

RESILIENCE THROUGH HERITAGE I:

HOTEL NEWWORLD

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HOTEL NEW WORLD

RESILIENCE THROUGH HERITAGE I



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FOREWORD

The National Heritage Board (NHB) introduced its "Resilience Through Heritage" series of projects in 2012 to document and promote national resilience and emergency preparedness through significant historical events in Singapore's history.

The first project focused on the collapse of Hotel New World which shocked and riveted the entire nation, and eventually led to the deaths of 33 people, the rescue of 17 survivors, and the introduction of new construction and building maintenance legislation.



Chan Yeng Kit
Permanent Secretary (Defence Development)
Ministry of Defence

I still remember learning about the collapse on 15 March 1986. I was then studying in Australia. News about Singapore in the Australian media was rare, while the modern Internet that we know of today did not exist yet. So imagine my surprise when news reports on the hotel collapse appeared on Australian TV. My friends and I tuned in to news reports on TV and radio, and scoured the newspapers for updates on the collapse.

The collapse of Hotel New World was undoubtedly a tragic event, but it also showed how we responded as one nation. It served as a rallying point for Singaporeans and our foreign friends, who worked tirelessly together to locate and extricate survivors. It was heartening how many private organisations and ordinary individuals came forward to offer aid and to contribute in whichever way they could to help those in need.

I am glad that this Hotel New World project similarly epitomises a spirit of cooperation, with NHB collaborating with the Ministry of Home Affairs' Heritage Development Unit, other public agencies as well as individuals who were involved in the rescue operations to curate a traveling exhibition and to organise public talks at libraries.

I hope that Singaporeans will be able to reflect upon the lessons learned from the collapse of Hotel New World and I look forward to more such projects from NHB.



An exterior shot of the former Lian Yak Building taken in 1974.

Courtesy of the former Public Works Department (PWD).

PROVIDING AN OVERVIEW

Located at the junction of Owen Road and Serangoon Road, the Lian Yak Building (more commonly known as Hotel New World) collapsed on 15 March 1986 at approximately 11.15 am. The collapse of Hotel New World was considered Singapore's Singapore's first major civil disaster and one of the worst disasters in Singapore's post-war history.

Owned by Lian Yak Reality Company, the building was built between 1969 and 1977 and had six levels above ground and one basement carpark. The ground floor was occupied by a branch of the Industrial &

Commercial Bank and the second floor was occupied by a nightclub. The 67 room Hotel New World occupied the remaining third to sixth storeys.

As early as 1974, concerns regarding the safety of the building were raised when cracks appeared on the walls of several rooms. Prior to the collapse, the building, then known as New Serangoon Hotel, made the headlines on 19 August 1975 when a toxic carbon monoxide leak occurred and left 35 people unconscious.





A photograph of Eagle Piano
Company which served as the temporary command centre for the Hotel New World rescue operations (1986).
Courtesy of the former
Ministry of Information,
Communications and the Arts

TRACING THE COLLAPSE

On the fateful Saturday morning of 15 March 1986, the Hotel New World building suddenly gave way and collapsed with a loud thunder-like sound. Eight minutes after the collapse, the first two fire engines dispatched from the Central Fire Station on Hill Street arrived at the scene followed by the police.

In view of the gravity of the disaster, the Executive Group¹ was activated. A Police Emergency Command Post was also established and a Command and Control Group set up to oversee the ground operations. A shophouse selling pianos operated by Eagle Piano Company opposite the collapse site, and later, the nearby Serangoon Plaza were used by the authorities as the command centre for the rescue operations.

A Casualty Information Bureau, an Information Collection Centre and a Services Action Group were also established, to collect and disseminate information and updates; provide supplies, equipment, logistical requirements; and coordinate all voluntary offers of assistance. In addition, a Temporary Mortuary was set up at a vacant piece of land near Burmah Road, and a Helicopter Landing Site was secured at the Farrer Park soccer field to airlift casualties to the hospitals. By late afternoon, government ministers and Cabinet members as well as relatives of the trapped victims had arrived at the site to assess the situation.



