement from the advisory board, key funders, and major academic advisors helped the museum launch its new vision. New trends in academic research matched the new vision of the museum; for example, the National University of Singapore in 2013 launched a new Comparative Asian Studies graduate programme. In the planning and design process, the museum received key advice from Peter Lee, Derek Heng, William Sargent, Edmond Chin, and Paravi Wongchicharai.

Equally important as the move away from regional categories was the new emphasis on exploration and self-discovery. The renovated museum would emphasise choice, interactivity, and questions, rather than a strictly defined storyline and set of educational values. The multi-cultural nature of Singapore as a port city which mixed cultures, religions, and languages would be a means of looking at Asian art history generally. New attention would be given to significant cross-roads such as ancient Gandhara, the flow of religions through the Himalayas into China and India, the mixed ports of Goa, Jakarta, Nagasaki, and Guangzhou.

Experimental initiatives

In preparation for its new galleries, the museum initiated exhibitions and programmes that would test certain key concepts. In 2013, the exhibition *Devotion and Desire: Cross-Cultural Art in Asia* explored inter-regional displays and international religious groupings. The catalogue, written by the curators, deepened these ideas.⁵ For example, the exhibition

considered the spread and transformations of religions through Asia, namely Buddhism, Islam, and Christianity through Asia. Some sections examined artistic forms like lacquer that were used in different regions. The project also compared ancestor worship in China and tribal Southeast Asia. This exhibition generated favourable response from visitors, as well as from docents who found the themes helpful to their thematic tours; in addition, the catalogue sold out. The following year, *China Mania* examined trade and competition in ceramics, and the response to world consumer demand.

It should be stressed that not all of the ideas presented in these exhibitions found final form in the museum's permanent collection galleries. Some concepts were fascinating but did not allow for an in-depth exploration of certain themes, such as ancestor worship, where the museum's collection is rich in material from island Southeast Asia. Similarly, the museum lacked the objects to effectively display international developments in urushi lacquer.

The museum also had curatorial responsibility for the Tang Shipwreck from Belitung Island, and presented a special exhibition of the material that emphasised the trading connections with the Middle East, and the exchange of artistic ideas resulting from this. With the new cross-cultural mission of the ACM, it became clear that the Tang Shipwreck Collection, acquired through the generosity of the Estate of Khoo Teck Puat, would make an ideal fit (Figure 5). This ninth-century ship was travelling from China to the Persian Gulf, laden with a cargo of ceramics and valuable works of gold and silver. It represents not only the intense trade between China and the Islamic Middle East, but simultaneously demonstrates the importance of Singapore's region as a pivot point in trade. The story of commerce, art, and international contact would make an ideal beginning for the new galleries of the ACM.

The new thematic approach

After developing this new vision for the galleries, which included the wing supported by the Hong Leong Foundation, the museum



Figure 5.

Khoo Teck Puat Gallery, with the Tang Shipwreck Collection (acquired through the generosity of the Estate of Khoo Teck Puat), Asian Civilisations Museum. Architecture by GreenhillLi, interior design by FARM; display cases by Click Netherfeld. Image courtesy of the Asian Civilisations Museum.

then commissioned a feasibility study for the architectural redevelopment of the building. The National Heritage Board applied for a Reinvestment Fund grant, awarded by the Ministry of Finance in 2014, which allowed the museum to develop a new entrance along the river. This would signal an engagement with the Singapore River, the site of the city-state's port for centuries, and the conceptual basis for the cross-cultural galleries. This matched the scheme of riverside renewal being considered by the Urban Redevelopment Authority. A dramatic set of steps down to the river was positioned directly in front of the new museum entrance, creating a major architectural statement. Coinciding with these developments, archaeological excavations were conducted at Empress Place, between the ACM and Victoria Concert Hall. Highlights from this dig, dating from the fourteenth-century heyday of the Temasek port, would be displayed in the new galleries.

The new museum is organised on two major themes, based on the two main floors of the historic building. The ground floor is dedicated to Trade and the Exchange of Ideas; the second floor is organised around the theme of Religion and Belief, with two galleries sponsored by the Kwan Im Thong Hood Cho Temple (Figures 6 and 7). These galleries emphasise the connections and interrelationships between

the cultures of Asia as a way of reflecting the multicultural makeup of Singapore. The galleries hope to dispel the still-common notion that the separate cultures are exceptional, self-contained entities, whereas they were dependent on and combined with each other. Most important, the galleries will stress, as they have in the past, that these cultures have never been fixed.

In addition to these two main themes, more specialised case studies will focus on areas of particular depth in the museum's collection. The third floor will present galleries dedicated to Chinese ceramics (Figure 8) and jewellery from across Asia (2017).

Architecture and design

The educational principals of openness and self-discovery are underscored by the architectural concept of GreenhillLi, which has emphasised natural light and a clean contemporary design. Preservation requirements meant that new structures had to be separated from the original building by glass. The renovation of the first floor galleries opened historic windows, a process that will be extended on the second floor in 2016 and 2017. Not least, this approach returns attention to the building itself, an important component of Singapore's history. The glazed structures



Figure 6.

Ancient Religions gallery,
Asian Civilisations
Museum. Gallery design by
Henry Yeo. Image courtesy
of the Asian Civilisations
Museum.



Figure 7.

The Scholar in Chinese
Culture. Second floor of
the Kwek Hong Png Wing.
Architecture by GreenhillLi,
interior design by FRD;
display cases by Click
Netherfeld. Image courtesy
of the Asian Civilisations
Museum.



Figure 8.

Chinese ceramics gallery,
with display of Dehua
white ware. Third floor of
the Kwek Hong Png Wing.
Architecture by GreenhillLi,
interior design by FRD;
display cases by Click
Netherfeld. Image courtesy
of the Asian Civilisations
Museum.

of the two new wings allow visitors to see the historic facades of the building, while the general brightening of the galleries and the elimination of complex interior structures permit appreciation of the columns, archways, and windows of the interior.

The previous galleries presented a highly structured experience that left most visitors with the impression that the museum visit had been completed, and that it needed to be seen only once. This suited tourists but did not encourage repeat visits from residents. Furthermore, most visitors do not flow through a permanent collection in a single fixed stream as they would in a special exhibition meant to give a structured experience of a single topic. Both experienced and new visitors tend to focus on a few areas. The new galleries are designed to be modular, so that visitors can dip into them, and continue to other sections. Audience surveys also indicate that visitors now prefer this approach, which breaks down a large museum into smaller components – digestible stories – rather than a seemingly endless narrative of history or repetitive object types. The reconfiguration also encourages visitors to visit all floors of the museum.

Learning and media

The revamped museum aims to provide learning experiences that involve discovery and exploration. We believe that the museum should present multiple ways of understanding the past through conversation, multiple perspectives on history, digital media, and special programming. One key to the experience of the new museum is a learning gallery, which will introduce the museum to school groups, families, and first-time visitors.

In the design stage of the museum, it was decided that delivery to personal phones would be our focus. Large-scale interactive devices can be engaging, but they are expensive and can go out of date quickly, so the museum focussed on developing an app and a digital experience, delivered through free and accessible Wi-Fi. The museum's partner in this was the consultant Area360. It was

decided to concentrate resources on media that would reach the widest audience and could be easily expanded. The museum also installed Bluetooth beacons, which allows the app to provide location-specific experiences. The beacons determine the physical location of a visitor's device, and recommend relevant information about objects as a visitor walks through the galleries. This strategy has proved a considerable success since its launch in November 2016, as the app is robust and scalable, and provides a range of information, from curatorial commentary and video interviews to more personal experiences.

The ACM develops its experiences from core content: important objects, many newly acquired, presented in a new and stimulating manner. Distinctive and dramatic objects invite inquiry and appreciation. Interesting combinations and groups should develop those ideas further. The architecture, interior design, and displays cases should reveal these ideas in an unobtrusive way. Natural light can help present these objects, although more controlled lighting is required for certain materials that are sensitive to light.

Museums over the world present their ideas in different ways, and we are thankfully past the stage where institutions felt the need to conform to certain trends and design approaches. The ACM of 2003 was a resounding success that has been echoed and expanded in the new galleries of the National Museum of Singapore, and in the displays of the Indian Heritage Centre and the Lee Kong Chian Natural History Museum. But museums need to remake themselves to respond to shifts in audience needs, growth of the collection, and new ideas that enrich our understanding of the past. With the collaboration of architects Greenhill and gallery designers FARM and FRD, the museum has attempted to refocus attention to the rich stories and complexities of significant works of art.

Acknowledgements

The author is grateful for the help of John Teo.

Notes

1. Lord Cultural Resources Planning and Management, *National Museum, Singapore: Museum Precinct Master Plan*. Singapore, 1990.
2. Alan Chong, "Introduction" in *Devotion and Desire: Cross-Cultural Art in Asia*. Singapore, 2013, pp. 9–11.
3. Kwa Chong Guan, *Structure and Themes of the Asian Civilisation Gallery in the NM Precinct*. Singapore, 1990.
4. This was because the Chinese population in Singapore was "not directly related to Japan, Korea and the northern nomadic peoples across the central Asian and Siberian steppes", and the national collection did not include any artefacts from these regions. See "Storylines for the Second Wing of the Asian Civilisations Museum", 22 July 1999.
5. *Devotion and Desire: Cross-Cultural Art in Asia*. Exh. cat. Asian Civilisations Museum. Singapore 2013. By Alan Chong, Pedro Moura Carvalho, Clement Onn, et al.

Re-writing a National Art History:

National
Gallery
Singapore

Dr Eugene Tan
Director, National Gallery Singapore

Today, the situations that national galleries — from Southeast Asia to Western Europe — find themselves in are not just complex, they may even seem contradictory and paradoxical. Whether founded recently or a century ago, the national gallery is under increasing pressure to confront not only the demands of globalisation but also the challenges of contemporaneity.

While many of today's dynamic museums are not necessarily positioned as national institutions, the problems faced by these national institutions can be a good starting point for thinking about the challenges facing all museums in the twenty-first century. Art museums today function as anchor points in the fast-changing cultural landscapes of our contemporary societies. In particular, the national gallery highlights the inherent tensions in mediating between the presentation of the art historical development of a country and the nationalist imperative to represent the nation through art. This is further complicated in Southeast Asian countries such as Singapore, where nationalism and nationhood have served as important themes in artistic modernism — at the same time, modern art of Singapore has served as a space to potentiate individual expression.

How can national galleries, which are tied to national histories, tell stories of art that are fully responsive to the changing contemporary conditions of art today? Do they transport audiences back in time or do they bring heritage forward to the present? How are the public functions of these institutions changing? If the audiences for today's museums are regional and international, how then do national galleries position themselves as connecting points for regional histories? What does it mean to go beyond a “national” art history? Does it mean the development of a regional, international, or global perspective? What does it mean to stake a regional perspective in contrast with a global one?

Re-writing art history at national and regional levels

Taking National Gallery Singapore — the country's newest museum which opened on 23

November 2015 — as a case in point, this article will propose how a “national” art history can be re-written and how the presentation of this re-writing of “national” art history is an important part of the global conversation of art today. It will outline how National Gallery Singapore addresses some of the key challenges that face many museums of the twenty-first century through its exhibitions and programmes. National Gallery Singapore aims to re-examine Singapore's art historical development, going beyond a “national” art history towards the creation of a platform for regional perspectives and global conversations.

National Gallery Singapore has been converted from two National Monuments, the former Supreme Court and City Hall, which were constructed in the 1920s and 1930s. The highlight of the museum will be its two permanent or long-term exhibitions: one that tells a history about Singapore art and the other about Southeast Asian art. Through these two galleries, National Gallery Singapore aims to examine the shared historical impulses in the region, highlighting the complexities and relationships between national and regional art histories. This is further complemented by projects which contextualise these developments within a wider global context.

These permanent exhibitions at National Gallery Singapore are something new for a Singapore-based art museum. In addition to bringing a sense of history to the art scene, which has been lacking, what they also offer is an opportunity for a dialectical approach towards curating art history. Over time, the propositions set forward by the earlier exhibitions will change, as we will respond to the critical discussions within the institution and, very importantly, to discussions that the institution has with other art historians, critics, curators and artists. The permanent exhibitions of National Gallery Singapore also set a new precedent for national museums in Southeast Asia, given the scale and depth of these exhibitions. Each of these exhibitions will feature around 400 works, dating from the nineteenth century to the present and will be the most extensive surveys of the art of Singapore and the region to date.

Questions of identity and belonging

The inaugural exhibition in the Singapore Gallery begins with two questions: “What is your name?” and “Where do you come from?” These questions, posed in Malay, are found in a painting by Chua Mia Tee (b. 1937), entitled *National Language Class*, painted in the year 1959. Chua was part of a generation of young artists who were actively involved in the independence struggles of the 1950s. In 1959, the year when the painting was completed, Singapore had gained internal self-government. Malay would be declared as the national language to unite the different ethnic groups in Singapore through a common Malayan identity.

Siapa Nama Kamu? – which is Malay for “What is your name?” and which is the title of the inaugural exhibition in the Singapore Gallery, actively courts an analysis of how art and identity operate through inclusions and exclusions, representation and de-representation, and the accumulation of art historical memory in museums. As it operates within this exhibition it is an intimation into what is shown, how it is shown, but also maybe what is not shown. *Siapa Nama Kamu?* is then a question and an invitation. In the painting, a group of Chinese students are seated around a table, learning the national language from a Malay teacher. Behind him hangs a blackboard, on which the two basic questions about identity and belonging were written. Like the title, the exhibition is a query, one into the art history of Singapore. The exhibition therefore foregrounds the consideration of the parameters of personal and national identity in art, and, reflexively, the writing of a national art history in a country barely fifty years old. While Singapore has been an independent nation for fifty years, she has been a site for the production of art for much longer. And the history of modern art in Singapore that *Siapa Nama Kamu?* presents begins in the nineteenth century and continues till today. It is interesting to note that Chua was a member of the Equator Art Society, whose contributions to Singapore’s art history have never been fully acknowledged because of its affiliations to left-leaning political groups.

The aim of *Siapa Nama Kamu?* is to create a discussion about art in Singapore. How it has changed, who are its artists, and where do we even begin. How do we understand its art in a larger regional context? And how can we move beyond a national narrative for art history? The answer is not simply to move toward a regional perspective. For what does a regional perspective mean? If trying to define Singapore as a nation is complicated, then trying to define Singapore as part of a region called Southeast Asia is no less complex. Southeast Asian art history is a relatively new field and has evolved considerably within a generation. Art historians have previously focused their attentions on individual countries within the region rather than Southeast Asia as a whole. Ten years ago, scholars would have argued for the recognition of the “other modernities” that contrast hegemonic notions of Western modernity. Today, however, researchers and practitioners have begun to move beyond the opposition of East versus West and engage in an inter-regional conversation.

Regions as interpenetrated systems

Of course, Sociology and Cultural Studies are other fields that have also tackled the question of Southeast Asia as a region, and it is important to learn from those fields. Let me, for instance, cite two examples from the beginning of the turn of the twenty-first century, that show a discursive that has moved away from the binary opposition of East versus West to an emphasis on inter-regional conversations. Sociologist Ananda Rajah (1953–2007), in 1999, wrote the essay “Southeast Asia: Comparatist Errors and the Construction of a Region”, where he argued that the problem is “not whether we can or cannot identify Southeast Asia as a region”; the problem is that “we lack a conceptual framework, if not a theory, of *regions as human constructs*”. The “errors” of Rajah’s essay title have to do with how “comparative methods imply systems of classification” — to think of Southeast Asia as a region is necessarily to think of other regions with which to compare it to — and yet, in the case of Southeast Asia in particular but also more generally, the category of “region” is,

in the first place, not adequately developed. His point is that we should not focus on the question of a Southeast Asian regional *identity* in comparison with other identities; rather, we should be looking at *interactions* of “inter-subjectivity over geographical space and time”. As Rajah reminds us, such interactions were not and are not self-contained — regions are interpenetrated systems.

In 2000, the journal *Inter-Asia Cultural Studies* was founded by National University of Singapore sociologist Chua Beng Huat (b. 1946) and Taiwanese cultural studies scholar Chen Kuan-Hsing (b. 1957). They deliberately used the term “inter-Asia” rather than “intra-Asian” for the title of their project. The term “intra-Asian” would have arguably put the emphasis on articulating what an Asian regional identity might be, whereas “inter-Asia” redirects our attentions to the interactions of an interpenetrated system. Rajah, Chua and Chen are all in a sense arguing that we will not uncover some underlying essential identity of Southeast Asia. What we are doing is constructing the region, constructing its complex and layered meanings, as we look at the historical inter-connections. And this is what we hope to do with our other permanent exhibition — of art from Southeast Asia.

Southeast Asia between declarations and dreams

The aim of the Southeast Asia Gallery and its inaugural exhibition *Between Declarations and Dreams* is to provide a regional narrative of modern art in Southeast Asia from the nineteenth century to the present, highlighting its richness and diversity through shared historical experiences, as well as the key impulses to art making across the region. For the first time, there will be a long term and comprehensive exhibition devoted to the historical development of art in Southeast Asia from a regional perspective. While the current understanding of Southeast Asia is through the economic-political configuration of the Association of Southeast Asian Nations (ASEAN) and the 10 countries that it comprises, it is also acknowledged that this approach encompasses the grouping's complexities

and limitations. Therefore, it is also the aim of *Between Declarations and Dreams* to complicate this understanding of the region and of regionality, to address how we understand “Southeast Asia” as a geopolitical as well as an imaginary entity – and by consequence – the art produced within these contexts.

The title of the exhibition, *Between Declarations and Dreams* may be credited to one of Indonesia's most cherished poets, Chairil Anwar (1922–1949). In 1948, Anwar wrote *Krawang-Bekasi*, a poem that lamented a massacre of West Javan villagers by Dutch colonial forces, giving vent to the desire for national independence at the time. This line may also be said to encapsulate the experiences of many artists in the region, caught as they are between declarations and dreams, the personal and the political. The exhibition unfolds over four main sections which highlight the main impulses to art-making in four imbricating time periods:

“Authority and Anxiety”, which examines the nineteenth and early twentieth centuries, begins by exploring the role of art production in asserting cultural authority in a period of immense social instability brought about by the widespread colonisation of the region in the nineteenth century. The section includes works by artists such as Raden Saleh Sjarif Boestaman (1811–1880) from Indonesia, and Juan Luna y Novicio (1857–1899) and Félix Resurrección Hidalgo y Padilla (1855–1913) from the Philippines. “Imagining Country and Self”, which examines the 1900s to 1940s, then highlights the period when art academies as well as formal and informal structures like exhibition societies and spaces were first established in the region, giving rise to the new modern identity of “professional artists.” Growing interest in synthesising the new mode of representation with local aesthetics can be found across the region at this time, which also marked the beginnings of a conscious reaction against academic training and practice.

