

Conservation Management Plan
for
Hong Kong Museum of Medical Sciences
at No. 2 Caine Lane, Mid-Levels,
Sheung Wan, Hong Kong.



By Spence Robinson Limited

Oct 2024

ENDORSEMENT

This report titled
"Conservation Management Plan
for
Hong Kong Museum of Medical Sciences"

is prepared and presented by **Spence Robinson Limited**.



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(prepared in 2021-2024 with 3D scan and modification based on current condition)

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- ELEVATIONS OF MAIN BUILDING
- TRUSS OF MAIN BUILDING
- FLOOR PLAN OF ANNEX BLOCK
- ELEVATIONS OF ANNEX BLOCK
- TRUSS OF ANNEX BLOCK
- DOOR AND WINDOW SCHEDULE OF MAIN BUILDING AND ANNEX BLOCK

Remarks:

This CMP was prepared between 2021 to 2024.

The photos were taken by the author during the years 2021 to 2024 if not specified.

The existing floor plans and drawings were provided by HKMMS, with data of 3D scanning on site and further modifications based on current site conditions in 2021 to 2024.

0.0 BACKGROUND & OBJECTIVE of PROJECT

0.1 BACKGROUND

The compound now commonly known as the Hong Kong Museum of Medical Sciences (HKMMS) first opened on 15th March 1906 as the Bacteriological Institute (BI). It was the first purpose-built public health and clinical laboratory in Hong Kong, a government facility established to control the Plague and other infectious diseases. It comprised 3 buildings: the Main Building, the Staff Quarters, and the Animal House.

After World War II, it was renamed the Pathological Institute (PI) on 5th September 1946 to better reflect the expanded work scope of the institute as was compatible with scientific progress. In July 1960, the pathology service moved to new facilities as PI could no longer be refurbished to support the service demand of a city of over 4 million people. Vaccine production continued at the site which became known as the Old Pathological Institute (OPI). In the 1973, vaccine production also moved out to new premises so that there were no longer laboratory services in the OPI. The vacated Animal House was demolished in the 1980s.

On 13th June 1990, the site was declared a Monument under the Antiquities and Monuments Ordinance (Cap. 53). The compound comprises the Main Building, the Annex Block, and the grounds. The red brick Main Building is built in Edwardian architectural style and has a ground floor, an upper floor, and a basement.

In 1995, a tenancy agreement was signed between the Hong Kong Government and Hong Kong Museum of Medical Sciences Society (HKMMSS) for operation of the site as a museum. The buildings were adapted, and on 22nd March 1996 the site opened to the public as the Hong Kong Museum of Medical Sciences. By March 2024, HKMMS had been in operation for 28 years.

0.2 OBJECTIVE OF THE PROJECT

Spence Robinson Limited has been commissioned by the HKMMSS to prepare a Conservation Management Plan (CMP) for the HKMMS compound. The CMP covers the major steps recommended by international and local best practice documents, including Background Study, the Statement of Significance (SOS), Character Defining Elements (CDEs), Four Conditions (i.e.: Retention of Significance, Client's Requirement, External Requirements and Physical Conditions, cited by Burra Charter Article 6), and finally survey of the status of CDEs to the level of satisfying CMP.

0.3 PROPERTY DESCRIPTION

Property Name	Hong Kong Museum of Medical Sciences (HKMMS)
Address of the studied site	2 Caine Lane, Mid-Levels, Sheung Wan, Hong Kong
AAB Grading	Declared Monument
Name as Declared Monument	Old Pathological Institute (OPI)
Year of Grading	1990
Year of Construction	1905
Land Status	Government
Original Use	Bacteriological Institute (BI)
Existing Use	Museum

0.4 ABBREVIATION OF TERMS

AFA	Automatic Fire Alarm
AMO	Antiquities and Monuments Office, CHO, DEVB, HKSARG
ArchSD	Architectural Services Department, Works Branch, Development Bureau, HKSARG
BFA	Barrier Free Access
BI	Bacteriological Institute
BRAVO	Building Records Access and Viewing On-line System of the Buildings Department
CDEs	Character Defining Elements
CMP	Conservation Management Plan
CSTB	Cultural, Sports and Tourism Bureau, HKSARG
CUHK	The Chinese University of Hong Kong
DEVB	Development Bureau, HKSARG
F&B	Food and Beverage
FAS	Financial Assistance Maintenance Scheme on Built Heritage, DEVB, HKSARG
FSD	Fire Services Department
G/CI	Government, institution or community
GPA	Government Property Agency, HKSAR
HK	Hong Kong
HKCM	Hong Kong College of Medicine for Chinese, later renamed Hong Kong College of Medicine
HKIA	Hong Kong Institute of Architects

HKMJ	Hong Kong Medical Journal
HKMMS	Hong Kong Museum of Medical Sciences, often referred to as Museum
HKMMSS	Hong Kong Museum of Medical Sciences Society
HKSARG	Government of the Hong Kong Special Administrative Region
HKU	The University of Hong Kong
LCSD	Leisure, Cultural and Sports Department, CSTB, HKSARG
MB	Malaria Bureau
MOA	Means of Access for Fire Fighting and Rescue
MOE	Means of Escape in case of Fire
NPO	Non-profit organisation
OPI	Old Pathological Institute
OZP	Outline Zoning Plan
PI	Pathological Institute
Plague	“Plague” or “plague” refers to the infectious disease caused by the bacterium <i>Yersinia pestis</i>
PPE	Places of Public Entertainment
RHBTPS	Revitalising Historic Buildings through Partnership Scheme
SOS	Statement of Significance
TA	Tenancy Agreement
TB	Tuberculosis
TPPEL	Temporary Places of Public Entertainment License
TPS	District of Taipingshan in the City of Victoria; or Tai Ping Shan in Sheung Wan today
WWII	World War II

0.5 SITE OF THE OLD PATHOLOGICAL INSTITUTE MONUMENT

0.5a Location of the Site

The site is at mid-levels in Sheung Wan, on a hilly area beneath Caine Lane. The neighbourhood now features many gardens and parks, reflecting the planning of the Tai Ping Shan area after the 1894 Bubonic Plague.



Fig. 1. Location of the OPI at the low-density residential area of Tai Ping Shan district in Sheung Wan.

(Source: Geo info map)

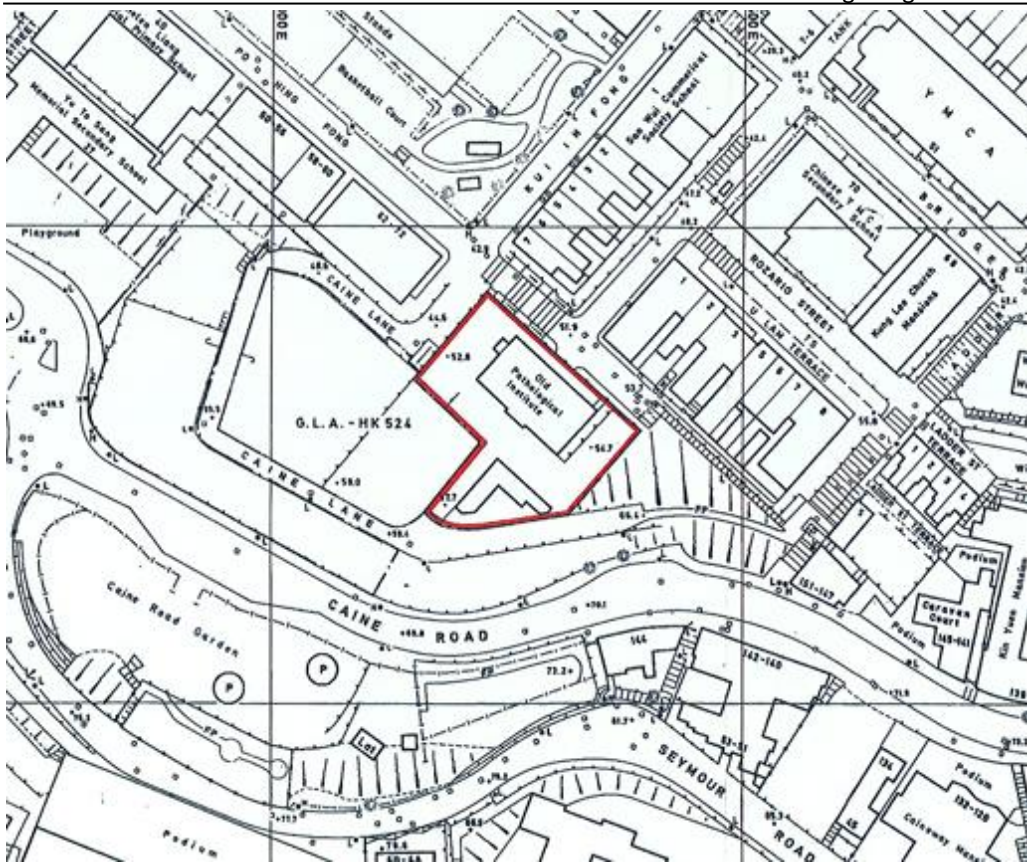


Fig. 2. Site boundary of the declared monument is marked in red line.
(Source: AMO website. Old Pathological Institute, Caine Lane, Sheung Wan. Last Modified Dec 2021.)



Fig. 3. The Compound

0.5b Historical development of the site

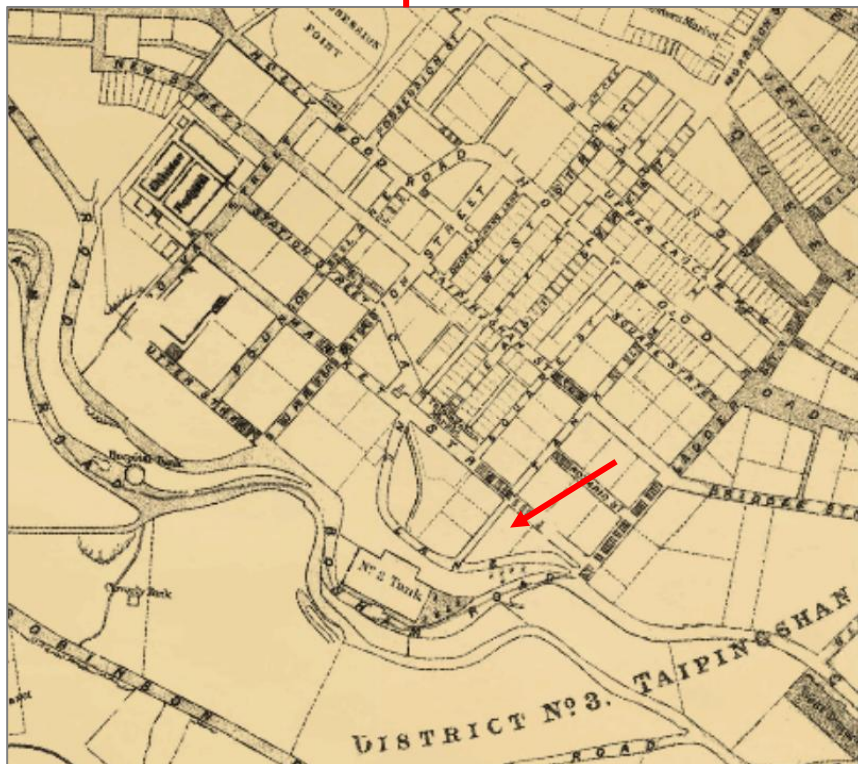
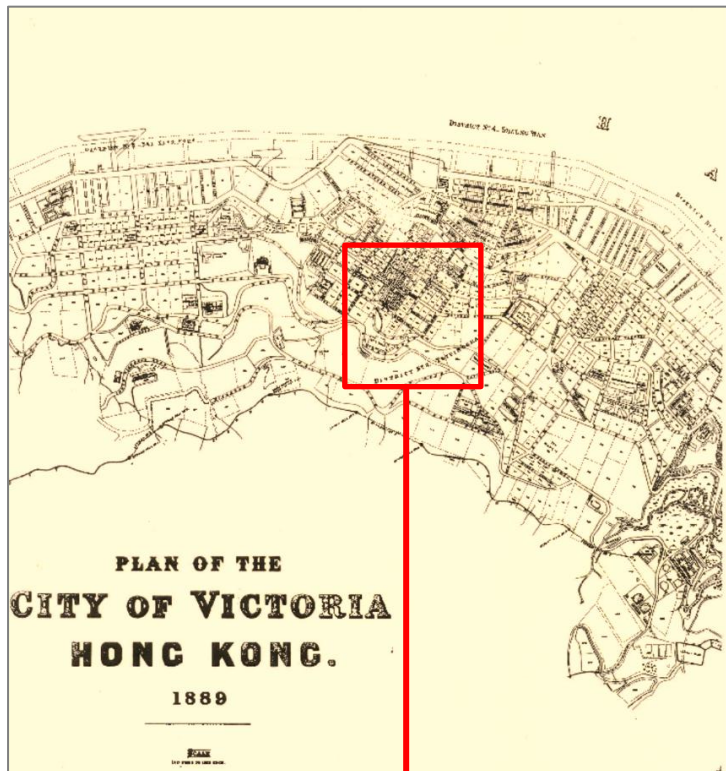


Fig.4. & Fig.5. Plan of the City of Victoria, 1889. It was before the enactment of the Taipingshan Resumption Ordinance 1894. The red arrow indicates the site where the Bacteriological Institute would eventually occupy.

(Source: Empson, Hal. 1992. *Mapping Hong Kong: A Historical Atlas* (Hong Kong Government Information Service))

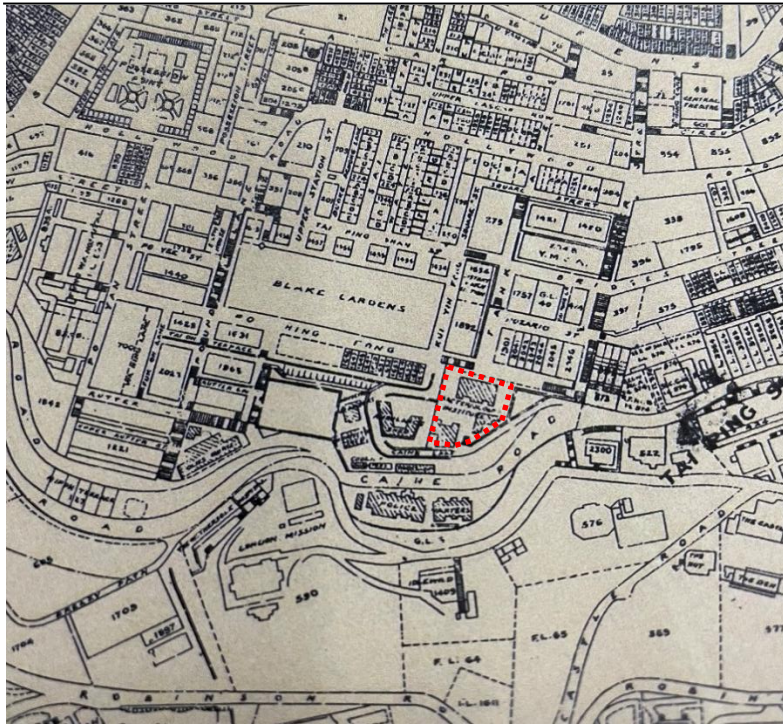


Fig. 6. Survey Plan 1936-46. The site of the BI/PI is indicated in red. Note the three buildings within the compound.

(Source: Crown Lands and Survey Office P.W.D. Hong Kong, Hong Kong Public Library)

0.5c Layout of the Site

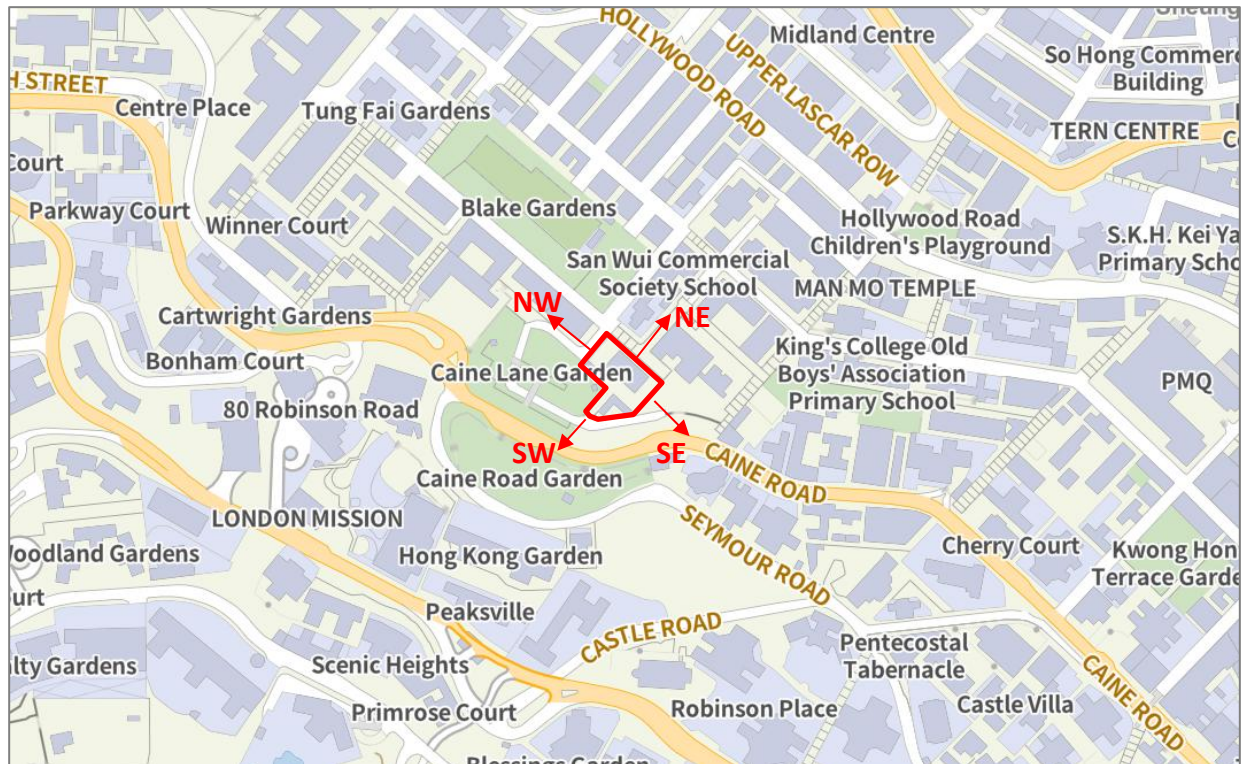


Fig. 7. Landscape around the Compound (in green colour)

(Source: Geoinfo map. Modified by author)

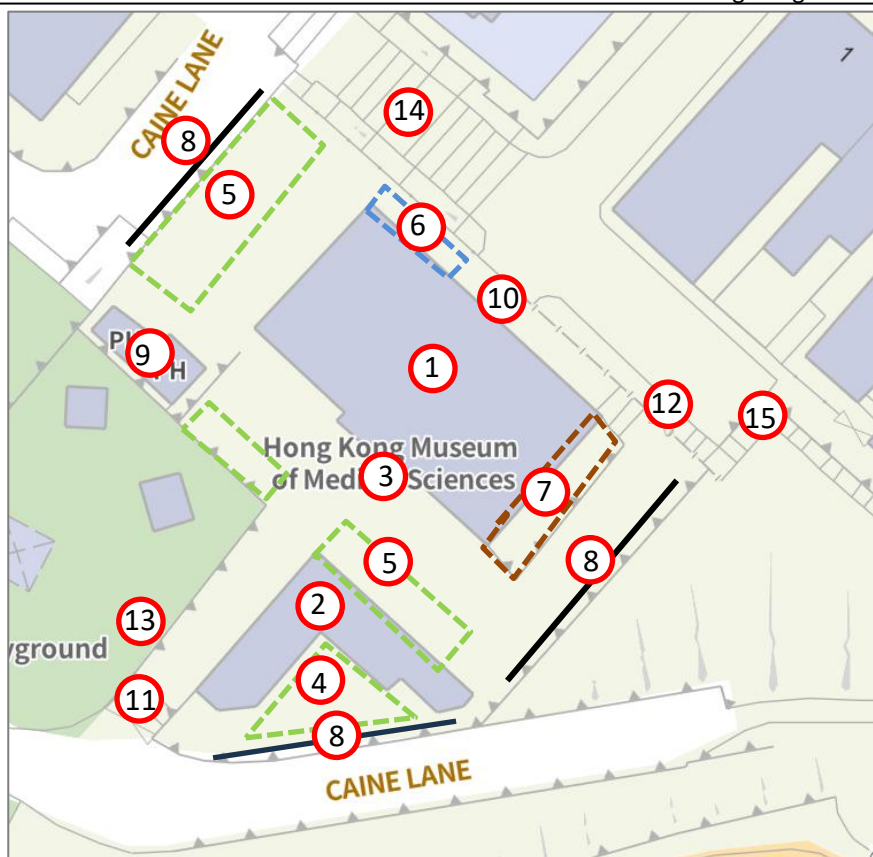


Fig. 8. Layout of the Compound. (Source: Geoinfo map. Modified by author)

Legend:

1. Main Building	2. Annex Block	3. Entrance Portal	4. Annex courtyard
5. Herbal Gardens	6. External Rear Steel Staircase	7. Side Sunken Area	8. Retaining Walls
9. Fire Service Pump Room	10. Rear Sunken Area	11. Main Gate	12. Rear Gate
13. Side Gate (to Caine Lane Garden)	14. Po Hing Fong steps leading down to Kui In Fong	15. Po Hing Fong steps leading up to Ladder Street	



Fig. 9. Main Building -South -West Side



Fig. 10. Main Building -South-East Side

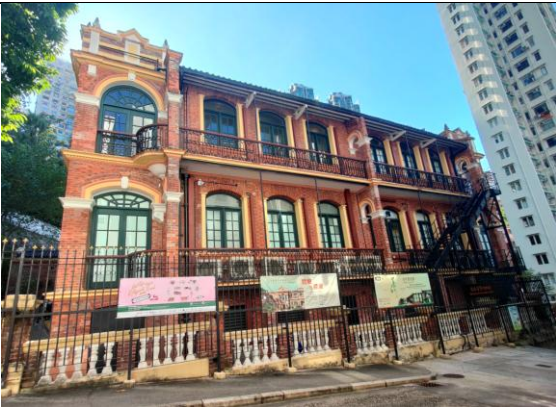


Fig. 11. Main Building - North- East Side



Fig. 12. Main Building -North-West side



Fig. 13. Annex Block -North Corner (front view)



Fig. 14. Annex Block -Back and top view

0.5d Different views of the Site



Fig. 15. View from Kui In Fong



Fig. 16. View from Caine Road above



Fig. 17. Rear entrance from Po Hing Fong



Fig. 18. Other views of the buildings and circulations



Fig. 19. Slope at the North-West side



Fig. 20. Retaining wall facing south-east side of the Main Building

1.0 BACKGROUND DESCRIPTION

1.1 HISTORICAL BACKGROUND

1.1.1 The District of Taipingshan

The site of the Hong Kong Museum of Medical Sciences is located in the old Taipingshan district in Sheung Wan. The British had in 1843 established the City of Victoria on the north shore of Hong Kong Island,¹ and by 1857, the district of Taipingshan (TPS) had developed into one of the 7 districts of the City of Victoria.² It was where the Chinese were encouraged to live. As Hong Kong developed into a successful entrepot, TPS attracted a large shifting population of migrant workers and soon became known for its overcrowding, unsanitary, and poor living conditions.

In 1873, Dr. Philip Ayres was appointed Colonial Surgeon of Hong Kong. After having conducted a series of inspections of “the back slums” of the city, Ayres in 1874 reported his findings to the Colonial Secretary, and recommended remedial measures. However, the report was considered too “alarming” and was only allowed to be released in 1879.³ In his 1880 covering letter to the Colonial Secretary, Ayres added his own emphasis:

“I speak with authority for what I say in these reports. Many and many a time have I come out of the houses to vomit in the street, in spite of using strong scents and essences to prevent it, and I closed this series of inspections with an attack of typhoid fever, which nearly cost me my life, which was entirely owing to infection caught in these foul slums; and I say, as I said before, that while this state of things continues we stand in danger of being visited at any moment by some fearful epidemic...”

Meanwhile, Sir Edwin Chadwick, Britain’s sanitary reformer, had already in his 1842 ground-breaking report linked ill health of the working class living in inner cities of Victorian Britain to their poor living environment.⁴ At that time, it was believed that diseases were caused by miasma, i.e., foul air from decomposing waste. He was successful in pushing through reforms such as clearing away refuse, improving drainage and sewer systems, and providing clean water.

In 1881, Ayres successfully appealed to the Colonial Secretary in London for a Royal Commission “to

¹ Ho, Pui-yin. 2018. “Duality in planning (1841-1898).” In *Making Hong Kong*, p6.

https://www.elqaronline.com/monochap/9781788117944/chapter01.xhtml?tab_body=pdf-copy1

² Government Notification No. 69. 1857. *The Hongkong Government Gazette*. Hong Kong Government Reports Online.

³ Ayres, Philip. 1880. “Letter of the Colonial Surgeon to the Colonial Secretary.” *Hong Kong Administrative Reports*, 1879. Hong Kong Government Reports Online.

⁴ Vaishali Mary et al. 2024. “Edwin Chadwick: A pioneer of public health reform and his role in sanitary awakening.” *Cureus*. CC-BY 4.0. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11457289/>

enquire and make recommendations on the sanitary state of the Colony (of Hong Kong)⁵. The Sanitary Commissioner appointed was Osbert Chadwick (1844-1913), son of Edwin Chadwick and at that time consulting engineer to the Colonial Office. In 1882, in his report, Chadwick confirmed the appalling sanitary conditions in the slums of TPS. He reported that:

*“The sanitary condition of Hong Kong is defective... the dwellings of the Chinese working classes are inconvenient, filthy, and unwholesome... the health of the population is not so good... The death-rate is high, whilst the average age at death is low.”*⁶

He recommended “energetic remedial measures” including: immediate and complete removal of all organic refuse, constant adequate supply of water to all, proper house drains for all the buildings, proper sewers, revision of the tenement houses, more open space, sufficient supply of pure air, among others. Unfortunately, when he visited Hong Kong again in 1887, very little was done in TPS in the intervening years.⁷

In 1894, the epidemic finally struck – as Ayres and Chadwick had feared, and-TPS was severely hit.

1.1.2 1894 Plague outbreak in Hong Kong

The story of the Bacteriological Institute (BI) began with the deadly plague epidemic of 1894 in Hong Kong. Soon after the first case presenting with severe symptoms and painful buboes was diagnosed on 8th May that year, Hong Kong was declared an infected port. At that time, no one knew what caused the epidemic or how it spread, and there was no effective treatment. The Government imposed house-to-house investigation to identify cases and enforced disinfection of the houses of those infected. The public panicked and fled from Hong Kong in large numbers. Out of a population of about 210,000 on Hong Kong Island, an estimated 80,000 left.⁸ At the height of the epidemic, there were as many as 80 admissions to hospital a day and at one time 109 dead bodies collected in 24 hours. Over 350 houses were condemned as unfit for habitation, and some 7000⁸ inhabitants evacuated. 2,679 cases and 2485 deaths were recorded. Of the 2679 persons affected, 2619 were Chinese, and of these 2,447 died. Mortality was 93.4%.⁹ Half of those affected came from a certain area within the TPS district.¹⁰

At that time Hong Kong had become a prosperous major shipping port in the region. Considering the

⁵ Ayres, Philip. 1893. “Sanitation.” The Colonial Surgeon’s Report for 1893. *Hong Kong Legislative Council Sessional Papers*, p394. Hong Kong Government Reports Online.

⁶ Chadwick, Osbert. 1882. “Mr. Chadwick’s Reports on the Sanitary Condition of Hong Kong; with Appendices and Plans”. <https://iiif.wellcomecollection.org/pdf/b2136591x> CC, Public Domain Mark. Accessed 30.12.2024.

⁷ Ayres, Philip. 1895. “Sanitation.” The Colonial Surgeon’s Report for 1894. *Hong Kong Legislative Council Sessional Papers*, p479. Hong Kong Government Reports Online.

⁸ Robinson, W. 1894. Governor’s dispatch on Bubonic Plague to Secretary of State, 20th June 1894. *Sessional Papers 1894*, p284-287. Hong Kong Government Reports Online.

⁹ Lawson, James. 1894. “The Epidemic of Bubonic Plague in Hong Kong, 1894”. *Hong Kong Legislative Council Sessional Papers*, 2nd March 1895, p206-207. Hong Kong Government Reports Online.

¹⁰ Government Notification No. 317. 1894. “An ordinance for the summary resumption of certain crown lands situate in the Taipingshan district of the city of Victoria and for other purposes”. *The Hong Kong Government Gazette 1894*, p714. Hong Kong Government Reports Online.

maritime routes and the porous border between Hong Kong and China, the epidemic would have been difficult to contain. From Hong Kong, plague spread to become the world's 3rd plague pandemic. The local outbreak caused a disastrous economic downturn for Hong Kong.

This was the turning point for Hong Kong. To prevent such a catastrophe from recurring, the government resolved to embark on public health and buildings reform, including increasing the capacity of the reservoir for water storage. As the plague subsided, the government resumed the land ownership of all the lots within that particular area of TPS. All the buildings were deemed not suitable for habitation and thus were demolished. The area was planned and re-laid to the improved urban planning and public health standards enacted in 1903.