A meeting involving commanders of rescue operations of the fifth day of the collapse (1986). Courtesy of Singapore Press Holdings

¹A Crisis Management Committee conceived at the national level and comprising a group of senior officials from various ministries formed to tackle crisis and emergency situations.





A photograph of rescue workers in the midst of rescue operations (1986). Courtesy of the former Ministry of Information, Communications and the Arts

CONDUCTING THE RESCUE

The Hotel New World rescue operations lasted for five days and involved more than 500 personnel from the Singapore Civil Defence Force, the former Singapore Fire Service, the Singapore Police Force, the Singapore Armed Forces and a team of foreign experts.

The initial phase of the rescue operations was fraught with many difficulties and challenges. The disaster site was chaotic with blocked roads, and access to the site was further obstructed by members of the public and the media who had gathered to witness the ongoing rescue operations. To make matters worse, some of the rescue personnel were not trained nor were they equipped to deal with a disaster of such a magnitude. The cut-and-lift method adopted by the rescue team was also ineffective.

The rescue team then decided on the tunneling method and enlisted the assistance of tunneling experts from Britain, Ireland and

Japan who were stationed in Singapore for the construction of the Mass Rapid Transit (MRT) subway. This resulted in a breakthrough in rescue operations and at the end of the first day, nine survivors were rescued and one body was extricated from the rubble.

The progress of rescue operations gathered momentum with the arrival of specialized equipment such as the ultra high pressure water machines that were able to blast through concrete without causing vibrations, 100-ton cranes that were able to lift heavy concrete slabs, life detector devices, and infrared imagers.

On 19 March 1986 - five days after collapse - at around 6.15am, the Executive Group called off rescue operations after a battery of sound checks established that there were no remaining survivors. The final death toll: 33 people died and 17 rescued.



An photograph of rescue workers working through the night (1986).

Courtesy of Singapore Press Holdings



A photograph of police officers collecting evidence from the Hotel New World disaster site for investigations (1986). Courtesy of Singapore Police Force

INVESTIGATING THE COLLAPSE

Soon after the disaster, investigations were conducted to determine the causes of the collapse. The investigations were led by DSP S.K. Menon of the Criminal Investigations Department who was assisted by experts from different fields to provide advice on various technical aspects. A series of tests and analyses were carried out on structural components such as building columns, beams, foundation etc. In addition, building materials extracted from the debris were examined to determine if the quality of the building materials could have contributed to the collapse.

The investigations also sought to determine if any explosion took place and if the nearby construction works carried out by Mass Rapid Transit Corporation (MRTC) could have played a part that led to the collapse. The subsequent findings of the investigation ruled out the possibility of an explosion and further concluded that the MRTC works did not cause nor contribute to the collapse of the building.

On 22 March 1986, former President Wee Kim Wee appointed a four-man Commission of Inquiry to determine the cause of the building's collapse and recommend measures to prevent a similar occurrence. The Commission of Inquiry was headed by Mr. Justice L. P. Thean, Chairman of the Commission and the remaining three commissioners were all engineers.

The Hotel New World inquiry

Blast, MRT work among 10 areas being probed

By GERRY DE SILVA



Index up 10.67 points

An article from *The Straits Times* regarding the investigations to determine the causes of the Hotel New World collapse (1986). Reprinted with permission from Singapore Press Holdings.



An examination of the piles disclosed poor construction practice where the piles were arranged haphazardly and in one case, there were 11 piles instead of the expected 9 piles (1987). Reproduced from the Report of the Inquiry into the Collapse of Hotel New World

PRESENTING THE CAUSES

The Commission of Inquiry presented the findings of the investigations and recommendations to former President Wee Kim Wee at a ceremony at the Istana on 16 February 1987. The 115-page report concluded that the collapse could be attributed to structural faults as well as poor quality design and construction.