“Manifesting the Nation”, which examines the 1950s to 1970s, is organised along the different perspectives on the art produced from the decades of decolonisation and nation-

building to the Cold War era. Artists were often pulled by the two forces – one responding to the needs of the new nation, and the other to the increasingly shared global artistic trends. The final section, “Re:Defining Art”, which looks at art in the post-1970s period, examines works that mark a turn against conventional and academic definitions of “art,” as well as new social commitments that challenged traditional gender, class, identity, and institutional borders.

Stories that will unfold and evolve

Launching a national gallery in the twenty-first century means confronting many challenges and opportunities. At the beginning of the article, I posed a series of questions: How can national galleries, which are tied to national histories, tell stories of art that are fully responsive to the changing contemporary conditions of art today? What does it mean to go beyond a “national” art history? How should one re-evaluate the role of national galleries, and how might they re-invent themselves? It is clear that the full answers cannot be provided here. Rather, from the perspective of the National Gallery Singapore, the answers will

come, not only in how we make our exhibitions and conduct our programmes, but in how we look back and reflect on what we have done, and how we evolve and innovate.

Singapore now has a national gallery with two major permanent exhibitions — one telling a story of Singapore art, and the other telling a story of art from the region, from Southeast Asia. The term “permanent” is not quite right. And the terms “nation” and “region” are also not straightforward. What is exciting about these permanent exhibitions is not only that they tell fascinating stories that complicate our understanding of what it means for Singapore to be a nation, and what it means for Southeast Asia to be a region — but that these stories will unfold and evolve. As these stories evolve, we hope that National Gallery Singapore will also create a shared sense of continuity. As humans, we do not just tell stories, we tell stories in series, changing them along the way. Storytelling is serial by nature. The stories we tell about art, about how art tells a story of a nation, a place, region, or a corner of the world — what these stories do, above all, is not to answer our questions, but keep the questions open, and keep them interesting.

THE INDIAN HERITAGE CENTRE:

A Discourse on the Representation of Identity, Diversity and Aspiration Regarding The Indian Community's Heritage in Singapore

Dr Gauri Parimoo Krishnan

Director (Fellowship & Research), Culture
Academy, National Heritage Board, Singapore.
Former Centre Director and Lead Curator,
Indian Heritage Centre.

Figure 1.

The IHC's building façade during its inaugural performance. Image courtesy of the Ministry of Culture, Community and Youth.



People from the Indian subcontinent have been an integral part of Singapore's economy and society since the British East India Company established a free trading port on the island in 1819 and made it part of the British Straits Settlements thereafter. In the earlier centuries, during the reign of the Malay polity in Southeast Asia — Chulias, Mapillah, Parsee and Gujarati sojourners were engaged in positions of power as ministers, financiers,

religious teachers, traders and commanders in many Malay states.¹ In the post-World War II period and with Singapore's gradual pre-eminence as a global entrepôt for trans-shipment since the 1970s, many waves of new migrants have arrived and continue to contribute towards its growth.

Indian contact with many countries in Southeast Asia goes back several centuries — there are archaeological, epigraphical, religious, artistic

and literary references to confirm that people from the Indian subcontinent have been regularly travelling to port cities in Southeast Asia, especially from the Gujarat and Malabar coasts in the west, but also from the Coromandel, Kalinga and Bengal coasts in the east as well as Sri Lanka, and their culture, polity, language and food have been absorbed by the royalty and nobility in many Southeast Asian countries.

Figure 2.

Map showing the Indian Ocean and a showcase with Buddhist artefacts from Theme 1 in the IHC Permanent Gallery. Image courtesy of Indian Heritage Center, National Heritage Board, Singapore.



This article will examine how the Indian Heritage Centre (IHC) dealt with the representation of the Indian² diaspora in Singapore through museum displays that showcase the community's diversity by adopting an inclusive approach to dealing with minorities within a predominantly Tamil diaspora.

The IHC's galleries largely convey its narratives through material culture which is further augmented with ritual, cultural, social and architectural artefacts, documents, photographs, memorabilia and other ephemera, oral narratives and interactive technology. The curatorial team, along with community-based committees overseeing content and building development, as well as the IHC's Steering Committee worked closely with the National Heritage Board (NHB), Ministry of Culture, Community & Youth (MCCY) and other government departments as well as the Indian community to develop a thorough documentation and feedback process. The technical work of planning the building and gallery design was left to the professionals. How the curatorial team negotiated and played the role of a significant conduit with multiple stakeholders, professionals, community members and the government was a unique arrangement with robust and wide-ranging ramifications. Most significantly, it managed to garner near unanimous support and overall positive feedback from all quarters for the IHC.

A Heritage Institution in the heart of Singapore's Little India

The IHC is one of the three Heritage Institutions managed by Singapore's National Heritage Board (NHB) along with the Malay Heritage Centre and the Sun Yat Sen Nanyang Memorial Hall, which are conceived to be focal points for their respective communities and developed into sustainable destinations of cultural and historical significance for both local and foreign visitors.

It is the first heritage institution in the Asia-Pacific region to showcase the heritage of the

Indian community, which comprises diverse migrant groups from the Indian subcontinent, in multicultural and multiethnic Singapore,³ the IHC was opened on 7 May 2015 by the Prime Minister of Singapore, Mr Lee Hsien Loong.

Rooted in sound museological principles, the IHC's key objectives are to collaborate with key stakeholders to promote Indian culture and community-rootedness; conduct research to promote a deeper understanding of the IHC and its values; as well as establish strategic partnerships with regional and international counterparts.

This environmentally friendly and energy efficient building (which is rated Green Mark Gold Plus by Singapore's Building and Construction Authority) was largely funded by the government of Singapore with a significant contribution by the Indian community, and cost nearly S\$21 million dollars to build and fit out. Following an open call design competition, an architectural design submitted by Robert Greg Shand Architects in collaboration with Urbanarc was selected in July 2011.

Located at a prime location in the heart of Singapore's Little India historic district, at the junction of Campbell Lane and Clive Street, the IHC provides a focal point for the local community and tourists alike. Together with other ethnic heritage centres, it complements the various national museums in Singapore by focusing on the ethnic, cultural, local as well as global histories of the various South Asian communities of multicultural Singapore. It is conceived as a sanctuary for the reflection and understanding of Singapore's multicultural society and the contribution of Indians over two centuries to its development.

Content development and curatorial direction

The process of content development for the IHC was a long drawn one – it began in 2007 when the author was a senior curator at the Asian Civilisations Museum (ACM) building momentum toward planning a new permanent gallery for the Indians in Singapore that would

complement the South Asia gallery of the ACM. It meant drawing up the storyline; assisting NHB with the approval papers; negotiating with the Singapore Land Authority (SLA), Land Transport Authority (LTA) and Urban Redevelopment Authority (URA) for the site; scoping research required through primary and secondary sources for content; planning and sourcing for collection development; sourcing resource persons as well as the IHC team; and facilitating master planning of the heritage centre which was detailed further with inputs from the curatorial team of the IHC and the chairman and members of the IHC's Concept and Content Sub-committee. It ranged from several consultation sessions with community organisations through sectorial interaction sessions, to the digitisation of countless historical and personal documents, photographs and records as well as oral interviews.

A seminar involving academics and community veterans was organised in 2013⁴ to identify how the narrative of the South Asian Diaspora in Singapore could be viewed from different lenses. This event also involved community organisations who shared their historical origins and development through time and validated the origins, migration patterns of their community members as well as their professions, lifestyles and settlement experiences in Singapore. Many veterans were identified by the community organisations

to speak to the curatorial team to share their origins, migration and initial experiences of settling down in Malaya and Singapore⁵.

There are shared histories and personal experiences that are woven together with world history. Parallel world events were mapped alongside local, personal and community histories to evolve a shared perspective on the community organisation's own development, adaptation to a changing landscape in Singapore as well as the demands from the new migrants. A large interactive map, charting the geographical locations within India and South Asia from where communities have migrated to Singapore, was developed with inputs from community organisations, which gave them a stake in the content accuracy at the IHC as well as ownership of the information shared with the wider world. Another such community-based engagement exercise resulted in the development of a digital interactive timeline in the IHC's Theme 3 gallery of organisations and individuals who have contributed to Singapore since the late nineteenth century to the present. The interactive map and timeline are on-going projects which will see more information being added and updated as time progresses and fresh information is processed by the curators.

The curatorial direction⁶ addressed the usual clichéd views of the early Indian community's convict past and indentured labour histories; however, the IHC's five thematic



Figure 3.

An interactive station in the Early Pioneers Gallery from Theme 3 in the IHC Permanent Gallery. Image courtesy of Indian Heritage Centre.

Figure 4.

Indian luxury goods traded with Southeast Asia and Europe, from the Early Contact Gallery in Theme 1 of the IHC Permanent Gallery. Image courtesy of Indian Heritage Centre.



galleries address these issues squarely as well as engagingly to highlight issues of diversity, multiple identities, migration, displacement and citizenship, cross culturality, industrialisation, modernisation and impact of media on identity formation and social change. Using artefacts as denotative referents to a syntactical and semantical interpretation of meaning, the collection on display operates to uncover meaning at several levels. Many of the artefacts refer to a particular period, moment or practice in history and may or may not belong to Singapore – however, symptomatically, they convey a meaning that is relevant to Singapore's Indian heritage.

There are multiple perspectives and conduits through which a visitor can experience the galleries, which range from hand-held multilingual audio/media guides, docent or curator led tours or a self-guided tour through bilingual exhibition panels, captions and interactive monitors with edited interviews, documents, and games. Every visitor is encouraged to first view a short conceptual film in English and Tamil that gives a quick overview of the five themes of the permanent galleries as well as contextualises them, starting with the early contacts between South and Southeast Asia through trade and religion

to European contact, expansion of global trade, industrialisation and modernisation. With a background score by Bollywood composer Shankar Mahadevan (b. 1967), the film takes the visitors on an experiential journey which will unfold through the museum displays, information panels, captions and standalone interactive monitors.

Representation of the diaspora through material culture in a chronological framework

A museological framework had to be developed for a permanent gallery display illustrating the multiple identities that comprise the typical South Asian diaspora living in Malaya and Singapore from at least the late nineteenth century. Tackling the historical experience of the diaspora and drawing parallels with world events, this narrative emerged as a representation of multiple voices and shared experiences that shaped the development of Singapore from a trading and penal colony to an independent nation-state through an Indian perspective. Indians from all walks of life had been drawn to this island, from its establishment and development as an entrepôt by the British East India Company, to

its later status as a Crown Colony and eventual journey towards self-rule and independence after the Second World War.

By adopting a chronological approach, the material culture of Indians from “everyday” items to luxury goods produced mainly for export to Southeast Asia and Europe were collected and displayed as illustrative or symbolic representations. Even cultural artefacts, religious relics and archaeological material finds were displayed as touch points of art history that bring to life an era gone by but whose relevance can be palpably sensed to this day. This approach to collection development and display technique hinted at what the IHC expected its audience to indulge in – namely to appreciate the relevance of their past and the present day to their future. The target audience ranged from locals to tourists, with a special focus on younger students who would have missed out on understanding their rich heritage if these objects had not been collected, annotated and preserved for future generations. Tangible as well as intangible artefacts, from oral histories to actual objects of worship⁷, heirlooms⁸ as well as everyday items including architectural fragments of their built heritage, were collected. These artefacts serve to document various aspects of Indian social and cultural identities such as rituals and rites of passage; military, professional and economic pursuits; arts, crafts and entertainment as well as philanthropy for religious, education and healthcare goals.

The objectification⁹ of the artefacts was another phenomenon the curatorial team was constantly grappling with. This ranged from identification, selection, cleaning and mounting for display in the galleries following strict conservation guidelines, which calibrated their value several notches higher for a museum “in the making”. Pens, looking-glasses, medals, implements, headgears and the traveling belt of a Haj pilgrim, for example, became artefacts. Objects confiscated from a Sikh revolutionary in Punjab by a British Deputy Commissioner of Police in 1849, kept in storage in the British Library in London for decades, made it to the IHC gallery for a year-long display on loan that brings to life the personality of the convict Bhai Maharaj Singh Ji (1780–1856), his contribution to the Indian Mutiny of 1857 and the veneration he receives amongst the Sikh community as a martyr.

Multiculturalism and syncretic cultures

Many regional and ethnic Indian groups have travelled to Singapore and Malaya, ranging from convicts and indentured labourers to itinerant merchants and professionals. There were several waves of migrations from the Indian subcontinent to Singapore through pre-modern, modern and post-colonial times, the latest being driven by demand for expertise in Information Technology (IT) and finance, although much construction labour still comes from South India, Bangladesh and Sri Lanka.



Figure 5.

The Early Pioneers Gallery
in Theme 3 of the IHC
Permanent Gallery.
Image courtesy of Indian
Heritage Centre.

Figure 6.

A view of the Indian National Army display in the Social and Political Awakening Gallery in Theme 4 of the IHC Permanent Gallery. Image courtesy of Indian Heritage Centre.



Singapore has adopted a policy of multiculturalism to address its racial and religious diversity and maintain harmony between the island's diverse communities. Within the local Indian community, that has strong divisions across regional, linguistic, religious, and nationality lines among others at practical as well as conceptual levels, the IHC tried to maintain an inclusive approach to celebrate diversity. This was to acknowledge the fact that many smaller communities have also made long-lasting and significant contributions to Singapore.

At the IHC, regardless of the size of the community, these groups have been featured in the "Roots and Routes" section of the gallery where beautiful ritual objects, traditional costumes and jewellery, traditional paintings and objects of ritual processions, especially from Hindu temples and mosques, some of them used in Singapore, have been put on display. There are also efforts to document and conduct further research into lesser-known communities such as the Jawi Peranakans and Chitti Melakas to showcase their syncretic cultures and uniqueness on an on-going basis. Many of these communities and organisations have come out in recent times to openly grapple with their identities as well as acknowledge their shared past heritage. Even Indian Muslims who have joined mainstream Malay-Muslim culture have acknowledged their Indian ancestral roots.

Ethnicity, individual and collective identities, and rootedness

The Indian community, whether or not they were aware of their distinct identities, have not been deterred from forming their own associations or practicing and modifying their cultural, religious and social customs and traditions to integrate with the larger Singapore society. Many of these practices, including visible manifestations of one's own faith, reflect rootedness and identity at a national level through festivals like Thaipusam, Theemithi (the fire-walking ceremony), Vaisakhi (the Sikh New Year), etc.

As a museum, our predicament was to observe, document and present, while maintaining objectivity. We documented major social and religious customs and festivals with an open mind as well as showcased these practices in our galleries on a loop, giving all communities sufficient airtime. Many collective practices, such as language, religion, food and lifestyle, even business and professions, emphasise collective identity (sometimes based on linguistic, regional or village kinships or sometimes caste) and rootedness which essentially are good and serve to bind a community together against the contemporary westernising influence on traditional societies. Singapore's Indian community is no exception



Figure 7.

Contribution of G. Sarangapany to the rejuvenation of Tamil identity, in the Social and Political Awakening Gallery, Theme 4, IHC Permanent Gallery. Image courtesy of Indian Heritage Centre.

and communities in this regard include the Nattukottai Chettiars, Kandaynallur Muslim League, Dawoodi Bohras, Parsees and Malabar Muslim Jama-ath, to name a few.

It is good to map collective memories against time and space for the younger generation to appreciate how things have evolved over time especially in the rapidly changing twentieth century. A case in point is the interactive Precinct Game in the IHC gallery, which features content and learning objectives developed by the IHC team. It showcases through a game, four distinct streetscapes of Singapore – Market Street, Arab Street, Serangoon Road and High Street – across a period from 1900 to the 1970s, to address the fact that Indians have been practicing their businesses in many parts of Singapore and were not confined to Little India.

International, global, local: Transnationalism and simultaneity of identities

A socio-political thematic narrative was evolved to keep historical moments in Singapore's history as key landmarks while examining the simultaneity of events and identities of Indians in Singapore and Malaya between the two World Wars as well as plugging in events related to the struggle for India's freedom from British Imperialism. These

milestones were further layered with visits by Indian Nationalist leaders to Singapore as well as Singapore's growing identity in relation to the Malayan Federation. Many Indians born in the early part of the twentieth century living in Malaya or Singapore were British subjects who began to identify themselves with India as their motherland, were committed to do something for its independence and felt patriotically connected to take part in its freedom struggle. Many sacrificed their wealth, career, youth, family as well as personal comfort to participate in the Indian Independence movement inspired by the writings and speeches of Mahatma Gandhi (1869–1948) and their direct rapport with Netaji Subhash Chandra Bose (1897–1945).

Writings of leaders such as Gandhi and visiting dignitaries such as Rabindranath Tagore (1861–1941) in 1927, Jawaharlal Nehru (1889–1964) in 1937, 1946 and 1950, and finally Bose in 1942–45, left lasting impressions, leading to the enrolment of several thousand Indian men and women in the Indian Independence League (IIL) and the Indian National Army (INA) including the Rani Jhansi Regiment. Much attention has been paid to the INA and its ethos and the life-changing experiences many Malayan Indians had when they came in contact with Bose. Awareness of the importance of religious harmony and understanding between the diverse Indian communities and the other

Figure 8.

A view of the Nation Building Gallery, Theme 5, IHC Permanent Gallery. Image courtesy of Indian Heritage Centre.



racess evolved into a more balanced view of society that Singaporeans wanted to build for themselves. Issues of race, language, caste and class were tackled with care against the backdrop of communism and ethnic cleansing during the years of Japanese Occupation. Seeds of interfaith and religious harmony were sown at this time. Modern media such as radio broadcasts and print along with photography and film played a significant role in documenting the shift towards modernisation and an awareness of rights, political process and the right to expression. These trends are explored by the IHC curatorial team through pioneering publications, newspapers and periodicals displayed in the Social and Political Awakening Gallery to depict multiple and simultaneous identities.