1.1.3 Discovery of the bacterium that causes Plague

Of importance was the arrival of two young and passionate physicians and bacteriologists who came to Hong Kong in June 1894 to investigate the plague: Kitasato Shibasaburo (1853-1931) who had worked with Robert Koch in Berlin arrived on 12th June; and Alexandre Yersin (1863-1943) who had worked in Louis Pasteur's laboratory in Paris, arrived on 15th June. At about the same time, they reported respectively to the *Lancet* and *British Medical Journal* (two of the world's top medical journals) that they had found the bacterium that caused the plague epidemic. Plague in Hong Kong suddenly became international medical news. The microbe was subsequently named *Yersinia pestis* in honour of Yersin.

This discovery in 1894 marked the beginning of the scientific understanding of Plague as a disease. It was the foundation upon which diagnosis, treatments, and public health measures were developed to control plague from spreading around the world today. It also put Hong Kong on the world map as a site of scientific discovery and thus contributed to the discoveries that made the mid to late 19th century a "golden age" of bacteriology.

1.1.4 Development of the Bacteriology Laboratory in Europe

The modern idea of a laboratory as a facility dedicated and equipped for scientific testing, teaching and research emerged around the middle of the 19th century in Europe.¹¹ It started first for modern chemistry, then later for other science disciplines, and finally at around the turn of the 20th century became applied generally to a laboratory. Medical specialisation also emerged during the 19th century, and each demanded bespoke laboratory premises.

At that time, in addition to laboratories in the universities and government institutions, there were also successful private laboratories set up by motivated teachers and researchers on their own initiative¹¹, such as the Royal Institution in London (founded 1799), and the private laboratories of Antoine Lavoisier

¹¹ Jardine, Boris. 2022. *Science Laboratories to 1900: Introduction to Heritage Assets*. HEAG0303. V1.0 August 2022, p1-25. Historic England. Available at <https://historicengland.org.uk/images-books/publications/iha-science-labs-1900/heag303-science-labs-1900/>.

(1743-1794) and Lord Rayleigh (1842-1919).¹² Justus von Liebig (1803-1873) and Robert Koch (1843-1910) also started out with small private laboratory set-ups.

The earliest teaching-cum-research academic laboratory was the private institute that Justus von Liebig, a chemist, established and operated in a disused barracks on the edge of town in Giessen, Germany. Liebig, at just 21 years old, was appointed a professor at the University of Giessen in 1824 and had to build his own laboratory. He developed a systematic curriculum that combined lectures with intensive laboratory hands-on practice and group research activity. His programme was very successful and attracted a lot of students, many from abroad. In 1833, the institute was integrated into the University of Giessen, and subsequently enlarged to accommodate even more students. His chemistry laboratory model soon spread to other experimental sciences and across the world. The Birkbeck Laboratory, the first teaching laboratory designed for undergraduate practical work, at University College London, was based on Liebig's laboratory at Giessen and opened in 1846.

In the mid to late 19th century, bacteriology was in its golden age. There were lots of discoveries, inventions, and scientific advancements in the field of bacteriology. For example, the Germ Theory of Disease,¹³ growing bacteria in pure cultures,¹⁴ identification of pathogens (such as that which causes anthrax and tuberculosis),¹⁵ production of vaccines (e.g., for anthrax and rabies), establishing the connection between bacteria and disease¹⁶, and others. Two of the most important figures in the field were Louis Pasteur (1822-1895), chemist and bacteriologist, and Robert Koch (1843-1910), physician and bacteriologist.

Students who learnt from these masters or had worked in the institutions that they founded were willing to work in outpost laboratories in the tropics to make their own discoveries and further medical science. Alexandre Yersin and Shibasaburo Kitasato who came to Hong Kong in 1894 to investigate the Plague were respectively from the Pasteur Institute (a private non-profit institute founded 1887), and the Robert Koch Institute (founded 1891, now Germany's public health institute). Nowadays, bacteriology is a branch of microbiology, and clinical microbiology is a branch of clinical pathology.

1.1.5 Impetus for establishing the Bacteriological Institute

In Hong Kong, the 1894 epidemic subsided after a few months. However, plague returned in 1895 and almost every following year, although not as severe as the 1894 episode. Hong Kong suffered

¹² Nobelprize.org. 1904. Lord Rayleigh (John William Strutt) – Biographical. Nobel Prize in Physics 1904. <https://www.nobelprize.org/prizes/physics/1904/strutt/biographical/>

¹³ Wikipedia "Germ theory of disease" https://en.wikipedia.org/wiki/Germ_theory_of_disease

¹⁴ Bonnet, M. et al. 2019. "Bacterial culture through selective and non-selective conditions: the evolution of culture media in clinical microbiology." *New Microbe and New Infect* 2020; 34: 100622.

¹⁵ Blevins, S.M., Bronze, M.S. 2010. Robert Koch and the 'golden age' of bacteriology. *International Journal of Infectious Diseases* 14(2010) e744-e781. <https://pubmed.ncbi.nlm.nih.gov/20413340/>

¹⁶ Nobelprize.org. 1905. Robert Koch – Biographical. Nobel Prize in Physiology or Medicine 1905. <https://www.nobelprize.org/prizes/medicine/1905/koch/biographical/>

economically every time. The Colonial Office in London had considered sending specialists to Hong Kong to strengthen plague control. Meanwhile, Hong Kong continued to prosper as an entrepôt. By 1900, the total tonnage of vessels sailing in and out of Hong Kong had reached over 17 million tons¹⁷ (up from 14 million tons in 1893¹⁸) and set to increase further. However, plague was still no end in sight. The Hong Kong Government finally decided that Hong Kong would appoint an experienced bacteriologist to come to Hong Kong to control the plague and other infectious diseases.

1.1.6 Appointment of the first Bacteriologist to the Government of Hong Kong

At that time, the Medical Advisor of the Colonial Office in London was Dr. Patrick Manson (1844-1922) who had been the first dean of the Hong Kong College of Medicine for Chinese (HKCM) when it started in 1887. His vision was for Hong Kong to be the centre for science for the whole of China, and began to look for a “first rate man” to fill the post in Hong Kong.

The offer was made to William Hunter, a young and talented bacteriologist with brilliant academic record and a bright future then working as an assistant bacteriologist at the London Hospital Medical College. Hunter initially declined the offer as there was no qualified bacteriological laboratory or apparatus in Hong Kong, and he had no reason to sacrifice his London career to be posted to the Far East. Manson, with bold vision, approached Hunter again, and promised him that a new bacteriological laboratory would be built in Hong Kong. Hunter reconsidered the offer and accepted the appointment.¹⁹

In November 1901, Dr. William Hunter was finally appointed Bacteriologist to the Government of Hong Kong, with authority and budget to equip the bacteriological laboratory that would be built under his direction. On 27th February 1902, Dr Hunter arrived in Hong Kong to take up his post. Initially he set up a temporary laboratory in the Kennedy Town Infectious Diseases Hospital to carry out bacteriological and pathological examinations and research. Other tasks would be carried out at other sites: the Vaccine Institute at Kennedy Road, and the Public Mortuary at Hill Road, which would obviously be inconvenient. While he started to institute a system of post-mortem and bacteriological examination of rats for the surveillance and control of the plague, he began to look for a site to set up the laboratory building.

1.1.7 The Bacteriological Institute

The site selected for the Bacteriological Institute (BI) was at the upper tip of the Taipingshan resumed area, on a small promontory just under Caine Lane. Construction of the buildings commenced in 1904²⁰,

¹⁷ “Shipping”. 1900. *Hong Kong Blue Book for the Year 1900*, pS2-S5. Hong Kong Government Reports Online.

¹⁸ “Shipping”. 1893. *Hong Kong Blue Book for the Year 1893*, pS2-S5. Hong Kong Government Reports Online.

¹⁹ Hong Kong Museum of Medical Sciences Society. 2006. *Plague, SARS and the story of Medicine in Hong Kong*, p148-150, p199. Hong Kong University Press.

²⁰ Jones, P.N.H. 1904. Report of the Director of Public Works for the Year 1904. *Hong Kong Legislative Council Sessional Papers 1905*, p233. Hong Kong Government Reports Online.

and on 15th March, 1906, the Bacteriological Institute opened for “routine work and research”²¹.

It was an unprecedented facility in this part of the world in the early 20th century – being the first ever such institution in Hong Kong, a custom-designed government building providing “excellent” accommodation for laboratories and related function rooms including stables and animal houses, and with equipment that was “difficult to beat East of Suez.”²² Specimens for routine bacteriological examination were received not only from doctors in Hong Kong, but also from medical men in neighbouring ports, such as Canton (now Guangzhou), Amoy (now Xiamen), and Swatow (now Shantou).²³

During the Japanese occupation of Hong Kong, the BI remained open but with limited operation. After the end of WWII, the BI was renamed the Pathological Institute (PI) on 5th September 1946, to better reflect its scope of work as science advanced and Hong Kong developed. Then, in 1960, the pathology services moved out to new premises because the PI had become too small and impossible to be further refurbished to meet the laboratory requirements of the day.

Below is a summary of the work of the laboratories during the lifetime of the BI and PI.

1.1.8 Work of the Bacteriological Institute and Pathological Institute

As the first and only public health laboratory of Hong Kong, the *raison d'être* of BI was to protect the health of Hong Kong’s citizens from the deadly infectious diseases of its time. This it did by keeping a close watch on significant prevalent diseases, particularly on diseases of unknown cause that suddenly affect a group of people, and by producing vaccines to prevent infection.

BI’s first bacteriologist promptly instituted a system for the surveillance of plague as soon as he arrived in Hong Kong, even before the BI was built. Like Alexandre Yersin who in 1894 came all the way to Hong Kong when the news of the plague broke out and took the initiative to obtain specimens of blood and buboes for analysis, the BI bacteriologist kept track of the diseases that might affect Hong Kong and the vaccines then available, and routinely took specimen samples for testing. The results informed the public measures that prevented citizens from becoming infected.

It was the PI that went on to systematically train the laboratory staff, and to expand the service as Hong Kong’s population and international connectivity increased, and scientific knowledge advanced. BI and the PI was the foundation upon which Hong Kong, located in the sub-tropics at the border with mainland

²¹ Hunter, W. 1906. Report of the Government Bacteriologist. *Hong Kong Legislative Council Sessional Papers 1907*, p474. Hong Kong Government Reports Online.

²² Hunter, W. 1905. Report of the Government Bacteriologist. *Sessional Papers 1906*, p358. Hong Kong Government Reports Online.

²³ Hunter, W. 1903. Report of the Government Bacteriologist. *Sessional Papers 1904*, p286. Hong Kong Government Reports Online.

China and facing the South China Sea, and an entrepot with international connectivity, had developed to become the sentinel post and centre of excellence that it is today in the surveillance of infectious diseases of global significance.²⁴

Below are examples of the main tasks carried out in the BI and the PI that protected the health of Hong Kong's citizens.

1.1.8a Surveillance and Control of Infectious Diseases

1.1.8a1 Plague Surveillance and Control

Plague surveillance and control were initially the most important tasks in the new Bacteriological Institute (BI) building. Work started when the first Government Bacteriologist Dr. William Hunter arrived in Hong Kong on 27th February 1902, to take up his post. To survey the plague, rats were collected from bins attached to lampposts, and examined in the Public Mortuary. Specimens and smears that require microscopy were transported back to the BI for further examination. Numbers of rats examined increased from 21,907 in 1904 to 30,701 in 1906, to 93,238 in 1926. Later in 1929, rat flea counts were added as a routine procedure in surveillance.²⁵

To inform public health control measures, Hunter proved that a rat plague epidemic preceded a human plague epidemic by about 1-2 weeks, and concluded that “a wholesale destruction of the rats” as the most important measure to prevent plague.²⁶ With the gradual elucidation of the role of rats and rat fleas in the transmission of plague, plague control measures focused on the elimination of rats and fleas.

1.1.8a2 Malaria Surveillance and Control

Malaria in Hong Kong today is a serious and sometimes fatal disease caused by a group of malaria parasites transmitted by an infected female *Anopheles* mosquito. It is a notifiable disease, and most cases are imported infections. Although not transmitted directly from person to person, it can be transmitted through contaminated blood such as through shared use of contaminated needles or from mother to baby before or during delivery. Prevention of malaria is by prevention of mosquito bites and prevention of mosquito proliferation.²⁷

In 19th century Hong Kong, malaria would have been one of the most important causes of “Hong Kong

²⁴ Centre for Health Protection, Department of Health, HKSAR. Reference laboratory designation. <https://www.chp.gov.hk/en/static/46081.html>

²⁵ Ho, Faith C.S. 2020. “The Work Done in the Bacteriological Institute”. In *The Silent Protector – Hong Kong's Bacteriological Institute, its History and Legacy*, p.32. Hong Kong Museum of Medical Sciences.

²⁶ Hunter, W. 1904. “Report of the Government Bacteriologist, for the year 1904. *Hong Kong Legislative Council Sessional Papers 1905*, p487-491. Hong Kong Government Reports Online.

²⁷ Centre for Health Protection, Department of Health, HKSARG. 2025. “Malaria.” <https://www.chp.gov.hk/en/healthtopics/content/24/30.html>

Fever,”²⁸ a leading cause of death that was in the league with smallpox and tuberculosis. At that time, the cause was thought to be due to foul air. That it was transmitted by mosquitoes was only discovered in 1898 by Ronald Ross (1857-1932) in India.²⁹

In 1930, the Malaria Bureau (MB) was set up in the BI to tackle the malaria problem. MB was accommodated on the eastern half of the first floor. Led by the Government Malariologist, the work of the MB included surveys of malaria, mosquito species in Hong Kong and the New Territories, including their respective life cycles and breeding places, Anopheline species in malarious districts, etc. The surveillance of mosquitoes included catching the adult insects, dissecting and examining their organs to see whether they harboured the malaria parasites. Survey results informed public health recommendations and led to collaborations with government departments, armed forces, companies and individuals to investigate and eradicate malaria.

The BI, being the only public health laboratory in Hong Kong and well-equipped, was naturally the site for conducting the initial careful parasitological and entomological studies required of the MB. The work of the MB was very successful, except for a period during and immediately after WWII. There was great demand for the MB to advise on how to prevent malaria and mosquito nuisance, and eradicate mosquitoes, notably during large influx of refugees from malarious rural sites in South China during 1930s to 1950s, or large construction projects in malarious sites such as that of the Queen Mary Hospital at Pokfulam and the Shing Mun Reservoir dam in the New Territories.

The MB moved out to new premises in 1950, but certain study samples were still checked by the PI. Thus, surveillance and control of malaria in Hong Kong was founded in the BI and nurtured by the PI. Nowadays, the control of mosquito pests would be undertaken by the Food and Environmental Health Department (FEHD) of the Department of Health.

1.1.8a3 Tuberculosis (TB) Surveillance and Control

The control of Tuberculosis (TB) is notoriously challenging. TB is an insidious and deadly infectious disease, known in human history for thousands of years. Robert Koch first isolated the causative bacillus in 1882. The TB bacillus is a fastidious organism. Today, laboratory confirmation of diagnosis often requires multiple tests, including inoculation into laboratory animals to observe for disease. Positive cultures are then tested for sensitivity to each of the standard drugs used for treatment. Treatment of TB is also difficult because of the months-long duration of treatment required, increasing bacterial resistance (from mutations), and because patients often fail to take the medications thus not only not curing the disease, but what’s worse, may even spread deadly drug-resistant bacteria further.

²⁸ Hong Kong Museum of Medical Sciences Society. 2006. *Plague, SARS and the Story of Medicine in Hong Kong*, p19-21. Hong Kong University Press.

²⁹ Nobelprize.org. 1902. Ronald Ross – Facts. Nobel Prize in Physiology or Medicine 1902. <https://www.nobelprize.org/prizes/medicine/1902/ross/facts/>

In Hong Kong during the Japanese occupation years, TB was a major killer because of the unstable social conditions, serious overcrowding, poor nutrition and lack of treatment. After the war, influx of refugees from Mainland China aggravated the situation, and TB as a cause of death increased steadily reaching a peak in 1951.^{30,31} The government had begun providing “specific treatment with anti-TB drugs” since 1950, but soon noticed that “only one quarter of the patients completed treatment.” To ensure that the patients take all the medications as prescribed, the Tuberculosis and Chest Service began trials to directly supervise each patient swallow each dose of their medicines.³² This was the forerunner of the Directly Observed Treatment (DOT) Programme.

To find out the best method and the best combination of drugs for treatment, numerous scientific clinical trials, with international collaboration, were conducted with support of the PI. Thus, on behalf of the Tuberculosis Service, PI in 1953 carried out 15,901 tests on sputum of which 4,271 were positive;³³ and in 1957 increased to 38,378 tests on sputum, of which 7,162 were positive.³⁴ In addition, there was also the workload of conducting drug sensitivity tests for positive cultures and drug resistance examinations, and the workload for surveillance of the disease. It was a lot of hard work, and counting.

By the mid-1950s, the PI was getting too small to accommodate all the work in all its fields. Finally, in 1960, after over fifty years at the premises on Caine Lane, the pathology services moved out to modern and more commodious premises in the Sai Ying Pun Jockey Club Clinic. Support for the clinical trials on TB control continued in the new premises while Hong Kong became among the first in the world to pioneer the new DOT strategy for TB control. This new programme was highly efficacious: the majority of TB patients managed to complete the full course of treatment, and resistance to anti-TB drugs started to fall. TB gradually came under control. In 1979, the programme was recommended as standard by the WHO, and is still the most effective strategy available for controlling the TB epidemic today.

The Department of Health’s TB Laboratory is currently one of WHO’s 25 Supranational TB Reference Laboratories, and one of four in the Western Pacific Region, for monitoring global TB control and treatment programmes, particularly drug-resistant forms of TB. The designation attests to Hong Kong’s proficiency not only in the surveillance of TB and testing of anti-TB drugs, but also in providing technical assistance and training to TB laboratories in other places and countries. No doubt the PI had provided

³⁰ Tuberculosis and Chest Service, Department of Health, HKSARG. “Historical summary of TB and services in Hong Kong”. https://www.info.gov.hk/tb_chest/en/contents/c13.htm

³¹ Director of Medical and Health Services, Hong Kong. 1953. “Tuberculosis Control.” *Annual Departmental Reports for the financial year 1952-53*, p25. Hong Kong Government Reports Online.

³² Government Chest Service. 2000. “Tuberculosis Control in Hong Kong.” https://www.info.gov.hk/tb_chest/doc/TBcon.pdf

³³ Director of Medical and Health Services, Hong Kong. 1954. *Annual Departmental Reports for the financial year 1953-54*, p38. Hong Kong Government Reports Online.

³⁴ Director of Medical and Health Services, Hong Kong. 1958. *Annual Departmental Reports for the financial year 1957-58*, p35. Hong Kong Government Reports Online.

the foundation for Hong Kong's public health laboratory to develop to what it is today.

1.1.8b Production of Vaccines

Vaccines production was one of the key responsibilities of the BI. In the days before antibiotics, vaccines were not only for prevention of disease, treatment of infections relied heavily on vaccines and anti-serum (blood containing antibodies). The most important vaccines that the BI and PI produced were smallpox vaccine and cholera vaccine. When the pathology services moved out from the PI in 1960, the site became known as the Old PI. Vaccine production remained at the OPI until it also moved out to the new Vaccine Institute at Pokfulam in 1973.

1.1.8b1 Smallpox Vaccine

Smallpox was an acute infectious disease, and a common cause of death for children between the age of 2 to 5. From 1891, children within 6 months of birth were mandated to be vaccinated. Vaccine against smallpox was first produced at the Vaccine Institute from 1892, then transferred to the BI after it opened in 1906. Smallpox vaccine was "manufactured in the same way as that used in the Government Laboratories in London." It was "extremely potent" and gave "satisfactory results to all who have employed it for vaccination".³⁵

The vaccine was produced using buffalo calves housed in the BI animal house. Hundreds of tubes of vaccine could be produced from the inoculation of one calf. Prepared vaccine tubes were kept in the refrigeration facilities in the basement of the Main Building of the BI until distributed to various local clinics, hospitals, maternity homes or maternal and child health centres for vaccination. Not only was the vaccine produced sufficient for increased vaccination in Hong Kong, but was also exported to help neighbouring cities.³⁶ Production of this vaccine stopped during WWII, and resumed in the PI afterwards. The last case of smallpox in Hong Kong was in 1952, and vaccine production ceased in 1972. Smallpox was eradicated in 1979.

1.1.8b2 Cholera Vaccine

Cholera is an acute diarrhoeal infection caused by the ingestion of contaminated food or water. BI began to produce cholera vaccine from 1920 and in large quantity so that these may be supplied immediately on demand.³⁷ However, Hong Kong was unprepared for the outbreak in 1937 during which two-thirds of 1,690 people afflicted died. In 1946, after public health canvassing, 370,000 people were vaccinated, 514 were afflicted and half of them died. Public education and vaccination promotion had to be

³⁵ Hunter, W. 1905. "Report of the Government Bacteriologist, for the year 1904. *Hong Kong Legislative Council Sessional Papers 1905*, p487-491. Hong Kong Government Reports Online.

³⁶ Ayres, Philip B.C. 1893. "Sanitation." The Colonial Surgeon's Report for 1893. *Hong Kong Legislative Council Sessional Papers*, p362. Hong Kong Government Reports Online.

³⁷ Scott, H.H. 1920. Report of the Government Bacteriologist. *Administrative Reports for the Year 1920*, pM65. Hong Kong Government Reports Online.

improved.³⁸

After a lapse of 15 years, cholera struck again in 1961. In early August cases were reported in Macao and Guangdong. This time the Health Department was well prepared. Environmental hygiene was improved. Staff in the PI worked round the clock to produce sufficient quantities of the vaccine. Inoculation started on August 14. The first case was confirmed on August 16. By August 25, nearly half of the population of 3 million was vaccinated. The last case was on September 23. 129 cases and 8 deaths were reported.^{39,40}

1.1.8c Monitoring of Water quality, food safety, and investigation of food poisoning outbreaks

Examination of water was first reported in 1904. Testing of water for potability and investigations of suspected food poisoning remained a major responsibility for the BI/PI. If offenders were prosecuted by the government, the Government Bacteriologist sometimes had to provide expert evidence in court.

1.1.8d Contribution to medical education and training

1.1.8d1 Pathology

The Government Bacteriologists were appointed Honorary Lectures of the Hong Kong College of Medicine and later the HKU medical school, and taught the subject of pathology, including practical training, to students of these institutions. Cooperation between BI/PI and University staff in teaching continued into the 1960s. A small pathology museum (e.g., of diseased organs and tissues collected at BI) was started by the first Bacteriologist for teaching purpose. The first HKU Chair Professor of Pathology, Professor Wang Chung-yik, even worked as Acting Government Bacteriologist at BI and Medical Officer in charge of the Victoria Public Mortuary, and collect materials for teaching and for the publication of a text book for students.

1.1.8d2 Medical Laboratory Science

Graduates and senior students of the HKCM and HKU have been appointed as assistants to the bacteriologists in the BI. Among these were Dr. Chan Tsun-kon, a HKCM graduate, who was Bacteriological Assistant at BI for 2 years before he went on to become bacteriologist to the government of Canton; and Dr. LIM Chong-eang, among the last batch of students admitted to HKCM in 1912 and subsequently transferred to the newly established HKU Faculty of Medicine, who worked at the BI in 1917, and went on to become Professor of Microbiology at Peking Union Medical College in 1930.

Systematic training for its laboratory staff began in the PI after the appointment of the first Chief Technician in 1946. There was a demand for medical technicians as the population of Hong Kong surged

³⁸ Chan-Yeung, Moira M.W. 2019. "Blue Death and White Plague." *A Medical History of Hong Kong, 1942-2015*, p64-66. The Chinese University of Hong Kong Press.

³⁹ Hong Kong Museum of Medical Sciences Society. 2006. *Plague, SARS and the Story of Medicine in Hong Kong*, p40-44. Hong Kong Museum of Medical Sciences Society.

⁴⁰ Yeoh, G.E. 1963. "Cholera in Hong Kong, 1961. *Transactions of The Royal Society of Tropical Medicine and Hygiene*, Volume 57, Issue 1, January 1963, p46-49.

and PI had to cover for its branch laboratories in the new hospitals and clinics. Training to become a Laboratory Assistant required 3-4 years, with 6-month rotations to different sections of work, lectures, and an examination at the end. Further training to become a qualified Medical Laboratory Technician began in 1958 with a formal 2-year training programme overseas. Local training for Medical Laboratory Science only became available in 1973 after the Government Pathology Service has moved out of the PI.

1.1.8d3 Malariology

While the Malaria Bureau was accommodated at the BI/PI, the Government Malariologists similarly provided teaching for medical students and training for local staff. To accommodate this, the 1/F open veranda on the east side was closed to provide more space.

1.1.9 **The Old Pathological Institute Declared Monument**

On 13th June 1990, the OPI was declared a Monument, thus attesting to its historical and social significance. In October the same year, The College of Pathologists was formed and was inaugurated a year later as a member college in the Hong Kong Academy of Medicine. A group of pathologists who had worked at the PI or were related to it wondered what would happen to the OPI now that it has become a declared monument. They came up with the idea of converting the OPI into a museum. Accordingly, in 1992, The College of Pathologists submitted a proposal to the government that eventually led to the establishment of the Hong Kong Museum of Medical Sciences. The HKMMS opened to the public on 22nd March 1996.

Chronology

1844	Hong Kong population: 19,463. (Census of Hong Kong 1853. <i>Hong Kong Government Gazette 1854</i>) Chinese population urged to live in the Taipingshan district.
1860	Kowloon ceded to Britain.
1882	Report of the Sanitary Commissioner, Osbert Chadwick, highlighted the unsanitary conditions of the Taipingshan area. "The death-rate is high, whilst the average age at death is low." Energetic remedial action advised. Hong Kong population: 160,402 (<i>Hong Kong Blue Book 1882</i>)
1887	Hong Kong College of Medicine for Chinese (HKCM) inaugurated, with Dr Patrick Manson as first dean; Sun Yet-Sen among the first students admitted. HKCM was renamed Hong Kong College of Medicine in 1907.
1892	Vaccine Institute opened on Kennedy Road.