Firstly, the Commission noted that the building was designed by unqualified individuals and as a result, many of the columns and beams were unable to withstand the loads imposed on them. Secondly, the construction of the building was done in a very haphazard way with virtually no professional supervision.

In addition, the Commission noted that the building's structure was further over-loaded by new installations on the roof (which included a water tank, two water heaters, a cooling tower, condensing units of the air conditioning system etc.). The tiling of the building exterior also added another 50 tons to the weight of the building.

To make matters worse, there was no proper maintenance of the building and structural defects were either ignored or superficially treated. The building was thus in a state of progressive deterioration, up till its eventual collapse.

Untrained man drew the plans



An article in *The Straits Times* outlining the main findings on the causes of the Hotel New World collapse from the Commission of Inquiry (1986). Reprinted with permission from Singapore Press Holdings

How to avoid another Hotel New World disaster

THE Government must become a more active watchdog of the building industry and get owners to make compulsory checks on their buildings every five years if another Hotel New World tragedy is to be avoided.

These are among the recommendations made by a commission set up to inquire into the collapse of the Lian Yak Building which housed the hotel.

Its report emphasised that owners and professionals such as engineers and architects should continue to be fully responsible for the design, con-struction and maintenance of their buildings.
But professionals are not

perfect and can make mistakes or commit malprac-tices; so the Government must play an enhanced role, the sion said.

New laws

Essentially, it wants the

Government to:
• FORCE owners to conduct five-yearly maintenance checks by professional engi-neers on all buildings to which

the public has access.

• DOUBLE-CHECK structural plans and calculations sent in by professional engi-

• MAKE sure that there are professionals at the sites to supervise structural works.

• CONDUCT irregular spot

checks at the sites;
• GET owners to do tests for piles and structural materials. And to achieve all these

new laws may be necessary, the commission said. In addi-tion, the Government should review and consider whether existing laws adequately pro-tected it and its officers from any liability arising from the various functions assumed by the Development and Building Control Division.

Main concern

It is understood the Govern ment is studying these and other recommendations in the 115-page report of the commission, which has been tabled before Parliament.
The report is the culmina-

tion of a two-stage inquiry, presided over by Mr Justice L. P. Thean and three other commissioners, Dr A. Vijiarat-nam, Prof S. L. Lee and Prof Bengt B. Broms. They heard evidence from 117 witnesses. And they made it clear what

"It is the small projects, such as the Lian Yak Building, with which we are most concerned. Ironically, the

Doomed from the start

There was no single triggering act that brought down the ill-fated Lian Yak Building, the commission of inquiry found out. The root of the disaster was poor structural design. Shoddy construction added to the

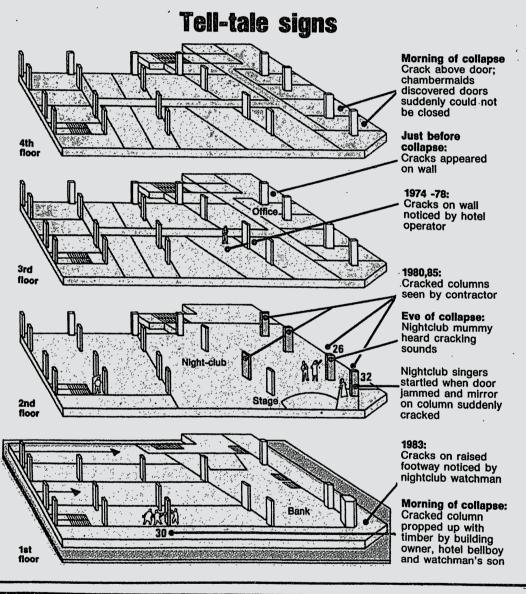
problem. The only hope lay in proper maintenance. But the signs that the building was tottering were ignored or not taken seriously. The result: the building collapsed, 33 people died and a nation shook in horror and

(1987).