Singapore's post-colonial Indians, especially the Tamils and other linguistic groups, invested significantly towards the development of their language, education, socio-cultural and religious beliefs and practices by establishing organisations such as the Tamil Reforms Association and newspapers such as Tamil Nesan and Tamil Murasu, which was strongly inspired by the Self Respect Movement of Periyar E.V. Ramasami (1879–1973)¹⁰ (who visited Malaya in 1929 and 1954) in Tamil Nadu through the print culture widely promoted by G. Sarangapany (1903–1974) in Malaya and Singapore¹¹. Punjabi, Gujarati, Urdu,

Malayalam and other Indian languages were taught at Sunday schools and huge efforts were underway to convince the education ministry to teach them as mother tongue languages at mainstream schools in order to preserve their cultural identities.

Nation building and home away from home

The issue of nation building and ethnicity versus citizenship in the context of Singapore as the permanent home (away from home) for the diverse Indian community plays a significant role in assessing its contribution to Singapore's nation building. It was only since the 1960s that the Indian and especially the Tamil community under the leadership and encouragement of Sarangapany that many became Singapore citizens – this was shared by many veterans of the community interviewed by the IHC team. Many Indians moved from sojourner and Malayan status to a Singaporean identity in post-independence Singapore, creating new rigour and grappling with the “being and becoming” of their new identity.

Their professional, personal or voluntary contributions to Singapore's nation building efforts have been identified and classified through research, interviews and consultations across various sectors such as education, medical, legal, political to business, social

work, government, media, sports, arts and culture. This gave the curatorial team the opportunity to showcase robust and extensive Indian contributions to every field or profession in Singapore. This effort also gave a parallel view of the community's development compared to other races and mainstream communities in Singapore. Much discussion, criteria and assessment were put in place to evolve a credible list which will evolve with time, giving room for younger contributors as well as lesser known pioneers who come to light to be added to the list. Digital technology has been incorporated to enable multiple accesses, sorting and editing possibilities.

Here, objectification is not limited to documents and everyday objects or memorabilia but encompasses people and objects used or received by them. This process brings to the fore new meanings, implied meanings as well as aspirational meanings to some of the objects. Even quotes of spoken or written words by some of the veterans have been included as part of the decor in the Nation Building Gallery which gives some of them an inspirational intent and a "larger than life" aura.

In conclusion, a word on the concerted effort to bring content to the visitor through technology is essential. It was a well-coordinated decision of the curatorial and steering committees of the IHC that clearly underscored the IHC as a contemporary and futuristic organisation that is willing to embrace new technology¹². After considering many technologies available in the market, Augmented Reality (AR) technology was adopted which has enriched and enhanced the discovery and experience of the IHC's collections, memories and information by its visitors. The self-guided media guide contains audio tours in three languages – English, Tamil and Hindi with the possibility of adding seven more language options, a Young Explorer tour for children and AR experience as well. This embrace of the new culture of digital and virtual technology as part of its museum experience is in sync with the new revamped museums in Singapore and museums abroad. It is hoped that IHC continues to grow into a repository of tangible and intangible heritage, a laboratory of exploration and learning for the educational institutions in Singapore as well as a focal point for community and audience engagement through innovative programming to facilitate a deeper understanding between the communities living in Singapore.

Notes

1. For a more detailed discussion on the involvement of Gujarati and other Indian traders in Nusantara in the pre-modern and modern eras in Kedah, Penang and Aceh, see my forthcoming paper "Gujarat, Coromandel and Nusantara: Trans-Regional Trade and Traders in the Indian Ocean" in Edward Alpers and Chhaya Goswami (ed.).
2. According to the 2010 census, Singapore's total Indian population is 9.2%, Malay 13.3%, Chinese 74.2% and others 3.3%; 5% of the total population is Tamil. IHC has explained in its introductory panel that "Indian" refers to the Indian Subcontinent which is also called South Asia to avoid ambiguity or sensitivities.
3. For more details about the IHC project's content and design development, involvement and roles of the various committees as well as the contributions of the community, see my paper "Singapore's Indian Heritage Centre: Curating & Negotiating Heritage, Diversity and Identity" in the forthcoming volume *50 Years of Indian Community in Singapore* (ed.) Gopinath Pillai.
4. "People, Ports and Places: The Narrative of Indian Communities in Southeast Asia" was the inaugural seminar organised by the IHC at the Gandhi Memorial Hall on Race Course Lane on 20-21 September 2013 as a lead-up to its opening in early 2015. At this seminar, academics, scholars and community members discussed the theme of "Roots and Routes" from historical and community perspectives. The academic sessions focused on migration and settlement of the South Asians in Malaya while the community members shared their collective memories. The seminar also focused on "Little Indias" as precincts and their history while focusing on Singapore's Little India. A seminar booklet with the programme and abstracts of the speakers was published while the seminar papers are being edited for future publication.

5. An example of shared history is the story of journey on ship and invariably most of the Tamils had travelled by the S.S. Rajula which plied between Madras–Penang–Port Klang–Singapore from 1926-1972. Realising the wealth of shared memories S.S. Rajula had left, curators designed an installation of suitcases and embedded artefacts along with an interactive station that has layers of information, interviews, films and photos related to their memorable and life changing journey.
6. The Concept and Content Committee appointed by the MCCY and the curatorial team led by myself discussed the curatorial direction through many sessions of mind mapping and discussions which included inputs from the engagement sessions with various community organisations as well as veterans of the communities identified by them.
7. A large collection of gold, silver and diamond jewellery used to adorn the deity in the Chettiar Temple in Saigon, Vietnam, has been loaned to the IHC by the Saigon Chettiars Temple Trust, while a flag used in the Nagore Durgah festival on loan from the Indian Muslim Heritage Museum in Singapore enrich the collection in the "Roots and Routes" section. Other artefacts such as the Aravan utsavar from the Sri Mariamman Temple and fragments of old Shivan temple sculptures from the Hindu Endowments Board in Singapore play a significant role in contextualisation.
8. The donation of a *kasumalai* (gold coin necklace) from the family of pioneering retailer Gnanapragasam Pillai (1872–1915), donation of jewels and a violin from Dr R Gangatharan Davar's family, objects of everyday use in a Bohra Muslim home from Salma Moiz, and badges and medals from Sarjit Singh's collection are some of the highlights of the community loans and donations to IHC on display.
9. Henry et al. 2013. <http://www.haujournal.org/index.php/hau/article/view/hau3.2.004/750>
10. <http://new.modernrationalist.com/2014/12/singapore-shines-in-the-light-of-periyar-dr-veeramanis-visit-to-singapore/>
11. Sathisan (unpublished)
12. <http://www.digitaltrends.com/cool-tech/how-museums-are-using-technology/>

References

S Arasaratnam. *Indians in Malaysia and Singapore*. Kuala Lumpur, 1970

Sunil S Amrith. *Crossing the Bay of Bengal: The Furies of Nature and Fortunes of Migrants*, Cambridge, 2013
 Rosita Henry, Ton Otto and Michael Wood, "Ethnographic artifacts and value proposition," in *Journal of Ethnographic Theory*, Vol. 3, No. 2, 2013

G.P. Krishnan. "Gujarat, Coromandel and Nusantara: *Trans-Regional Trade and Traders in the Indian Ocean*" in Edward Alpers and Chhaya Goswami (ed.), *Trans-Regional Trade And Traders: Situating Gujarat in the Indian Ocean from early times to c. 1900*. Oxford University Press (forthcoming)

G.P. Krishnan. "Singapore's Indian Heritage Centre: Curating and Negotiating Heritage, Diversity and Identity" in Gopinath Pillai (ed.), *50 Years of Indian Community in Singapore* (forthcoming). World Scientific.

Rajesh Rai. *Indians in Singapore, 1819-1945: Diaspora in the Colonial Port City*. New Delhi, 2014

K.S. Sandhu and A. Mani (ed.). *Indian Communities in Southeast Asia*. Singapore, 1993.

Dinesh Sathisan, *The Power of Print: Tamil Newspapers in Malaya and the Imagining of Tamil Cultural Identity, 1930-1940*, National University of Singapore, Honour's Thesis (unpublished)

MORE THAN A GARDEN:

Singapore Botanic Gardens' Journey Towards Becoming Singapore's Inaugural UNESCO World Heritage Site

Jean Wee
Director, Preservation of Sites and Monuments,
National Heritage Board, Singapore



The iconic Bandstand at the Singapore Botanic Gardens. All colour photographs in this article were taken by the late Kwek Leng Joo (1953-2015) as part of a series commissioned for the first promotional exhibition of the Singapore Botanic Gardens at the 37th World Heritage Committee Meeting in Phnom Penh, 2013.



A group of Chinese men posing at a pavilion the Botanic Gardens. Image courtesy the National Museum of Singapore, National Heritage Board.

A World Heritage Site designated by UNESCO, the United Nations Educational, Scientific and Cultural Organisation, conjures images of well-known tourist attractions that are described as monumental, if not as stunning wonders of the world. The likes of the man-made Taj Mahal, Great Wall of China and the natural beauty and plant diversity of Mount Fuji and the Amazon Basin come to mind. With such lofty comparisons, some Singaporeans were in

mild disbelief that the humble, albeit well-loved Botanic Gardens qualified for inscription as a UNESCO World Heritage Site.

What many people may not be aware of, however, is that the process of deciding what qualifies as a UNESCO World Heritage Site is not about inscribing a place that has potential touristic and commercial value. Instead, it is about identifying a structure or site that has in some way made a significant contribution to World Heritage, as well as to its own community that wants it preserved for the future. As is often said, size is relative – Singapore is a city state of just 718.3 sq km with the Singapore Botanic Gardens occupying 0.74 sq km in Tanglin, just a few minutes away from the shopping hub of Orchard Road.

Sites of “Outstanding Universal Value”

UNESCO's World Heritage Centre recognises “... cultural and natural heritage (as) priceless and irreplaceable assets, not only of each nation, but of humanity as a whole. The loss, through deterioration or disappearance, of any of these most prized assets constitutes an impoverishment of the heritage of all the peoples of the world. Parts of that heritage, because of their exceptional qualities, can be considered to be of “Outstanding Universal Value” and as such worthy of special protection against the dangers which increasingly threaten them.”¹

This principle was the firm basis upon which the National Heritage Board (NHB) of Singapore embarked on the journey to nominate the Singapore Botanic Gardens as Singapore's first UNESCO World Heritage Site. To be awarded UNESCO World Heritage status, sites must be of “Outstanding Universal Value”. This means that sites must meet at least one out of ten assessment criteria, such as exhibiting an important exchange of human values over a span of time, and being an outstanding example of a place that illustrates a significant stage in human history. Beyond the need for the site to be intuitively and recognisably outstanding, UNESCO places tremendous emphasis on how well the site is preserved as well as its evolving

changes over time. UNESCO also looks out for the authenticity of the nominated sites and monuments, the presence of a buffer zone that ensures adequate protection of the site, as well as a sustainable site management plan. These work together to protect the integrity of the site



The Palms in the Botanic Gardens.
Image courtesy the National Museum of Singapore,
National Heritage Board.



Palm Valley, Singapore Botanic Gardens.
Photo by Kwek Leng Joo.



Para rubber Plantation, Singapore. Image courtesy of
National Archives Singapore.

especially in the face of future developmental plans and other negative encroachments to the site.

In 2010, a study was commissioned by the then Ministry of Information, Communications and the Arts (MICA) to identify sites in Singapore that would potentially fulfil UNESCO's criteria. Consultations were also done with members of the Singapore Heritage Society, academics, heritage advocates and heritage experts. It was important that the shortlist of potential sites not only clearly illustrated their outstanding universal value, but included choices of sites that would resonate well with Singaporeans for good support. The list was eventually whittled down to three potential sites – the Botanic Gardens, the Civic District and the combined historic enclaves of Little India, Chinatown and Kampong Glam.

After much deliberation, the Civic District, with nearly eight national monuments in close proximity, as well as the three enclaves soon fell out of the running. Clearly, the requirement to impose a buffer zone would severely limit the amount of development that could take place in these districts.

The case for the Gardens: Shared personal and social memories

The Gardens are undeniably well-loved and cherished in the social memory of many Singaporeans. Members of the public have shared stories of childhood walks with families, of visits to feed the swans at the lake as well as simply enjoying the generous shade of the landmark tembusu (*Fagraea fragrans*) tree which is featured on the reverse side of the Singapore five dollar note.

Other visitors have recalled musical performances with their school bands at the Gardens' bandstand, watching concerts or taking romantic walks through the grounds. Some others remembered that the Gardens was a "neutral" meeting place for families to introduce partners in arranged marriages. In 1959, an outdoor multi-cultural concert bringing together for the first time, Chinese, Malay and

Indian performers, took place in the Gardens. This performance was graced by the late founding Prime Minister Lee Kuan Yew (1923–2015).

The case for the Gardens: The birthplace of Southeast Asia's rubber industry

While personal histories were evident, many Singaporeans were less aware of the significant role that the Gardens played in transforming the landscape of Singapore and that of her Southeast Asian neighbours with the development of the rubber industry. The 156-year-old Singapore Botanic Gardens was in fact the birthplace of the global rubber revolution.

Rubber seedlings, originally from Brazil, were transported to the Singapore Botanic Gardens via the Kew Gardens in London. These seedlings were in fact the catalyst for the rubber industry's revolution in Southeast Asia and the resultant economic boom across the region. Subsequent directors of the Gardens took further the Gardens' research and development for rubber, which continued unabated even during the Japanese Occupation.

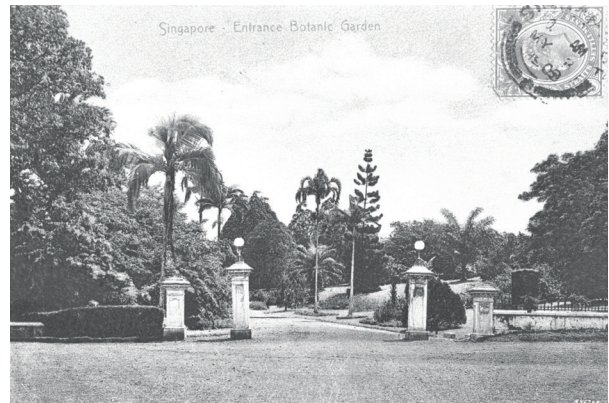
The case for the Gardens: A showcase of historic architecture

The Gardens also presents a humble architectural showcase of twelve historical buildings, including a colonial-style plantation bungalow and other smaller bungalows. These buildings served as residences for the directors of the Gardens, and some functioned as laboratories for research and development. Well-preserved examples include Ridley Hall (1882) and Burkill Hall (1867). The Swan Lake Gazebo (1850s) and the Bandstand (1930) are popular landmarks even till today.²

The original Potting Yard near the Gardens' Tanglin Gate, where newly introduced species were grown, and where the greening of Singapore's streets and cityscape took root, is still evident. Today, the Gardens' original



Swan Lake, Singapore Botanic Gardens.
Photo by Kwek Leng Joo.

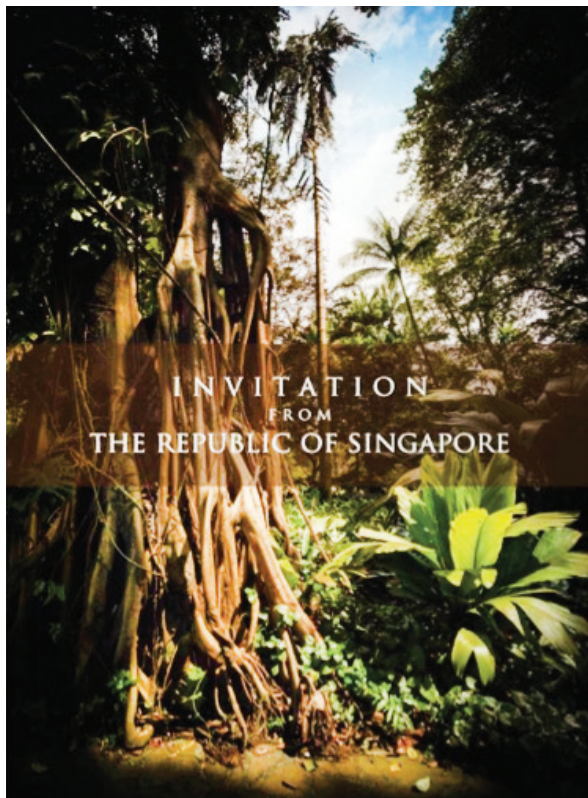


Singapore - Entrance Botanic Garden. Image courtesy of National Archives Singapore.

English Landscape design, with 34 heritage trees – the oldest of which is over 200 years old – and the Palm Valley which has more than 200 species of palms, together present an interesting counterpoint to the urbanised densities of Singapore's premier shopping district, Orchard Road, located a mere five minutes away.

A timely bid

Initially, many government agencies were either modest in their projections of the outcome, or unfamiliar with the history of the Gardens. There was also the question of “why now?”. What would this international accreditation or recognition be for? Did turning fifty (2015 being Singapore's Golden Jubilee Year as an independent nation) present an opportunity for Singapore to profile her heritage preservation efforts, or was it also about recognising sites of social memory for



Singapore's invitation to the delegates of the 37th UNESCO World Heritage Committee Meeting in Phnom Penh, 2013.

what they really are? Should the inscription be successful, what would future expectations be? Would national pride at securing Singapore's first UNESCO World Heritage Site raise stronger awareness of heritage values?

The National Heritage Board (NHB) and National Parks Board (NParks) had to work closely together to convince everyone that the Gardens was a strong candidate and affirm the historical role played by the Singapore Botanic Gardens. The NHB and NParks also relied on Singapore's Ministry of Foreign Affairs' wide network of missions and international contacts to assist in promoting the idea of the Singapore Botanic Gardens as a worthy candidate for consideration. It was an important time for all concerned to understand the international playing field and how things worked functionally as well as by way of protocol. Helpful advice from UNESCO's World Heritage Centre, The International Council on Monuments and Sites (ICOMOS) based in Paris, as well as experts in the field allowed the team the opportunity to build friendships with diplomats and

heritage experts around the world. At some point, the team started to think of themselves as salespersons with a cause and took full advantage of the subsequent UNESCO World Heritage Committee Meetings to showcase the heritage values of the Singapore Botanic Gardens.

Telling the story of the Gardens

After rallying all relevant government agencies for support, the next step was to work on the legislative and administrative provisions to submit Singapore's bid. In September 2012, Singapore ratified the 1972 World Heritage Convention, the most universal conservation instrument overseeing the inscription of sites that have cultural and natural importance onto the World Heritage List. Three months later, the Singapore Botanic Gardens was placed on the Tentative List³ of UNESCO World Heritage Sites, a prerequisite for nominations to the World Heritage List to be considered.