1894	<p>May: Bubonic plague outbreak in Hong Kong.</p> <p>June: The bacterium that caused Plague discovered by Alexandre Yersin.</p> <p>September: Taipingshan Resumption Ordinance enacted. The area resumed was approximately from Ladder Street to the east, to Po Yan Street to the west; and from Taipingshan Street to the north, to Rutter Street and Caine Lane to the south.</p> <p>Hong Kong population: 246,006 (<i>Hong Kong Blue Book 1894</i>)</p>
1898	<p>New Territories leased to Britain for 99 years.</p>
1901	<p>Dr. William Hunter appointed the first Government Bacteriologist, with authority and budget to equip the Bacteriological Institute that will be built to control the plague and other infectious diseases.</p> <p>Hong Kong population (census): 283,975 (<i>Hong Kong Blue Book 1901</i>)</p>
1902	<p>Dr William Hunter, arrived in Hong Kong to take up his post and plan the Bacteriological Institute.</p> <p>Supervision of the work of the Vaccine Institute and the Public Mortuary by the Government Bacteriologist began.</p> <p>A suitable site for the BI was identified at the southern tip of the resumed area of Taipingshan district just under Caine Lane.</p>
1904	<p>Construction of the BI commenced. Messrs. Leigh & Orange were the architects appointed to prepare plans and estimates according to the ideas of the Government Bacteriologist.</p>
1906	<p>Bacteriological Institute (BI) officially opened on 15th March, 1906.</p> <p>The BI was composed of a Main Building, a staff quarters building, an animal house, and grounds. The laboratories were state-of-the art excellent for that time, rare even within Europe.</p> <p>Vaccine production transferred to the BI from the Vaccine Institute which then closed.</p> <p>Hong Kong population: 329,038 (<i>Hong Kong Blue Book 1906</i>)</p>
1912	<p>The University of Hong Kong officially opened. The Hong Kong College of Medicine was incorporated into the University, becoming the Faculty of Medicine.</p>
1919	<p>HKU School of Tropical Medicine and Pathology opened.</p> <p>Dr Wang Ching-yik appointed the first Chair Professor of Pathology.</p>

<p>1930</p>	<p>Malaria Bureau (MB) accommodated in the BI till relocation to its own premises in 1950s.</p> <p>Hong Kong population: 1,171,400 (<i>Hong Kong Blue Book 1930</i>)</p>
<p>1941-1945</p>	<p>Japanese occupation of Hong Kong from December 25, 1941 to August 15, 1945. BI remained open but in limited operation.</p> <p>Hong Kong population decreased from about 1.6 million to 610,000.</p>
<p>1946</p>	<p>BI renamed Pathological Institute (PI) on 5th September 1946 to better reflect the scope of its work. Government Bacteriologist renamed Government Pathologist.</p> <p>First Chief Technician of the PI appointed, and systematic training of PI laboratory staff began.</p> <p>Hong Kong population: estimated 1.16 million (<i>Hong Kong Medical & Health Department Annual Report 1946-1947</i>)</p>
<p>1947</p>	<p>First public service for Tuberculosis.</p> <p>Massive influx of refugees fleeing civil war in mainland China. Serious overcrowding, poor nutrition and unsanitary conditions. Tuberculosis and enteric diseases such as cholera among the top causes of death.</p> <p>Hong Kong population: 1.75 million (<i>Census & Statistics Department, Hong Kong, 1969</i>)</p>
<p>1952</p>	<p>BCG vaccination against tuberculosis for newborn babies began, with assistance from the United Nations International Children’s Emergency Fund (UNICEF) and the WHO. Coverage for newborn babies reached 98% in 1980.</p> <p>Hong Kong population: estimated 2.25 million (<i>Hong Kong Medical & Health Department Annual Report 1952-1953</i>)</p>
<p>1960</p>	<p>PI moved to new premises at Sai Ying Pun Polyclinic. The site became known as the Old PI (OPI). Vaccine production continued at OPI.</p> <p>Surplus laboratory space was leased to the United College (a constituent College of the Chinese University of Hong Kong) from 1964 to 1972 while their laboratories were being built.</p>
<p>1961</p>	<p>Hong Kong population (census): 3,129,648 (<i>Census & Statistics Department, Hong Kong, 1969</i>)</p>
<p>1973</p>	<p>Vaccine production moved out to the Institute of Immunology on Victoria Road at Pokfulam. The OPI became a store for the Government Institute of Pathology.</p>
<p>1980s</p>	<p>The animal house of the OPI was demolished.</p>

1990	OPI was declared a monument under the Antiquities and Monuments Ordinance (Cap.53) on 13 th June, 1990.
1995	<p>The College of Pathologists successfully applied to the Government for the OPI to be used as a museum.</p> <p>Hong Kong Museum of Medical Sciences Society was formed to establish and operate the Hong Kong Museum of Medical Sciences.</p> <p>The OPI was refurbished for use as a museum. One of the laboratories on the first floor – the Old Lab – had its original fittings retained.</p>
1996	<p>Hong Kong Museum of Medical Sciences (HKMMS) opened in the OPI on 22nd March 1996.</p> <p>Poster panels, medical equipment exhibits, and guided tours told the stories of battles against infectious diseases, work of the BI/PI and various medical specialties, and local medical discoveries. Volunteers were a part of the work force.</p>
2003	Herbal Garden established in the HKMMS grounds to encourage the appreciation and study of plants of medicinal value found in Hong Kong. Species include those that are/were the source of Chinese medicine as well as that of western medicine drugs.
2005	Presented the exhibition <i>SARS 100 Days – Overcome in Unity</i> , in collaboration with the Hong Kong Science Museum.
2006	Publication of <i>Plague, SARS and the story of Medicine in Hong Kong</i> and the first edition of <i>The Silent Protector</i> as part of the celebration of the 10 th anniversary of the opening of the Museum and the centenary of the opening of the Bacteriological Institute. These were the first books published by the HKMMS Society.
2008	Presented the topical exhibition “Sports and Health” in collaboration with the Hong Kong Science Museum and other institutions, and a programme on the same theme for primary school children with sponsorship from the Health Care and Promotion Fund. Promoted exercise, health, and heritage.
2009	<p>Established the <i>Medical History Interest Group</i>. Meetings were held regularly to promote interest and research into the history of medicine in Hong Kong and the region. Professor Sir David Todd, Professor Emeritus of HKU, Founding President of the Hong Kong College of Physicians and Founding President of the Hong Kong Academy of Medicine, was the speaker at the inaugural meeting.</p> <p><i>Renewal of the Monument</i> – an exhibition on how maintenance and repairs of the OPI was carried out by the HKMMSS in collaboration with the government’s planned maintenance.</p>

<p>2011</p>	<p><i>Tai Ping Shan Medical Heritage Trail</i> inaugurated together with the publication of an accompanying booklet to promote interest in medical heritage and to celebrate the 15th anniversary of the opening of the HKMMS. Regular guided tours conducted. In 2018, a mobile App on the <i>Tai Ping Shan Medical Heritage Trail</i> was produced in collaboration with the Wellcome Trust for worldwide downloading.</p> <p>Hong Kong population (census): 7.07 million (<i>Census & Statistics Department, Government of the HKSAR</i>)</p>
<p>2012</p>	<p>Began to provide specially-designed lessons on local medical history for HKU medical students. Similar lessons were provided for medical students of the Chinese University of Hong Kong from 2022.</p>
<p>2014</p>	<p>Began to contribute to the <i>Reminiscence</i> section of the Hong Kong Medical Journal, the official journal of the Hong Kong Academy of Medicine. Artefacts in the Museum Collections were regularly featured.</p>
<p>2015</p>	<p>The <i>SARS Oral History Archive</i> was established as a special resource for future study and research on the SARS outbreak and lessons learnt.</p>
<p>2016</p>	<p>The <i>Human Body</i> exhibition launched to promote understanding of one’s own body and how to take care of it. This was the first of a series of exhibitions with digital interactive exhibitions on the ground floor of the Museum.</p> <p>The exhibition <i>Health and Medicine in Hong Kong</i> opened in 2017 to tell the tale of the development of western medicine in Hong Kong, including that of the 1894 Plague.</p>
<p>2019</p>	<p>Fun fair “Living medical heritage in the community” held in the Museum and adjacent Caine Lane Garden, in collaboration with 30 institutions, funded by the Urban Renewal Heritage Preservation and District Revitalisation Funding Scheme, to promote health and heritage.</p> <p>Collaborated with Hong Kong Institute of Architects (HKIA) in the nine-month event, <i>Co-Vitalize Our Heritage</i> – with tours/ lectures/ workshops to introduce heritage conservation to the public.</p>
<p>2020</p>	<p>New exhibit developed: the 3D copper Acupuncture Model with AR interaction, to promote Chinese Medicine.</p>
<p>2023</p>	<p>Opening of the exhibition “Modern Medicine” in collaboration with the College of Obstetricians and Gynaecologists.</p> <p>Hong Kong population: 7.50 million. (<i>Census & Statistics Department, Government of the HKSAR</i>)</p>

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1.2 ARCHITECTURAL BACKGROUND

1.2.1 Location of BI in the resumed Tai Ping Shan district

In 1841, British troops began claiming possession of the island which is to be later named as Hong Kong Island. They landed at a place known by Chinese as Shui Heng Hau (Nullah Estuary) on the northwestern coast of the island of Hong Kong, and the place were later to be called "Possession Point". Further up the hill were Chinese settlements along streams that ran down from Victoria Peak (The Peak, Taipingshan).



Fig. 21. Location of Taipingshan district in the City of Victoria.

(Source: Empson, Hal. 1992. "Plan of the City of Victoria". 1889. *Mapping Hong Kong: A Historical Atlas*. Hong Kong Government Information Service.)

The British began to set up the City of Victoria. To reserve more space in Central for government buildings and European residents, the government encouraged Chinese residents to move west to Sheung Wan and east to Wan Chai. Taipingshan district (TPS) in Sheung Wan soon became one of the most populated residential areas in Hong Kong. As a developing entrepot, Hong Kong attracted a large number of migrant workers, many of whom were unskilled low-wage labourers ("coolies"). To maximise profit, landlords built low-cost and simple Chinese row-house (known as Tong Lau, meaning Chinese blocks), to accommodate this inflowing population. As density increased rapidly, rudimentary extension and subdivisoning prevailed. The houses were partitioned into cocklofts and cubicles. A 2-storey building

thus partitioned became 4-storey.¹ In particular, in-order to accommodate more families in the Chinese row-houses, small courtyards originally meant for drainage/ lighting/ ventilation were built-over, staircases for escape were blocked causing life-risk, and cooking/ defecation are tolerated in inner rooms causing obvious serious hygiene problems. To make matters worse, animals such as pigs were kept in the lodgings, with government permission². Drains were non-functional, water from the public street hydrant was only intermittent, and there was no latrine.

In 1880, the Colonial Surgeon warned of the danger of an epidemic should the crowded and poor sanitary conditions in TPS persist. In 1882, Mr Osbert Chadwick (1844-1913), consultant engineer to the Colonial Office reported that “The sanitary condition of Hong Kong is defective, and calls for energetic remedial measures. The death-rate is high, whilst the average age at death is low” (at around 18.3 years old). He made recommendations for sweeping reforms.³ However, for various reasons, the reforms were not carried out adequately. In 1894, large scale bubonic plague broke out, at exactly the most serious Tai Ping Shan district, as Chadwick had warned. The plague finally pushed the British Hong Kong government to recognize the importance of health and safety of building environment for the general Chinese population.

In the aftermath of the Plague, an area bounded by Ladder Street to the east, Po Yan Street to the west, Tai Ping Shan Street to the North and Rutter Street and Caine Lane to the South was resumed by the government under the Tai Ping Shan Resumption Ordinance, 1894. By its enactment, all 384 houses in the area, together with the market and, police station were demolished. Streets were laid out anew and only houses which conform to standards set by the new Public Health & Buildings Ordinance 1903 were permitted. A large area at the upper corner of Caine Lane was reserved for health-related buildings including the Bacteriologist Institute (BI) to control and prevent the Plague.

¹ Chu, Cecilia L. 2022. “Combating Nuisance: Urban Improvement and the Colonial Conundrum.” *Building Colonial Hong Kong. Speculative Development and Segregation in the City*, p79-80. Routledge.

² Hong Kong Museum of Medical Sciences Society. 2006. *Plague, SARS and the Story of Medicine in Hong Kong*, edited by Arthur Starling et al., p27. Hong Kong University Press.

³ Chadwick O. 1882. “Mr. Chadwick’s Reports on the sanitary condition of Hong Kong; with appendices and plans”. Great Britain Colonial Office. Wellcome Collection. Public Domain Mark.

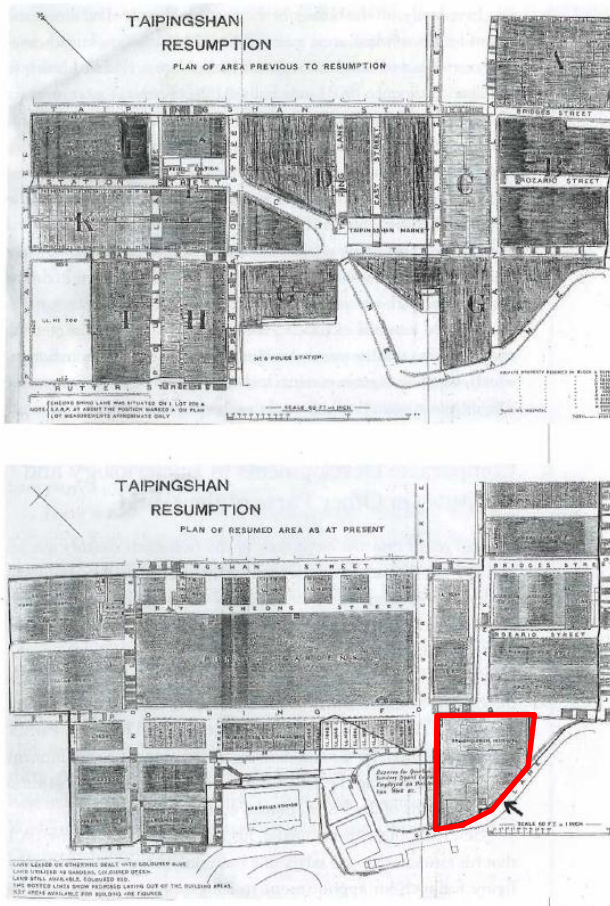


Fig. 22. Plan of Tai Ping Shan area before(top) and after(bottom) resumption. The location of BI on Caine Lane is highlighted in red. (Source: Hong Kong Museum of Medical Sciences Society. 2006. *Plague, SARS and the Story of Medicine in Hong Kong*, edited by Arthur Starling et al., p27. Hong Kong University Press. p155)

1.2.2 Design of the Bacteriological Institute (BI)

BI was designed by Messrs of LEIGH & ORANGE, who also supervised the construction⁴. Messrs. Leigh and Orange (now Leigh and Orange Architects) was established in 1864; and is one of the oldest established architectural practices still operating in Hong Kong. In addition to the BI, Messrs. Leigh and Orange also designed the Ohel Leah Synagogue on Robinson Road, Former French Mission Building on Battery Path, St Andrew's Church on Nathan Road, and Loke Yew Hall in The Hong Kong University.

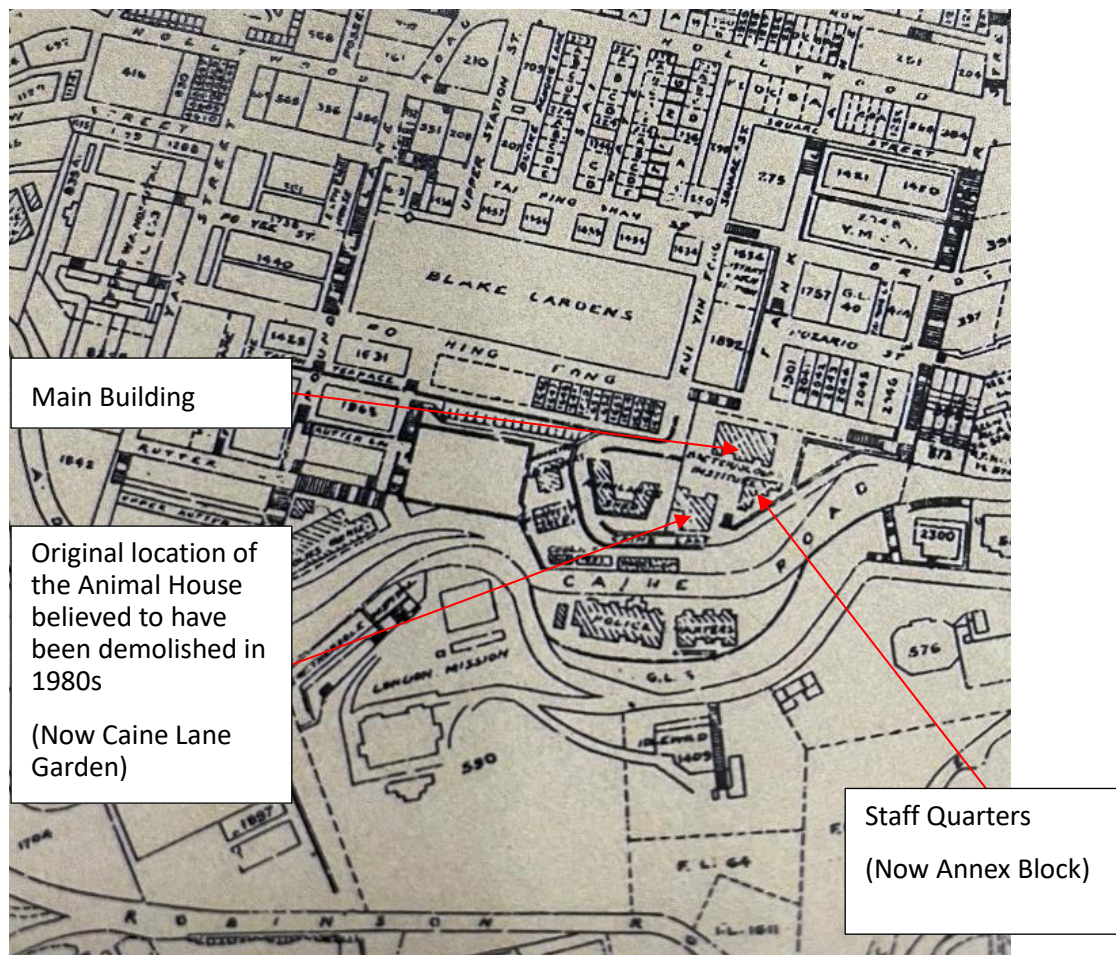


Fig. 23. Survey Plan 1936-46 showing the BI with three buildings. (Source: Crown Lands and Survey Office P.W.D. Hong Kong, Hong Kong Public Library.)

1.2.2a Site context and composition of site

In the report of the Director of public Works for the year 1905,⁴ the original site context and composition of the buildings within the institute were described item by item:

“...in the upper part of the Taipingshan resumed area and consist of a main block and two subsidiary blocks—one for servants' quarters and the other for animal houses...”

⁴ Chatham W. 1905. Report of the Director of Public Works for the year 1905. In *Sessional Reports 1905*, p14. Available at <https://sunzi.lib.hku.hk/hkgro/view/s1906/1946.pdf>

“...The whole of the compounds are laid with lime concrete surfaced with cement concrete and the site is enclosed by a brick boundary wall with iron entrance gates...”



“...Balconies extend along the whole of the north front on the ground and upper floors and there are verandahs on the east, south and west fronts...”

Fig. 24. Old photo of Main Building, facing the courtyard of the Animal House. 1906-1910.

(Source: ‘Historical Photographs of China’, University of Bristol (CC BY_NC_ND 4.0))



“...One of the subsidiary blocks (a one-storied building) affords accommodation for 11 Chinese attendants, with kitchen, &c., whilst the other (a two-storied building) contains a stable (4 stalls and 2 loose boxes); houses for 5 cattle and 8 calves; 2 sheep-pens and suitable accommodation for monkeys, fowls, rats, mice, guinea pigs and rabbits. There is also a room for 4 Chinese attendants, a doctor’s room, a corn store and a fodder store...”

Fig. 25. Photo of the Animal House. 1906-1910.

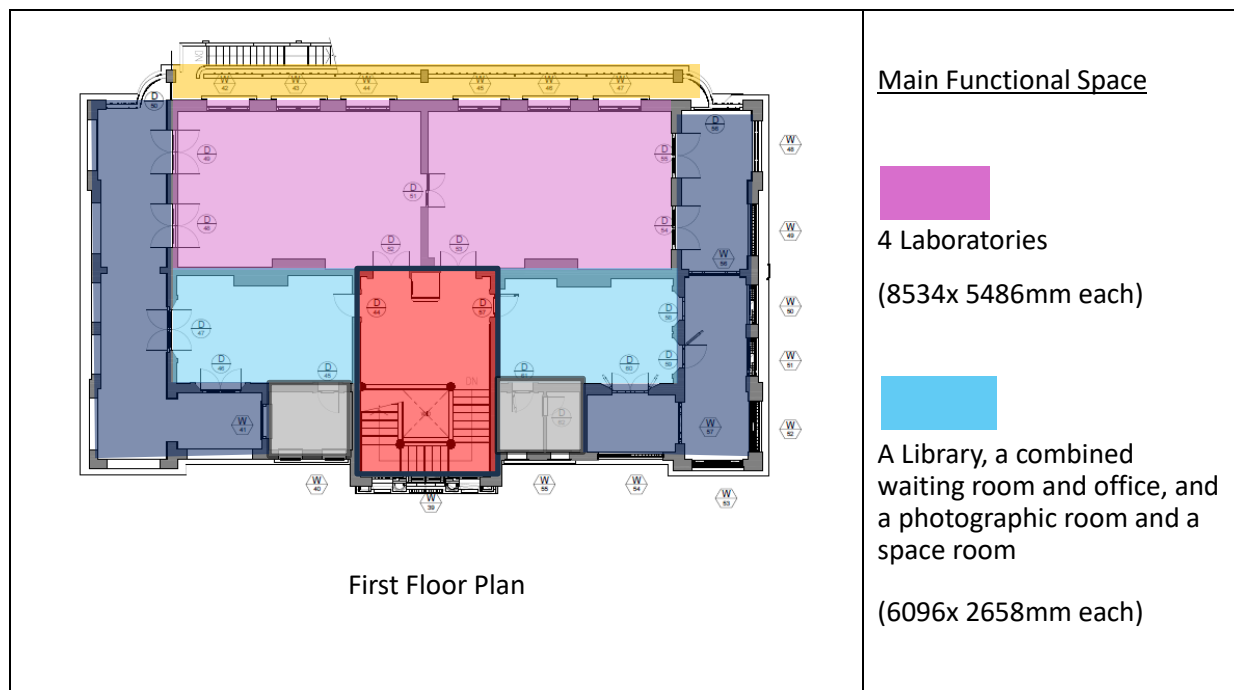
(Source: ‘Historical Photographs of China’, University of Bristol (CC BY_NC_ND 4.0))

1.2.2b Spatial arrangement

In the 1905 report of the Director of public works, it also stated that the BI occupied a site with extent of 20,776 square feet that consisted of a Main Building and two subsidiary blocks. Other than the main functional building block, the other two, one used as staff quarters and one served as animal houses. The schedule of accommodation at the Main Building was listed as below:

- 4 Laboratories each 28'x 18',
- 1 Library, 1 Combined Waiting Room and Office, Photographic Room and Spare Room each 20' x12',
- Storeroom,
- Incubating Room,
- Heating Chamber and Refrigerating Room,
- Dark Room,
- Hall and Staircase,
- Lavatories,
- Balconies extend along the whole of the north front (NE) from the ground to upper floor,
- Verandahs on the east (SE), south (SW) and west (NW) fronts

The original spatial arrangement of the Main Building in 1906 is tried to recurrence as below based on said written record, old photo record and current site evidence.



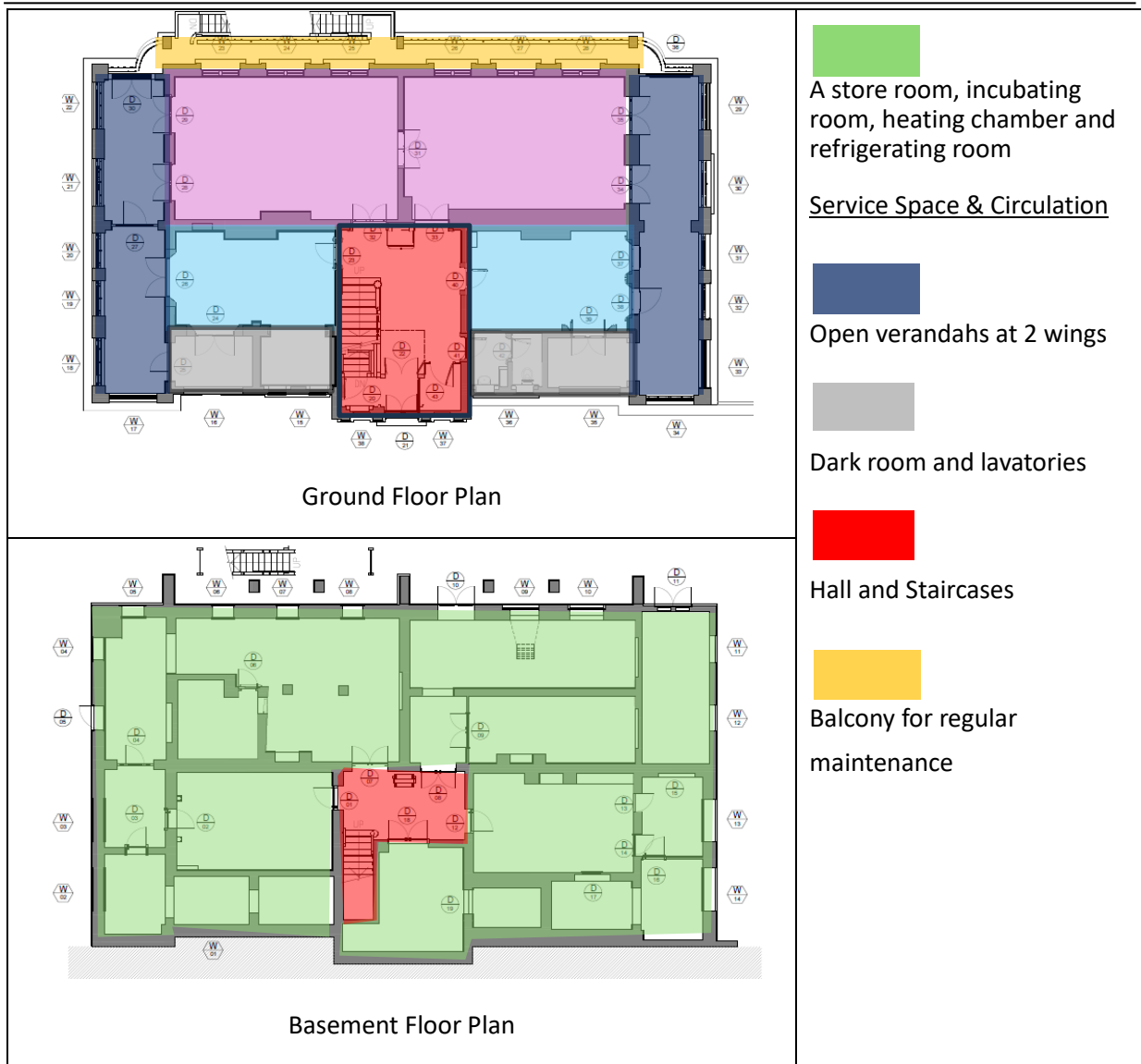


Fig. 26-28. Spatial arrangements

1.2.2c Structural System

On the original structural system of the Main Building, the report remarked as below:

“All the buildings are of red brick, built in lime mortar and pointed externally in cement mortar... The roofs are covered with double pan and roll tiling, on timber purlins and principals...” (Refer to Fig. 29 and 30)

“...The two laboratories and all other apartments on the ground floor, including verandahs, &c., and the 2 laboratories and verandahs on upper floor have floors of cement concrete supported on rolled joists and covered with encaustic tiles.” (Refer to Fig. 32)

“...the remaining apartments on the upper floor have teak floors supported on China fir joists.” (Refer to Fig. 31)



Fig. 29. Red brick external wall structural with double-pan-double-roll tiled pitched roof.



Fig.30. pan and roll tiles sitting on timber purlin and principals.



Fig. 31. timber joists under the teak floor.



Fig. 32. Encaustic tiles flooring at the verandahs.

Based on site inspection of structural engineer, it is believed that the Main Building is built of timber, brick and reinforced concrete. All external and internal walls are constructed by bricks. The pitched roof is supported with wooden king post trusses and pan-and-roll tiles on top. The structural framework

consists of timber joists supported by structural brick walls in the internal rooms, while reinforced concrete slabs are supported by brick walls in the verandah. It is highly consistent with the report description. During maintenance works by ArchSD in 1990s, plan of the timber roof and framing plans of different floors were recorded. No obvious changes are observed in comparing with existing structural condition in 2023.

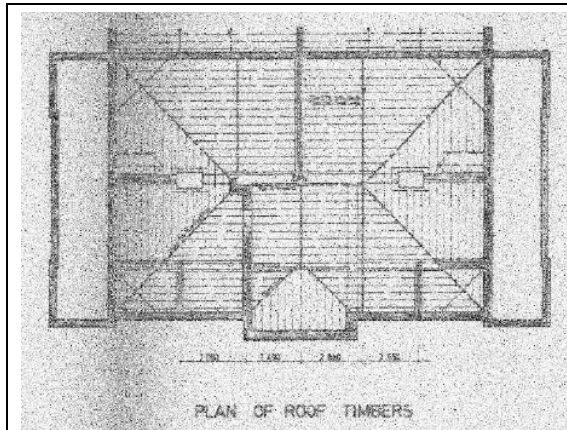


Fig. 33. Plan of roof timbers
(Source: Arch SD Maintenance Branch)

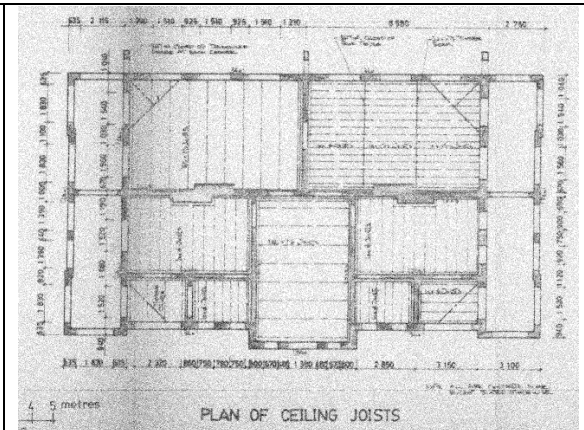


Fig. 34. Plan of ceiling joists
(Source: Arch SD Maintenance Branch)

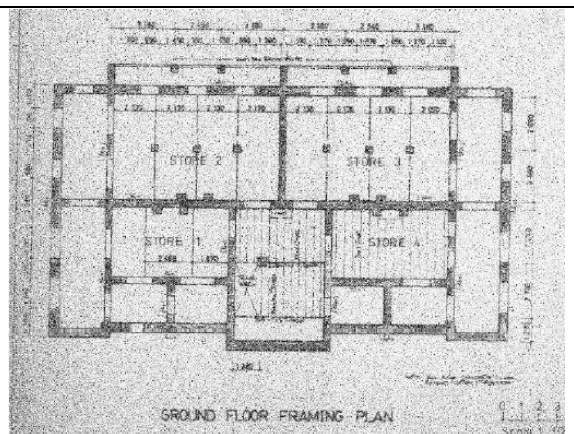
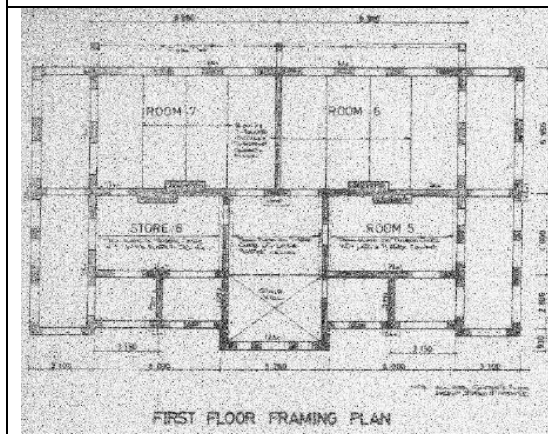


Fig. 35-36. Framing plans of First floor and Ground floor in 1990s
(Source: Arch SD Maintenance Branch)

1.2.2d Design and fittings

Although final approval budget was HK\$40,000 by Public Works Committee in 1903 that was lower than the original request from the first bacteriologist Hunter⁵, and also there was lost of some apparatus through shipwreck from London⁶, the bacteriologist remarked that the apparatus was “excellent” in his 1906 report.