Reprinted with

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Singapore Press Holdings



- What went wrong: at the design, construction and maintenance stages
- What was ruled out: MRT tunnelling, explosion, soil settlement, pile failure

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smaller the project, the greater the risk of human error and the greater the likelihood of professional malpractice and under-designing occurring; and because it is small, it is less likely to receive the professional attention which it de-

In their analysis of why the tragedy which took 33 lives occurred, the commissioners said the causes had their origin more than 15 years ago when plans for the building were still on the drawing

qualified people laid the groundwork for the tragedy. Shoddy construction brought the building to the brink. And superficial maintenance

It crumpled in a life-crush ing heap on March 15, 1986.

"Clearly at about 11.15 that morning, the building could not stand the load any longer and its collapse was inevita-ble; and collapse it did, sud-denly and swiftly within less than a minute it was all over.

"Until then, no one would have believed that such a di-saster could happen in the way that it did," the report said.

RECOMMENDING An article in *The Straits* Times which outlined the key measures **MEASURES** recommended by the Commission of Inquiry

The Commission made several recommendations to prevent similar disasters from occurring in the future. More importantly, it recommended that the government should assume a more active role in the building industry to avert potential disasters of this nature.

The recommended measures included more spot checks on buildings and legislation to enforce maintenance checks every five years. The revised laws also encouraged building owners to adopt more stringent standards in reviewing building plans, testing structural materials and supervising structural works.

Following the disaster, the government called on owners of buildings designed by the architect and engineer of Hotel New World to carry out structural checks on their buildings. In addition, the government merged the former Singapore Fire Service and the Singapore Civil Defence Force (SCDF) on 15 April 1989 to ensure better coordination and a more systematic approach to rescue work, especially during disasters. The integration would also result in a standardization of response time and strategies when tackling civil emergencies.



A group photograph taken during the presentation of the Commission of Inquiry Report to former President Wee Kim Wee at the Istana (1987). Courtesy of the Istana

HONORING THE RESCUERS

Following the Hotel New World disaster, an investiture ceremony was held at the Singapore Conference Hall on 26 April 1986 during which former President Wee Kim Wee gave out national awards to 94 individuals and 33 organisations involved in the rescue operations as a national expression of gratitude.

The four award categories included the Conspicuous Gallantry Medal, the Public Service Star and the Public Service Media for individuals, and the President's Certification of Commendation to private corporations and public organisations.

In addition, to assist the families of the 33 victims, an amount of S\$24,000 was given to each family in May 1986 from the relief fund set up by the Community Chest.

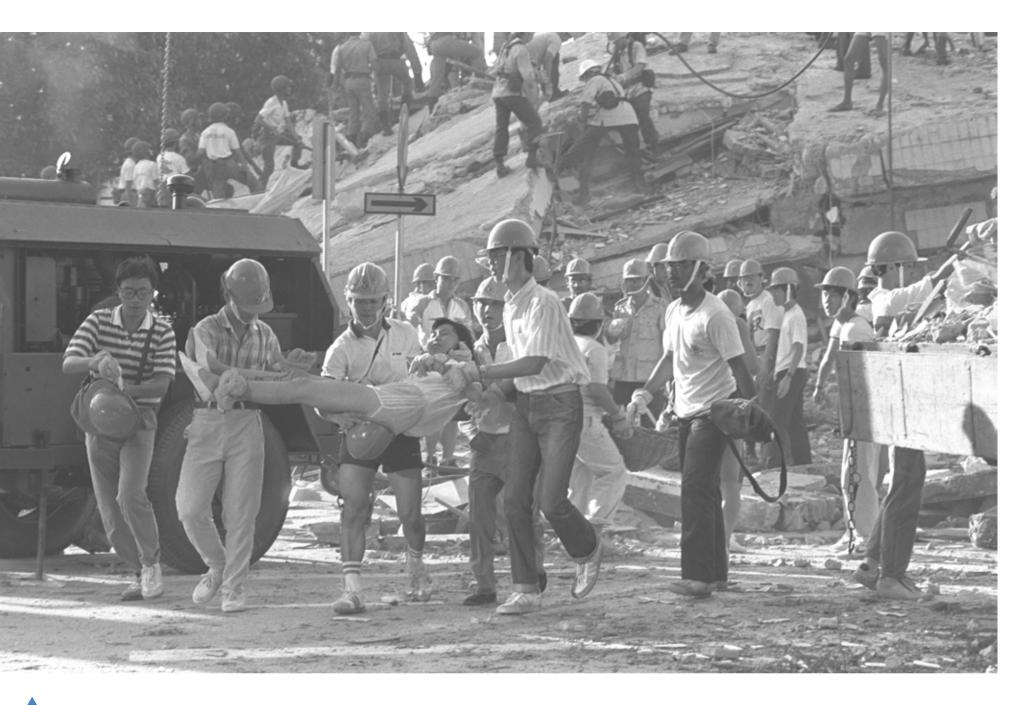
The families of the seven foreigners who died in the disaster received the amount through their respective High Commissions. The public, moved by the entire incident, had donated more than \$\$1.5 million when the Hotel New World Disaster Relief Fund closed on 30 April 1986. An annuity scheme worth \$\$900,000 was also set up for the 35 children of the victims.