UNESCO World Heritage Sites must demonstrate that they have Outstanding Universal Value (OUV) based on ten identified criteria. For the Singapore Botanic Gardens, the focus was on criteria ii and iv, namely:

- (ii) to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design
- (iv) to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history

Beyond this, what would be of concern would be the unique heritage values of the landscape, its authenticity as well as adequacy of measures in place to protect the site for the long term. There was also the need to be very thoroughly acquainted with the specific timelines to be met, as the NHB and NParks had only one bite of the cherry if they were to make the bid as part of the celebrations for Singapore's Jubilee in 2015. This meant that Singapore had a year to put together a comprehensive dossier for submission to UNESCO by 28 February 2014, in order for it to be considered for inscription at the meeting of the UNESCO World Heritage Committee in 2015.

As the agencies involved prepared the nomination dossier, a draft was made available online for public feedback. There was also a published call to invite members of the public to submit their reflections and memories about the Gardens as well as personal photographs. Throughout this process, the team were grateful to receive a tremendous amount of support and encouragement from the public, which affirmed that the Gardens was also the People's Choice as Singapore's first UNESCO World Heritage Site.

It was also during this time that an inter-agency steering committee was formed to work out a strategy for local and international

engagement in the bid for the Singapore Botanic Gardens to be inscribed as Singapore's first UNESCO World Heritage Site. This steering committee was chaired by the Deputy Secretary of the Ministry of Culture, Community & Youth (MCCY), concurrently the Chief Executive Officer (CEO) of the NHB and Secretary-General of the Singapore National Commission for UNESCO, and the CEOs of NParks. The steering committee also comprised representatives from the Ministry of Foreign Affairs (MFA), Urban Redevelopment Authority (URA), MCCY, Ministry of Education, NHB and NParks, reflecting the high level of support and collective effort from the government to champion this bid.

The committee was a testament to the diverse nature of capabilities that went into supporting the bid. A crucial support came in when the land planners at URA ensured that the core and buffer zones were protected in the context of Singapore's development Master Plan. International engagement efforts were in the able hands of MFA, while the Arts and Heritage Division at MCCY and the NParks team were always present to pitch in for any related activities in support of the bid.

MCCY headed the Singapore National Commission for UNESCO, with the Minister of Culture, Community and Youth as Chairman, coordinating national engagements with UNESCO beyond the areas of culture and heritage. This was to demonstrate that Singapore is a committed and involved Member State to the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage. At the Preservations of Sites and Monuments Division in NHB, a three-member team played the role of taking the lead in the administrative aspects as well as coordinating all that was required to ensure the team met all of UNESCO's deadlines and oversaw the preparation of the nomination dossier.

On the side, the team also curated two exhibitions to promote the heritage value of the Singapore Botanic Gardens. The first one used the 37th UNESCO World Heritage Committee meeting in Phnom Penh, Cambodia, in 2013 as a platform to showcase the Gardens

as a well-preserved green lung just minutes from bustling Orchard Road. There would be about 1,500 international delegates, and there were opportunities to distribute books, brochures and postcards to highlight the value of the Gardens and establish that it was also one of the best preserved British Tropical Colonial Gardens left in the world and an important cultural site in view of its tremendous contribution to the development of the rubber industry globally.

Locally, the NHB's Preservation of Sites and Monuments Division conceptualised *More than a Garden*, which was planned as a travelling exhibition to highlight the worthiness of the Gardens as a candidate for inscription. The exhibition team went to great lengths to try and develop the smell of smoked rubber – a strong smell that used to pervade parts of Singapore where rubber factories had been located. The exhibits included rubber tapping equipment, latex sheets and a revolving model of the bandstand. Photographs and text panels explained the story of rubber research and development as well as referred to the critical if not symbiotic relationship of the Singapore Botanic Gardens as one of the 200 satellite gardens to the Royal Botanic Gardens at Kew in the United Kingdom. This network was formed during Britain's nineteenth century global expansion, exploration and colonisation in Southeast Asia. The rubber research and development pioneered in the Gardens provided the foundations for the rubber industry's success in the early twentieth century. The supply of seven million rubber seeds to the Malay Peninsula, and the promotion of their planting by one of the Garden's directors, Henry Ridley (1855–1956), led eventually to the economic success of rubber in the region.

A heart-stopping moment

Time was never on the team's side and new material had to be continuously added and edited and discussed. The team made decisions on how the nomination dossier would be framed as it was read and evaluated at UNESCO. Finally, the dossier – all 700 pages of it – coupled with numerous annexes, blueprints, photographs, and URA Master Plans, went to print. The best of plans still

go awry, and a heart-stopping moment came when the scheduled pick-up of the dossier from the printer did not happen. With their hearts pounding, the team members had to make frantic calls to the courier service to explain that this delivery was of utmost national significance and the three 700-page bound coloured copies had to be received at UNESCO's headquarters at the Place de Fontenoy in Paris by 28 February 2014. The Deputy Chief of Mission at the Singapore Embassy in Paris, who had warned about bad weather in winter and possible strikes, made doubly sure that the copies were safely delivered to UNESCO. Everyone sighed in relief that they still had their jobs.

What next? With the dossier submitted, the team's local and international engagement efforts continued. The Preservation of Sites and Monuments Division curated *More Than a Garden*, an exhibition that showcased the history and heritage values of the Singapore Botanic Gardens. This exhibition opened at the National Museum of Singapore in March 2014 and travelled all over the island to various malls and schools until end 2015.

As an active and committed member of UNESCO, Singapore also continues to contribute to UNESCO's capability building efforts by convening several platforms that facilitate the sharing of best practices on heritage preservation, such as a supporting event on heritage challenges and sustainable solutions at the World Cities Summit 2014 and the Future of Preservation Conference held in collaboration with the Association of Southeast Asian Nations (ASEAN) in September 2014. In the long term, Singapore hopes to continue to build up her capacity as a thought leader for heritage preservation issues in the region and ensure that the site management developed for the Gardens is not just sustainable, but a good model in practice.

To raise awareness of the Gardens at the international level and show Singapore's support for UNESCO's important mission, Singapore named a new variety of orchid – the *Dendrobium* UNESCO – after UNESCO at the 38th Session of the World Heritage Committee in Doha, Qatar, in June 2014.

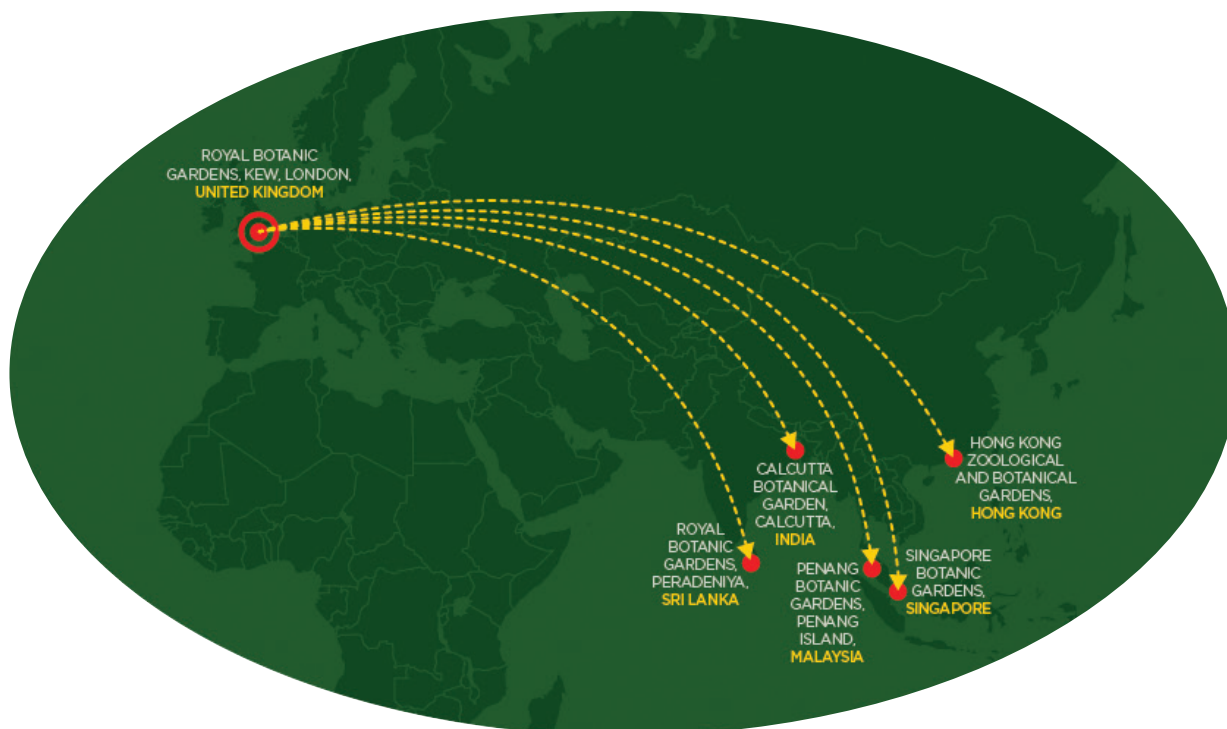


Diagram to illustrate the connection of Singapore Botanic Gardens, one of the 200 known satellite colonial gardens, to Kew Royal Botanic Gardens, London.



Jubilation at the announcement of Singapore Botanic Garden's inscription as Singapore's first UNESCO World Heritage Site, 5 July 2015, Bonn, Germany.

Upon the team's return from the Doha meeting, the Singapore Botanic Gardens set about preparing for the all-important visit by the ICOMOS appointed assessor. The evaluation of any UNESCO World Heritage Site nomination comprises the desk evaluation and the on-site visit to assess the site management plan. Following this evaluation process, the advisory

bodies make a recommendation that will then be deliberated by the UNESCO World Heritage Committee (WHC) members at the subsequent WHC meeting. The on-site visit by the ICOMOS assessor was the one and only opportunity to showcase the Singapore Botanic Gardens and demonstrate Singapore's capability to ensure the continued protection of the site. This highly

anticipated on-site visit however, was not going to be the sole determiner of the final outcome. The timing of this visit took place at a time when the massive construction of a new Mass Rapid Transit (MRT) subway station would be most apparent. Staff members of the Gardens worked with the LTA to do their utmost to camouflage and mitigate the above-ground chaos. Everyone put in their best effort, and the assessor left the team feeling comfortable about future outcomes.

What was left at this point was to discuss the communication plan in the run-up to the 39th Session of the UNESCO World Heritage Committee meeting on 5 July 2015 in Bonn, Germany, where Singapore's inscription would be announced. While the team was careful not to over-calculate the chances even though feedback from UNESCO seemed very positive, it was SG50 – and the team wanted to make sure it would be something to bring everyone together in celebration and that everyone would be able to share almost immediately once Singapore got clear word of her success.

The moment everyone had spent the last couple of years waiting for finally came. Representatives of the 21-member UNESCO World Heritage Committee congratulated Singapore on her inaugural inscription and effort. The Minister for Culture, Community and Youth reciprocated with a speech that conveyed Singapore's thanks and gratitude for UNESCO's support as well as to express continued commitment.

Beyond this successful inscription is a hope that the site management of the Singapore Botanic Gardens will be a testimony to Singapore's commitment to cultural preservation and that the site where the greening of Singapore was test-bedded will be an enduring one in that regard. Perhaps in the future, when a Singaporean is asked to name a UNESCO World Heritage Site, he or she will instantly reply, "the Singapore Botanic Gardens."

Notes

1. Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage. *Operational Guidelines for the Implementation of the World Heritage Convention*. United Nations Educational, Scientific and Cultural Organisation. February 1997. From <http://whc.unesco.org/archive/out/guide97.htm>. Retrieved 24 April 2016
2. Singapore Botanic Gardens. *Burkill Hall*. From www.sbg.org.sg/bukittimahcore/burkillhall.asp. Retrieved 7 February 2009
3. A Tentative List is an inventory of natural or cultural properties that a State has compiled in consideration of outstanding universal value and may be considered as suitable candidates for inscription on the UNESCO World Heritage List.

The Gardens Through Time

A PLEASURE PARK FOR THE AGRI-HORTICULTURAL SOCIETY

It is believed that this piece of land was gifted to the Society as part of a deal that member Hoo Ah Kay (Whampoa) made with the British authorities when he sold land he owned on Dempsey Hill for the creation of army barracks.



Cattle likely being used to cut grass shown in an early postcard c. 1910. IC De Vos Collection. Courtesy of the National Archives of Singapore.

ZOOLOGICAL ADDITIONS

The Gardens was home to some large animals (there was a bear, a rhinoceros, leopards and tigers) and several small ones, until the early 1900s.



Map of the zoo in the Gardens. R is where the Rhinoceros' enclosure was; Q, the deer enclosure; M, the monkey house; K, the Kangaroo and Emu pens; A, the old Aviary; C, the first Camellia house; O, Merton's (Superintendent of the Gardens) office. Courtesy of the Singapore Botanic Gardens.

SINGAPORE'S NURSERY

The Gardens produced hundreds of thousands of trees for planting alongside Singapore streets and in parks. The roadside trees you see today may have had origins at the Gardens!



Gardens staff tidying up the landscape. Courtesy of the Singapore Botanic Gardens.

THE FOUNDATION OF THE COMMERCIAL ORCHID INDUSTRY IN SOUTHEAST ASIA

This period began when Eric Holttum was appointed Director (1925), and worked to improve the quality of the ornamental flowering displays at the Gardens. Holttum's orchid-breeding programme commenced in 1928.



The research laboratory in Holttum Hall, used for the growth of orchid hybrids. The man in the suit is a colonial official, the man to the right is Director Humphrey Burkill. Photo from 1958. Courtesy of the Singapore Botanic Gardens.

A PEACEFUL GARDEN

During the Second World War, the Japanese allowed scientific research to continue in the Gardens.



Benevolent Japanese directors with some of the Gardens' staff. Courtesy of the Singapore Botanic Gardens.

FIRST 'PEOPLE'S CONCERT' OPENED BY MR LEE KUAN YEW, PRIME MINISTER

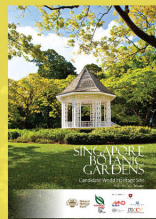
These concerts were organised for the purpose of bringing together a nation of different races to create a national culture.



Mr Lee Kuan Yew opening the first multi-racial Jendela Ragam Rakyat (People's Variety Show) at the Gardens. Courtesy of the National Archives, UK.

SINGAPORE'S FIRST WORLD HERITAGE SITE

The Singapore Botanic Gardens becomes Singapore's first UNESCO World Heritage Site in July 2015.



The cover of the nomination dossier submitted to the UNESCO World Heritage Centre. Courtesy of the Preservation of Sites and Monuments.

1859

1875

1877

1880s

1888

1928

1930

1942 - 1945

1956

1959

2015

FIRST VIP ORCHID

'Aranthera' 'Anne Black' was named after Lady Black, wife of a former governor of Singapore.



This red orchid is named after Lady Black. Courtesy of the Singapore Botanic Gardens.

THE ICONIC BANDSTAND

This was built on Bandstand Hill, which had already been used for musical performances.



Musical performances were commonly held under the gentle gaze of the moon. Courtesy of the Singapore Botanic Gardens.

FIRST DIRECTOR OF THE GARDENS

Henry Ridley, latterly known as the 'father of Malaya's rubber industry', had the honour of this appointment.



Henry Ridley and assistant beside a rubber tree carved with his famous herring-bone tapping method that improved rubber yields without harming the tree. Courtesy of the Singapore Botanic Gardens.

FIRST ECONOMIC GARDEN

Cash crops began to be experimented with, to increase the economic strength of the British Empire.

FIRST RUBBER SEEDLINGS ARRIVE

Coming from Brazil through Kew Gardens (London) to Singapore, these rubber seedlings would have a great impact on Singapore, Southeast Asia, and the world.



Bandstand Hill in 1877. Courtesy of the Singapore Botanic Gardens.



Rubber plantation in Economic Gardens (1890s). Courtesy of the Singapore Botanic Gardens.



Map of extent of Gardens when the colonial government took over. Courtesy of the Singapore Botanic Gardens.

This timeline illustrates key historic events that contributed to the eventual inscription of Singapore Botanical Garden as a UNESCO World Heritage site.

Apart from the significance of rubber, the history of the Gardens is intertwined with the Greening of Singapore led by the late Mr Lee Kuan Yew.

This timeline was developed for the *More than a Gardens* travelling exhibition to remind the public that the SBG was really more than a garden.

Image courtesy of National Heritage Board.

Retooling Collections Management:

Tagging and Tracking Singapore's National Collection with Radio Frequency Identification (RFID) Tags

Lee Huang Han, Sean
Director, Heritage Conservation Centre,
Singapore

Darren Wong
Assistant Director, Heritage
Conservation Centre, Singapore

This paper details how a Radio Frequency Identification (RFID) tracking system was implemented to improve collections management at the Heritage Conservation Centre (HCC) in Singapore. The HCC is the repository and conservation facility that manages, cares for and facilitates access to the National Collection in the custody of the National Heritage Board (NHB).

The project consisted of three phases: development of a suitable software system, installation of the required infrastructure and hardware, and execution of an extensive exercise to tag over 275,000 artefacts and artworks in the National Collection. The introduction of this new capability has yielded several benefits which include helping to resolve many legacy registration issues, putting in place a systematic process for handling high volumes of collections access, and enabling more efficient work processes. But first, we will outline the context and operational challenges that led to the HCC's development of a customised RFID tracking system.

The imperative for change

Electronic database management systems have already been used globally to manage collections data and increase productivity for more than a decade. The NHB too has introduced its own collections database management system since 2005. However, the use of these systems is often confined to content management with only a limited emphasis on workflow optimisation and automation of key business processes like registration of new acquisitions and tracking of collections movements. Manual registration of new acquisitions in physical ledger books and tracking of collections movements using cards and logbooks are still common practices at many museums all over the world.

The largely manual collections management processes used at the HCC had become severely overwhelmed and strained as the size of the National Collection had grown significantly over time from around 25,000 items in the 1990s to over 275,000 items currently. In particular, the manual process of inputting,

updating and retrieving artefact location information was time-consuming, labour-intensive and prone to human error. As a result, the accessioning of new acquisitions took a long time, and the tracking of artefacts and artworks movements for retrieval or stocktaking was frustrating and onerous.