The laboratory fittings carried out by the Public Works Department were also record in the Public Report 1905, some of them still recognizable and some have already become part of the history: ⁷

“The walls of the incubating chamber are lined with asbestos and double doors are provided to this apartment. A hot-water service is laid on to all the laboratories from a vertical boiler in the heating chamber...”

“The floors of all the animal on the ground floor are laid with chequered tiles of local manufacture on a layer of lime concrete The upper floor is entirely of cement concrete. Some of the walls have dadoes and the others skirtings of cement mortar. An incinerator is provided for of animals...”



Fig. 37.

“ They consist of long wall benches with teal tops and fitted with sinks; large centre tables, also fitted with sinks; drawers, cupboard &c. A fume cupboard is also provided...”



Fig. 38.

“The windows of the laboratories, which are placed in the north front, are fixed and glazed with plate glass, the balconies affording access for cleaning their outside surfaces...”

⁵ Hong Kong Museum of Medical Sciences Society. 2006. *The Silent Protector – a Short Centennial History of Hong Kong’s Bacteriological Institute*, edited by Faith C. S. Ho, p21,25-26. Hong Kong Museum of Medical Sciences Society.

⁶ Hong Kong Museum of Medical Sciences Society. 2006. *Plague, SARS and the Story of Medicine in Hong Kong*, edited by Arthur Starling et al., p151-152. Hong Kong University Press.

⁷ Chatham W. 1905. Report of the Director of Public Works for the year 1905. In *Sessional Reports 1905*, p14. Available at <https://sunzi.lib.hku.hk/hkgro/view/s1906/1946.pdf>



Fig. 39.

“Double doors are provided to all openings into the laboratories. one door being glazed and the other filled in with mosquito-proof wire gauze.”

(Source: ‘Historical Photographs of China’, University of Bristol (CC BY_NC_ND 4.0))



Fig. 40.

The sinks with trademark of Baird & Tatlock (Cross Street, Hatton Garden, London) Ltd still found in BI.

Baird & Tatlock (London) Ltd was established in 1881. It cannot be confirmed that the sinks are the originals from 1906 but they should be one of the old features in the laboratory.

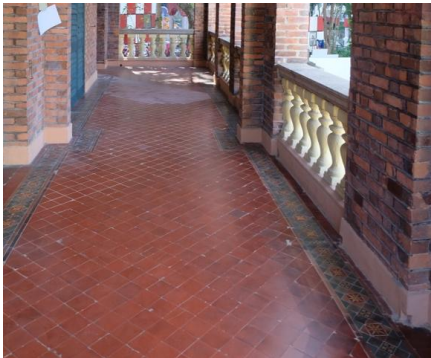


Fig. 41. & 42.

“...the 2 laboratories and verandahs on upper floor have floors of cement concrete supported on rolled joists and covered with encaustic tiles...”

1.2.3 Design of a Laboratory Building

The concept of the laboratory as a space which can be isolated from disturbance and precisely manipulated for productive and experimental purposes first emerged during the “scientific revolution” (from mid-16th century to mid-17th century) when the sciences and the scientific method developed. After evolving for a century, the modern chemistry laboratory with its quantitative measuring instruments appeared in the 19th century. An example is the Birkbeck Laboratory at University College, London, which opened in 1846.

In the article *“Science Laboratories to 1900: Introduction to Heritage Assets”* of Historic England written by Dr. Boris Jardine of the University of Cambridge⁸, Dr Boris introduced The Birkbeck Laboratory was the first purpose-built teaching laboratory in Britain. The design of the laboratory was the representative of its time.

The laboratory had long wall work benches on both sides, and central placement of double-sided tables. This layout maximized the pathway for supervising every position of work. Large windows with good illumination were important as microscopes became a basic instrument in the laboratory. It was crucial that the windows allowed right-angle illumination of the long tables during most of the day. High ceiling facilitated carrying away fumes and provided good ventilation irrespective of whether furnace or burner was used.

We can compare the historic interior photo of Birkbeck Laboratory of 1846 (see Fig. 43), which we now know should have contained all the state-of -the art fitments for a laboratory at 19th century, with an early interior photo of the 1906 BI building (see Fig. 44), we can see very similar design and provisions, implying that Hong Kong was not very far behind in global medical laboratory research facilities at that time, and that BI is indeed our valuable historic testimony.

⁸ Jardine, Boris. 2022. “Science Laboratories to 1900: Introduction to Heritage Assets”. HEAG0303. V1.0 August 2022 p1-25. Historic England. Available at <https://historicengland.org.uk/images-books/publications/iha-science-labs-1900/heag303-science-labs-1900/>.

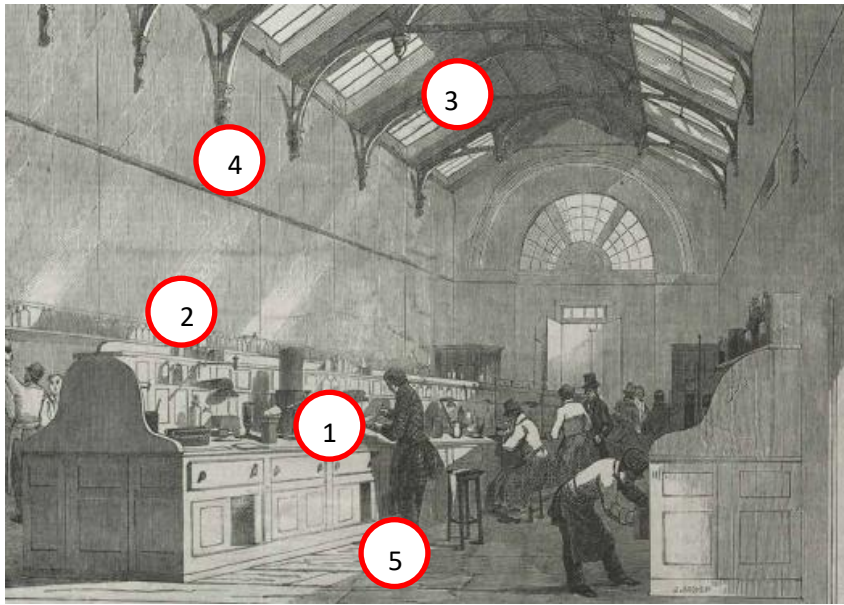


Fig. 43.

Birkbeck Laboratory at University College, London (opened 1846)

(Source: Jardine, Boris. 2022. P16 Fig 8.)

The Birkbeck Laboratory (Fig. 43) and the Bacteriological Institute laboratory (Fig. 44) share similar interior design:

1. Long bench desk with storage
2. Bottle rack as central divider
3. Large window
4. High ceiling
5. Circulation pathway for supervising along the desk

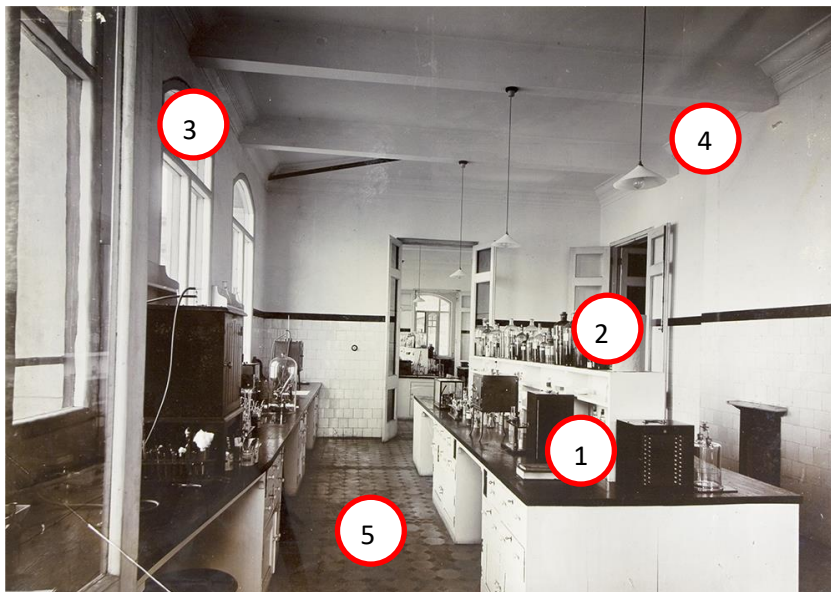


Fig. 44.

Laboratory in the Bacteriological Institute, Hong Kong (built 1906) shares similar interior design.

(Source: 'Historical Photographs of China', University of Bristol (CC BY_NC_ND 4.0))

1.2.4 Edwardian style for modern lifestyle

Architectural historians will often explain that it is fairly difficult to precisely define the Western Architectures of early Hong Kong into neat periodic styles, since our society at those times did not closely match the evolving tastes of the British monarchs. Nevertheless, the shifting trends of styles here were inevitably influenced by the prevailing scene in Britain at various time., since the merchants and politicians would like to demonstrate their taste through art and architectures.

The BI building is designed in a loosely known as “Edwardian Style”,⁹ but more accurately can be said to be in a style strongly influenced by Edwardian Style then prevailing in England. Edwardian style is named for the architectural style under the period King Edward VII from 1900 to 1910, and the influence extended until 1918. During the Edwardian era, the public enjoyed more freedom and a higher standard of living. Electricity was more commonly available and modern appliances were popular in many families. New water supply piped to house and drainage system were improved with higher life expectancy. The train network was highly developed. The middle class moved to the suburbs for larger houses and garden.¹⁰

On the other hand, people rejected mass production goods of the industrial age. The Arts and crafts movement was popular, and it led to the use of timber framing, balcony with intricate fretwork and balustrade. The façade design was colourful and decorative, but more subtle than the Victorian era. Comparing with Georgian or Victorian styles, Edwardian lasted only a short period of time.¹¹ It was strongly influenced by many other styles or popular architects of the time, such as Sir Edwin Lutyens of the Arts and Crafts movement and Sir Richard Norman Shaw of Queen Anne. The Edwardian architecture would always mixed-use features from other styles such Georgia and Victoria styles that had remained popular for about 200 years before Edwardian Era. Therefore, Edwardian buildings may vary in layout, size and features.¹²

BI was completed in 1905. It was designed and built in the period that corresponding to the Edwardian reign England, thus the architect sensibly adopted the style of composition popular at that era in

⁹ Antiquities and Monuments Office. “Old Pathological Institute, Caine Lane”. Declared Monuments in Hong Kong. https://www.amo.gov.hk/en/historic-buildings/monuments/hong-kong-island/monuments_41/index.html Last revision 2024.12.05.



¹⁰ Yorke, Trevor. 2006. *The Edwardian House Explained*. Countryside Books. P. 11-17.

¹¹ Yorke, Trevor. 2006. *The Edwardian House Explained*. Countryside Books. P. 50-55

¹² Yorke, Trevor. 2006. *The Edwardian House Explained*. Countryside Books. P. 40

configuring and decorating the building. The layout of it is simple, a 3-storey box, 2 room depth and strict symmetrical arrangements with chimneys on both gable walls. Main block has a distinguishable protruding main entrance portal with a Dutch gable wall at the top in curve shape, and a round window and short strip features that are the iconic features of Edwardian style. Obelisk-shaped finals at the roof top is also unique. BI has a classical outlook with iconic columns supporting the entablature as decoration for the first-floor façade. A dedicated stained-glass Palladian window decorated with Chinese motifs positioned at the center part of the façade, allowed penetration of natural light into the main entrance hall and the upper floor.

The main gathering space is located after the main entrance. There is a decorated plaster moulded ceiling at this space with timber grand staircase driving towards the first floor. Their design and details echo the simple Edwardian style of the building.

	
<p>Fig. 45. Edwardian style distinguishable protruding main entrance portal</p>	<p>Fig. 46. Dutch gable wall in curve shape with round window, pilasters and short strips</p>

	
<p>Fig. 47. Obelisk-shaped finials at the roof, with pilasters and short strips on brick wall</p>	<p>Fig. 48. Dedicated stained-glass Palladian window decorated with Chinese motifs</p>
	
<p>Fig. 49. Ionic columns supporting the entablature as decoration for the first-floor façade</p>	<p>Fig. 50. Plastered moulding at the main gathering space. The patterns are simple and subtle compared with Victoria architectures.</p>
	
<p>Fig. 51. The Main entrance towards the central gathering place of the BI.</p>	

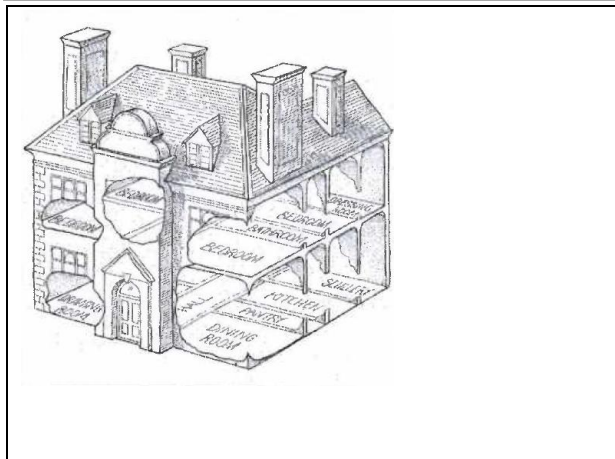


Fig. 52. The typical layout of Edwardian large house. (Source: Yorke, Trevor. 2006)

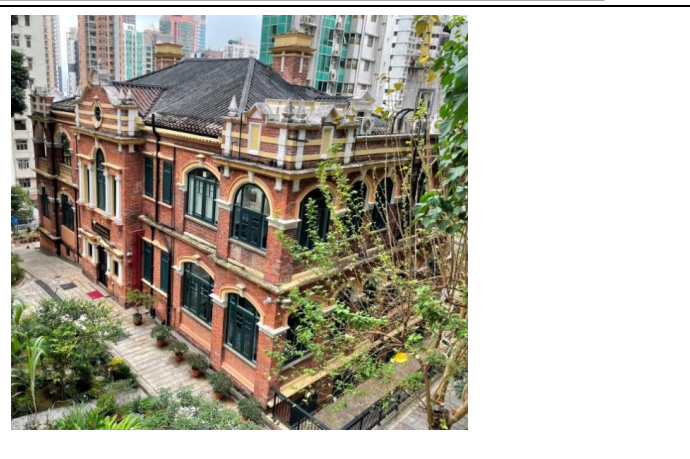


Fig. 53. The layout of BI Main Building is similar to the typical of Edwardian large house.

Red brick buildings in Hong Kong constructed during the Edwardian period (1900-1920):



Fig. 54. Bacteriological Institute built in 1906



Fig. 55. Western Market North Block built in 1906
(Source: AMO website. Declared monuments in Hong Kong- Hong Kong Island. Last modified Feb 2022.)





Fig. 56. University of Hong Kong built in 1910
(Source: AMO website. HKU Heritage Sights and Sites. Last modified Oct 2024.)



Fig. 57. Kom Tom Hall built in 1914.
(Source: AMO website. Declared monuments in Hong Kong- Hong Kong Island. Last modified June 2022.)

1.2.5 Colonial style and Chinese adaption

Colonial architecture is widely defined as the style of the architecture brought from the ruling country to its colony, often modified to accommodate the local climate conditions. The British colonial style in Hong Kong has its roots in the British colonial architecture of the Indian subcontinent. Because of Southeast Asia's hot and humid climate, architectural features such as verandahs, arcades, balconies, and louvered shutter windows and doors were commonly incorporated.¹³

	
<p>Fig. 58. Flagstaff House with verandah and louvered shutter windows for shading. (Built in 1846) (Source: AMO website. Declared monuments in Hong Kong- Hong Kong Island. Last modified Dec 2021.)</p>	<p>Fig. 59. Verandah at the Main Building of the University of Hong Kong. (Built in 1910) (Source: Wikimedia Commons."The inside of The University of Hong Kong Main Building corridor". CC BY-SA 3.0.)</p>

The roof system of BI is a combination of Western and Chinese architectural style. Main Building is a Western hipped pitched roof with dormer windows and chimneys. It is laid with Chinese double-roll-double-pan clay tiles, and with Western cast iron downpipes with hoppers at the tiled roof edge to collect the rainwater. Under the tiled roof, there is English timber truss system as the roof structure resting on brick walls, beneath which is a timber false ceiling decorated with classical plaster moulding.

“Early western buildings in Hong Kong were general imitative of the British styles with adaptations to suit the local technology, the available building materials and the hot and humid climate”.¹⁴ The

¹³ Hong Kong Heritage Conservation Foundation Limited and University of Hong Kong, 2012. “Pattern Design and Architectural Style.” Old Tai O Police Station: The Evolution of a Centenary Monument.

¹⁴ Hui, D. 2004. Selected Historic Building and Sites in Central District. Antiquities and Monuments Office.

widespread practice of applying Chinese tiled roofing to Western timber frames in Hong Kong probably began in the mid-19th century, after the first Opium War of 1841 for massive construction of Western buildings in Hong Kong.¹⁵

Although the tiled roofing system of Chinese and Western shared some similarities, the details configurations are quite different (e.g. slope angle, span between purlins, tiled design and fixing method). "Problem arises when one attempts to put Lingnan pan tiles on a Western truss with widely spaced purlins." Leung stated in his article "Accidental Marriage: Chinese Roofings on Western Frames of Early Colonial Architectures of Hong Kong" (2017). "Lingnan Roofing," named after the southeastern coastal region of China known as the Lingnan region. It consists of standardized baked clay tiles with simple shapes. The roofing features alternating rows of wide concave pan tiles and narrow convex roll tiles. These tiles are mainly laid with loose mortar to fill gaps, rather than for adhesion. "The use of traditional thin Chinese battens are found to be unable to span between Western purlins, thus becomes the common cause of long-term deformation.

The Staff Quarter with simple timber frame covered with double-pan -double-roll. The shallow gutter and valley of it have already created problem of occasionally overflow. The low parapet has difficulties on insertion of lead flashing for better protection from water leakage. Other defects such as complexity of the chimney for lead flashing insertion and the slippage of roof tiles are also commonly observed in these combined styles roofs and modifications should be made for maintenance purpose.¹⁵

¹⁵ Leung, Edward. 2017. "Accidental Marriage: Chinese Roofings on Western Frames of Early Colonial Architectures of Hong Kong". O-0349. UIA 2017 Seoul World Architects Congress. P1-6.

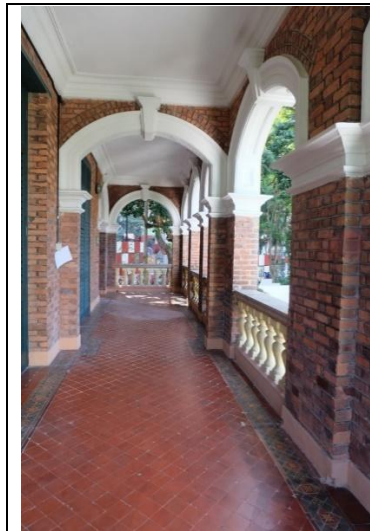


Fig. 60. Verandah at the BI with arch opening and balustrades, beautiful encaustic tiles in staggered pattern in the field with borders at the verandahs.



Fig. 61. Laboratory rooms with louvred shutter windows toward the verandahs. The tilt rods of the shutters control the level of openness. Door stays to fix the louvred shutter aside to allow no blockage of natural light while full open is necessary.

Bacteriological laboratory survived sub-tropical climate

Backed on Caine Lane and in Southwest facing orientation allow sufficient daylight to enter the main block. Two levels of balcony are extended along the whole of the north wall on the ground and upper floors for daily cleaning and regular maintenance of the NE wall. Deep verandahs with large arch- shape opening on the NW and SE sides allow natural light but prevent direct penetration of sunlight. The large openings, large windows and doors on the ground and first floor also allow good ventilation throughout the building and alleviate trapping of the moisture. These are not only important for human comfort in the sub-tropical climate but also crucial for mitigating the risk of contamination in the laboratories. Fireplaces, fitted with iron-grating imported from Britain, surrounded by ceramic tiles and locally made ornate timer mantelpiece were installed at the main rooms, and connected to chimneys above for the dispersion of smoke and driving of cross-ventilation.

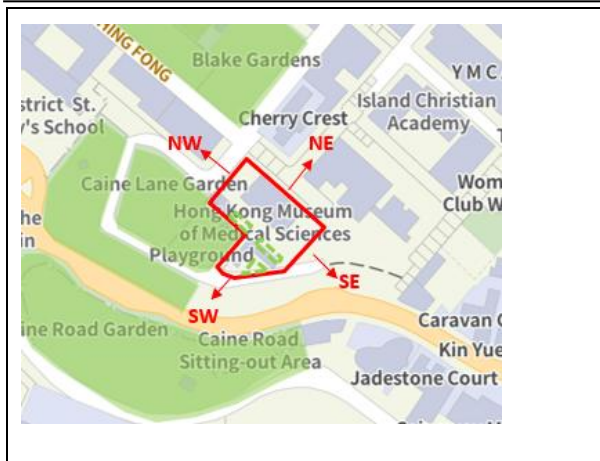


Fig. 62. Orientation was carefully planned to allow sufficient illumination to the laboratories.



Fig. 63. Main Building is the highest in the Compound and allows sunlight to enter from the main façade side without obstruction.

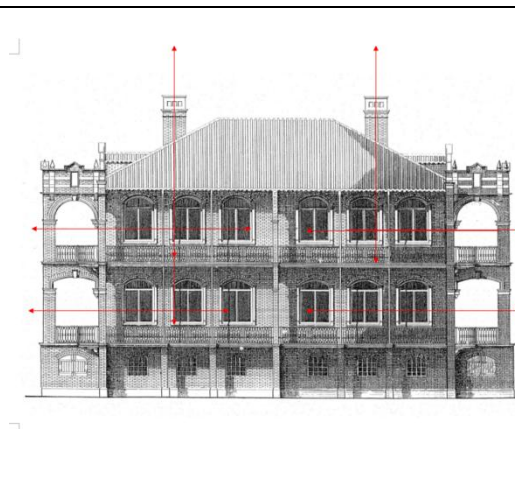
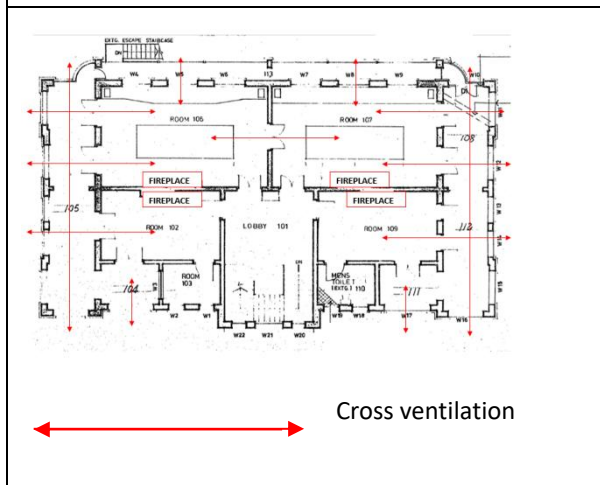


Fig. 64-65. Cross ventilation in Main Building driven by the release of hot air at the chimney stacks and winds entering through the large doors into the laboratories facing verandah.




Fig. 66.
Verandah and large arch opening to allow good ventilation



Fig. 67.
Large (about full height) opening windows and doors to allow good ventilation



	
<p>Fig. 68. Fireplaces at laboratories and other function rooms for comfort</p>	<p>Fig. 69. Chimneys at the roof allow cross ventilation</p>

1.2.6 Staff Quarters during Pathological Institute period

According to the Appendix of staff memory in the book *The Silent Protector – a Short Centennial History of Hong Kong’s Bacteriological Institute*, published by Hong Kong Museum of Medical Sciences Society, the old days of PI in around 1963 to 1973 flashback:

“It was a serene bungalow consisting of three bedrooms, one sitting and dining room, one storeroom, kitchen and a courtyard. The resident technologist had to wake up at midnight for operation on goats and buffalo calves when it was an opportune time for vaccine preparation, as well as to cope with any accidental breakdown of laboratory equipment after office hours.” In the days traffic network was less comprehensive, staff quarters were important part of the institute to allow sufficient manpower all time.

The information and old photo record of the staff quarters are far less than Main Building. The spatial arrangement of the Staff Quarters is tried to recurrence as below based on the limited said written record, old photo record and current site evidence.

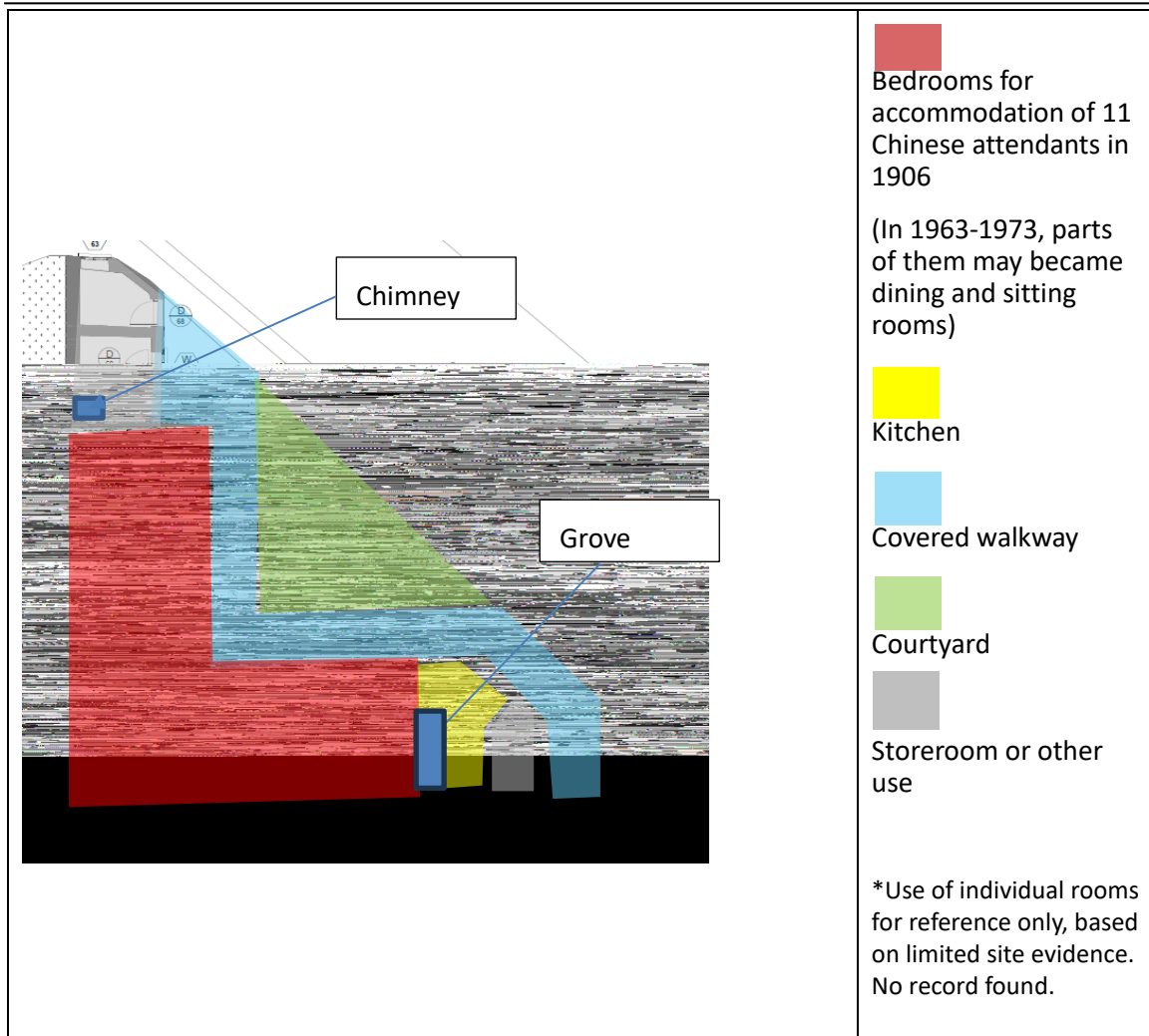


Fig. 70. Layout of Staff Quarters (now Annex Block)

1.2.7 Alterations and Adaptive Reuse

There is also very limited record on the alteration of the BI and PI until 1990s, the revitalization works done by ArchSD after the declared of the buildings as monument and confirmed of the new use as a museum. These A&A works for revitalization include certain upgrade works for fire escape (installation of steel staircase), fire services installations, lighting installation and plumbing/ drainage connections so as to fulfil the statutory requirement and operation need of a museum.

Since there are no original drawing records available, the changes to the buildings since their construction can only be identified through old photographs. This is a crucial step for future repair and maintenance work, as the monument holds significant historic, architectural, and social value that is worth our effort to preserve, retain, and revitalize.