National honours for three CD volunteers



Recognition too for private firms and public organisations

Two articles from *The Straits Times* on the national awards and accolades given to volunteers and organisations involved in the Hotel New World rescue operations (1986). Reprinted with permission from Singapore Press Holdings



A group of volunteers in action at the scene of the Hotel New World disaster (1986).

Courtesy of the former Ministry of Information, Communications and the Arts

RESPONDING AS ONE NATION

The Hotel New World disaster highlighted the importance of emergency preparedness and national resilience. It also illustrated how everyone - from the military to the civil authorities, from the private to the public sector - has a part to play when the nation is faced with a crisis.

When disaster struck, the Singapore Armed Forces responded immediately to the call for assistance from the civil authorities, and worked side-by-side with the Civil Defence and Fire Service officers to clear the rubble. Likewise, the Singapore Civil Defence Force and hundreds of volunteers worked tirelessly to rescue the trapped victims.

Private companies also pitched in by offering the use of specialist equipment such as the ultra high pressure water machines and 100-ton cranes to facilitate rescue operations while relief aid organisations rendered assistance to families of the victims. Ordinary citizens from different walks of life, races and nationalities also came forth to donate blood, food and money.

In conclusion, the Hotel New World disaster demonstrated that, in a time of crisis, the whole of Singapore was able to reach out in empathy, to give help in any way they could, and to move and feel as one.





The Heart of One Mation

The tragedy struck when the day was young, when people rushed for the meal hour,

when bankers hurried to clear the cheques.
It was on a day when no man could have guessed that what was once a proud, sturdy structure, would be reduced to a pyramid of death.

Nor was there any trace of its glorious past.

The cloud of dust extended, far throughout the island, penetrating deep into every heart, stirring up more tears and sympathy than any one occasion before.

Aid poured in from every source, Hands reached out to rid the heap of doom. The trained and untrained, the common man, and even friends from foreign lands.



The number that thronged the streets from dusk to dawn and dusk again, were no less than a thousand. Each displayed what was now a permanent imprint Of concern, of fear,

of dwindling hope.
Yet the spirit fought
ceaselessly on,
as if night and day
no longer differed.

No reward or prize was more sought after than a voice or breath of life. No one absent could have heard,

the prayers said aloud in the loved one's heart, the heave of joy after each drag of time, when prayers emerged from the prisoned hell.

No one young could ever recall, when a strange hand reached out to feel his neighbour, giving him courage and strength as one stone was moved after another.

It was an event of great loss, never preceded. Yet it was an event of enormous gain, for all hearts of the nation had heeded the message – To stand together and hold out strong.

CHAN WEE SHIAN, 19, National University of Singapore



THANK YOU

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