Even though our Registrars and Collections Officers were already assisted by contracted art-handlers and temporary staff in less sophisticated functions and laborious tasks, they were still inundated by the heavy workload due to the rapidly growing National Collection and increasing frequency of exhibitions, rotations and loans. With only a small pool of staff to manage a large collection involving voluminous requests to retrieve and move items under constant deadline pressures, it was inevitable that less-pressing but nonetheless necessary tasks, for example, updating of location records, verification of collections data, photography documentation, etc., were often helplessly postponed and inadvertently snowballed.

This status quo was assessed to be untenable. This was even more so as the multi-year acquisition plans of the museums and heritage institutions were projected to continue to increase the size of the National Collection substantially in the coming years. The number of museums and heritage institutions supported by HCC has also expanded rapidly from just two in the late 1990s to eight today, namely: the National Museum of Singapore, Asian Civilisations Museum, the Peranakan Museum, Singapore Art Museum, National Gallery Singapore, Malay Heritage Centre, Indian Heritage Centre and Sun Yat Sen Nanyang Memorial Hall. Consequently, the number and frequency of exhibitions, rotations, and loans have also increased noticeably in the recent years. The need to improve the status quo was strong and urgent.

Customising a technology-based solution

After a process review by the HCC in 2011, a project to improve collections management, specifically, in the areas of tracking, updating

and monitoring of artefacts and artworks, was prioritised to be critical. The central idea was to use suitable tagging and data capture technology to automate the work processes.

The technological options for tagging and automatic data capturing are many, namely, 1D barcode, 2D barcode, colour coding, passive High Frequency (HF) Radio Frequency Identification (RFID), passive Ultra High Frequency (UHF) RFID, active RFID, semi-active RFID, Near Field Communication (NFC), and Contactless Smartcard. Amongst these, passive UHF RFID held the most promise as the most versatile technology for large-scale implementation.

Although passive UHF RFID technology had been found to be suitable, there were no readily available and cost-efficient solutions to RFID-tag the whole spectrum of artefacts and artworks in the National Collection and monitor their movements according to NHB's operational processes. Cultural heritage materials are difficult to tag as each item is unique and comes in a different material, condition, shape and size. Stringent handling and preventive conservation practices are also enforced in order to avoid damage and to preserve these precious heritage materials for future generations. This means that the affixing of permanent fixtures of any kind, for example, gluing tamper-proof security devices onto the artefacts and artworks, is not permitted.

The size of our National Collection is considered relatively modest with around 275,000 items (parts included). Nevertheless, given that each item is unique, devising a standardised solution with economies of scale to tag these 275,000 items was a tall order. Effectively, all the known commercial examples for reaping productivity gains in non-heritage asset management were not directly applicable.

Customised solutions were needed. The HCC took about two years to study the problem, conduct research on relevant technologies, and met with various industry players to finally formulate a proposal for an Automated Collections Tagging System (ACTS). The executive decision to invest in the ACTS was

made in 2013 by NHB's Senior Management. The ACTS project aimed to develop an automated tracking system using passive UHF RFID tagging technology on all the heritage materials belonging to the State that have been entrusted to the custody of the National Heritage Board.

It was recognised that the project would have to be implemented without disrupting the HCC's operational commitments to the museums in the many major events planned to celebrate Singapore's Golden Jubilee in 2015. Given the inherent difficulty, complexity and scale of the project, the time and effort spent on careful and deliberate preparation work was warranted. The time and effort expended had allowed the operational requirements and technical specifications to be prepared properly, which resulted in a detailed tender document that was published in the Singapore Government Procurement Website – the GeBIZ. Consultations with NHB's Information Technology & Knowledge Management (ITKM) and Procurement Divisions were invaluable in achieving a successful tendering outcome.

Objectives of the ACTS project

The ACTS project is probably one of the world's largest deployments of RFID technology on a wide spectrum and range of artefacts and artworks. The project is expected to yield significant productivity gains in the management of the National Collection. The four objectives for the project are:

- 1: to automate existing manual work processes such as the issuing of receipts and updating of item movements on physical store logbooks. This includes eliminating the need to manually keep track of collections data such as the size of collections, breakdown of acquisition types, and number of items on display, which is currently tracked in spreadsheets.
- 2: to improve the ease and efficiency of managing item movements. This would allow fast and accurate retrieval and updating of location records through portable handheld devices. It involves

implementing standardised location naming and allowing instantaneous updating and tracking of item movements.

3: to facilitate stocktakes through the use of handheld devices. The aim is to allow stocktakes to be carried out accurately and efficiently to ensure better accountability of the National Collection. It seeks to eliminate the current cumbersome and tedious stocktaking process that involves manual generation and preparation of stocktake lists, manual tracking and reconciliation of stocktake results, and manual compilation of stocktake reports. It also has to cater for different modes of stocktakes, such as rapid scanning, individual item authentication, and authentication with and through external witnesses.

4: to improve data collection for management reporting. This allows for important data for management reporting such as collections display rate, storage space utilisation, time spent on work activities, and Entity Capacity Management (ECM) utilisation to be captured and tracked through the ACTS system. The ECM system is used to manage the allocation of HCC resources to support museum acquisitions, exhibitions, rotations and loans.

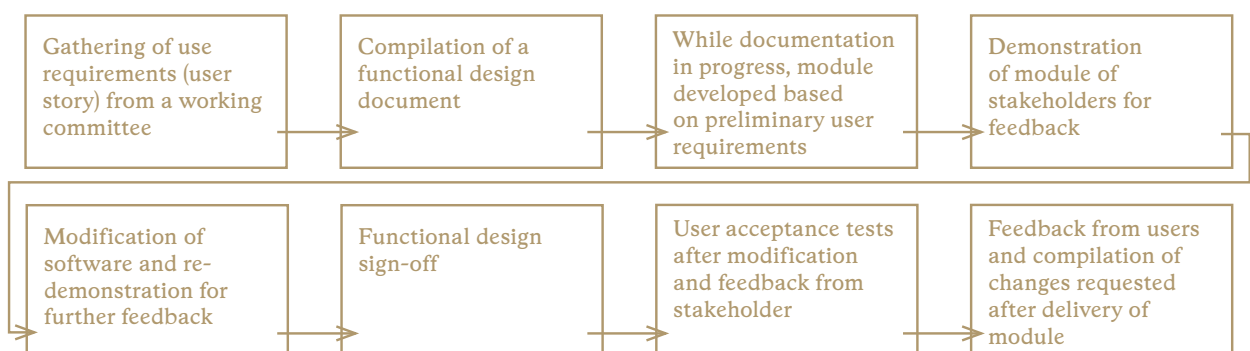
Retrofitting collections management

The ACTS project consisted of three main tracks: software development, infrastructure and hardware, and physical tagging. The project also had a training and orientation component to complete its implementation. Waterfall project management¹ was largely employed to manage the whole project. However, agile project management² was also utilised to address a portion of the project, namely software development, which had frequent changes and where requirements were incremental and interrelated with completed requirements. Despite the scale and complexity, the project was completed within an acceptable timeline of fifteen months.

Track 1: Software development

The software development track involved developing a system that delivers near real-time updates of multiple and simultaneous data exchanges for daily operational uses as well as customisable dashboards for management decision-making. The ACTS software largely captures the business processes of collections management, digitalises it, and provides timely, accurate and consistent data synchronisation that allows fast and accurate generation of reports and statistics. Part of the software development required integration with the new Singapore Collections Management System (SCMS) database³.

Following the general principles of agile project management, the software development took on an iterative and incremental design and build model. Each software module was treated as a mini-project of its own with the following stages:



As much as the software development team wanted to “do it right the first time” as assumed under the waterfall project management method, the importance of finding a balance between efficiency and effectiveness of complex requirements was recognised. Although more effort was required in managing

the multiple modules, the agile process was worth the additional effort as it ensured that each module is useful for the HCC users. The end result was an effective software that meets the needs of users. Table 1 provides a summary of the software modules developed and new functions and capabilities achieved.

Table 1. Software Modules and their Functions and Capabilities

Modules	Functions and Capabilities
Collections	Dynamic collections search and export; issue of receipts and delivery receipts from system; tracking of new acquisitions registration and accessioning; storage capacity management; electronic store logbooks; RFID tags request
Project Management	Management of exhibitions, rotations and loans as projects; tracking of ECM utilisation; collection of project data such as artefacts and artworks displayed and time spent on different support activities (e.g., retrieval, viewing, packing, etc.)
Investigation	Documentation of legacy registration and accessioning issues for follow-up; documentation of long-term loans and non-National Collection items (e.g., props, frames, mounts, etc.)
Stocktake	Dynamic generation of stocktake list based on user input criteria; tracking of stocktake progress through system; options for various modes of stocktake (e.g., item-by-item authentication, rapid scanning, etc.)
Reports	Management reports on total items tagged and verified, projects supported, new acquisitions received pending Artefact Justification Forms (AJFs), total items moved out for loan or display, etc.
User Management	Management of user accounts with role based access rights control

Track 2: Infrastructure and hardware

The choice of infrastructure and hardware for passive UHF RFID technology was another significant part of the project upon which the necessary platform for the software and physical tagging was based. The advantages of passive UHF RFID technology for collections management are compelling. Every tag has a unique ID assigned from its production source. It is thus not easy to counterfeit. It does not require a line of sight when reading so long as reading is not attempted through metallic objects/material. A RFID reader can read

multiple tags per scan. The reading range can be adjusted according to the choice of readers used.

Due to mass-market adoption of the technology, the tags and reader hardware are cost effective. There are also peripheral support items such as RFID printers and encoders, which can programme and print the tag at the same time, thus facilitating the use of this technology. The different types of reader functionalities, namely, handheld, portable or fixed mount, provide a good range for users to choose the reader hardware best suited for their operations. The tag's form factor for passive RFID is also versatile and easy to

package to suit the different types of artefacts and artworks and the materials that they are made from, such as wood, stone, textiles, metal, ceramic, etc. The customised RFID tags created, handheld readers and scanners, and specialised RFID tag printing machine can be seen in Figure 1.

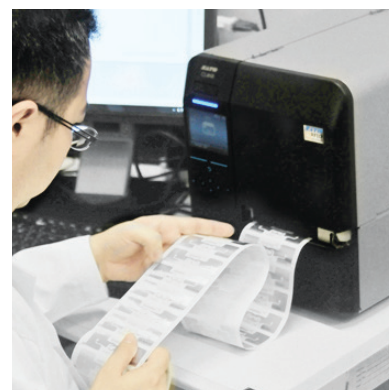
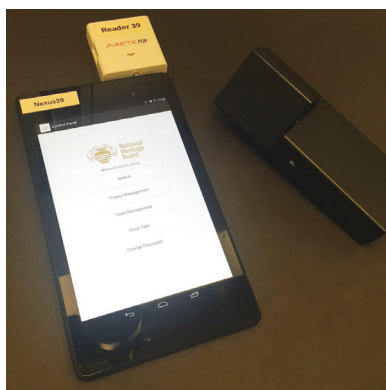
On top of the RFID readers and tags, the infrastructure for the project also included the computer server and wireless components that make up the “communications backbone” of the entire ACTS. A major consideration in the infrastructure set up was how to innovatively install, test and phase it in without affecting on-going daily operations.

Track 3: Physical Tagging

The third and most difficult part of the ACTS project was the physical tagging exercise. This task covered all stores and all items in the HCC. Physical tagging of the artefacts and artworks consists of five sub-processes: surveying of artefacts to check physical accession numbers; verification of the survey results; preparation of RFID tags

and association to database records; physical tagging on the artefacts and artworks; and verifying that the tag is attached on the correct item. Figure 2 illustrates the steps of the physical tagging process.

The physical tagging exercise was much more extensive than expected. The tedious and time-consuming process was further challenged by the need to find experienced personnel with know-how in artefacts handling before tagging activities could even commence. Physical tagging is an area which requires four types of expertise: art handling, tag production, sorting, and verification. Four teams are thus required: art handlers who can competently handle the artefacts and artworks according to HCC’s practices and standards; a production team who prepares and produces the RFID tags according to the approved form and format; a sorting team who has to meticulously sort the printed tags according to their location to facilitate the tagging process; and a verification team who knows how to handle the RFID devices and tablets so as to make updates in the application properly. The competency of these four teams was critical to the seamless process



From left: Customised RFID tags, handheld readers/scanners, and RFID printing machine. Images courtesy of Heritage Conservation Centre, National Heritage Board.

Figure 2. Five-step process of physical tagging



of tagging. The whole spectrum of collections tagged is illustrated in Figure 3.

Training and orientation

When the project was nearing completion, a training-cum-orientation programme (see figure 4) was conducted to transit the HCC personnel from their former manual mode of operations to the new technology-assisted

operations. The objective was to allow HCC staff to be familiar with the ACTS system before the cut-over period. This programme lasted several weeks. HCC staff were equipped with the necessary skills and given opportunities to practice during the training programme. One-to-one consultations were also made available so that users were given further opportunities to clarify doubts as well as to raise areas for improvement after using the system.

Figure 3. Tagging of the whole spectrum of collections such as 2-D archival documents, 3-D objects, textiles, etc.



Figure 4. Group and individual training orientation to prepare HCC staff for system cut-over. Images courtesy of Heritage Conservation Centre, National Heritage Board.



Project duration

From commencement to completion, the ACTS project took about twelve months. This was followed by another three months of run-in and stabilisation. The infrastructure and hardware are now fully in place, the software modules are functional and the RFID readers are deployed to users. More than 275,000 items have been tagged with customised RFID tags. HCC personnel have been trained and are comfortable with the new technology and method of operation.

Improvements in productivity and morale

ACTS delivers the following key improvements: automation of the previously manual work processes, with the need to manually update logbooks completely eliminated; improved ease and efficiency of managing artefact movements, with fast and accurate retrieval and updating of location records; facilitated stocktaking through use of handheld devices; and streamlined tracking and data collection data for management reporting, such as collections size, display rate, and staff time spent. The improvements derived from the ACTS project implementation are summarised in Table 2.

The implementation of ACTS has improved productivity at the HCC. With the increased productivity, the ease of use of the ACTS system and the convenience resulting from

the automation of previously mundane and manual work processes, staff morale has also improved.

Table 2. Summary of improvements accrued from ACTS project implementation

<u>Improvement</u>	<u>Elaborations</u>
100% tagging of collections stored at the HCC	Allows rigorous checks to be made to locate misplaced or missing items: every item at the HCC has been physically checked and those with unclear identities have been flagged out and documented for follow-up. Improved accountability of the National Collection: every item at the HCC has now been checked, tagged and accounted for; previously missing or inaccurate storage locations are now updated; the collections database can now be data-cleansed to reflect only live, unique and verified records. Improved storage conditions and housekeeping: during tagging implementation, the tagging team made many improvements to storage conditions (e.g., by changing old acid-free paper, re-housing and re-organising items to optimise storage space, re-sorting items to improve ease of retrieval, etc.) to enhance the long-term preservation of the National Collection.
Standardised location naming system and automatic update of locations through handheld devices using RFID tags	Resolved problem of inaccurate location records in database by making location updates automatic through the use of handheld devices. Resolved problem of inconsistent location naming which made data search and retrieval unreliable; a standardised location naming system controlled by a system administrator is now in place. Improved data accuracy and accountability of collections: the risk of items becoming misplaced, especially at stores with high volume of movements, has been greatly reduced as the new system and workflow forces and helps users to update location automatically using handheld devices; locations are now also further distinguished as permanent or temporary, and the system can trigger alerts for follow-up actions (e.g., when new acquisitions or items returned from exhibitions are kept at temporary locations for an extended period). Improved productivity: staff no longer have to perform the previously tedious and time-consuming work of manually updating location changes in MCS and manually updating physical store logbooks; time spent on locating and retrieving items for viewings is also reduced with more accurate locations records available.

Improvement	Elaborations
	Improved management reporting and planning capabilities: storage capacity and utilisation can now be tracked and managed through the system which facilitates planning for future improvements (e.g., re-organizing items to increase capacity and re-grouping items to better meet environmental requirements); reports can also be generated to retrieve information on how many and what types of locations are in the system and the specific list of items at every single location.
Improved stocktake efficiency and capabilities	Elimination of various manual processes in performing stocktake: previously a large amount of manpower and time were spent on carrying out stocktake as there were many manual processes involved, such as the manual generation of the list of items to stocktake, the manual preparation of daily stocktake lists for verification with witnesses, the manual reconciliation of stocktake results, and the manual preparation of stocktake reports; these manual processes are now completely eliminated as the system is able to generate stocktake lists automatically based on a variety of criteria such as specific collections stores, specific locations, percentage of total collection, etc. Stocktake is now carried out using handheld readers and the system automatically keeps track of stocktake progress and generates management reports. Improved accountability and productivity: productivity is greatly improved with the elimination of manual processes that are tedious, time-consuming and susceptible to human error; accountability is also greatly increased as the confirmation of items sighted and stocktaken can only be done through matching images retrieved onto the handheld device, scanning the RFID tag, and confirming through an authentication card held by an external witness; the possibility of fraud or errors in stocktake has been greatly reduced.
Improved data collection for management reporting with enhanced software functions and features	Collections statistics are now more accurate and can be retrieved directly from the system for management reporting as compared to manually compiled data; these statistics include size of collection, breakdown of acquisitions by types and museums, number of items on display, number of items on loan, etc. Registration of new acquisitions and generation of receipts through the system: registration of new acquisitions and issuing of receipts are now done and tracked through the system instead of manually; accessioning of new acquisitions and backlogs can now be better tracked and managed; receipts (both receiving and delivery receipts) are now generated through the system instead of manually issued which will allow for better tracking and data retrieval in future.

<u>Improvement</u>	<u>Elaborations</u>
	Project management features have also been implemented to manage exhibitions, rotations and loans support for museums: project leads and members can be defined, artefact lists can be imported and maintained within projects, movement forms generated and tracked within projects, and time spent on various work activities (e.g., museum support, new acquisition accessioning, etc.) can be recorded and tracked by the system; ECM allocation and utilisation can now be better tracked and managed using these new project management features.

Automation for greater accuracy and accountability

The two key achievements of the ACTS project are in the areas of improved work productivity and accountability for the National Collection. Many manual work processes have been eliminated, so precious time can be now directed to more added-value work activities. The HCC is now better able to manage and collect accurate collections and operations data for work planning and management reporting. New features and capabilities developed for stocktake, together with 100% RFID tagging of the collections at the HCC, has greatly enhanced our ability to conduct regular stocktakes to ensure accountability for the National Collection. Other new system features and work processes developed in areas such as project management, time-tracking on work activities, and storage capacity management

have also laid the foundation for further improvements in resource management, work efficiency, and operations excellence.