1.2.7a Main Building - Exterior

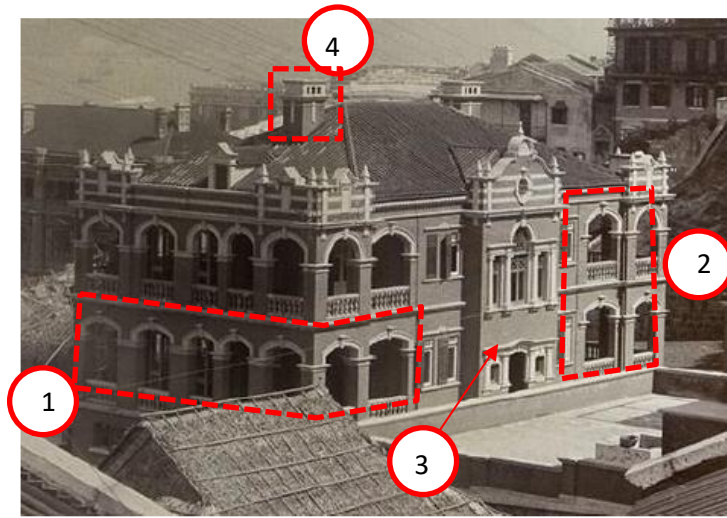
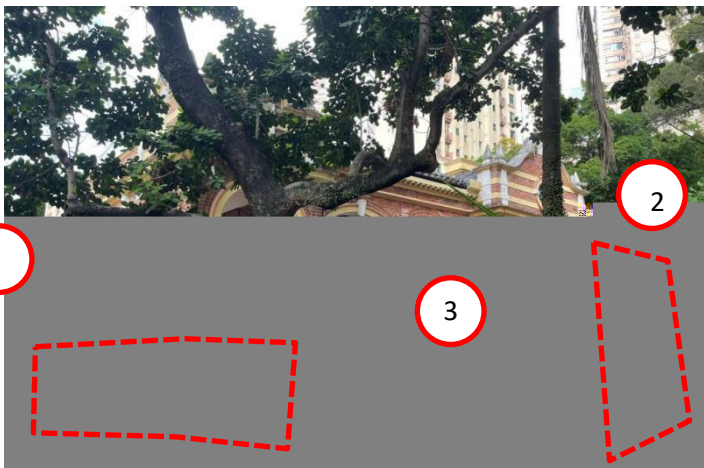


Fig.71. Main Building in 1906-10. (Source: 'Historical Photographs of China', University of Bristol (CC BY_NC_ND 4.0))



According to old photo records, fabric changes over time:

	1906-10	2023
1. Verandah at the G/F facing NW	Open verandah, with balustrade and window sills above balustrades	Enclosed verandah with glazed windows, short wall below windows
2. Verandah at the G/F and 1/F facing SW	Open verandah, with balustrade and window sills above balustrades	Enclosed verandah with glass windows, short wall below windows
3. Name plaque	No name plaque above entrance door	Name plaque above entrance door
4. Chimney stack	Three flue apertures at the top	No flue apertures in elevation



Fig. 72 - 73. Main Building in 2023.

According to old photo records, fabric changes over time:

	1980s	2023
1. Colour of the decorative mouldings, cornice, arch, window sill, balustrade and chimney stack	Grey and white for decorative mouldings, cornice, arch and chimney stack, white for balustrade and pink for low walls	Yellow and pink for decorative mouldings, cornice and arch, yellow for balustrade and chimney stack
2. Window pattern facing SW	Different window frame	Different window frame
3. Open area facing NW	Grassland with attached small house to the NW of Main Block, no public access	Cement walkway with plants



Fig. 74. Main Building in 1980s. (Source: Courtesy of Mr. Andrew Tse, for use of HKMMS in the CMP only)

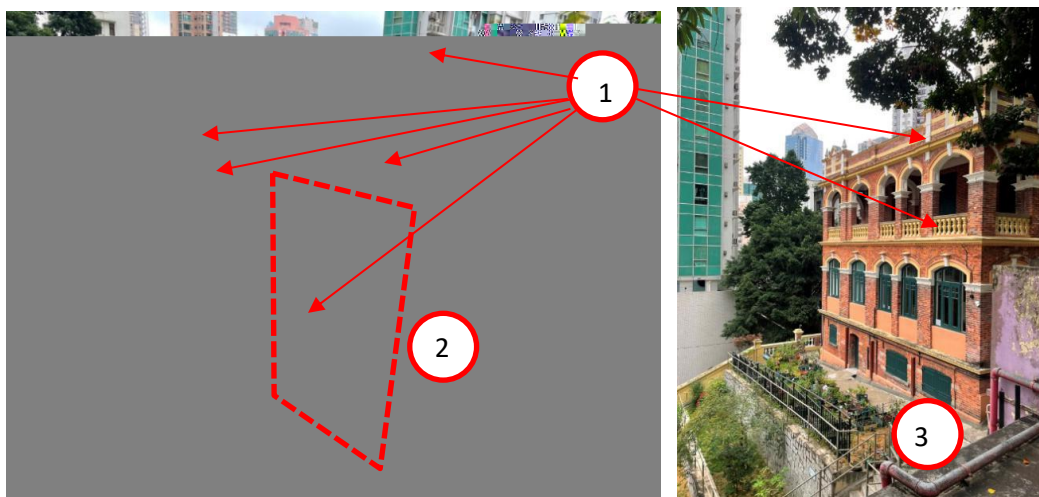


Fig. 75 -76. Main Building in 2023.

According to drawing record, facades changes over time:

Elevation record prepared by Maintenance Branch ArchSD in 1992	Existing elevation prepared with 3D scan and modified bases on current site condition
 <p data-bbox="603 683 774 750">SW facade</p>	
 <p data-bbox="603 1131 774 1198">NE facade</p>	
 <p data-bbox="603 1780 774 1848">SE facade</p>	


 Changes are highlighted in red

Fig. 77-82.

1.2.7b Main Building - Interior

According to record plan, layout change overtime:



Fig. 83-88.

1.2.7c Laboratories

According to old photo records, fabrics remain intact until 2023 at the 1/F laboratory:

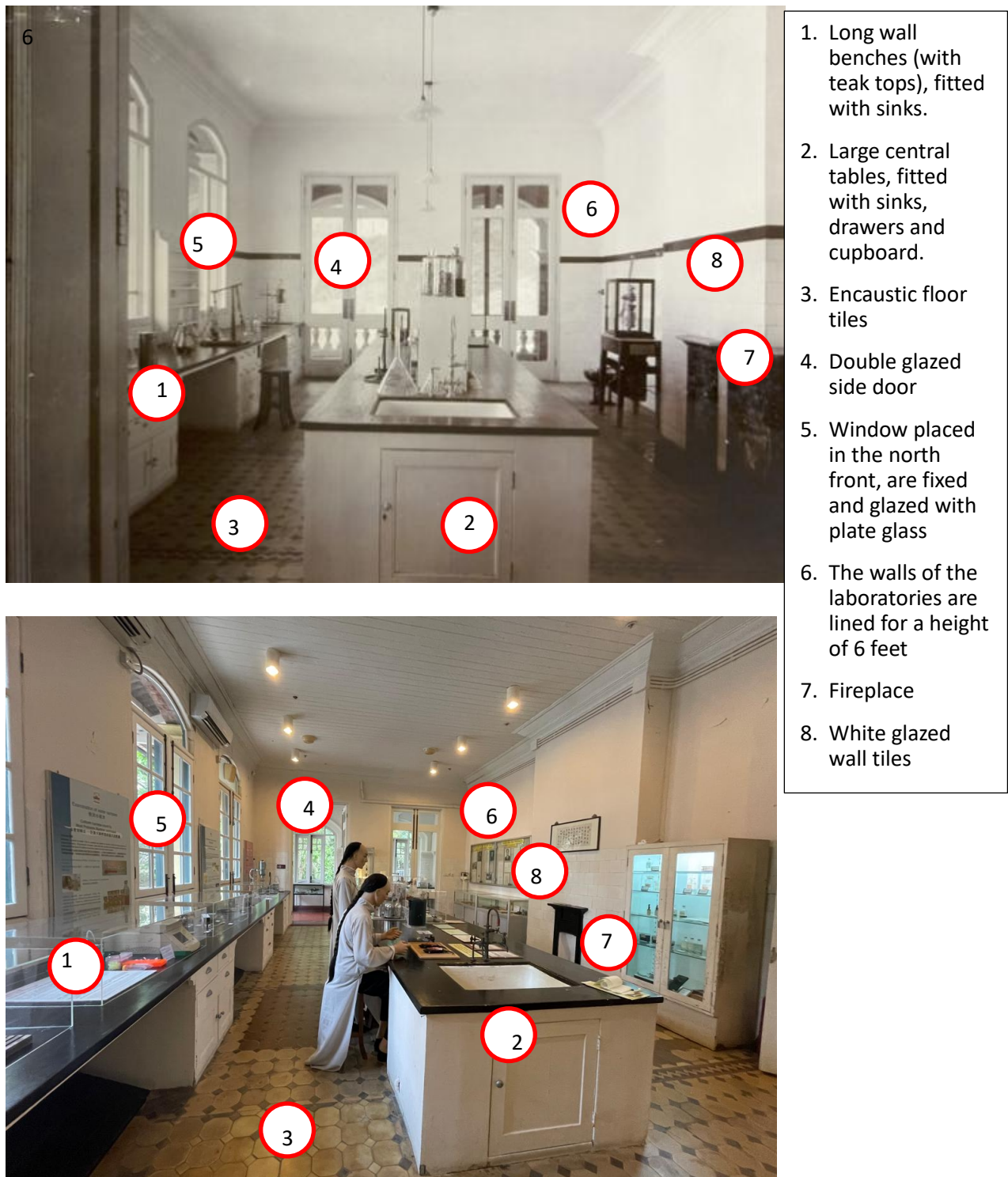
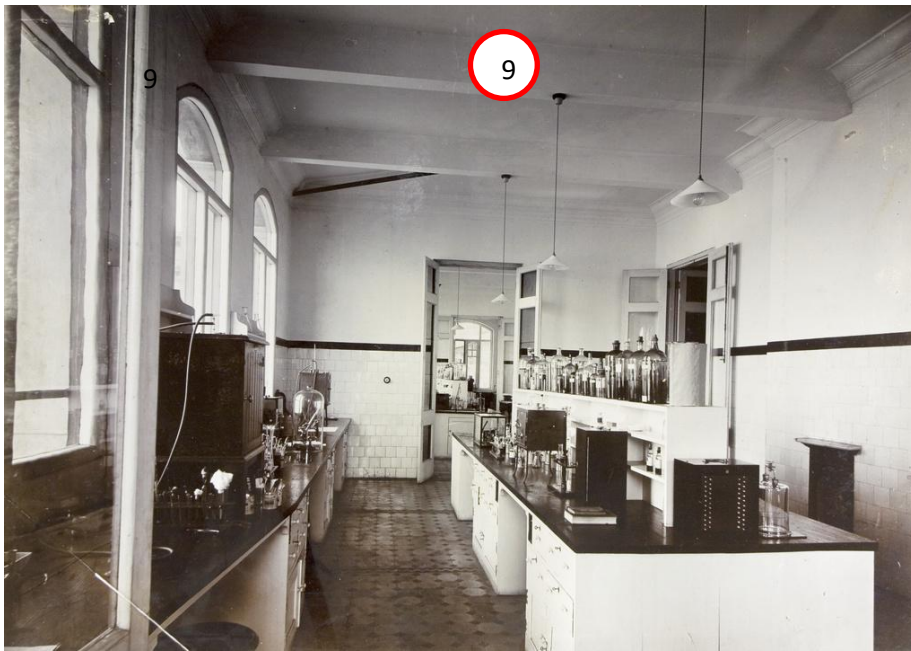


Fig. 89 (Top). Photo of the laboratory in 1906-1910. (Source: 'Historical Photographs of China', University of Bristol (CC BY_NC_ND 4.0)); Fig. 90. (Bottom) Laboratory in 2023.

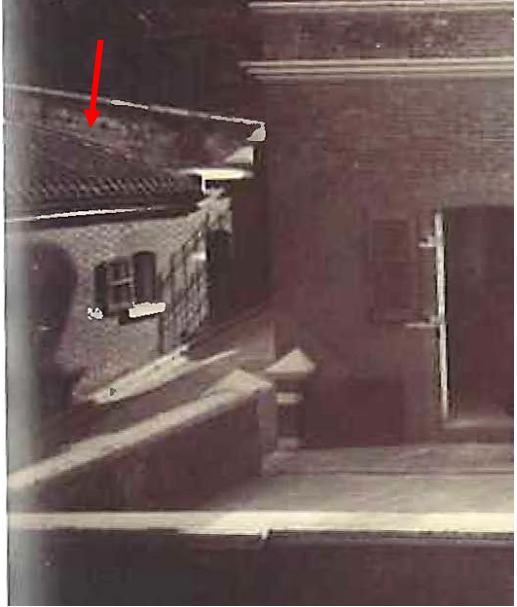



According to old photo records, the beams remain intact at the G/F in 2023 (now exhibition areas):

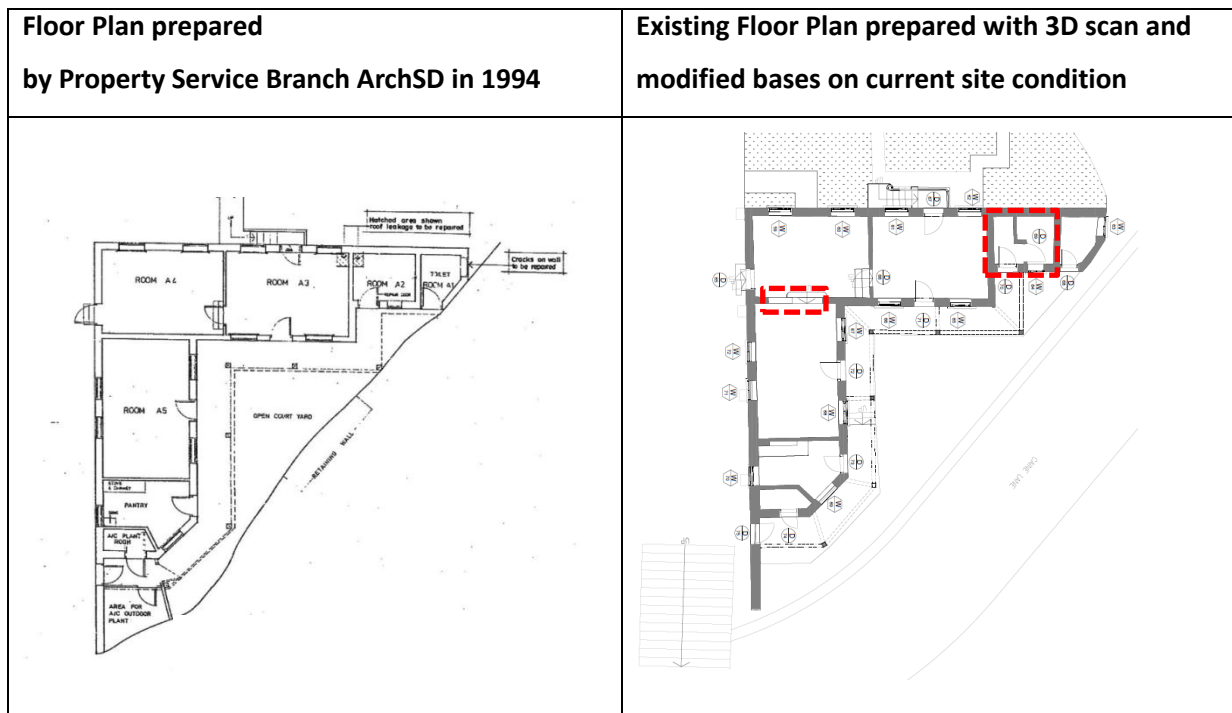


9. Structural beams at the ceiling as part of the structural system of the building

Fig. 91 (Top). Photo of the laboratory in 1906-1910 (Source: 'Historical Photographs of China', University of Bristol (CC BY_NC_ND 4.0)); Fig. 92. (Bottom) Exhibition area at G/F in 2023.

1.2.7d Staff Quarters

Photo in 1906-1910	Photo in 2023
	
<p>Fig. 93. Photo of Staff Quarters in the 1906-10 when the animal house still exists. (Source: 'Historical Photographs of China', University of Bristol (CC BY_NC_ND 4.0))</p>	<p>Fig. 94. Photo of the Staff Quarters (now named Annex Block) in 2023. Brick external wall, tiled pitch roof, segmental arch over window, louvered shutter, window sill, service channel and location of side door remain unchanged.</p>
Photo in 1980s	Photo in 2023
	
<p>Fig. 95. Old photo at around 1980s. (Source: Courtesy of Mr. Andrew Tse, for use of HKMMS in the CMP only)</p>	<p>Fig. 96. Remain highly intact, only introduction of building services (downpipe, light fixings are found)</p>



Changes are highlighted in red

Fig. 97-98.

Selected references:

- Antiquities and Monuments Office. "Old Pathological Institute, Caine Lane". Declared Monuments in Hong Kong. Available at https://www.amo.gov.hk/en/historic-buildings/monuments/hong-kong-island/monuments_41/index.html. Last revision 2024.12.05.
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1.3 SOCIAL BACKGROUND

1.3.1 The impetus for a medical museum

The 1906 building of Bacteriological Institute (BI), more commonly known today as the Old Pathological Institution (OPI), had been particularly close to the heart of pathologists, microbiologists, and other medical professionals of Hong Kong, who had either once worked there, or were related to it through their work.

In 1992, a group convened by then President of the College of Pathologists, Professor Faith Ho, and comprising of pathologists and other professionals from diverse medical and non-medical fields, proposed to the Government to convert the OPI into a Hong Kong Museum of Medical Sciences (HKMMS, or “the Museum”) for the public, to promote the understanding of history and development of public health and medical science in Hong Kong. Despite competing claims, the bid was successful. This group evolved into a Non-Profit Organization (NPO). Their vision is best summarized by the paragraph below, quoted herewith from the *Grand Opening Commemorative Publication* (Chapter 4, page 37):

“Few would argue that the population of Hong Kong now enjoys a high standard of health and medical services, comparable to any developed international city... this did not come about fortuitously. The stories of the men and women who made this happen... these are all stories which should be told...”

How did medical science, as epitomized in the “Old Pathological Institute” become accepted as part of Hong Kong’s culture to allow Hong Kong’s health services to develop to their present international standards? What role did our medical schools and institutions play in this transformation?

The Museum should help us glean lessons for the future from studying these past efforts.”

In 1995, the Non-Profit Organization was officially incorporated to become the Hong Kong Museum of Medical Sciences Society (HKMMSS) to include wider support and to conduct the ongoing business of establishing the Museum,. Professor Gerald Choa was elected its founding Chairman. The late Professor Gerald Choa (1921-2001) was a highly respected physician, former Director of Medical & Health Services, founding Dean of the Chinese University of Hong Kong’s medical faculty, and medical historian. He had enthusiastically supported and participated in the setting up of the Museum.

The explicit purpose of the HKMMSS was to establish and develop the Museum. Apart from acting as the official entity which entered into a tenancy agreement with the Government in 1995, the HKMMSS actually had to take on the enormous task of raising funds, seeking exhibits, planning the displays, and preparing for the opening and on-going operation of the Museum.

By that time, as the Government Pathology Service moved its stores out of the OPI, the Government Architectural Services Department (ArchSD) began the necessary repairs and renovations. ArchSD not only had to carry out restorations as per heritage conservation guidelines, but also executed necessary upgrades and adaptive works to the buildings on the OPI site, to enable their practical use as a public venue-as much as possible, to the satisfaction of the Antiquities and Monuments Office (AMO). In June 1995, the works were completed and the site was handed over to the HKMMSS, who then started to fit-out with furniture and exhibits in preparation for the opening.

1.3.2 Revitalizations of the OPI as a museum

The Museum opened on 22nd March, 1996, officiated by then Governor of Hong Kong, Mr. Christopher Patten. A booklet *Hong Kong Museum of Medical Sciences – Grand Opening Commemorative Publication* was written to celebrate the occasion. It gives a succinct account of Hong Kong’s medical development, and what to see in the museum.

The opening exhibits were put in place by 3 staff members and a team of over 35 volunteers. Since then, volunteers from medical profession, local community, and other sectors associated with HKMMSS, and had provided great support for the Museum, especially in providing guided tours and in events for the public. From then, the public gradually came to know of this site and the building(s) as the Hong Kong Museum of Medical Sciences.

In those days back in the mid-1990s, it was of high significance that a government-owned historic building (also recognized as a Declared Monument) would be operated as a public venue by a NPO. Conventionally, disused government-owned historic buildings would only be managed by government departments, or sometimes converted into exhibition venues to be operated by the Leisure and Cultural Services Department (LCSD).

It was not until 2009 that the Government officially first launched its programme of inviting NPOs to take on adapting and using government historic buildings via the *Revitalizing Historic Buildings Through Partnership Scheme* (RHBTPS). The key consideration for the Government on this brave step would have been whether NPOs in Hong Kong have the capacity to operate and expertise to maintain the historic buildings. No doubt, the successful running of HKMMS for over a decade would have acted as an exemplar for the Government at that time in the pursuit of RHBTPS. Hence it is fair to say that, the diligent and professional performance of HKMMSS with respect to the operation of the museum and maintenance of the site had not only served the medical profession, but also served as a pioneer and role model as to how private institutes can contribute to heritage conservation of Hong Kong. By the end of 2024, the HKMMS has been in operation for over 28 years.

1.3.3 Work of the HKMMS

HKMMS worked to preserve the cultural heritage of Hong Kong's medical development. It has often been referred to as a "medical history museum" by the public. However, the vision and mission of members of the medical profession is not limited to looking at the past. In the spirit of transmitting the historic contribution of the BI/PI to prevent disease and promote public health, HKMMS had included the ongoing progress of disease science and promulgation of public health in its exhibitions and programmes. Such knowledge and message are particularly significant in the current post-covid era and ongoing global threats under pandemics, and thus the role of the Museum is indispensable.

Vision of the HKMMS

The vision of the HKMMS is to provide educational and cultural activities to person of all ages, where lessons from history and lessons from health are presented in integrated fashion, at a Site (the OPI in Tai Ping Shan district) where Hong Kong's historical fight against infectious diseases actually took place, so that the public can learn to stay healthy and be inspired to face the challenges of the future.

1.3.4 The evolving HKMMS

HKMMS started by putting up long-term and short-term thematic exhibitions, and provided guided tours for the public. Then, research and publications on Hong Kong's medical history began, and from 2014 contributed regularly to the official journal of the Hong Kong Academy of Medicine.

Over the years, a Herbal Garden was added. Lectures, workshops, drama plays, competitions for school children on medical themes, and even fun fairs for the community were organised. Many of these activities were held in collaboration with other institutions. A list of the exhibitions, books and activities presented in the recent past is available on the HKMMS website.

Since 2012, HKMMS began to provide special lessons for medical students of the HKU. Similar lessons were also provided for CUHK students from 2022.

1.3.4a Themes

While exhibitions and activities came and went, these can be considered under 5 main themes, often in combination. The duration of respective exhibitions and activities vary depending on the topic content, technology and space available, manpower, sponsorship at the time, and demand.

1.3.4a1 Work of the BI and PI

This was one of the main themes in the galleries since the opening of the Museum in 1996.

The Old Laboratory (Old Lab) at the first floor is one of the original 4 laboratories in the BI. It is believed that even the sinks and taps are original. In 2006, on the 10th anniversary of the opening of the HKMMS and the 100th anniversary of the establishment of the BI, the famous rat bin and two manikins were added in the Old Lab to better tell the story of the examination of rats in the surveillance and control of

plague. Even today, the Old Lab remains one of the main attractions in the Museum.

Vaccine production was another key role of the BI and PI. A related interesting exhibit is an authentic *calf table* used for the production of smallpox vaccine during the PI days. Students when asked about their impression of their visit often remembered only the life-size model of the calf lying on the calf table.

The museum offers a guided tour on *Public Health, Conquest and Prevention of Infectious Diseases, Past and Present*. This tour is popular with group tours.

1.3.4a2 Medical history of Hong Kong

Numerous long-term and short-term thematic exhibitions had been mounted on this topic. In 2015, a booth on the *SARS Oral History Archive* was installed with interview excerpts of 20 individuals from different backgrounds (such as patient, doctor, nurse, cleaner, reporter), who lived through the SARS epidemic in 2003 and recalled their experience. This was the first such project that HKMMS undertook.

The following year, in 2016, the *Health and Medicine in Hong Kong* opened, for long-term display, to tell the story of battles against infectious diseases and the development of health services from the 19th century up to about 30 years ago. Some previous thematic exhibitions on a medical history theme were *Hong Kong 1883-1892 – The Medical & Social Landscape during Dr Sun Yat Sen's Formative Student Years*, *Transitions in Midwifery – The Hong Kong Story*, and *SARS 100 Days – Overcome in Unity*.

HKMMS has produced 7 books. Of these, *Plague, SARS and the story of Medicine in Hong Kong* was published in 2006 as part of the celebration of the 10th anniversary of the opening of the Museum and the centenary of the opening of the Bacteriological Institute. *The Silent Protector*, written on the same occasion has a second edition published in 2020.

In 2014, HKMMS began to collaborate with the Hong Kong Medical Journal (HKMJ) to contribute to a new section of the journal: “Reminiscence: Artefacts from the Hong Kong Museum of Medical Sciences”. HKMJ is the official publication of the Hong Kong Academy of Medicine. In 2016, a selection of the articles was published in a book *Footprints of Medicine*, with permission from the HKMJ.

HKMMS offers two guided tours on this topic. *Development of Medical and Health services in Hong Kong* is another popular tour with group visits to the museum. The *Tai Ping Shan Medical Heritage Trail* inaugurated in 2011 with the then Secretary for Development taking the first tour, is a special tour that outreaches to sites in and around the Tai Ping Shan region. An App (for free downloading) was developed in 2018 in collaboration with the Wellcome Trust as part of their international project *Infectious Cities*.

1.3.4 a3 Traditional Chinese Medicine and Western Medicine

This theme came about because of Hong Kong's unique Chinese and Western medicine heritage and in view of Hong Kong being a meeting place for East and West. The Herbalist Shop replete with a wall of medicine cabinets (百子櫃) and medicine chopper, introduces the visitor to Chinese medicines, and has been one of the galleries since HKMMS opened.

The Herbal Garden is an attraction to visitors young and old. It was first established in 2004 to show the live plants while complementing the processed medicines in the Herbalist Shop. In 2013, the garden was revised to include species that are the source of Chinese Medicines and species that are/were the source of western medicine drugs. The medicinal parts of the plants are indicated for each species. Since then, the Herbal Garden has become a practicum site for HKU School of Chinese Medicine students studying herbal medicine. To tie in with the revised Herbal Garden, a thematic exhibition *The Use of Herbs in Chinese and Western Medicine* exhibition was mounted in 2013 and an accompanying book on the same theme was also published at the same time.

HKMMS currently offers a guided tour *Traditional Chinese Medicine and Western Medicine – Introduction and Comparison*, during which the exhibit *The Spleen in Chinese and Western Medicine* and a pathology specimen of the spleen are used as reference.

In 2020, a new original exhibit, a life-size 3D copper Acupuncture Model with augmented reality interactions was developed to complement exhibits on Chinese Medicine treatments. All presentations are in Chinese and English. The project was sponsored by the Innovation and Technology Commission. The model was awarded the Grand Prize Innovation Award 2021 by the Hong Kong Institution of Engineers.

1.3.4a4 Architecture

The grand old Main Building and its grounds had been a major attraction ever since HKMMS opened in 1996. For the visitor, it is a rare experience to be on a site where plague actually took place a hundred years ago, and to be able to actually explore the building in which the early bacteriologists worked to control the plague.

In 2019, HKMMS acted as one of the key collaborating organizations in the public event called *Co-Vitalize Our Heritage* organized by the Hong Kong Institute of Architects (HKIA), funded by the Building Heritage Conservation Fund (BHCF). This series of events included a number of visits by the public to the Museum premise, co-hosted by HKIA architects and HKMMS staff, explaining how an NPO like HKMMS can support the adaptive reuse and ongoing maintenance of a significant Declared Monument to be opened to the public in a meaningful manner in-line with the historic use of the place. In particular, two sessions of demonstrating the laying of Chinese tiles onto Western wood frames (the special heritage architectural technique common in Hong Kong and well-practiced in recent repairs of the Museum) were

carried out, arousing public interest, and promoting best practice architectural conservation in Hong Kong.



Fig. 99. Craftmanship workshop on laying Chinese tiles on Western wood frame held in the Museum in July 2019 in collaboration with HKIA.

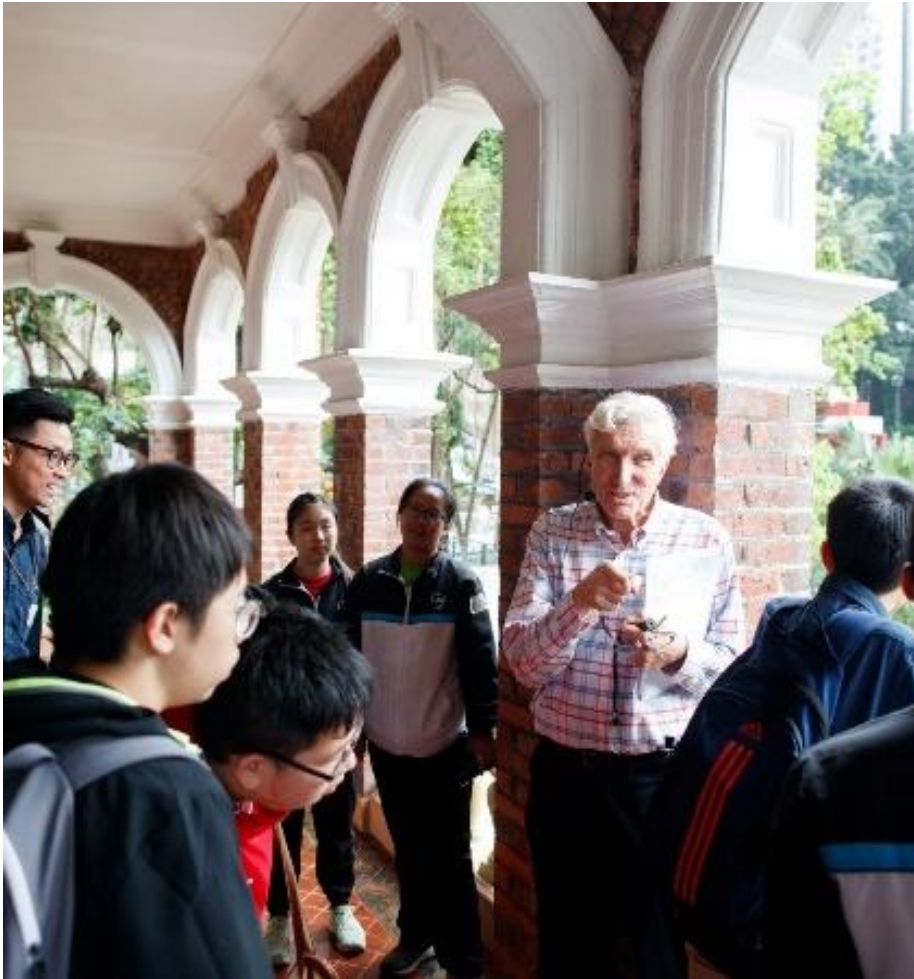


Fig. 100. Study trip to the Museum for students led by Architect Ken Borthwick in April 2019, in an event for students in the Co-Vitalize our Heritage series organized by HKIA and collaborated with HKMMSS.