In conclusion, the ACTS project has proven to be an important step in modernising and leveraging on technology to automate work processes in collections management. It facilitates the handling of high volume transactions with greater accuracy and reliability. The RFID tagging implementation, which entailed a 100% survey of the collection, has allowed us to gain better clarity on the status of all the items stored at the HCC. With every single item now tagged, there is a basis for systematically resolving registrations issues of the past and rectifying accessioning errors and anomalies. Retooling our collections management system has thus allowed many legacy issues to be resolved and laid the foundation for a better and sustainable way of doing things in the HCC.

Notes

1. The waterfall project management system is a sequential design process in which progress is seen as flowing steadily down like a waterfall through the phases of conception, initiation, analysis, design, construction, testing, production/implementation and maintenance.
2. Used in software development processes and known as agile software development, it is a set of principles for software development in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, and continuous improvement, and it encourages rapid and flexible response to change.
3. Singapore Collections Management System (SCMS) is NHB's collections management system to manage national collection information. It supports various business functions, including acquisition process, conservation and exhibition documentation.

CONSERVATION SCIENCE:

The Forensics of Cultural Connections

Dr Hanna M Szczepanowska,
Senior Conservation Scientist, Heritage
Conservation Centre, Singapore

The value of scientific examination as an integral part of documenting cultural heritage has been recognised since the preservation of museum collections gained status as a scholarly discipline in the early years of the twentieth century. However, the scientific analysis of archaeological materials and paintings has been reported from as early as the eighteenth century (Caley 1951, Nadolny 2003, Winter 2008). The aim of applying science to the examination of objects of artistic and historic significance is to understand the materials they were made of and the causes of their deterioration. This process of discovery, which is similar to forensic analysis, can be compared to the weaving of a fabric of knowledge based on small pieces of evidence revealed by the artefacts themselves.

Although scientific analysis unquestionably benefits conservators, by guiding their treatment choices and empower curators with knowledge of the artefacts under their care, not all institutions are fortunate enough to have their own conservation science laboratories. In 2015 the Heritage Conservation Centre (HCC) of the National Heritage Board (NHB) in Singapore realised its three-year plan and established a research laboratory dedicated to the analysis and characterisation of materials of cultural significance in the Southeast Asia region.

In the course of analysis that was carried out in the newly established laboratory we were able to trace the artistic workshop techniques, intricate connections between artefacts and places of their origin, and elucidated some aspects of objects' provenance as exemplified by the collections of the National Museum of Singapore, Asian Civilisations Museum and the Indian Heritage Centre.

Conservation science at the HCC, an overview

The Conservation Science (CS) Laboratory is a new entity at the HCC, an organisation within the NHB, a statutory board charged with the management of Singapore's national museums and heritage institutions. Established in 2000, the HCC is the central repository and conservation facility for the management

and preservation of the heritage collection of Singapore. In 2013 the foundations were laid for establishing the CS Laboratory which materialised in 2015.

A diverse range of materials are found in Singapore's museum collections, from oil paintings, art and manuscripts on paper, pith, and palm leaves to corroded metal objects and glass beaded decorative textiles, to just mention a few. These diverse artefacts require sophisticated analytical instruments and expertise that enable the interpretation of the analytical data.

To carry out such analyses a set of powerful instruments was utilised at the CS Laboratory at the HCC. A high resolution, field emission scanning electron microscope with energy dispersive X-ray spectroscopy (FE-SEM-EDS) was the first such instrument acquired by the HCC. It examines surfaces, producing micrographs of their topography and detects chemicals which often elucidate the alteration mechanisms of materials.

The Confocal Scanning Laser microscope (CLSM) is another analytical tool. It provides supplemental information to that obtained from FE-SEM-EDS, by precisely measuring the features of surfaces. For example, it measures corrosion of metals, depth of cracks in glass, or indicates how thick a transparent coating is on an oil painting. The resulting data sheds light on the state of preservation, informing conservators as they design an optimal treatment strategy.

The chemical nature of materials and products of their deterioration is characterised by several different instruments. In general, the inorganic elements such as lead in white lead paint or zinc in zinc-white are easily revealed using an EDS detector that works in tandem with FE-SEM.

The Fourier Transform Infrared spectroscope with Attenuated Total Reflectance (FTIR-ATR) provides information about organic chemical compounds which assists in characterising paint bindings and varnishes on paintings among other organic-based components of artworks and artefacts.

Each instrument produces results that complement each other, creating a more complete picture of the artefacts and their place in museum collections.

Tracing cultural traditions and artistic connections through materials analysis

The intricate details revealed in the course of material analysis is illustrated here using three examples of artefacts, each one made of different material: glass, clay and textile fibres, and created in a different geographic location and time.

First, we examined the glass beads from a pair of Peranakan slippers (Figure 1), dated from the early twentieth century, which pointed to trade connections between Singapore and Europe. Next, a clay statue created by Rakhal Das Pal (1834–1911), a prominent Bengalese artist, revealed through an analysis of its clay the artist's techniques of working clay. Finally, a cheongsam made in Singapore in the mid-twentieth century, elucidated manufacture techniques that made use of early polymer fibres and the techniques used in their decoration. The types of analysis involved for each of these three artefacts are elaborated in greater detail later in this article. The findings, however, are preliminary as each artefact is still undergoing laboratory investigation, thus it is a work in progress.

The selected examples demonstrate not only the diversity of analysed materials but also a broad span of scientific questions posed by each material and artefact. Although the analytical methods were similar, the collected data was uniquely relevant to each artefact.

The glass beads from the Peranakan slippers were selected for analysis because of evident deterioration, cracking, spalling and presence of white powdery deposits. The analysis aimed to understand the deterioration processes through surface morphology with FE-SEM and chemical mapping of deterioration products in EDS. Both instruments indicated chemical breakdown of soda-lime glass.



Figure 1. Early 20th century glass beaded Peranakan slippers. Asian Civilisations Museum, 2009-01573. Collection of the Peranakan Museum. Given by mama seet. SPP. Seet Mui Kok wedding. Image courtesy of the National Heritage Board.



Figure 2. Detail of the pink coloured glass bead, micrograph taken with Confocal Laser Scanning Microscope, showing deterioration and cracking of the outer glass layer. Scale 100µm. Collection of the Peranakan Museum. Given by mama seet. SPP. Seet Mui Kok wedding. Image courtesy of the Heritage Conservation Centre, National Heritage Board.

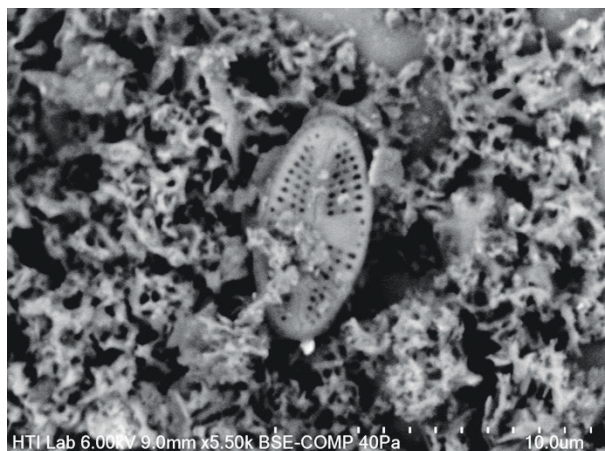


Figure 3. A micrograph of a silicon diatom frustule taken using a Field Emission Electron Scanning Microscope, Hitachi SU5000, Scale 5µm, magnification 5,500x. Image courtesy of Heritage Conservation Centre, National Heritage Board.

Exotic impurities, such as arsenic, found in one of the beads pointed out their link to international trade routes. Arsenic in glass has been associated with Italian manufacturers who have used it as an opacifier as early as the sixteenth century (Sempowski 2000, Sugar 2008).

A revealing find detected during FE-SEM examination showed a well-preserved silicon frustule of a diatom 5 microns in diameter, indicating that the slippers had been exposed to damp soil (Figure 3). Diatoms are microscopic algae living in oceans as well as in fresh waters and in damp soil. Their characteristic biogenic silica frustules are used in diagnostic studies of environmental changes, while their specific chemical makeup may indicate the provenance of an object on which they were located, in the case of “narrow endemics” restricted to a small region of occurrence. However, according to an expert in the field, Dr D Mann, our diatom, most likely *Luticola mutica* or another closely related species, occurs on soils or in terrestrial mosses in many geographic areas (Crawford & Mann 1990). Therefore, the diatom could not serve as a diagnostic feature, besides pointing out to the wet environment in which the slippers were used or exposed to.

The second example, the Bengalese clay figurine, underwent analysis in conjunction with its preservation for the inaugural exhibition at the newly opened Indian Heritage Centre in Singapore. The figurine is part of a larger group representing various local servants and tradespeople (Figure 4). These clay figurines, made in the late nineteenth century in Krishnanagar, West Bengal by renowned sculptor Rakhal Das Pal, are highly detailed, life-like, and were made to be displayed at the world fairs.

The reddish clay appeared to be original while the yellowish clay suggested filling material. The characterisation of the original and filler materials was the main focus of the analysis, which aimed to guide the conservation decisions. In order to ascertain if the repairs were done by the artist, or at a later stage by a restorer, a correlation between the varying compositions of the original and filler clays had to be established.



Figure 4. Man holding a plate, West Bengal, Rakhal Das Pal, clay figurine. The Indian Heritage Centre, NHB, 2012-00786. Image courtesy of the Indian Heritage Centre.

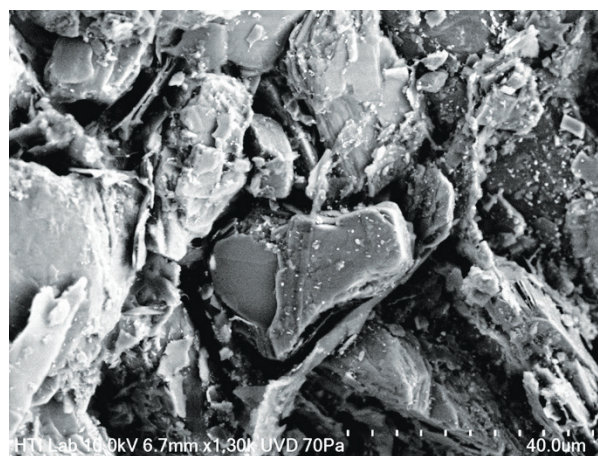


Figure 5. A micrograph obtained using FE-SEM SU 5000 showing the mineral microstructure of well-defined clay particles indicating air-drying technique of clay, magnification 1,300x, scale 20 microns. Image courtesy of Heritage Conservation Centre, National Heritage Board.

Information gained from the surface morphology and microstructure of clay using FE-SEM revealed insights into the clay drying conditions. Typically, if clay is fired, many changes in morphology and the structure of crystalline clay minerals take place, transforming them into a non-crystalline mixture, whereas well-defined particles can be recognised in non-fired clay (Swapn et al., 2005, Castellanos et al., 2012). The latter was observed in the samples of clay from both the original and two filler materials, pointing to a non-firing technique (Figure 5). Furthermore, the presence of vegetal fibre (Figure 6)



Figure 7. Cheongsam, National Museum of Singapore, NHB national collection, 2012-00786. Image courtesy of the National Museum of Singapore, National Heritage Board.

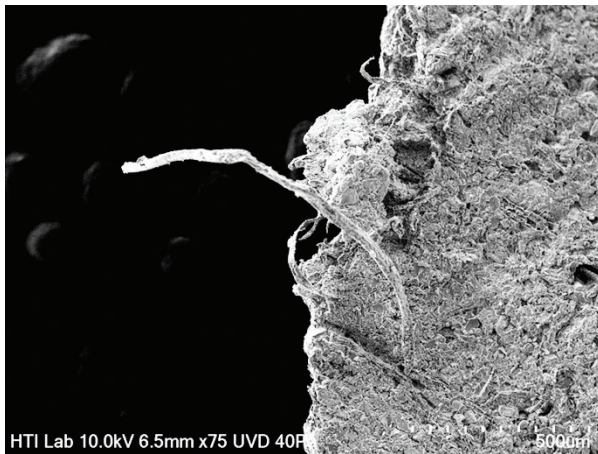


Figure 6. The presence of vegetal fibre in the filler-clay confirmed the traditional use of vegetal material fillers. A micrograph obtained in FE-SEM SU 5000, scale 250 microns. Image courtesy of Heritage Conservation Centre, National Heritage Board.

confirmed the historically known use of straw and grasses in indigenous and local clay production techniques in India.

Cross referencing the analytical findings with bibliographic sources confirmed that the practice of air-drying clay has been known in Krishnanagar, where our figurines were created. The reason for the air-dried approach stems from an Indian cultural belief that the water element is part of a material's composition and the firing process will remove life from within the clay, depleting it of the sacred power of water (Das 2008, Stevenson 2009, Smee 2010).

The third artefact that underwent material analysis was a cheongsam. This dress which originally belonged to Mdm Wu Chuen Chuen (1915–2004), the owner of Stamford Café, a popular Western food eatery at Bras Basah Road from the late 1940s to the 1960s. It was selected because of severe deterioration of a decorative layer. The analysis aimed to establish the mechanism and causes of this deterioration to assist a conservator in designing an optimal stabilisation technique which eventually would facilitate display of the dress.

The term cheongsam refers to a tightly fitted dress with an asymmetrical diagonal neckline closure that was popular in the mid-twentieth century in Singapore (Lee and Chung, 2012). The use of new synthetic materials, such as polymer fibres, was on the rise, yet their longevity and interaction with other materials were not well known at that time. The textile fibre was determined to be of acetate based as indicated by FTIR spectra; the adhesive appeared to be nitrocellulose, which is known to degrade over time (Shashoua, 1992). The severely degraded decoration prevented any safe movement of the dress without causing shedding of the paint applied on the surface; the bond between the textile and the decoration had failed.

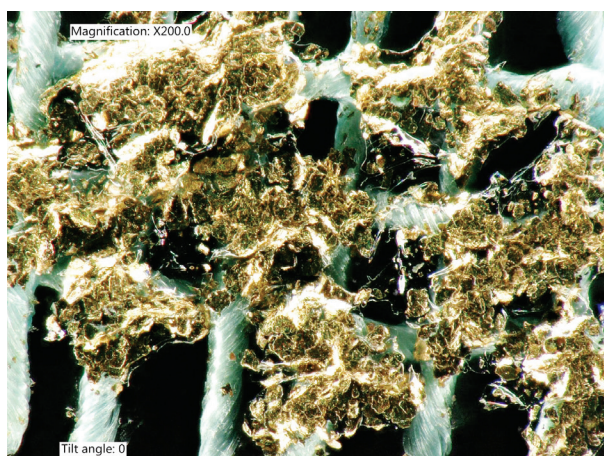


Figure 8. SEM micrograph showing poor adhesion between the fibre and decoration. The pattern of the fibres indicates an extrusion method characteristic of synthetic polymers. Image courtesy of the National Museum of Singapore, National Heritage Board.

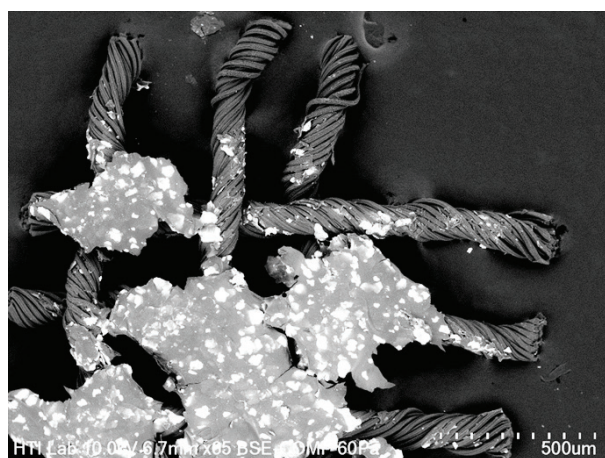


Figure 9. Digital micrograph acquired in a 3D Laser Scanning Microscope showing a cluster of metallic paint flakes suspended in adhesive. Image courtesy of the National Museum of Singapore, National Heritage Board.

In the course of analysis in FE-SEM-EDS the surface morphology of the fibres showed extrusion patterns such as elongated ridges which are typical for manufactured synthetic fibres. The paint was a mix of brass metallic particles suspended in a material that served as an adhesive. The confocal laser scanning microscopy traced the interface of paint flakes with the fibres, confirming their loose positioning on the surface of the fibres' matrix.

The analytical results assisted the conservator in designing a treatment that stabilised the decoration of the dress. Detailed reports of the analytical and conservation processes are on file at the Heritage Conservation Centre.

Closing remarks

The case studies presented here highlight the range of materials that are currently undergoing analysis at the Conservation Science Laboratory at HCC. They offer a sample of the broad scope of research projects that will be undertaken in the near future, for the benefit not only of the NHB-HCC's staff of conservators and curators but also to demonstrate the laboratory's potential for serving the Southeast Asia region as a resource centre. The scientific data produced in the course of examination forms part of the permanent records of the National Heritage Board.

Acknowledgements

The author is grateful to conservation colleagues at HCC for their insights on conservation practice of the cited artefacts; they include: Sylvia Haliman, Sarah J. Benson Miki Komisumo, Cindy Lau and Swee Mun Lee.

References

- E.R. Caley. "Early history and literature of archaeological chemistry" in *Journal of Chemical Education* 28 (1951), pp. 64–66
- A.O.M. Castellano, R.C.A. Rios, G.M.A. Ramos and E.V.P. Plaza. "A comparative study of mineralogical transformations in fired clays from the Laboyos Valley, Upper Magdalena Basin (Colombia)" in *Boletín de Geología* 34 (1) (2012), pp. 43–55
- R.M. Crawford and D.G. Mann. *The Diatoms: Biology and morphology of the genera*. Cambridge, 1990
- S. Das. "Living Clay" in *The Telegraph*, Calcutta. 8 June 2008. Accessed 2 November 2015.
- J. Nadolny. "The first century of published scientific analysis of the materials of historical painting and polychromy, circa 1780-1880" in *Reviews in Conservation* 4 (2003), pp. 39–51
- M.L. Sempowski A.W. Nohe and J.-F. Moreau. "On the transition from tin-rich to antimony rich European white soda-glass trade beads for the Senecas of Northeastern North America" in *Journal of Radioanalytical and Nuclear Chemistry* 244 (no. 3) 2 (2000), pp. 559–566
- In the mood for cheongsam*. Exhibition catalogue, National Museum of Singapore. Singapore, 2012. By C.L. Lee and M.K. Chung.
- Y. Shashoua, S.M. Bradely and V.D. Daniels. "Degradation of cellulose nitrate adhesive" in *Studies in Conservation*, 32 (2) (1992), pp. 113–119
- S. Smee. "In clay, a passage to India" in *The Boston Globe*, 14 September 2010. Accessed 20 October 2015.
- M. Stevenson. *Krishnanagar Clay Modelling in Museum Victoria Collections*, 2009. <http://collections.museumvictoria.com.au/articles/2796>. Accessed 2 November 2015
- A. Shugar and A. O'Connor. "The analysis of 18th century glass trade beads from Fort Niagara: insight into composition variation and manufacturing techniques" in *Northeast Historical Archaeology* 37 (1) (2008), pp. 58–68
- K. Swapan, D. Kausik, S. Nar and R. Sarkar. "Shrinkage and strength behaviours of quartzitic and kaolinitic clays in wall tile compositions" in *Applied Clay Science* 29 (2) (2005), pp. 137–143
- J. Winter. *East Asian Paintings, Materials, Structures and Deterioration Mechanisms*. London, 2008

Getting Online and Staying Engaged:

The National Heritage Board's Digital Engagement Journey

Shaun Wong, Senior Manager, Digital

Ian Liu, Manager, Digital

Cheryl Koh, Director, Strategic Communications and Digital
National Heritage Board, Singapore

This article examines the National Heritage Board's (NHB) foray into employing digital tools and provides an account of the milestones of this journey and the challenges the NHB has overcome in the formalisation of an integrated digital strategy. Focusing on websites, social media and the growing area of mobile apps, this article provides valuable examples for the consideration of fellow cultural professionals and institutions embarking on their own journeys into the digital world.

1. Websites and portals

HTML Websites (Late 1990s)

The NHB's first step into the digital realm began with the development of its corporate and museums' website, in tandem with the formation of the board and the inception of the national museums under the management of the NHB in 1993.

Website technology was rudimentary at that point in time, and websites were run on basic

programming languages such as Hyper-Text Mark-Up Language (HTML). The operation of these sites required a webmaster with a level of programming proficiency to be able to edit webpages and images, and publish them via File Transfer Protocol (FTP).

This was not a sustainable model of operation as users needed to be trained in basic HTML programming. Thus, the NHB looked towards solutions that did not require users to have specific technical skillsets.

Content Management System Phase 1 (2002–2003)

With the advent of content management systems (CMS) for businesses in the early 2000s, the NHB made a strategic decision to consolidate its websites into a single system to achieve consolidated governance for operations and security.

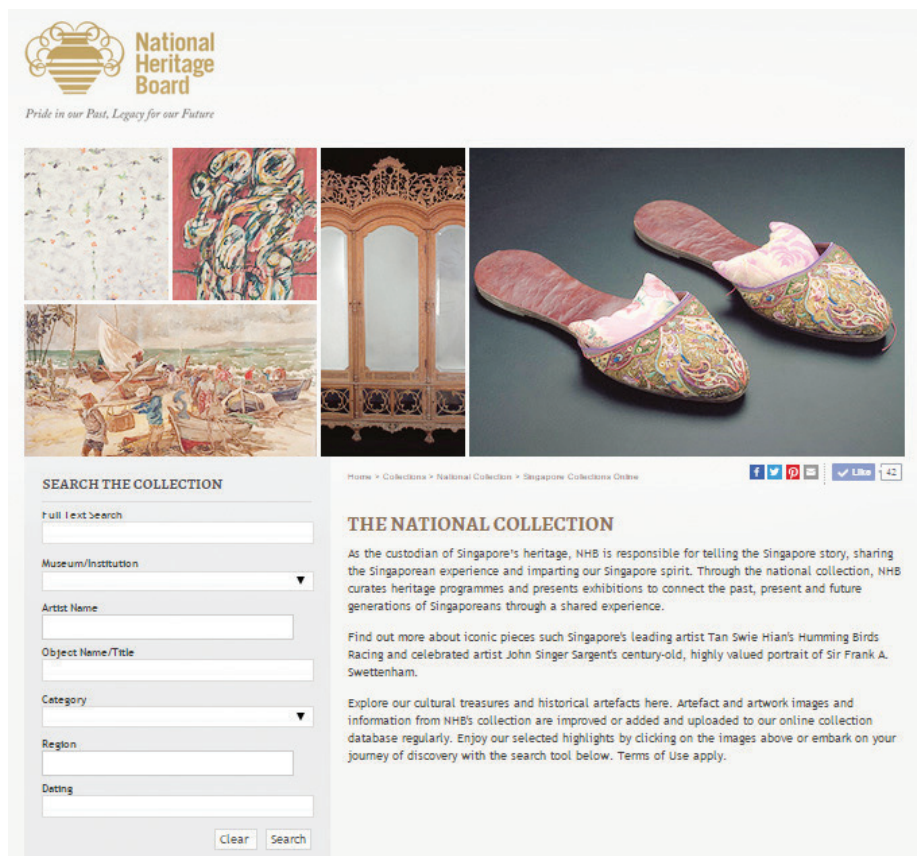
This exercise to consolidate NHB's corporate website and the websites of the



Figure 1.

The National Heritage Board's website in 2007. Image courtesy of National Heritage Board.

Figure 2.
Singapore Collections
Online (SGCool) in 2014.
Image courtesy of National
Heritage Board.



Asian Civilisations Museum, National Museum of Singapore, Peranakan Museum, National Archives, Reflections at Bukit Chandu and Singapore Art Museum into a single CMS was executed from 2002 to 2003.

While the move to provide a consolidated CMS achieved security and governance objectives, operational issues remained. The CMS implemented required users to have a certain level of programming proficiency, which was counterproductive and did not meet operational needs.

As a result, towards the end of the development of the CMS, the NHB began to source for more operationally sustainable solutions for its corporate and museums' websites. These included externally managed websites which were administrated by hired specialists or a regression to HTML websites. As such, the initial goal of consolidating NHB's websites into a single system was not realised. This de-centralised digital face of NHB, wherein

each museum had their own website, would be the mode of operation until the next website consolidation exercise in 2012.

Putting the collections online with SGCool (2005–2015)

In 2005, a concerted effort was made to digitise Singapore's National Collection. The key objectives of this project were to increase the public's awareness of the National Collection as well as aid the operational issues of managing the NHB's increasing collection volume.

This project involved developing a back-end museum collection system that would automate the accessioning process and capture key information about the objects. This was essentially the start of a knowledge management system for the NHB. Concurrently, additional efforts and research resources were also invested in enhancing the content of the collection.

In 2010, non-classified information from the collection was made publicly available in the form of a website named Singapore Collections Online (SGCool). SGCool provided users with a simple search function, low-resolution photos and brief write-ups on each item in the collection.

To date, 100% of the displayable items in the National Collection been made available online. It might also be of interest to note that web visits to SGCool increased by 56% from 2014 to 2015 with an average of four minutes spent on the website. This is perhaps an indication of a growing interest by the public and museum visitors in the National Collection.

This Singapore Collections Online portal would eventually be subsumed under a new Heritage Resource Portal that was launched in April 2016.

As a result of this process, the NHB developed a better understanding of the requisite skillset required for collections research as well as the optimal output of collections digitisation by a set number of cataloguers on an annual basis. The challenges faced by this project included the limited pool of researchers with relevant knowledge expertise that the NHB could tap on as well as difficulties in developing an overarching editorial direction for the content utilised by the website. The need to develop a controlled and consistent vocabulary of taxonomy of subjects and categories for the collections also became evident in this project.

Improving the content in the national collections portal will continue to be a focus for the NHB, as the organisation looks to promote the national collection on a variety of platforms owned and operated by the Board. Better ways of presentation, improved searchability and usability, and integration with non-collections data are being explored.

Content Management System Phase 2 (2002–2003)

As a result of an increased focus on cyber security and corporate governance as

well as compliance with government security audit requirements, the NHB consolidated its eighteen websites into a single CMS in 2012. By that time, business solutions available in the market were well-placed to meet the diverse needs of the various divisions within NHB and relatively comparable to open source solutions. This exercise achieved its security and governance objectives and brought about certain operational improvements.

However, the adopted CMS was encumbered by technical issues which were not apparent at the point of adoption. The system did not allow for scheduled publication of webpages and the unique website addresses (or URLs) for specific pages displayed were unintelligible, resulting in diminished search engine visibility.

Users also provided feedback that even after various training sessions, they felt that using the CMS was too daunting. The system was too complex and rigid, while the interface was not as user-friendly as initially promised. This resulted in the outsourcing of content management and web mastering services to an external web development vendor at an additional cost.

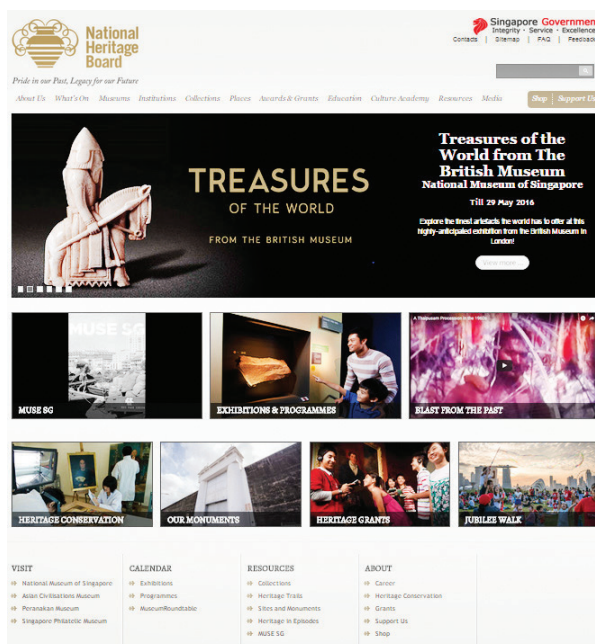


Figure 3. The NHB's website in 2014. Image courtesy of National Heritage Board.

In 2014, the NHB was required to shift its entire network of websites to a Singapore Government cloud hosting solution. This solution would lead to increased security compliance as well as allow for transactional services (e.g., signing up for e-newsletters and events) to be conducted. Up to this point, the NHB and museum websites had served largely as informational sites with little or no interactivity with their audience

This hosting environment also afforded NHB the opportunity to utilise a new CMS. Having had the benefit of lessons from previous web migration exercises, the NHB then conducted a thorough consultation exercise with internal stakeholders to map out their user needs. The users highlighted accessibility, usability and design as their key considerations, and a stocktake of content producing divisions was conducted. This consultation and stocktake contributed to the development of the information architecture of the websites.

The migration process was completed in 2015 when eighteen separate websites were migrated onto a single platform. Within 12 months, the overall web visitorship saw an overall increase of 5%. Users have also provided positive reports of the usability of the system. The CMS improved accessibility to the NHB's content, providing end-users multiple ways to search and retrieve information quickly. The new CMS also allowed the NHB to provide geospatial data of our physical locations, using maps to represent our heritage places for the first time. However, it is useful to note that some constraints continue to exist, in the form of the collection of personal data and conducting financial transactions, such as the selling of merchandise.

Two websites developed on this CMS, namely the Singapore HeritageFest and Singapore Night Festival portals, have received awards from the Interactive Media Council (IMC) in New York in 2016. Singapore HeritageFest website received The Best in Class award, which is the highest honour bestowed by the Interactive Media Council. As stated in its website: "The winner of this award has excelled in all areas of the judging criteria

and achieved a perfect, or near perfect, overall score. This winning site represents the highest standards of professionalism, standards compliance and impeccable planning and execution."

The Singapore Night Festival received the Outstanding Achievement award. The judging criteria as stated: "This award, like the Best in Class award, is an extremely challenging award to win and represents excellence and great accomplishment. However, in allowing for slight leniency in the judging process, this award recognizes that outstanding websites worthy of honor and recognition need not achieve scorecard perfection. In most cases, these sites have received top marks in four of the five judging criteria and we believe that by lagging slightly in one criterion the entire work should not be disqualified."

Roots.sg: Heritage Resource Portal (2014–present)

With the growth of the heritage sector in Singapore and increasing public interest in heritage matters, the NHB felt it was an opportune time to launch a heritage resource portal to better provide information to the public.

Targeted at educators, the portal, Roots.sg, brings together all of the NHB's resources – the National Collection, heritage trails, historic sites, national monuments, publications, videos and other online media in a single place. Its aim is to encourage the discovery of the wealth of resources produced by the NHB and content partners from the public sector and civic groups.

Other than providing an engaging, interactive interface for audiences, a key benefit of this exercise was that it started the NHB on the track of implementing data standards to ensure a uniform method of collecting location-based data. The benefit to the audience is that information of national monuments, heritage trails, historic sites and heritage places can be retrieved quickly through the portal, and related resources can be presented to the visitors to deepen their exploration of our heritage. In

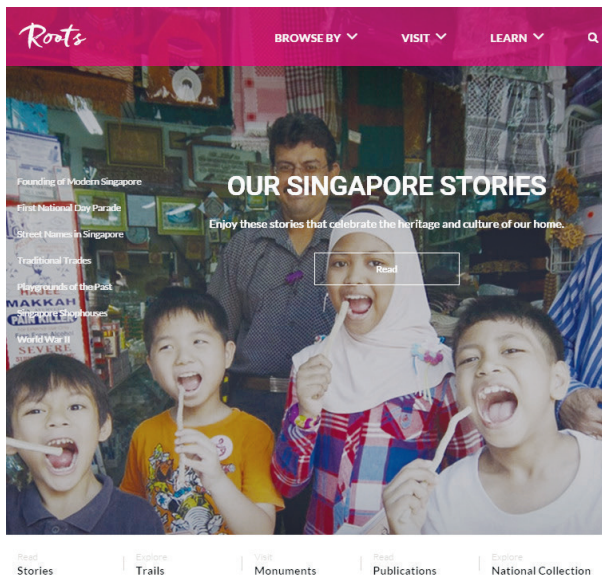


Figure 4. The Roots.sg portal. Image courtesy of National Heritage Board.

future, such data can also be easily shareable with other like-minded organisations.

With this project's inception, the NHB posited the idea that “our museums are repositories of our National Collection and in many instances they are national monuments, with heritage trails and historic sites in the vicinity. Our museums and NHB also produce publications and multimedia resources. When this comes together in a single place, we can deepen engagement with our audiences and inspire enjoyable heritage journeys”.

However, the NHB's data existed in different systems and was not structured to facilitate sharing. Bringing together disparate data and finding commonalities that could be used to link and surface these resources was a huge challenge. For example, typical information pertaining to a national monument includes the gazette date, construction date, architects and background information. This information was previously grouped into a single text field, which made retrieval difficult. This process involved reviewing close to 1,000 heritage places, obtaining accurate geolocation attributes and finally formatting the information and placing them in structured tables that could be transposed to the system database.

To meet the project's 12-month development timeline, the NHB had to rapidly define a useful categorisation that would be able to encompass all the different data types. The NHB consulted the National Library Board (NLB) and learnt that they had developed a cultural taxonomy for their resources that was localised to the Singapore context and was derived from universal data/cataloguing standards (e.g., The US Library of Congress: <https://www.loc.gov/>).

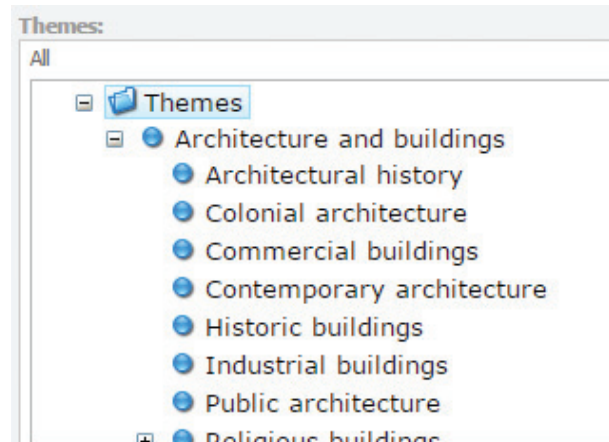
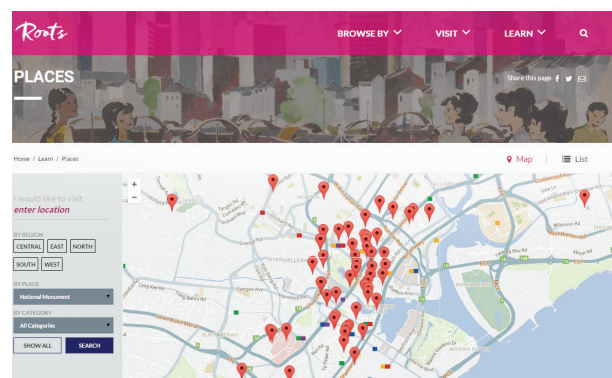


Figure 5. An example of the NLB's taxonomy that established architectural categories (e.g., colonial, contemporary, industrial, interior, public) and helped categorise heritage places. Image courtesy of National Heritage Board.

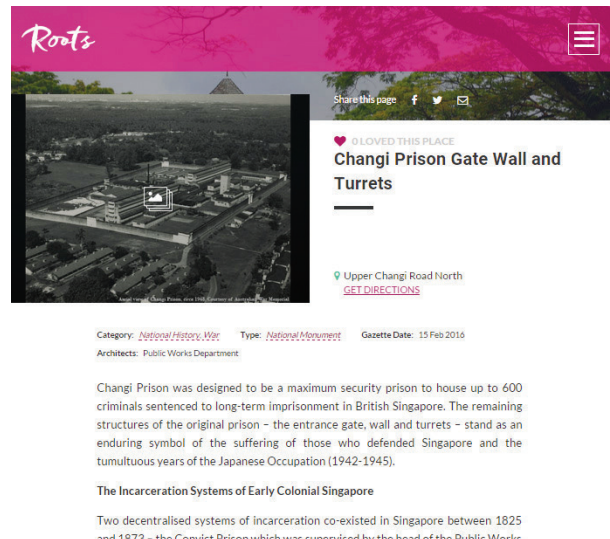
The NHB then conducted a review of this taxonomy and ascertained that a subset of this could be used to categorise its resources.