The museum grounds with the buildings as background are particularly attractive to wedding couples, graduates, and cosplayers. More extensive photo-taking or filming require prior reservation. Tours have been held by professionals to guide appreciation of the building, and workshops held to demonstrate selected building skills.

In the maintenance of the OPI, HKMMSS as tenant is responsible for interior repairs, while the government as landlord is responsible for structural and the exterior. In 2016, as government undertook limited repair works to the roof and roof rainwater drainage (among others), HKMMSS undertook the redecoration and repair of the interior that the 110-year-old monument needed. These included re-design of the dormer window on the roof to prevent water ingress, and repair of water-damaged cornices and plasterwork in the rooms below.

A thematic exhibition, *Renewal of the Monument*, was mounted in 2017. It captured the process of

re-decoration and repair of the monument carried out in 2016 – a collaboration between HKMMSS and the government. The exhibition included displays such as the “horse” for running a cornice, and horse hair and other items used in the traditional methods for repair and decoration.

HKMMS currently offers a guided tour on *Appreciation of the Architectural Features of the Museum Building, and Conservation of the protected Monument* for group visits.

There are areas of the OPI where the public cannot access because of its structure and because of certain structural cracks that are awaiting a solution. HKMMS is in the process of developing a 3D digital model of the site so that visitors can better view and enjoy the monument, and contemplate on its contributions.

1.3.4a5 Health promotion

Nearly all of the thematic exhibitions presented by HKMMS included elements of disease prevention and health promotion. For example, the topical exhibition “Sports and Health” presented in 2008 in collaboration with the Hong Kong Science Museum, Hong Kong Sports Institute and other institutions, not only recalled the purpose and history of the Olympics, but also allowed museum visitors to measure aspects of their physical fitness such as stretching ability. Included in the exhibition’s scope was a special programme funded by the Department of Health’s Health Care and Promotion Fund to promote exercise and health to primary school children. The exhibition opened at HKMMS, then travelled to the Science Museum. Its related public lectures, also held at the Science Museum were well received.

In 2016, two exhibitions *The Human Body* and *Understanding Disease* were installed for long-term display to promote understanding of one’s own body as a prelude to learning how to take care of it. In 2023, the exhibition *Modern Medicine* was mounted to introduce some of the recent advances that Gynaecologists and Obstetricians can deploy to help their patients, up-to-date “routine” pathology examinations, and what the public can do to lower their risk of cancer of the colon.

In addition to exhibitions and related activities, independent workshops (e.g., “I am a little doctor” workshops) are regularly conducted particularly for disadvantaged school children. In October 2024, a special programme named *Life Education Trail* was piloted. It consisted of a walk around the vicinity followed by a workshop in the HKMMS, to promote practical management of stress, with mindfulness being one of the means.

1.3.4b Presentation

In the rooms suitable for exhibitions, displays have made best use of the high ceiling and tall windows while allowing the visitor to view the original beautiful timber and plaster decorations, fireplaces, original tiles and other original fittings.

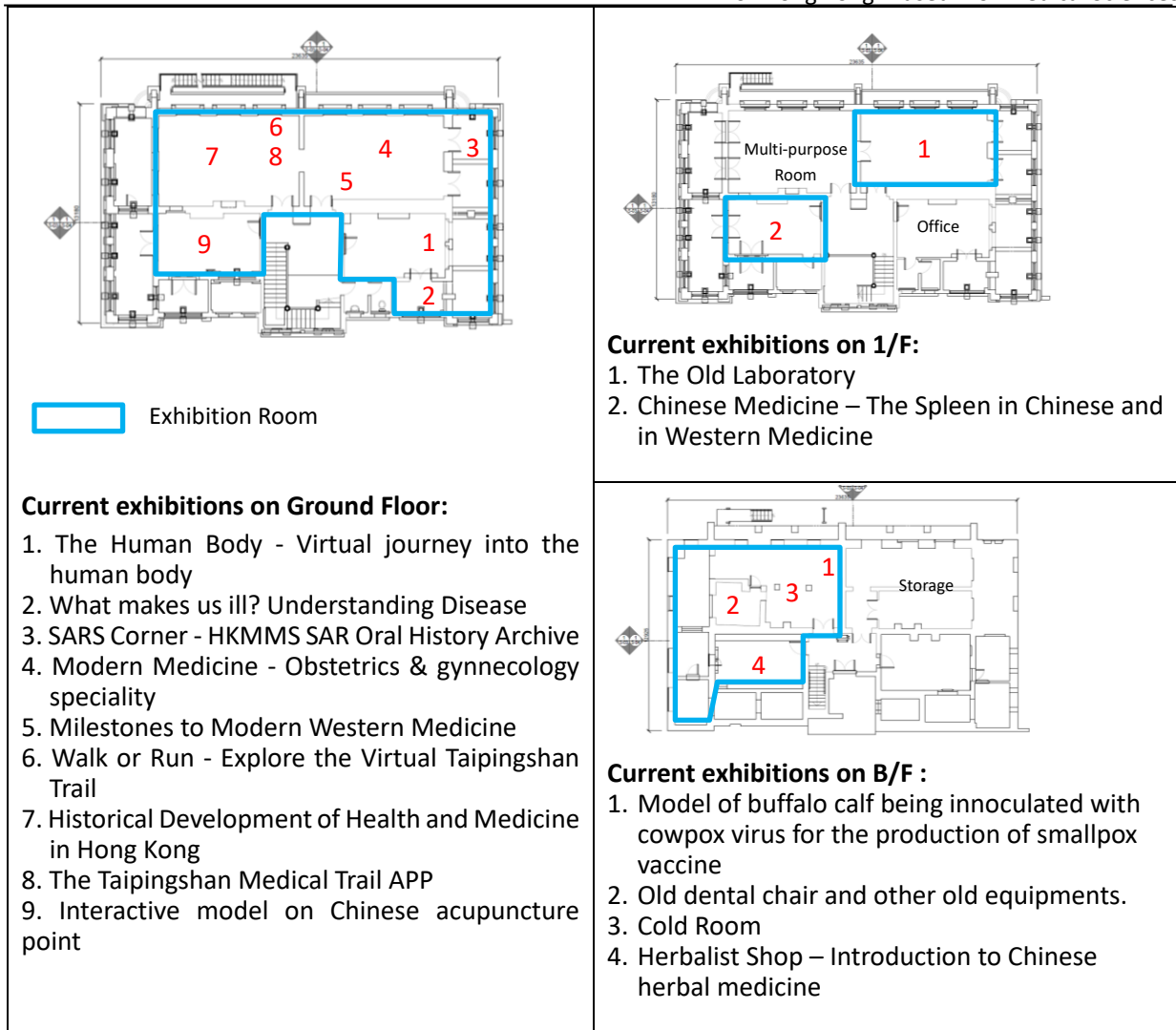


Fig.101-103. Current exhibitions in the Main Building

As technology advanced and curatorial concepts developed, HKMMS has progressed from simple posters and exhibits in 1996, to digital interactive exhibits, and virtual reality games to enhance visitor experience. Lectures, workshops, special guided tours are now regular programmes, and a variety of events have been tried to reach a wider audience.

Below are examples of the displays.



Fig. 104. Photograph of a general laboratory on the west side of the building, estimated date 1906-1910.

(Source: 'Historical Photographs of China', University of Bristol (CC BY_NC_ND 4.0))



Fig. 105. The Old Laboratory gallery currently on the east side on the 1/F.



Fig. 106. SARS Oral History Archive booth in the SARS Corner.



Fig. 107. Model of the Amoy Gardens and explanation of how the SARS virus spread.



Fig. 108. Simple but insightful: handwashing to prevent infection was proven in 1847.



Fig. 109. The life-size 3D Copper Acupuncture Model with acupuncture points and screen for augmented reality interaction.



Fig. 110. Interactive exhibit to test your skill in micro-surgery.



Fig. 111. Virtual reality tour of the Taipingshan trail while testing your physical fitness at the same time.



Fig. 112. HKMMS's books and related publications



Fig. 113. The Herbal Garden, between the Main Building and the Annex Block.



Fig. 114. Allenburys Feeder.
Can you imagine this was once a popular infant feeding bottle? Being open at both ends, it was easy to clean. Before this invention in 1895, baby bottles were dirty and caused many deaths.
(Source: HKMMS)



Fig. 115. Nelson's Inhaler.

	<p>Invented in 1861, this “simple and effective” apparatus helped to establish inhalation as a popular treatment for respiratory ailments today. For example, asthma. Can you imagine how it works? (Source: HKMMS)</p>
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Table 4: List of Activities in 2023 (Museum and outreach)

Date	Activity	Venue
April 1 & 2	“I am a Little Doctor” Workshops Four workshops conducted.	Museum
April 15, 22, & 29	Photography Workshop 3 workshops conducted, including one outreach.	Museum
June 17	Lecture - COVID-19 Educational Series – “Management of COVID-19 Patients with Chinese and Western Medicine”	Hong Kong Space Museum
July 19, 26, & 28	“Medicine for Kids” Workshop 3 workshops conducted.	Museum
August 2, 4, 9, & 11	“Medicine for Kids” Workshop 4 workshops conducted.	Museum
August 20	“I am a Little Doctor” Workshop 2 workshops conducted.	Museum
August 25	“Modern Medicine” Exhibition Opening Ceremony	Museum
August 27	“I am a Little Doctor” Workshop 2 workshops conducted	Museum
Oct. 14	Meeting of the HKMMSS Medical History Interest Group – “Stroke and Dementia: Past, Present and Future”	St. Paul’s Hospital Auditorium
Oct. 22	2023-24 18dART District Community Arts Scheme - "Project on Rebooting Arts in Central and Western District" Street Photography Workshop (Advanced Class) Organiser: LCSD.	Museum
Nov. 4	Muse Fest HK 2023 - Visit the Laboratory of 100 years ago. Organiser: LCSD.	Museum
Dec.9	COVID-19 Educational Series - "2019 冠狀病毒病之疫情防 控的背後" Lecture	Museum
December 10, 17, 19	“I am a Little Doctor” Workshop 4 workshops conducted.	Museum

(Source : HKMMS)

1.3.4c Operations

Admission to the museum is highly subsidised, with discounts for children, senior citizens, people with disability, family groups, and tour groups, and even waived on special occasions.

HKMMS is supported by a skeleton crew of staff and enthusiastic volunteers (many of whom are members of the HKMMSS). HKMMS reports that it is deeply appreciative of the encouragement from collaborators, sponsors, donors, other well-wishers, and most importantly the public. The list of collaborators is long.

1.3.4d Visitors

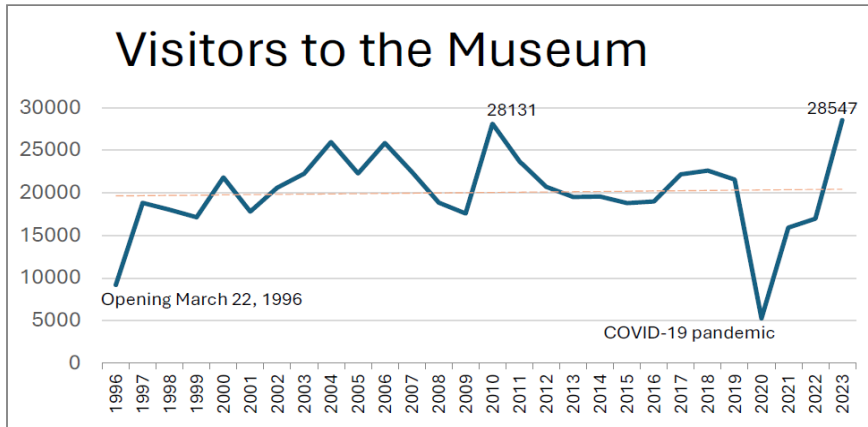


Fig. 116. Record of visitors to the HKMMS from 1996 to 2023.
(Source : HKMMS)

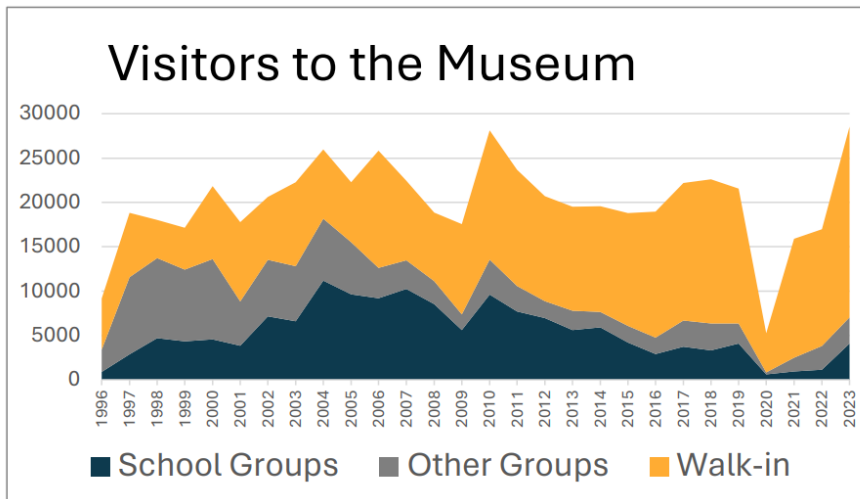


Fig. 117. Record of school, group and individual visitors to the HKMMS from 1996 to 2023.
(Source : HKMMS)

Visitors to the HKMMS include groups of school children who visit to learn “outside the school,” university student groups, as well as walk-in visitors from local and overseas, many of whom are in the medical fields.

After twenty-eight years of hard work and perseverance, the number of HKMMS visitors has increased from about 1,000 in 1996, to 28,547 in 2023, and 53,485 in 2024. Group visit tours currently require reservation 2-3 months ahead. HKMMS has set a limit to the number of visitors in the museum at any one time as a management approach for the protection of the historic fabrics.

HKMMS has successfully demonstrated that a medical museum can be very lively and insightful.

Selected references:

Ho, Faith C. S. 2020. "The Impetus for Establishing the Bacteriological Institute." In *The Silent Protector: Hong Kong's Bacteriological Institute, its History and Legacy, revised 2nd Edition*: pp7-11. Hong Kong Museum of Medical Sciences Society.

Hong Kong Museum of Medical Sciences Society. 1996. "From Medical Laboratory to Medical Museum – Transformation and the future". In *Grand Opening Commemorative Publication*. Hong Kong Museum of Medical Sciences Society.

2.0 STATEMENT OF SIGNIFICANCE

2.1 HISTORICAL SIGNIFICANCE

2.1.1 **BI was the first purpose-built clinical and public health laboratory in Hong Kong.**

It was established to control the plague and other infectious diseases, and constructed during the time of Hong Kong's turning point in public health and buildings reform in the early 20th century.

2.1.2 **BI was an unprecedented facility in this part of the world in the early 20th century.**

Equipped with state-of-the-art facilities for bacteriological research, BI strongly facilitated scientific research to identify the causes of infectious diseases and their treatment and prevention in Hong Kong.

BI's first government bacteriologist Dr. William Hunter instituted a system of post-mortem examination of rats, including using microscopy as indicated, for plague surveillance. He also conclusively proved that a rat plague epidemic preceded a human plague epidemic by about 1-2 weeks, and concluded that "a wholesale destruction of the rats" was the most important measure to prevent plague. Public health measures based on these findings helped Hong Kong become plague-free in the days without antibiotics or a suitable plague vaccine.

2.1.3 **The establishment of the BI furthered the development of Hong Kong to become the sentinel post and centre of excellence that it is today in the surveillance of infectious diseases of global significance.**

Located in the sub-tropics at the border with mainland China and facing the South China Sea, Hong Kong is an entrepot with high international connectivity. The discovery of *Yersinia pestis*, the bacterium that causes plague during the 1894 epidemic in Hong Kong, marked the beginning of the modern understanding of the disease, its treatments and prevention, and put Hong Kong on the world map of scientific discoveries.

2.1.4 **Vaccine production had been one of the key responsibilities of the BI.**

It prevented infectious diseases then rampant and saved the lives of people in Hong Kong and Hong Kong's neighbours. The production of vaccine and anti-sera continued from 1906 to 1973 in BI/PI/OPI. In the days before antibiotics, treatment of infections relied heavily on vaccines and anti-serum (blood-containing antibodies). The most important vaccines that the BI and PI produced were the smallpox vaccine and the cholera vaccine. The successful control of smallpox infections by massive vaccination finally made Hong Kong become smallpox-free before the time when smallpox was eradicated from around the world.

2.1.5 **BI was where medical laboratory science began in Hong Kong.**

It was the breeding ground of the first-generation of bacteriologists in Hong Kong. Professor C.Y. Wang who had worked at the BI became the first professor of Pathology when that position was established in HKU in 1920. Dr. LIM Chong Eang, who had also worked at the BI became Professor of Microbiology at Peking Union Medical College in 1930. Their success in the bacteriological field was strong evidence of BI's achievement in the education of the first generation of local professionals.

PI was where technical laboratory science professionals began to be systematically trained, and where the specialties of medical laboratory science developed in Hong Kong. PI made significant contributions to the international research that identified the best treatment schedule for tuberculosis, and to Hong Kong's mass immunization programmes that resulted in tremendous decline in the incidence and mortality of the targeted infectious diseases. It was from the PI that the clinical pathology services now in the hospitals and the public health laboratories now in the Centre of Health Protection originated and developed.

2.1.6 The OPI was declared a monument in 1990.

2.2 ARCHITECTURAL SIGNIFICANCE

2.2.1 OPI is the only remaining early 20th century bacteriological institutional architecture in Hong Kong.

Its building form, layout, material and 1/F laboratory are highly intact. It is the living evidence of early 20th century laboratory design.

The design and layout reflected the laboratory design of the time. Large windows, high ceiling, long bench tables divided with bottle racks, fireplaces with chimneys, and white glazed wall tiles, all basic but functional. They allow sufficient illumination, cross-ventilation and control of bacteriological and pathological contamination. The design is highly similar to "The Birkbeck Laboratory" at University College, London, which was built in 1894, and reflected the origins of the BI design.

2.2.2 OPI is the only remaining bacteriological institution in the Tai Ping Shan district.

The district of Taipingshan (TPS) was the epicentre of the 1894 plague which spread from Hong Kong to become the 3rd Plague Pandemic. The devastation that it wrought in TPS triggered public health and buildings reforms in Hong Kong.

The Taipingshan Resumption Ordinance, 1894, was followed by the Public Health and Buildings Ordinance, 1903, which regulated the design standard of tenement houses in terms of living space,

lighting, ventilation, and particularly sanitary provisions to facilitate good and proper hygiene.

BI is located in the TPS area resumed in 1894. Its edifice evokes the lessons learnt from old TPS and the science that will take Hong Kong forward towards the future.

2.2.3 OPI is a rare example of an English Edwardian-style building with Arts and Crafts influence and Chinese adaptation.

It showcases the adaptation of English colonial architecture to local climate and culture.

Hipped pitched roof with chimneys is laid with Chinese double-roll-double-pan clay tiles covered with wu-yin. The brilliant combination of Western and Chinese architectural styles showcases the special craftsmanship at the time. Craftsmen adapted the British architectural style by using local materials to serve the practical and functional needs of the bacteriological institute as well as catering for Hong Kong's sub-tropical weather.

2.3 SOCIAL SIGNIFICANCE

2.3.1 HKMMS is the only museum in Hong Kong that celebrates the work and spirit of the BI/PI in preventing disease and promoting health, at where it actually took place.

The original buildings, layout and fittings create an unreplaceable atmosphere for showcasing history, medical development and the spirit of fighting disease.

The vision of the HKMMS is to provide educational and cultural activities to persons of all ages, where lessons from history and lessons from health are presented in an integrated fashion, at the very site (the OPI in Tai Ping Shan district) where Hong Kong has successfully fought against infectious diseases. Through these activities, the awareness of the public to learn to stay healthy is raised and the public is inspired to face challenges.

2.3.2 The tradition of providing education for medical students began in the BI and is carried through PI to HKMMS today.

BI provided education on the subject of pathology to medical students before and after HKU was founded. The practice was continued in the PI. HKMMS is carrying on this tradition and began providing education on the history of Hong Kong's medical development to medical students of HKU since 2012 and the CUHK since 2022.

2.3.3 The OPI is one of the early adaptive-reuse heritage buildings in Hong Kong and that has

been sustained for nearly 30 years.

It is a valuable example of an adaptive reuse project in Hong Kong in appreciation of the physical fabrics as well as other intangible cultural heritage.

HKMMS has attracted more than two hundred and eighty thousand visitors since the establishment of the museum in 1996. Different age groups can enjoy and learn the history of BI and PI, the history of infectious disease in HK, medical development in HK, comparing Western and Chinese medicine, as well as architecture of OPI, through exhibitions, guided tours, workshops, seminars, performing arts, journals and publications.

HKMMS has kept pace with the times in connecting with society. As technology advanced and curatorial concepts developed, HKMMS progressed from simple posters and exhibits in 1996, to digital interactive exhibits and virtual reality games to enrich visitors' experience. Lectures, workshops, and special guided tours are now regular programmes, and a variety of events have been tried to reach a wider audience. HKMMS currently offers a guided tour on *Appreciation of the Architectural Features of the Museum Building, and Conservation of the Protected Monument* for group visits with a managing approach. HKMMS is in the process of developing a 3D digital model of the site so that visitors can better view and enjoy the monument, and contemplate its contributions.

HKMMS preserves and protects the OPI through daily maintenance and repair of the interior as a tenant to ensure that the public can enjoy a well-conserved historical compound and a significant page in the medical history of Hong Kong.

3.0 CHARACTER DEFINING ELEMENTS (CDEs)

3.1 Elements of Significance

CDEs is used to depict the materials, forms, locations, spatial configurations, uses and cultural associations or meanings that contribute to the heritage value of a historic place, which must be retained to preserve its heritage value¹. The selection of the CDEs is based on the cultural significance of the Block derived from the previous chapter.

3.2 Level of Significance – Defining of Terms²

Five levels of significance have been used to describe the elements individually with descriptions listed below: -

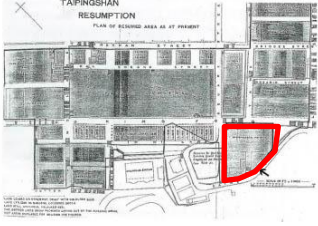
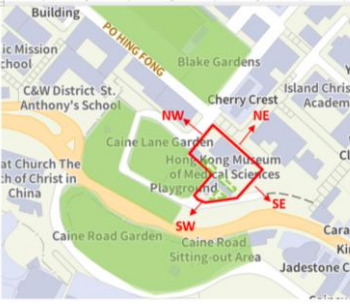

Levels of Significance	Description
Exceptional	Elements which make a strong contribution to the overall significance of the place. Spaces, elements or fabric exhibit a high degree of intactness and quality, though minor alterations or degradation may be evident.
High	Elements which make a substantial contribution to the overall significance of the place. Spaces, elements or fabric originally of substantial quality, yet may have undergone considerable alteration or adaption resulting in presentation which is either incomplete or ambiguous.
Moderate	Elements which make a moderate contribution to the overall significance of the place. Spaces, elements or fabric originally of some intrinsic quality, and may have undergone alteration or degradation. In addition, elements of relatively new construction, where the assessment of significance is difficult, may be included.
Low	Elements which make a minor contribution to the overall significance of the place, especially when compared to other features. Spaces, elements or fabric originally of little intrinsic quality, any may have undergone alteration or degradation.
Neutral	Elements which are of little consequence in terms or understanding or appreciating the site and its developments, without being actually intrusive.

¹ Definition extracted from Standards and Guidelines for the Conservation Historic Places in Canada, Park Canada, 2010.

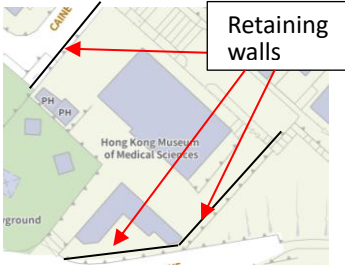
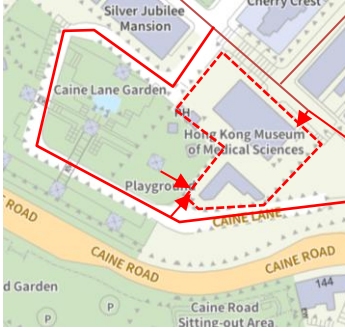


² The definition of terms is developed based on James Semple Kerr, The Conservation Plan: A guide to the Preparation of Conservation Plans for Places of European Cultural Significance, Australian ICOMOS, 2013

3.2.1 CDEs of Cultural (Heritage) Significance


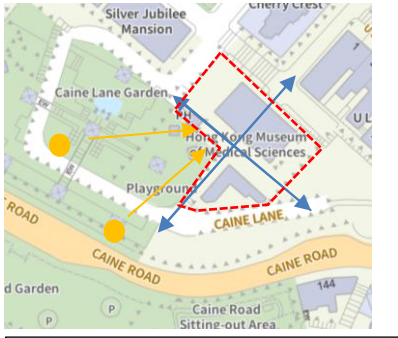
S-Site (Compound)

No	Element	Character	Photo	Level of Significance
S-1	Site/ Compound location	Located at historical Tai Ping Shan area		<p>Exceptional -Historic Significance</p> <p>Original location since 1906. The Site is located at the historical Tai Ping Shan area which once been strongly suffered from plague outbreak. As a health-related bacteriological institute, it was part of the planning for plague control in Hong Kong.</p> <p>It is living evidence of the development of bacteriology in Asia and the increase health awareness of Hong Kong.</p>
S-2	Orientation	East (NE) facing of the laboratories and SW facing for the Main Building main façade		<p>Moderate-Architectural Significance</p> <p>Good illumination at the laboratories with right angle of laboratory benches and windows were the most important design criteria of laboratory at the time of late 19th and early 20th C. East (NE) facing the laboratories allowed sufficient natural light at the daytime.</p> <p>With the change of use and introduction of new air-conditioning and artificial lighting systems, the benefit of orientation may not be as important as in the old days.</p>
S-3	Urban context	-Low -density residential neighbourhood -Many greenery area (park and garden) around		<p>Moderate - Historic Significance</p> <p>Low-density was important land planning of the area after the Tai Ping Shan reclamation due to the plague outbreak. The low-density residential neighbourhood and greenery areas reflect the historical significance of the Site.</p>





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<p>S-4</p>	<p>Topography</p>	<p>Mild steep flat land with retaining wall on both sides</p>		<p>Moderate-Architectural Significance</p> <p>The Site is located at a mild steep flat land above the Po Hing Lane retaining wall. It is also located under the Caine Road retaining walls that create levels of viewing experience.</p>
<p>S-5</p>	<p>Multiple access</p>	<p>Staircase down from Caine Road and vehicle access at Caine Lane to the main entrance, walk uphill from Po Hing Lane from the side entrance</p>	  <p>Main gate & side gate(from garden)</p>  <p>Side gate</p>	<p>Moderate - Social Significance</p> <p>Visitors can access the compound from Caine Lane after visiting other historic buildings such as Sun Yat Sen Museum at the upper level or Man Mo Temple from the below.</p>




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<p>S-6</p>	<p>Block disposition</p>	<p>-Higer Main Block and lower subsidiary block -Main Building with subsidiary block(s) for supplementary services</p>		<p>Moderate- Historic and Architectural Significances</p> <p>The compound consists of Main Building and Staff Quarters, which were common block disposition for the government building due to limited public transportation before mid-19th C.</p> <p>Staff Quarters, now named Annex Block, serves as another activities room & meeting room in supporting the museum activities. It has retained the role as a subsidiary block of the Main Building since it was built.</p> <p>Lower subsidiary block allows the appreciation of the Main Building main façade from Caine Lane.</p>
<p>S-7</p>	<p>Micro-climate</p>	<p>-Level different of buildings (3-storey Main Building and 1-storey Annex Block) -Open space /pathway at the sides of Main Building and Annex Block -Pathways within the BI compound in cross directions</p>	 <div data-bbox="606 1556 1005 1792" style="border: 1px solid black; padding: 5px;"> <p>● Sunlight from the South and West with no building blockage (landscape/garden only)</p> <p>→ Cross ventilation along pathways and natural wind</p> </div>	<p>Moderate -Architectural Significance</p> <p>Good ventilation and illumination are the important design requirements of the bacteriological laboratory of BI.</p> <p>With the change of use and the introduction of air-conditioning system, the benefit of micro-climate may not be as important as in the old days.</p>




M-Main Building (External)

No	Elements	Character	Photos	Level of Significance
M-1	Roof top decoration	-Obelisk-shaped finials at the roof, with pilasters and shorts strip on brick wall -Symmetrical		Exceptional -Architectural Significance A rare example of Edwardian architecture in Hong Kong with arts and crafts influence. The location of additional AC and water tank facilities should be reviewed if the current use of the compound is altered.
M-2	Flat roof at the rooftop	- Flat roofs at two sides above verandahs with low brick parapet -Symmetrical		Moderate -Architectural Significance It is believed flat roofs are part of the building design as well as for maintenance access purposes.
M-3	Dormer at the roof	-Dormer doors at two sides -Pediment at the top -Door opening		Moderate - Architectural Significance Dormer windows are typical features of western pitched roof. Most of its functions are to allow ventilation for the penthouse floor. In the Main Building, it allows easy access to the roof top for regular maintenance.
		Timber frame glazed door		Low - Architectural Significance It is believed the existing timber frame glazed door is not original after a hundred year of operation. No record photo on original pattern. As it is similar to the common dormer window /door design, replacement should be matched with existing.