The NLB also extended advice on the operationalisation of taxonomies and how it could be applied to the resources. This greatly reduced the effort required to devise an entirely new taxonomy from scratch. The next massive part of this project involved data cleansing and tagging. Bearing in mind this content bank would constitute more than 125,000 collection and non-collection data points, NHB identified data sets that could be quickly cleaned up and tagged. These data sets had information that was 70% complete and would not require extensive research to be conducted.

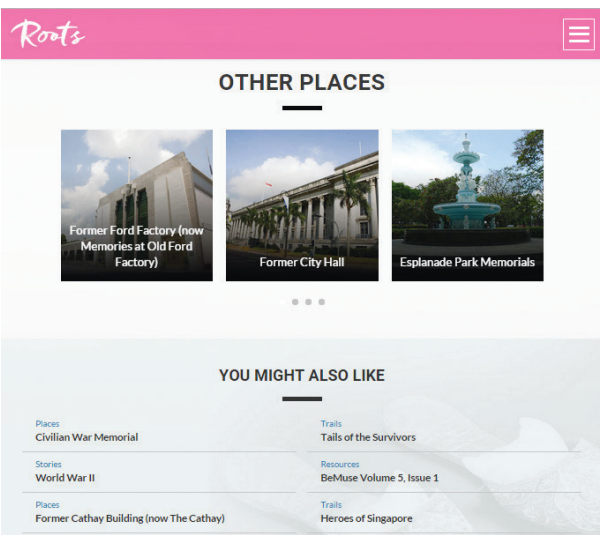
Figure 6. Example of tagging of data for public access. Images courtesy of National Heritage Board.



Heritage places are presented visually using maps on Roots.sg



Typical presentation of a heritage place on Roots.sg



Recommended content is now readily available due to the new taxonomy

The data sets comprised the non-collections resources that include physical heritage locations and multimedia resources and numbered about 1,000. The collections data had its own existing taxonomy, but the scale of integrating these two taxonomies was massive, and had to be taken on a separate track.

The clean-up and tagging of the non-collections data involved two staff working full-time to ensure that each resource's write up was updated with accurate data values assigned to the appropriate back-end fields, along with ensuring that each resource was tagged relevantly. This process took three months whilst running concurrently with development of the front-end website.

The key performance indicators for this website included page views and time spent. To achieve this, the NHB decided early on that the website should maximise every opportunity to profile related resources to encourage deeper learning and exploration of the heritage resources. Based on the taxonomy adopted, the NHB developed a machine logic that actively recommends related content to the visitors. This involves making sense of how each piece of content relates to the taxonomy, and applying both contextual and logical tags to each article or resource. With the logic in place, the system recommends articles and resources to visitors that have the most relevant tags to the current article that they are browsing.

For example, in the Jubilee Walk heritage trail, the start point on the trail is the National Museum of Singapore. Besides learning about the significance of the National Museum, visitors are also recommended more sites on the Jubilee Walk, other national monuments within the vicinity, activity sheets as well as virtual tours such as historic bridges over the nearby Singapore River.

Along with consulting internal stakeholders during the development of this project, the NHB had the privilege of tapping on the expertise of its Digital Resource Panel, who was consulted on key design and functional issues. This panel consists of expert practitioners in arts and culture (from organisations such as Singapore's National Library Board and British Museum) as well as user interface.

During the development of the website, the NHB also felt that the content was still segregated and the NHB was not reaping the full benefits of a consolidated content bank. Hence, the NHB developed content in the form of stories which have an evergreen thread.

In our World War II story, many resources are showcased in a single article. These include World War II artefacts from our collections, heritage trails, historic sites, magazines as well

as videos. This method of delivery allows the visitors to discover more resources on the topic that they have searched for.

Each story brought together various content elements such as heritage trails and national monuments to an object in the national collection. Moving forward, a steady stream of content will be produced or re-purposed from offline sources to be featured on Roots.sg. This will include articles that better illustrate NHB's programmes and initiatives as well as the conversion of printed publications (e.g., Muse SG) to digital format.

Roots.sg was launched in April 2016 and is projected to achieve one million page views in its first year of operation. As the main content bank facing the public for the NHB's heritage resources, this portal will be a key driver in the organisation's Digital Engagement Strategy and aims to deepen audience engagement with Singapore's heritage.

Websites: Lessons learnt

The NHB's web development journey thus far has stressed the need for substantial testing of potential systems prior to adoption. It is also important to conduct thorough information architecture development and conduct



Figure 7.

The Yesterday.sg blog.
Image courtesy of National
Heritage Board.

functional and user requirements studies prior to project development. Stakeholders should be engaged early and at key milestones in the course of the project.

The NHB recommends that Information Technology and Digital teams have thorough oversight of the variety of systems that are in operation, as this allows for opportunities for streamlining of resources and demand aggregation can result in time and cost savings.

Each project also affords an opportunity to highlight any gaps in knowledge management in the organisation that need to be addressed at an organisational level.

2. Social Media (2006–present)

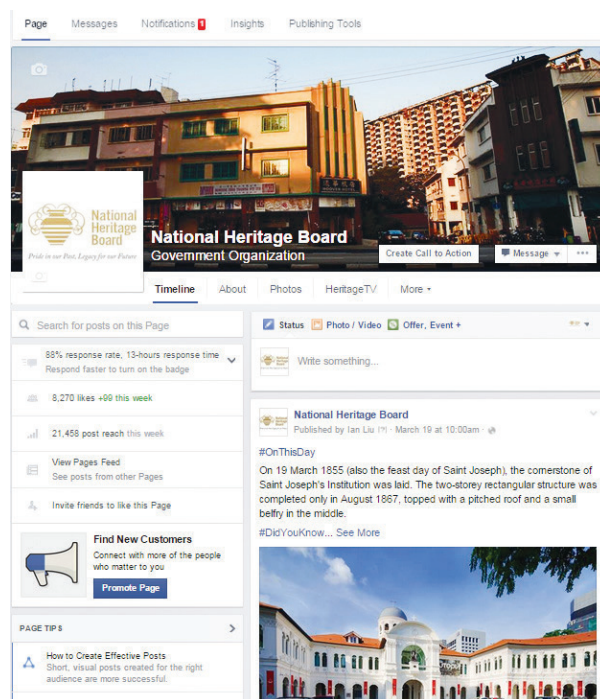
Blogs

In 2005, the NHB started exploring the viability of operating a blog as a channel to deepen engagement with its audiences that could increase awareness and cultivate conversations about museums and heritage.

Blogs (also known as weblogs) were considered a fairly new communication platform at the time. No other government or government-linked organisation had embarked on it and NHB took a bold step in doing so.

The NHB started its blog by creating content pieces that embraced a conversational tone with the intention of giving new perspectives to heritage or historical subjects that were usually perceived as dull and uninteresting.

At that point in time, there were only a handful of individuals who wrote about museums and nostalgia on blogs. The NHB identified the opportunity to bring these individuals together as content contributors on a heritage blog. The blog started out under the Museum Roundtable brand, which is Singapore's informal association of public and private museums, to give it a more ground-up and organic feel. Named Yesterday.sg, the blog sought to create original content on a sustainable basis and was able to do so for close to two years.



(Left) Figure 8. “I Love Museums” Facebook Page.
(Right) Figure 9. NHB’s Facebook page.
Images courtesy of National Heritage Board.

Over time, Yesterday.sg morphed into an aggregator of heritage content. This was because the contributors preferred to publish content directly on their own sites. Also, with the growth of social media platforms and interest in blogs, contributors preferred to grow their audiences on their own branded sites.

This initial foray into social media aided the NHB in understanding the effort required for community management to achieve mutual benefits. The NHB learnt the importance of identifying popular content themes (e.g., behind-the-scenes stories, previews of new exhibitions or galleries) which was subsequently reproduced on other social media platforms. The NHB also realised that it should only embark on new platforms if there is a sustainable pipeline of quality content to be propagated. This became the guiding force in all of the NHB's future digital engagements.

Social media sites

In 2008, the NHB launched its first Facebook page with the "I Love Museums" page to support its eponymous campaign. As with blogs the NHB was considered an early adopter from the government sector (Facebook was launched in February 2004) of the now-popular social media site.

This Facebook page is still in operation, long after the conclusion of the campaign and has garnered more than 37,000 fans to date. In the early phases the "I Love Museums" page was used mainly for marketing and promotion to complement the traditional marketing platforms deployed. There were no content strategies nor dedicated resources to further the growth of the page. However, over the years it has grown organically becoming the key driver in the NHB's social media engagement. One of the key thrusts of the Digital Engagement Strategy is to cultivate advocacy. Through this page, the NHB identifies and cultivates online advocates who are still actively engaged and post about NHB's programmes on their own platforms where they are acknowledged as opinion leaders.

From 2009 onwards, the NHB's museums and institutions established their respective

Facebook pages and focussed on a mix of original content as well as programme-related posts. This was a strategic directive as audiences preferred to learn more about the venues from the venue owners themselves. From late 2013 to 2015, the NHB developed a systematic approach to social media content and experimented with more original content. The objective was to increase engagement with the audiences and grow the pages organically.

Concurrently the museums also began to dedicate more resources to their Facebook pages and their pages grew both in terms of fan base as well as audience engagement. The "I Love Museums" page then evolved into an aggregator page to share content from the various museums' and institutions' pages so as not to cannibalise each other's content.

In 2014, to meet the increased needs from divisions to communicate heritage issues and promote its larger pool of heritage programmes which did not fit naturally into the 'I Love Museums' page, the NHB launched its official Facebook page. The NHB page offers a mix of original content about its resources as well as announcements on new initiatives and programmes that originate from its non-museum divisions.

This page has gained more than 8,000 fans to date. With the launch of Roots.sg, the NHB envisions that its Facebook page will allow audiences to better engage with the NHB's content. Audiences can now further their interest in specific topics by visiting Roots.sg for a more comprehensive experience.

The NHB's museums and institutions have also created profiles and content on other social media platforms such as Instagram and Tumblr, but face the challenges of maintaining a steady stream of quality content and a unique persona on these respective sites.

Social media: Lessons learnt

An important lesson is that social media engagement should only take place if the organisation is willing to commit to a sustainable content development pipeline

and has the requisite expertise in community management. The real time engagement and statistics provided by social media sites also allow and require organisations to respond dynamically and refine their communication plans and corporate messages.

Social media platforms also provide opportunities to identify and cultivate individual enthusiasts who can potentially become customer evangelists for the organisation. This, however, needs to be done with a long-term view in mind and commitment on the part of the organisation. As social media sites continually evolve, it is also important to develop platform agnostic content that can be transposed across different platforms.

Dedicated human resources who are adept in social media communications need to be hired as traditional communication professionals may not be suited for the role. As an organisation's social media platforms grow to become more independent, work processes need to be tweaked to ensure integration between the marketing and communications departments.

3. Mobile applications (2011–present)

The NHB started developing mobile applications (apps) in 2011, with the Asian Civilisations Museum taking the lead with *Terracotta Warriors*. This app offered visitors an interactive story-driven tour of the museum's special exhibition and featured augmented reality (AR) experiences and mini-games. In 2014, the Singapore Philatelic Museum offered a similar experience in its *League Against Evil* app where visitors who used the app had the opportunity to take AR photos with their favourite comic characters.

From 2012–2015, the NHB's Education and Outreach division developed mobile apps to accompany their heritage trails, which present the history and selected landmarks of various history-rich areas around Singapore such as Tiong Bahru, Jurong and Jalan Besar. Three heritage trail apps were launched by 2014, and an aggregated trail app, in collaboration with the National University of Singapore, was launched in 2015.



(Left) Figure 10. The *Terracotta Warriors* mobile app by the Asian Civilisations Museum.
(Right) Figure 11. *League Against Evil* Mobile App by the Singapore Philatelic Museum.
Images courtesy of National Heritage Board.

In 2015, the National Museum of Singapore and Asian Civilisations Museum launched mobile apps that enhanced the experience of their revamped galleries. The first iteration of the National Museum of Singapore's app offered translations, gallery highlights and way-finding, while the Asian Civilisations Museum's app aimed to enhance visitors' experience with audio-visual content and a selection of self-guided tours and interactive exhibition maps.

In recent years, the museums have also explored other interactives but there has not been a concerted effort to look at an overall roadmap for the various apps and interactives for better synergy across institutions.

Mobile apps: Lessons learnt

Awareness of the availability of mobile apps has to be continually communicated on both physical and online platforms. The Asian Civilisations Museum identified that involving the visitor services staff in promoting and assisting to install the app on visitors' mobile phones has contributed to the adoption rate of the app.

The NHB continues to define the returns on investment and key performance indicators beyond app downloads and is seeking to identify sustainable models for mobile app development. Parameters and indicators such as whether an app complements the visitor experience, what is the mobile app experience for different audiences, and the benefits of having a mobile app, continues to be assessed internally.

Formalising a Digital Strategy (2014–present)

Recognising the rapid growth of online and social media platforms in Singapore and the advantages the NHB has reaped from using digital media, the NHB formulated its Digital Engagement Strategy in 2014 with the key objectives to improve access to its resources, deepen engagement with audiences and cultivate heritage advocacy. Internal outcomes include improving the technology infrastructure, increasing the digital

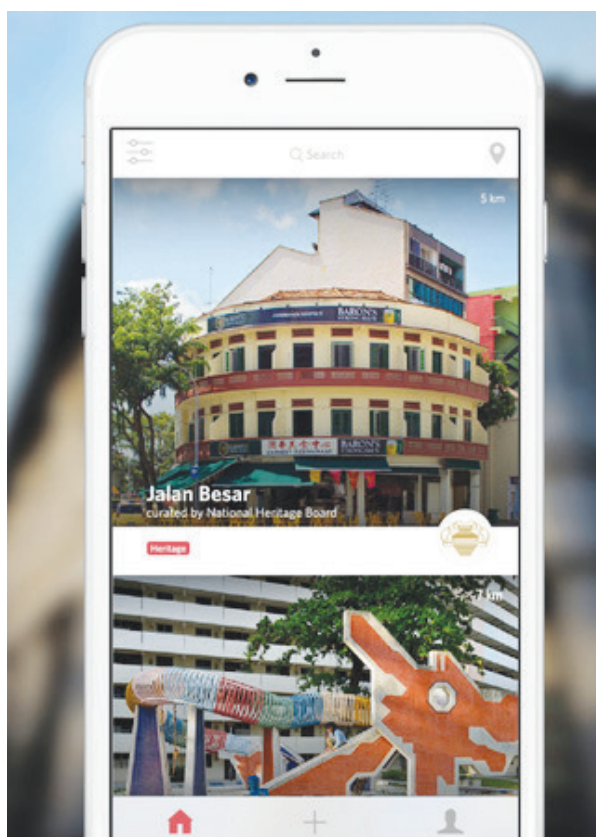


Figure 12. The National Heritage Board's heritage trails mobile app. Image courtesy of National Heritage Board.

capabilities of NHB's staff and instilling a digital mindset.

This strategy was applied in all projects from 2014 till 2016, as the NHB sought to make resources and initiatives available and accessible on various online platforms, improve visitor experience through mobile apps and in-gallery interactive applications, as well as sustain engagement with advocates.

The strategy was reviewed and refined in 2016 to align with the NHB's strategic priorities including Heritage Preservation and Nation Building, developing Audiences and Education, Research and Organisational Excellence. This second phase of the strategy builds on the foundation that was laid in the first phase. The NHB will continue to enhance the quality and types of digital content through digitisation of heritage resources, and to increase discovery of these resources.

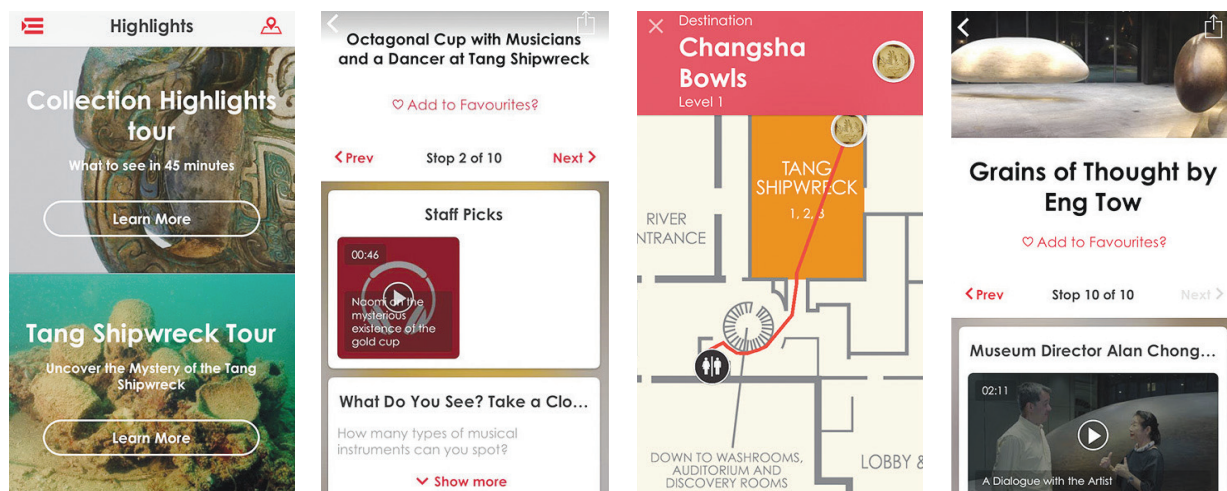


Figure 12. The Asian Civilisation Museum's mobile app. Image courtesy of National Heritage Board.



Figure 13.

The NHB's Digital Engagement Strategy.
Image courtesy of National Heritage Board.

The NHB will also continue efforts in fostering a digital perspective and capability across its museums, institutions and divisions. Most importantly, plans will be in place to better

understand the customer journey across the NHB's museums and heritage sites, and use the derived analytics to improve the overall offering.

Looking forward to a digital landscape

The continually evolving digital landscape provides the NHB with numerous challenges and opportunities. The NHB has improved in terms of its agility in adopting new technologies to meet changing operational and communication needs and has continued to maintain a high-level of engagement through various social media channels.

There is room for improvement in producing quality in-gallery interactive applications, as well as mobile apps that will complement visitor experiences. There is also still much work to

be done in terms of knowledge management of public facing and internal resources. This will be a key focus in coming years.

The NHB is also keen to look at gaining a better understanding of our audience's profiles and will bring together various sets of data from existing and new systems, such as from donor management, volunteer management and online ticketing systems, in order to further our customer relationship management capabilities. The NHB's digital transformation effort ultimately aims to position the organisation as a thought leader in the digital arena, and evolve into an organisation where art and culture, science and technology converge.