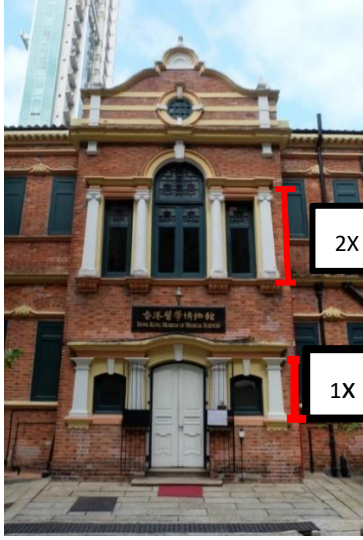



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<p>M-4</p>	<p>Main hipped pitch roof</p>	<ul style="list-style-type: none"> -Hipped pitched roof -Chinese double-roll-double-pan roof system with use of wu-yin -Symmetrical 		<p>High-Architectural Significance</p> <p>The western hipped-pitched roof in use of Chinese double-pan-double-roll tiles system and wu-yin use, that showcase the adaption of Western architecture with local material, craftsmanship for adaptation of local climate and culture in colonial style building.</p>
<p>M-5</p>	<p>Red brick chimney</p>	<ul style="list-style-type: none"> -Red brick chimney stack -Symmetrical -Decorative moulding and pattern 		<p>High-Architectural Significance</p> <p>Chimney is a typical feature of western pitched roof. It allows cross ventilation of the building and the bacteriological laboratories. It also provides a lively and movable skyline for the architecture.</p> <p>According to old BI photo (early time and around 1980s), there were three flue apertures at the top of the chimney stack. Now they are blocked and may be for the avoid of falling water, dust and release of cold air after installation of air-conditioners.</p> <p>Today, mechanical ventilation is so commonly in-use. Also, the awareness of environmental protection (pollution) is high. Fireplaces no longer allow and have necessities to serve its original warm-up and ventilation function.</p>
<p>M-6</p>	<p>Building form</p>	<p>Simple and symmetrical form</p>		<p>Moderate – Architectural, Historical and Social Significance</p> <p>Edwardian architecture is simple in building form. Symmetrical form is more common in Edwardian architecture, but Edwardian architecture can be varied in form and layout.</p>



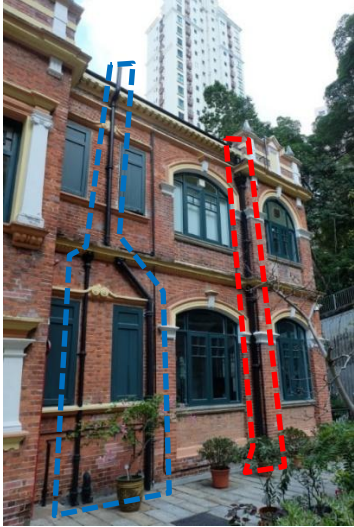
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M-7	Red brick external wall	-Flemish bond red brick -Wall arrangement -Red brick appearance	 <p style="text-align: center;">Flemish bond red brick wall</p>  <p style="text-align: center;">Layout of the brick walls</p>	<p>High- Architectural, Historical and Social Significance</p> <p>A rare example of Edwardian architecture in Hong Kong with arts and crafts influence. Exposed bricks were used instead of rendered surface. It is the true expression of material in Art and Crafts movement.</p> <p>The different colour and shape of the Flemish bond red bricks and mortar joints (some recessed and some not) show that the brick walls have undergone many repair works and no proof of any part of the external brick wall is original.</p> <p>While, the layout of the structural brick walls should be low intact and much of the original.</p>
M-8	Classical Features	Ironic column brick arch, entablature, cornice, mouldings		<p>High - Architectural Significance</p> <p>The classical features have functional and aesthetic value. Cornice and moulding at the façade hid the rainwater marks. The horizontal lines also direct our eyebrow to move up and down along the façade in a more lively way.</p> <p>There are decorative features of different styles in use, such as classical ironic column at the main façade, Romanesque brick square piers. They reflected the architectural style is no longer highly regulated at the early 20th C.</p> <p>The features are moderate to low in significance solely but high in significance with the red brick external wall to create the ambience as a whole.</p>
M-9	Protrude front entry portal	-Protrude front entry portal -Dominate first floor		<p>Exceptional - Architectural Significance</p> <p>A rare example of Edwardian</p>


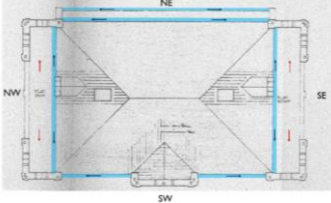


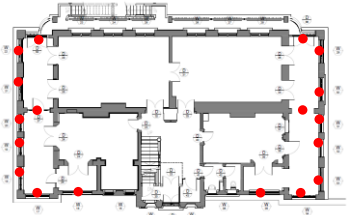
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		<p>-Ionic columns height about double of the square piers at the first floor -Dutch gable wall at the top -Cornice and moulding at different levels</p>		<p>architecture in Hong Kong with arts and crafts influence.</p> <p>Protrude front entry portal, dominate first floor, with ionic columns height about double of the square piers at the first floor. These proportions enhance the grandness of the building.</p> <p>It is the most decorative façade of the Main Building but much simpler than the previous era of architectural style. That reflects the transition of the 19th to 20th century when the noble class had faded but people were also tired of mass production of the industrial revolution.</p> <p>Cornice, moulding serve not only decorative purpose but also minimized water marks on facade.</p>
<p>M-10</p>	<p>Dutch gable wall at the protrude front entry portal</p>	<p>-Dutch gable wall in curve shape, cornice, moulding and patterns -Bull's eye round window with moulding and pattern around -Pilasters and shorts strip</p>		<p>High- Architectural Significance</p> <p>A rare example of Edwardian architecture in Hong Kong with ionic Dutch gable in curve shape with bull's eye, pilasters and shorts strip of Edwardian style features.</p> <p>Cornice, moulding serve not only decorative purpose but also minimized water marks on facade.</p>
<p>M-11</p>	<p>Palladian windows</p>	<p>-In stained glass with Chinese motifs -Central location of the protrude front entry portal</p>	 	<p>High- Architectural Significance</p> <p>The good combination of western architecture style with Chinese style motif. It showcases the wisdom of adaptation of local culture to western architectural features in colonial style buildings.</p> <p>SE facing stained-glass window with Chinese motif allow colorful sun ray stream into the main entrance hall, and leading visitors to walk upstairs.</p> <p>According to old photos, these were openable windows. They were good for air ventilation in the old days. Now, as the mechanical ventilation has introduced, and the rooms no longer served as bacteriological</p>

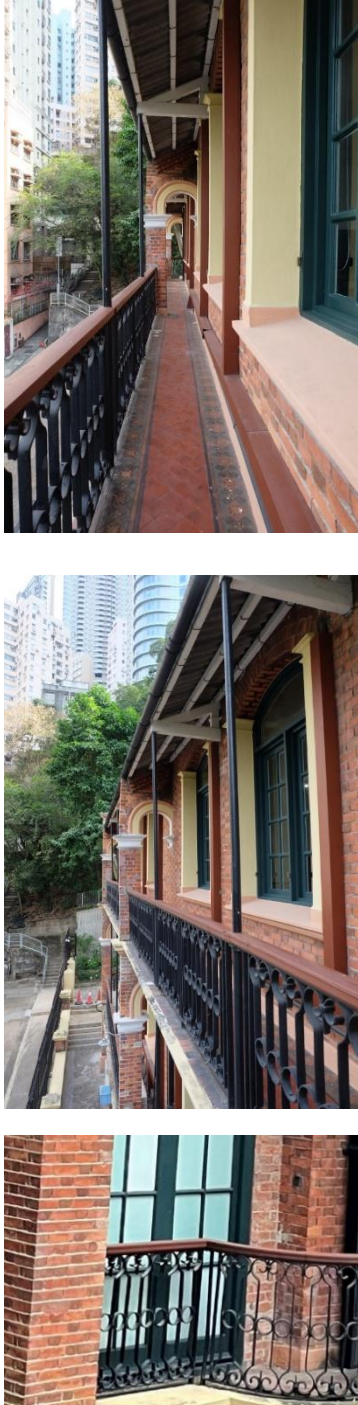

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				/pathological/medical laboratories, their role on air ventilation become low.
M-12	Cornice, frieze, architrave and other decorative moulding band (4 faces)	-Cornice, frieze, architrave and other decorative moulding band (4 faces)		<p>Moderate - Architectural Significance</p> <p>Cornice, frieze, architrave and other decorative moulding bands form the whole of the facades design which are important features of western architecture. The levels of horizontal lines direct our eyebrow to move up and down along the façade in a more lively way.</p> <p>Cornice, moulding serve not only decorative purpose but also minimized water marks on facades.</p>
M-13	Roof drainage system	-Overhanging gutter system - Cast iron rainwater downpipe with hopper	 	<p>Moderate - Architectural Significance</p> <p>Downpipes were found in the old photo in early BI. It is believed the gutter and downpipe drainage system is the original.</p> <p>Rainwater from the NE and SW roof discharges directly to their gutter. SE and NW roofs fall from the pitched roof to the flat roof. They finally discharge from the RWP at the NE and SW façades.</p> <p>Some downpipes are believed to be later addition (no existing in old photo of early BI) and they are located at quite dominated location of the front façade.</p> <p>Location of them can be reviewed to the least obstructive location if the current use altered.</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px dashed red; width: 40px; height: 20px; display: inline-block;"></div> <div style="border: 1px solid black; padding: 2px;">Piping believed to be original</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px dashed blue; width: 40px; height: 20px; display: inline-block;"></div> <div style="border: 1px solid black; padding: 2px;">Piping believed to be later addition</div> </div>


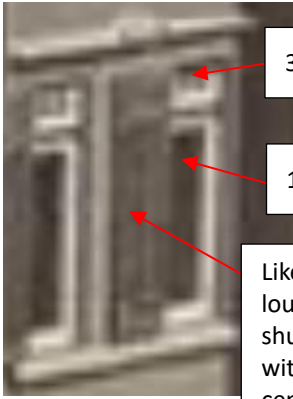


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			  <p>Overhanging gutter around the roof is highlighted in blue</p>	
<p>M-14</p>	<p>Arcade at the 1/f and G/F</p>	<ul style="list-style-type: none"> -Large contiguous brick arch openings -Key stone -Brick piers 	  	<p>High -Architectural Significance</p> <p>Brick arcades have long history in western architecture. The brick arcade at the verandah is an iconic colonial architecture design. It serves both functional and aesthetic value. Large arch openings allow good ventilation of the laboratories and the building.</p> <p>The arch openings were enclosed in 1930 for the housed of Malaria Bureau and other unknow reasons, and the architectural significance of the Main Building is highly affected. Restoration of the open arcades can be reviewed and considered if the current use is altered.</p>


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<p>M-15</p>	<p>Balcony at NE Façade</p>	<p>-Cast iron railing with overhang -Small round balconies at both ends</p>		<p>Moderate - Architectural Significance</p> <p>Cast iron railing and overhang were popular in the 18th and 19th century that demonstrated new technology and industrial revolution of the age. Compared with the balustrade at the main façade and two verandahs, the cast iron railing located at the least dominated façade (back façade) that also reflected the rejection of mass production at the Edwardian era.</p> <p>Functional design of western architecture. It allows easy access for cleaning and maintenance of the windows and doors at the back façade.</p>
<p>M-16</p>	<p>Window openings at SW facade</p>	<p>-Window openings -Brick arch at the top -window sill -decorative moulding at the top</p>		<p>Moderate - Architectural Significance</p> <p>Old photo of early BI shows that the design of these windows and associated compartments and decorations is similar to the existing. It is believed the existing are of the original design.</p>


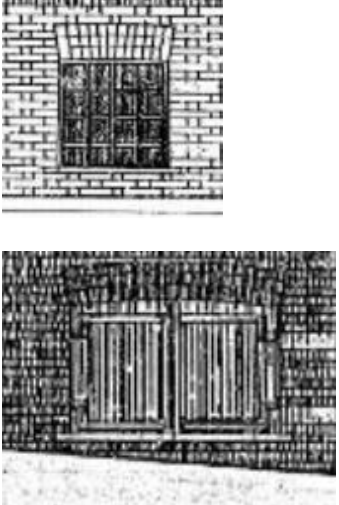

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		<p>-Timber external window -Glazed internal window -Window frame</p>	  <p>3 panels</p> <p>1 panel</p> <p>Like a louvered shutter with central control</p> <p>(Photo of early BI)</p>	<p>Low - Architectural Significance</p> <p>Old photo of early BI shows that the design of glazed window was different from the existing. Restore to the original appearance to be considered.</p> <p>The existing timber windows look different from the early louvered shutter design. Restore to original design to be considered.</p> <p>These rooms are toilets nowadays, openable windows would be more suitable for better hygienic control.</p>
<p>M-17</p>	<p>Window at B/F of SW facade</p>	<p>Window opening</p>	  <p>Now, one panel with metal grilles at the external</p> <p>Look like 4 panels design in 1980s photo</p> <p>(photo in 1980s)</p>	<p>Low - Architectural Significance</p> <p>Ventilation needs for the B/F. Window opening should retain as it is.</p> <p>The existing timber framed glass window may not be the original with installation of a ventilation fan nowadays. It is also different from the photo taken in 1980s. But whether the WWII design is original, there is not enough evidence to confirm.</p>

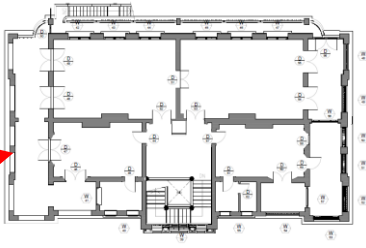

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<p>M-18</p>	<p>Windows at the basement</p>	<ul style="list-style-type: none"> -Window opening at existing location and size -brick arch at the top and window still below -Rectangle-shaped stone at the side(s) of window with hinge. They allow fixing of the windows 		<p>Moderate - Architectural Significance</p> <p>The refrigerator, incubating room, heating chamber and dark room were located in the basement. Temperature and humidity control were important for vaccine storage at the time while vaccine production was one of the keys and long-lasting contributions of the BI-PI. Therefore, the windows are comparatively small at the B/F then G/F and 1/F. That reflects the significance of bacteriological institute design.</p> <p>Based on site inspection, the window openings, brick arch, window sill and the adjacent stone for window installation are aligned with each other and can consider the original design.</p>
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		<p>-External timber window facing outward with associated window frame, hinges, tie-backs and stays -Internal glazed window open inward with associated window frame, hinges and locks</p>		<p>Low - Architectural Significance</p> <p>Based on the site evidence and the usage, it is believed that the external windows at the basement are very likely double layer for better environment and security control. The external window and internal window should open outward and inward respectively, with associated ironmongeries such as hinges, tie-back, stays and locks.</p> <p>The windows design record in 1992 elevation prepared by Maintenance Branch ArchSD (below) are quite different from existing design. Therefore, the design of the windows are unknown and can be considered altered when replacement works necessary.</p> 
<p>M-19</p>	<p>Door at the basement</p>	<p>-Door opening at existing location and size -brick arch at the top and -Rectangle-shaped stone at the side(s) of window with hinge. They allow fixing of the windows -Timber door located at the inter end of the arch for better shield</p>		<p>Moderate - Architectural Significance</p> <p>Brick arch serves as a shield. Door locates at the end of brick arch to minimize the rainwater fallen-in.</p>




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		<p>Door frame and leaf</p>		<p>Low - Architectural Significance</p> <p>No old photo record on the design of the door. It is believed not the original frame and door after a hundred year of operation. They can be repaired or replaced on like-with-like basis.</p>
<p>M-20</p>	<p>Water outlet at external wall</p>	<p>-Water outlet running from the verandah on the NW and SE verandahs to the external</p>		<p>Moderate - Architectural Significance</p> <p>Functional design of the building. It allows the release of water from the verandah to outside. Water control in avoiding accumulation of water within the brick wall is an important management control of the brick architecture.</p>





M-Main Building (Internal)

No.	Element	Character	Photo	Level of Significance
M-21	Laboratory at 1/F	<ul style="list-style-type: none"> -Long benches with teak tops ad fitted with sinks -Large centre tables fitted with sinks, drawers and cupboard -High ceiling -Large windows -Full height doors, double door leaves -Fireplace and associated compartments -Full height double doors, with louvered shutters and associated ironmongeries existing to verandah -White glazed wall tiles -Sinks with trademarks of London company 		<p>Exceptional- Historical, Architectural and Social Significances</p> <p>BI is the only remained early- 20th Century bacteriological institute in Hong Kong with building form, layout, material highly intact. It witnesses the development of Hong Kong to become the sentinel post and centre of excellence that it is today in the surveillance of infectious diseases of global significance.</p> <p>The outfit of BI was constructed by Public Works Department. Most of the fitting believed to be the original design, original fitting or early replacements. Long bench laboratory tables are iconic laboratory design in 1900s. BI was where medical laboratory science began in Hong Kong.</p>
M-22	Dumb waiter system	<ul style="list-style-type: none"> -Channel (void) opening between 1/F and G/F -Dumb-waiter machine with the timber enclosure 		<p>Moderate - Social Significance Low- Architectural Significance</p> <p>It showcases the design and daily operation of laboratories in transportation material and equipment around the three storeys.</p> <p>According to drawing record in 1994 prepared by Property Service Branch ArchSD, the size of the dumb-waiter was different from existing. Moreover, the part at the basement has already been demolished.</p> <p>Reconstructed can be considered because the furniture and service directly related to the laboratory's daily operation are limited (apart from laboratory furniture at 1/F). It would be a good display for visitors to visualize the old life of BI.</p>

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<p>M-23</p>	<p>Fireplaces at G/F and 1/F</p>	<ul style="list-style-type: none"> -Victorian style fireplaces -Additional shelving for ornaments above the mantelpiece -Timber mantel -Green and red glazed tile hearth and/or tiled surround -Timber surround -Steel grate -Steel ashpan 		<p>High - Architectural Significance</p> <p>It showcases the architectural design of the Bacteriological Institute in the early 20th Century. It provides cross ventilation of the building through the chimney system and heat-up of rooms during winter time.</p> <p>Fireplace is one of the key features of the western architecture. It is a focus point of a room. It also showcases the living style of European bacteriologists at the far east. The Victoria style of the fireplace at the 1/F reflected the age of the building.</p> <p>There is no old record for the fireplaces. But they are believed to be located at the original locations connected to the chimneys at the roof. They are believed to be original or early replacement based on site evidence.</p>
<p>M-24</p>	<p>White glazed wall tiles at 1/F laboratories</p>	<p>White glazed wall tiles</p>		<p>Moderate - Architectural Significance</p> <p>The outfit of the Bacteriological Institute in the early 20th Century was highly function. Basic glazed wall tiles in white colour at the laboratory for best hygienic control at the time believed to be original design.</p> <p>They showcase the architectural design of bacteriological laboratories in the early 20th Century.</p>
<p>M-25</p>	<p>Encaustic tiles in staggered pattern in the field with borders</p>	<ul style="list-style-type: none"> -Encaustic tiles -Plain red or black quarry are popular -Geometric pattern 		<p>Moderate - Architectural Significance</p> <p>Floors in concrete with covering tiles are common for Edwardian architecture. The encaustic tiles were believed to be imported from England which demonstrated the age of construction.</p> <p>The tiles pattern at the internal spaces are more decorative and at the verandah spaces are simple</p>

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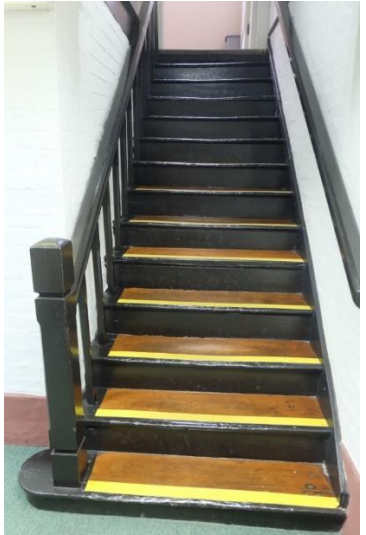
			 	<p>(plain red). Both of them are decorated with pattern borders.</p>
M-26	Teak strip floor deck	<ul style="list-style-type: none"> -No screw and nail fixing on top, that reflected the good quality of the building -Narrow strip -Right angle to joists with air gap -Strip with length of the room 	 	<p>Moderate - Architectural Significance</p> <p>Wood planks covering the floor was common for Edwardian architecture. Floorboards were narrower than 18th and early 19th century type and were laid at right angles to the joists with air gap below to help reduce damp.</p> <p>The length of the teak strips is of the length of the room and space that is rare in modern building.</p> <p>Nail heads left visual on surface is common for Edwardian houses of lower quality. No nail or screw fixings expose at the flooring of the BI demonstrate the outstanding craftsmanship of the time and BI was considered a high quality/standard building of the time.³</p>
M-27	Timber joist structural	<ul style="list-style-type: none"> -Timber joist structural system -Span and space 		<p>High – Architectural and Historical Significance</p>

³ Yorke, Trevor. 2006. The Edwardian House Explained. Countryside Book. P.77.

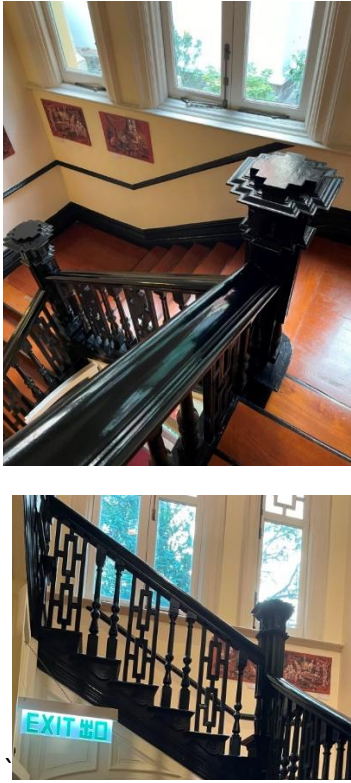

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	system for the internal rooms	between joists -Joist size		The structural frame of the building comprising timber joists supported by structural brick walls to the internal rooms. This structure demonstrates the structural beauty of the time. It is believed to be original.
M-28	Decorated plaster moulding ceiling	-Classical pattern -Located at the ceiling of main entrance hall		Moderate - Architectural and Social Significance One of the most distinctive classical features at the Bacteriological Institute. In general, the design of BI is simple and functional with limited decorative elements only at the façades and main public space such as main entrance hall (now the reception area). It showcases the architectural design of bacteriological institute at the early 20 th Century.
M-29	Decorated mounded panels and fretwork under the timber staircase at G/F main entrance	-Decorated mounded panels and fretwork -Entrance area		Moderate - Architectural Significance Mounded panels and fretwork are common decorations for western architecture. The decoration at BI is rather simple than the Victoria era. The ceiling panels and fretwork at the main entrance are the limited decoration of the BI. It is believed not the original after a hundred year of operation. They can be repaired and replaced on like-with-like basis if necessary.
M-30	Moulded plaster cornice	Moulded plaster cornice		Low - Architectural Significance It serves both decorative and functional purposes. It can limit the leakage/condensation water on wall and allow better protection for the connections of different material (e.g. wall and ceiling). It is believed not the original and been repaired and replaced after a





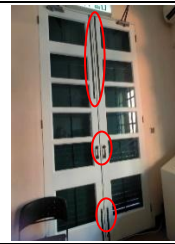
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				hundred year of operation. They can be replaced on like-with-like basis if necessary.
M-31	Timber fretwork and moulded cornice			<p>Low - Architectural Significance</p> <p>It serves both decorative and functional purposes. It can limit the accumulation /condensation water on ceiling. And allow better protection for the connections of different materials (e.g. wall and ceiling).</p> <p>The existing suspended ceiling fretworks are plywood and are believed not the original after a hundred year of operation. They can be replaced on like-with-like basis if necessary.</p>
M-32	Moulded timber skirting	Moulded timber skirting		<p>Low - Architectural Significance</p> <p>Common feature of western architecture. It serves both decorative and functional purposes. It can protect the lower wall from normal activity damage and allow better protection for the connections of different materials (e.g. wall and floor).</p>
M-33	Timber staircase from G/F to B/F	-Timber balustrades and handrails -Timber newel posts and skirting -Circulation from G/F to B/F		<p>Moderate - Architectural Significance</p> <p>For normal access to the basement. It showcases the age of construction when elevators were not common. The design is very basic.</p>



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<p>M-34</p>	<p>Grand timber staircase from G/F to 1/F</p>	<ul style="list-style-type: none"> -Central position -Besides large window for illuminated of the staircase -Timber construction -Timber balustrades, -Closed string with balustrades resting on treads handrails -Skirting and dado trail along the staircase -Newel posts -Timber panels under 		<p>High - Architectural Significance</p> <p>A rare example of Edwardian architectural style building in Hong Kong with iconic features of English Edwardian style demonstrated the age of construction.</p> <p>The grand staircase at the center of a building is always the most iconic feature of classical architecture. It works with welcoming decorated plaster moulding ceiling and Palladian windows with natural lighting to create a most descent gathering space in the Bacteriological Institute.</p>
<p>M-35</p>	<p>Door at the verandah of G/F and 1/F from laboratories</p>	<ul style="list-style-type: none"> -Segmental arch over door -Large door opening to the verandahs -Timber double door with glazed panel, full height -Timber louvered shutters open toward verandah -Align with external wall arch openings 		<p>Moderate - Architectural Significance</p> <p>A rare example of Edwardian architectural style building in Hong Kong with iconic features of English Edwardian style demonstrated the age of construction.</p> <p>Large windows allow better ventilation and sufficient sunlight for the bacteriological laboratory. Louvered shutters and ironmongeries allow control of the shading and openness of the door. It showcases the wisdom of architectural design of BI in adaptation of English architecture for sub-tropical climate.</p>



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			 <p data-bbox="742 840 1077 974">Door openings of the laboratories facing verandahs align with external wall arch openings</p> 	
		<p>-Timber door -Metal door stays, back-tie of timber louvered shutter allow fixing of the opened louvered -Hinge of timber frame glazed door allow 180-degree open inward -Timber door ironmongeries including metal door lock and door stay</p>	  	<p>Low - Architectural Significance</p> <p>It is believed most of the timber door, louvered shutter and ironmongeries may not be the original after a hundred year of operation. The flexibility on control the degree of lamination and ventilation are key values of the ironmongeries but not the components themselves.</p> <p>They can be repaired and replaced on like-with-like basis if necessary.</p>



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M-36	Internal door to laboratories at G/F and 1/F	<ul style="list-style-type: none"> -Full height door opening -Moulded timber architraves -Double door -180-degree open inward 		<p>Moderate - Architectural Significance</p> <p>Large doors allow better ventilation and sufficient sunlight for the bacteriological laboratory. It showcases the wisdom of architectural design of BI of adaptation of English architecture for sub-tropical climate.</p> <p>According to the public works report year 1905, all doors to the laboratories were double- layer doors. One with mosquito-proof wire gauze is believed to have been removed when mosquito controls no longer necessary.</p>
		<ul style="list-style-type: none"> - Timber door ironmongeries including metal door lock, handle and door stay 		<p>Low - Architectural Significance</p> <p>It is believed most of the timber doors and ironmongeries may not be the original after a hundred year of operation. They may not even the original style of use. They can be repaired and replaced on like-with-like basis if necessary and no other proof for the original design.</p>
M-37	Door after main entrance door	<ul style="list-style-type: none"> -Moulded timber architraves -Door opening -Allow 180-degree open inward 		<p>Moderate - Architectural Significance</p> <p>Doorway to create a semi-space before directly entering the main space (G/F and 1/F) from external area.</p> <p>The existing door and ironmongeries may not be the original after a hundred year of operation. They can be repaired and replaced on like-with-like basis if necessary.</p>
		<ul style="list-style-type: none"> - Double leaf timber door - Ironmongeries including metal door lock, handle and door stay 		

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<p>M-38</p>	<p>Double door</p>	<ul style="list-style-type: none"> -Moulded timber architraves -Full height door and fanlight opening -Allow 180-degree open outward to verandah 		<p>Moderate - Architectural Significance</p> <p>The existing door and ironmongeries may not be the original after a hundred year of operation. They can be repaired and replaced on like-with-like basis if necessary.</p>




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<p>M-39</p>	<p>Internal full height single door with fanlight</p>	<p>-Moulded timber architraves -Full height door and fanlight opening</p>		<p>Low - Architectural Significance</p> <p>The existing door and ironmongeries may not be the original after a hundred year of operation. They may not even be the original style of use. They can be repaired and replaced on like-with-like basis if necessary and no other proof for the original design.</p>
<p>M-40</p>	<p>Internal full height double door</p>	<p>-Moulded timber architraves -Full height double door opening</p>		<p>Low - Architectural Significance</p> <p>The existing door and ironmongeries may not be the original after a hundred year of operation. They may not even be the original style of use. They can be repaired and replaced on like-with-like based if necessary and no other proof for the original design.</p>



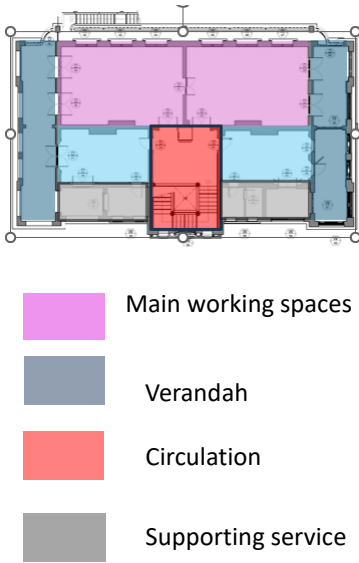
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<p>M-41</p>	<p>Door for autopsy room at B/F</p>	<p>Door opening and the associated ironmongeries to the autopsy room at B/F</p>		<p>Moderate - Architectural and Social Significance</p> <p>BI is the only remained early- 20th Century- built bacteriological institute in Hong Kong. Autopsy is important for providing first -hand information of a infectious disease. This would be good evidence on demonstration of process of bacteriological research.</p> <p>As there is no record of the room and no mention of the autopsy room in the 1905 record, this room is believed to be later construction.</p>
<p>M-42</p>	<p>Segmental arch openings at B/F</p>	<p>Segmental arch</p>		<p>Moderate - Architectural Significance</p> <p>Segmental arch is a common features of western architecture that reflects the truthfulness of the brick building structure.</p>
<p>M-43</p>	<p>King-post timber trusses</p>	<p>King-post timber trusses with steel fixings</p>		<p>High - Architectural Significance</p> <p>BI is located on a slope with a higher level at the entrance and lower level at the back. The king-post with diagonal truss is tailored made to the size of the Main Building and brick wall locations, as well the hipped pitched roof design with dormer windows access. They allow the transfer of loading from top and any directions to release to</p>




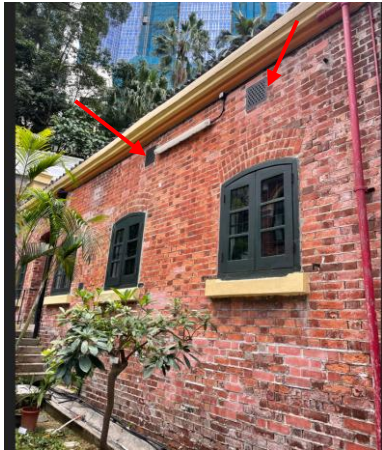
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				<p>both King-post ends.</p> <p>They showcase the wisdom and outstanding craftsmanship at the time with true material (timber) but not mass production.</p>
M-44	Timber Purlin, rafters and tile system	Timber Purlin, rafters and tile system		<p>High- Architectural Significance</p> <p>They stand on the timber trusses and cover by Chinese double-pan-double roll tiles as a complete roof system. This showcases the adaptation of English colonial building with local climate and culture. They work well to avoid water leakage of pitched tiled roof.</p>
M-45	Timber plywood ceiling - with brick catwalk	Timber plywood ceiling -with brick catwalk		<p>Moderate - Architectural Significance</p> <p>Enclosed roof with plywood grid ceiling allows decorative moulded design of the internal ceiling. It is common for English architecture. Catwalk allows regular maintenance and access to the roof top.</p>
M-46	Layout	<p>-Simple layout</p> <p>-Room arrangement</p> <p>-Central circulation</p>	 <p> Main working spaces Verandah Circulation Supporting service </p>	<p>Exceptional - Historical, Architectural and Social Significance</p> <p>The spatial planning was simple and clear with verandah on both sides, main working space(laboratories) at the back that occupied the largest rooms/spaces of the building. Smaller supporting service rooms beside the main laboratories. The major circulation of was the grand staircase for user and dumb waiter for goods.</p> <p>According to written records and site evidence (wall, window and door openings), it is believed that the overall layout of Main Building remains largely intact since built. It is the living evidence of the architecture design and daily life of the first bacteriological institute in Asia.</p>





Staff Quarters (External)




No.	Element	Character	Photo	Level of Significance
SQ-1	Red brick external wall	-Flemish bond red brick -Red brick appearance		<p>Moderate –Architectural Significance</p> <p>Exposed bricks were used instead of rendered surface. It is the true expressed of material in Art and Crafts movement.</p> <p>The different colour and shape of the Flemish bond red bricks and mortar joints show that the brick walls have undergone many time of repair works and no proof any part of the external brick wall is original. The arrangement (layout) of the structural brick walls should be low intact and much of the original.</p>
SQ-2	Double-pan-double-roll pitched roof with Wu-yin	-Pitched roof -Chinese Double-pan-double-roll roof system with use of wu-yin		<p>Moderate – Architectural Significance</p> <p>The western pitched roof in use of Chinese double-pan-double-roll tiles system and wu-yin, that showcase the adaption of Western architecture with local material, craftsmanship for adaptation of local climate and culture in colonial style building.</p>
SQ-3	Chimney stack	Chimney stack		<p>Moderate – Architectural Significance</p> <p>Only the upper part of the chimney remains and the lower part is unknown. It may not be connected to the fireplace as the is very small.</p>

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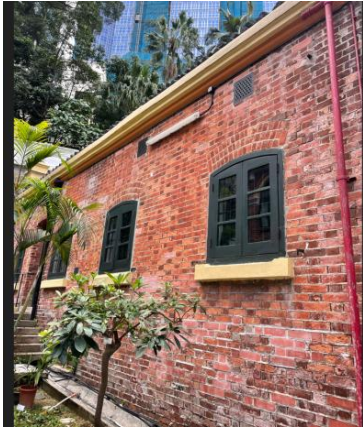



				
SQ-4	Cornice concrete gutter with cast iron downpipe and hopper	Overhanging gutter along top of the exterior wall	 	<p>Moderate – Architectural Significance</p> <p>It is believed the gutter and downpipe drainage system is the original which (gutter) is found in the old photo.</p> <p>Some downpipes are believed to be original location, and some are later addition which were not found in the early photos. The later additional may consider remove to retain a clearer facade.</p>
SQ-5	Ventilation windows on external wall	-Small ventilation windows at high level -Metal guard		<p>Moderate - Architectural Significance</p> <p>The Staff Quarters is of low height and consists of small windows only. That may result in hot and humid in the summertime. The small ventilation windows at the high level allow air ventilation and penetration of light.</p>

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SQ-6	Central courtyard	Central courtyard		<p>Moderate - Architectural Significance</p> <p>There is no record on the courtyard of the Staff Quarters. It is guessed that it could be used for hanging laundry for Asian staffs.</p>
SQ-7	Cover walkway under pitched roof	Cover walkway under pitched roof		<p>Moderate - Architectural Significance</p> <p>It is functional for staffs to move around the rooms at the rain reasons. It also creates extra semi-open space for users other than functional rooms.</p>
SQ-8	Doors	-Segmental arch over door -Door opening		Moderate - Architectural Significance
		-Timber door -Timber door frame -Ironmongeries		<p>The size and the location should be the original or early intervention and should be retained as far as possible.</p> <p>Low - Architectural Significance</p> <p>The existing door and ironmongeries may not be the original after a hundred year of operation. They can be repaired and replaced on like-with-like based if necessary.</p>
			Main entrance door	

			 <p>Side door</p>  <p>Doors at the back</p> 	
SQ-9	Window	- Segmental arch over window		Moderate - Architectural Significance



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	<ul style="list-style-type: none"> -Window sill in u shape -window opening -Louvered shutter at the North west facing façade 		<p>The size and the location should be the original or early intervention and should be retained as far as possible.</p>
	<ul style="list-style-type: none"> -Timber window -Timber window frame -Metal grilles - ironmongeries 		<p>Low - Architectural Significance</p> <p>The existing window and ironmongeries may not be the original after a hundred year of operation. They can be repaired and replaced on like-with-like based if necessary.</p>
	<p>North west facing façade with louvered shutter</p>		
	<p>U shape window sill</p>		



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SQ-10	Cast iron chimney	-Location -Cast iron chimney -For release of smoke		Moderate - Architectural Significance The location and function is believed to be original as it connects to the brick grove at the kitchen for the release of smoke at the tiny enclosed space. However, whether this is the original type of kitchen chimney is unknown as it is very different from other brick chimney of the BI compound and another chimney stack at the rooftop of the Staff Quarters.
SQ-11	Overhang roof supporting system	-Column and truss -Stone on wall for support of the truss		Moderate - Architectural Significance It is a typical supporting element of the pitched roof. The location and system should be the original. But the concrete column and timber truss should be later replacement. They can be repaired and replaced on like-with-like based if necessary.



Staff Quarters (Internal)

No.	Element	Character	Photo	Level of Significance
SQ-12	Brick grove with stack	Brick grove with connected brick stack		<p>High – Historical, Social and Architectural Significance</p> <p>It is the only remaining elements at the Staff Quarters that can proof the functional use of the building and the room (kitchen).</p> <p>It is the living evidence of the first Bacteriological Institute in Southeast Asia with Staffs' Quarter that had once housed 11 staffs.</p>
SQ-13	Encaustic tiles at the kitchen and new toilet room	Encaustic tiles		<p>Low - Architectural Significance</p> <p>No record for the original type of tiles. They are believed to be later replacement and can be repaired and replaced on like-with-like basis.</p>

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<p>SQ-14</p>	<p>Truss system</p>	<p>King post timber truss</p>		<p>High - Architectural Significance</p> <p>They showcase the wisdom and outstanding craftsmanship at the time with true material (timber) but not mass production.</p>
<p>SQ-15</p>	<p>Purlin-batten and tile roof supporting system</p>	<p>-Timber purlin -Timber batten -double-pan-double-roll tiled layering system</p>		<p>High - Architectural Significance</p> <p>They showcase the wisdom and outstanding craftsmanship at the time with true material (timber) but not mass production.</p>

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<p>SQ-16</p>	<p>Wall decorative moulding</p>	<p>Wall decorative moulding</p>		<p>Low - Architectural Significance</p> <p>It serves both decorative and functional purposes. It can limit the leakage/condensation water on wall and allow better protection for the connections of different material (e.g. wall and ceiling).</p>
<p>SQ-17</p>	<p>Layout</p>	<p>-Layout -Arrangement of rooms</p>	 <p> Bedrooms for accommodation of 11 Chinese attendants Kitchen Covered walkway Courtyard <u>Store room</u> or other use </p>	<p>High- Historical, Architectural and Social Significance</p> <p>According to written records and site evidence (wall, window and door openings), it is believed that the overall layout of Staff Quarters remains largely intact since built. It is the living evidence of the architecture design and daily life of the first bacteriological institute in Asia.</p>

4.0 OPPORTUNITIES AND LIMITATIONS

4.1 STATUTORY AND LEASE REQUIREMENTS

4.1.1 Declared Monument Control

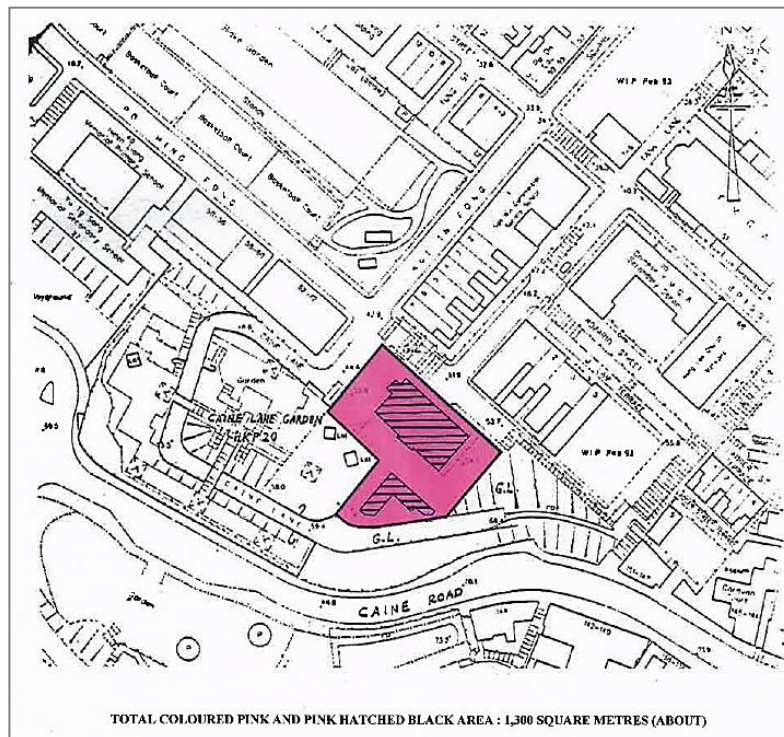
The Antiquities and Monuments Ordinance (Cap.53) (A&M Ordinance), enforced since 1976, empowers the Antiquities Authority, now the Secretary of Development, to designate certain buildings/ sites/ structures as “monument”, generally known as Declared Monument. The Old Pathological Institute was declared a monument in 1990.

The A&M Ordinance empowers the Antiquities and Monuments Office (AMO), acting on behalf of the Secretary of Development, to exercise protection to Declared Monuments, by controlling “any action to demolish, remove, obstruct, deface or interfere with the monument unless a permit is granted by the Authority”. HKMMSS had not only never carried out such prohibited acts but also informs museum staff, visitors and contractors not to do so, e.g., through house rules and notices. All past renovations and repairs were only carried out after obtaining prior approval from AMO and other Government departments as needed.

As a general practice in Hong Kong, AMO would issue to owners or users of Declared Monuments a building-specific “Block Permit” that lists the usual permitted repairs/ maintenance works of minor and regular nature, and works that are usually not destructive to significant fabric or features of the Declared Monument. HKMMSS had been complying with the requirements of the listed conditions. Moreover, HKMMSS’ applications for renewal of the Block Permit had been approved by AMO.

4.1.2 Tenancy Agreement Control:

The estate of the OPI monument comprises the existing buildings and structures coloured pink in the drawing.



Government Property Agency (GPA), acts on behalf of the Government of the Hong Kong Special Administrative Region (HKSARG) as “Landlord” who leases the Old Pathological Institute (OPI) monument to HKMMSS for operation as Museum. HKMMSS has been the “Tenant” since 1995. It is a general practice for the HKSARG to lease buildings or sites to Non-Profit Organizations (NPOs) to operate community functions under non-market-rate, particularly for buildings/ sites not favoured by commercial bodies.

Below are clauses of the Tenancy Agreement (TA) relevant to the use and maintenance of the premises. HKMMSS had been able to fulfil these requirements in the past years.

- (a) The TA includes clauses that prevent acts that demolish, remove, obstruct, deface or interfere with the declared monument. HKMMSS had not only never carried out such acts but also informed museum staff, visitors and contractors not to do so, such as through house rules and notices. All renovations and repairs are only carried out after obtaining prior approval from AMO and other Government departments as stipulated.
- (b) Clauses about preserving the historical and architectural character of the Premises have often been written into leases to tenants of government historical buildings. However, “historical and architectural character” is not specific for the OPI monument. Hence in this Conservation Management Plan (CMP), a professional and objective list of Character Defining Elements (CDEs) of the OPI monument is established and approved by the AMO, together with corresponding intervention guidelines. (See chapter 3.)

- (c) With respect to the maintenance and repair of the buildings, it is noted that the Landlord is responsible for structural and external fabric while the tenant is responsible for the interior of the buildings. HKMMSS had been keeping the Premises neat and tidy, clearing the drains, and is currently carrying out repair works to the underground drainage under the Financial Assistance Maintenance Scheme on Built Heritage (FAS) approved by AMO and GPA. HKMMSS duly follows the required procedures to seek prior approval from AMO, GPA, and relevant other departments either for regular maintenance/ repairs under Block Permit, or for special repairs/ renovations such as those carried out under FAS and/or for minor investigations such as those in projects funded by the Lord Wilson Heritage Trust. In recent years, maintenance works carried out by the Landlord on the buildings, open areas, and slopes also sought permission from the AMO via HKMMSS.
- (d) None of the trees within the Premises were interfered with without prior permission from AMO. When a tree that was professionally appraised to be sick beyond treatment and in danger of falling, it was professionally removed, and replaced by a healthy tree planted nearby. HKMMS has since 2004 been maintaining a Herbal Garden within the Premises for the education and enjoyment of the public. Since 2007, the Herbal Garden had become a practicum site for students reading a course on Herbal Medicine. The plants are carefully tagged, and tended to by staff, volunteers, and special contractors, including annual pruning of the tall trees by certified arborists so as to prevent any damage to buildings or injury to staff and visitors.
- (e) Clauses such as maintenance of retaining walls or preventing the collapse of earth banks from outside onto the OPI estate will require clarification from the Landlord, since the retaining walls specific to the OPI are maintained by the Lands Department and Highways Department and the slopes behind the retaining walls are outside the estate of the OPI. The OPI site has 4 retaining walls at this boundary. The walls were reinforced by the Civil Engineering and Development Department (CEDD) in 2016-2017. Nevertheless, HKMMS regularly conducts inspection of the buildings and grounds, and irregularities detected are reported to AMO or other relevant government departments. One peculiar example was the excessive discharge of water which began in January 2016 from weepholes of two adjacent retaining walls. In about a month, after initial investigations, the relevant department installed pipes to direct water from the weepholes to the surface channel at the toe of one of the walls. As the situation worsened, HKMMS periodically brought up the issue again. In 2019, Lands Department added pipes to weepholes higher up on the wall. Finally, in March 2021, Water Supplies Department personnel identified the water to be salt water and the cause was ruptured sea-water pipes inside the slope behind the retaining walls. After these pipes were repaired, excessive discharge from the retaining walls ceased. A subsequent similar incident was repaired after only a few days.

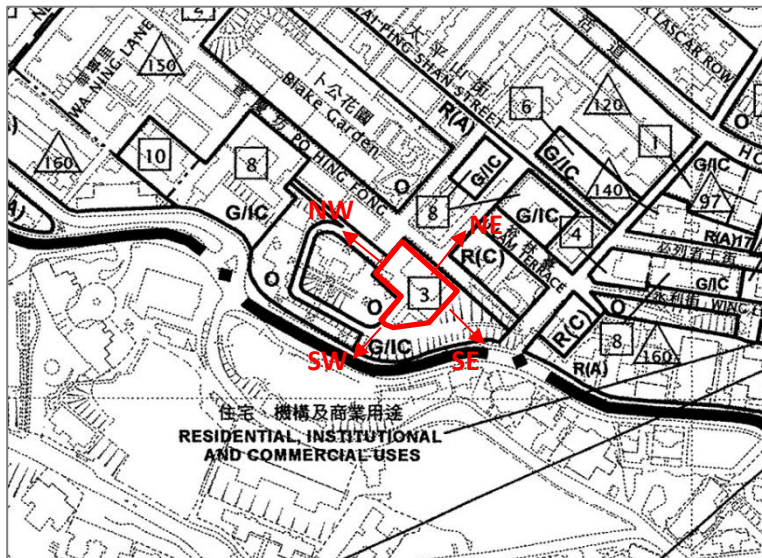
- (f) To protect the OPI from termite infestation, HKMMSS has engaged pest-control specialists to monitor the premises, and is ready to report regularly to GPA. If termites/pests are found, GPA will be informed together with eradication proposal.
- (g) Tenancy Agreement requirements pertaining to the operation of the Museum. HKMMS regularly renews the requisite licenses, permits and certificates from the relevant authorities. For example, the Temporary Places of Public Entertainment License (TPPEL) and the Periodic Test Certificate (Form WR2) for fixed electrical installations endorsed by the Electrical & Mechanical Services Department (EMSD). Charges and duties are paid on time.
- (h) The TA requires interpretation display to introduce the history of the former Pathological Institute and to promote heritage preservation. Indeed, the history of the BI and PI in Hong Kong's battles against infectious disease form a good part of the long-term interpretation displays in the Museum. In addition to displays are publications and guided tours on the topic. Periodic thematic displays introduce the visitor to the architectural features of the OPI, and how the OPI is renewed using modern as well as traditional methods. A regular guided tour on the architectural features of the Monument is currently available for visitor groups.
- (i) To facilitate public access to appreciate the Premises, the Museum's regular opening hours are currently Tuesdays through Saturdays 10am to 5pm, and Sundays and Public Holidays 1pm to 5pm; closed on Mondays, Christmas Day, New Year's Day, and the first three days of the Chinese New Year; and closes at 3pm on Christmas Eve and Chinese New Year's Eve. These times have been maintained since the Museum opened in 1996. Information is available on the HKMMS website and social media.
- (j) Admission fees are highly subsidised by the HKMMSS with discounts for students, senior citizens, people with disabilities, children under 6 years old, and family groups; and even free of charge on special events or programmes. HKMMSS has collaborated with Leisure & Cultural Services Department, District Office, Commissioner of Heritage's Office and AMO, and was also funded by the Urban Renewal Heritage Preservation and District Revitalisation Funding Scheme to have special programmes and open days for the public.

4.1.3 License Control:

- (a) Operating as a private museum opened to the wider public, the premise requires Places of Public Entertainment (PPE) license or Temporary Places of Public Entertainment (TPPE) license. Currently HKMMSS holds and regularly renews TPPE license.
- (b) Currently HKMMSS does not operate food and beverage services, thus does not require Food and

Beverage (F&B) License.

4.1.4 Town Planning Control



Excerpt of plan from page 14 of the Approved Sai Ying Pun & Sheung Wan Outline Zoning Plan No. S/H3/34. Available at https://www.legco.gov.hk/yr20-21/english/brief/sh334_20201113-e.pdf
The HKMMS site outline is added in red.

According to the current Sai Ying Pun & Sheung Wan Outline Zoning Plan (OZP) No. S/H3/34¹ gazetted on 13.11.2020, HKMMS falls within a zone for sites intended primarily for the provision of “Government, institution or community (G/IC) facilities serving the needs of the local resident and/or a wider district, region or the territory”. Among the list of G/IC uses always permitted are Exhibition Hall, and Place of Recreation, Sports or Culture, which HKMMS currently fulfils. Since the HKMMS’s office and gift shop are ancillary to the Museum, and HKMMS does not intend to develop these or other uses such as Eating Place independently separated from the Museum, application to the Town Planning Board for these uses do not apply.

The current use of HKMMS is acknowledged in the current gazetted OZP. For example, Clause 8.4.3 states that “Many buildings within the G/IC zone of this Area are declared monuments protected by the Antiquities and Monuments Ordinance including the old Pathological Institute at Caine Lane”; and Clause 12.1 on Cultural Heritage mentions that a number of important declared monuments are located within the Area, including the old Pathological Institute (now used as Hong Kong Museum of Medical Sciences) at Caine Lane.

¹ Hong Kong Planning Area No. 3. Approved Sai Ying Pun & Sheung Wan Outline Zoning Plan No. S/H3/34. Available at <https://www.ozp.tpb.gov.hk/api/Plan/PlanNote?planNo=S%2fH3%2f34&lang=EN&ext=pdf&dType=in>. Accessed 28.01.2025.

Future development, redevelopment, or rezoning that might affect the HKMMS site should only be made after prior consultation with the AMO. As at present, HKMMS does not intend to re-develop the HKMMS site.

Other than the above, the OZP has no other restrictions on the HKMMS.

4.1.5 Building and Fire Safety Regulations Compliance

- (a) The Bacteriological Institute comprising the Main Building and Annex Block was opened in 1906. The current Building Ordinance does not require it to fully fulfil the prevailing versions of Building Regulations unless the owner proposes to carry out Alterations and Additions (A&A) works, or the operator wishes to obtain licenses.
- (b) The Architectural Services Department (ArchSD), as the execution arm for GPA on government buildings, carried out certain major repairs and upgrades to this compound so as to enable it to be used as a museum for the community before the compound was handed over to the HKMMS in 1995. The adaptations that ArchSD carried out at that time included certain upgrades to fire escape, fire services installations, and plumbing/ drainage connections. ArchSD, being government architects, obtained separate approval by Fire Services Department (FSD) on their works, and also observes the Buildings Regulations under their established practices.
- (c) Means of Access for Fire Fighting and Rescue (MOA):
It is noted that neither Caine Lane nor Tank Lane are accessible to modern fire engines. However, as noted above, ArchSD obtained FSD agreement on their renovations adapting the buildings for managed community use.
- (d) Means of Escape in case of Fire (MOE):
ArchSD installed a steel external staircase to the rear of the Main Building in the late 1980s or early 1990s, providing alternative escape for users of the two upper floors. Although not fully matching current MOE Code, it was considered appropriate by ArchSD for managed community use.
- (e) Barrier Free Access (BFA):
Wheelchair access is from Caine Lane (through the side gate adjacent to Caine Lane Garden). From the museum garden, wheelchairs can access to all public areas on the Ground Floor (with the help of a low ramp at the entrance), and to public areas in the basement of the Main Building via the emergency exit.
- (f) Protective Barrier (at floor void edge or at external balcony):

Historical balustrades at first floor verandahs and at floor void edge over the main entrance do not fulfil current code. Hence HKMMSS does not allow the public to visit the verandah unless under managed supervision for special visits. A traditional Chinese three-seater is placed in front of the balustrades at the floor voids, and visitors are also reminded not to lean over the floor voids.

(g) Sanitary Fitments:

The Main Building has two toilets shared by staff and visitors, where the fitments and pipes were originally installed by ArchSD and maintained by HKMSSS. It is considered adequate since public toilets are located at the Caine Lane Garden adjacent to the OPI compound. .

(h) Fire Services Installations:

The Main Building is equipped with Automatic Fire Alarm (AFA) activated by Smoke Detectors, under regular maintenance by registered Fire Services contractors. Considering the technical difficulty of installing standard sprinkler system, a complying AFA system is often acceptable for a modest size historic building managed properly.

4.2 USER'S REQUIREMENTS

4.2.1 Background

Current use of the Old Pathological Institute (OPI) is as a museum, the HKMMS, which opened in March 1996. It is operated by the HKMMS Society, a charitable organisation, and housed in the OPI under concessionary lease from the Government of the HKSAR.

4.2.2 Work of the Museum

(a) Vision of the Museum

The OPI had in its work from BI to PI preserved the health of the people of Hong Kong. Continuing in that spirit, the vision of the HKMMS is to provide educational and cultural activities to person of all ages, where lessons from history and lessons from health are presented in integrated fashion, at a site (the BI/PI) where Hong Kong's historical fight against infectious diseases actually took place, so that the public can learn to stay healthy and be inspired to face the challenges of the future.

(b) Programmes for the public

Programmes for the public have been varied and often in collaboration with other institutions. The varieties included interpretative displays, collection and digital exhibits, interactive games, regular tours on different themes within the museum, a special guided tour to the historical sites

in the neighbourhood of the OPI (e.g., the Tai Ping Shan Medical Heritage Trail), lectures, workshops, drama plays, writing, drawing and photography competitions, books on the history of the OPI and the medical development of Hong Kong, various other publications, a Herbal Garden of plant species that are used in Chinese Medicine or are/were the source of Western medicines, and special lessons for medical students.

The number of visitors to the Museum has increased from about 9000 in 1996 (April to December) to over 28,000 in the year 2023, to about 5000 per month in 2024.

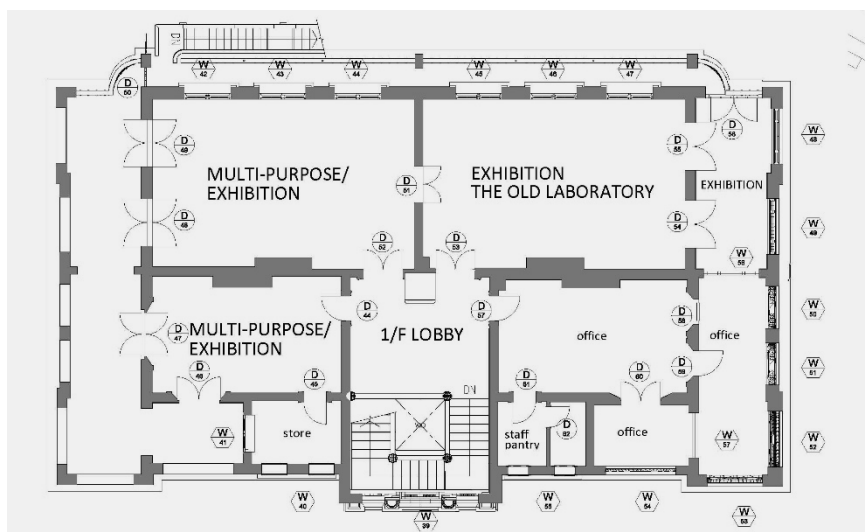
(c) Contribution to conservation of the OPI

HKMMS contributes not only through complying with the conditions of the tenancy agreement but also strives to carry on the spirit of the BI/PI in protecting the health of the community. The rooms of the OPI are opened to the public as much as possible so that visitors can appreciate the work at the old laboratories and enjoy the architectural features of the buildings. In 2004, the Antiquities Advisory Board and the Antiquities and Monuments Office (AMO) commended HKMMS on its contribution to the conservation of the OPI as well as having most appropriately revitalised the declared monument.

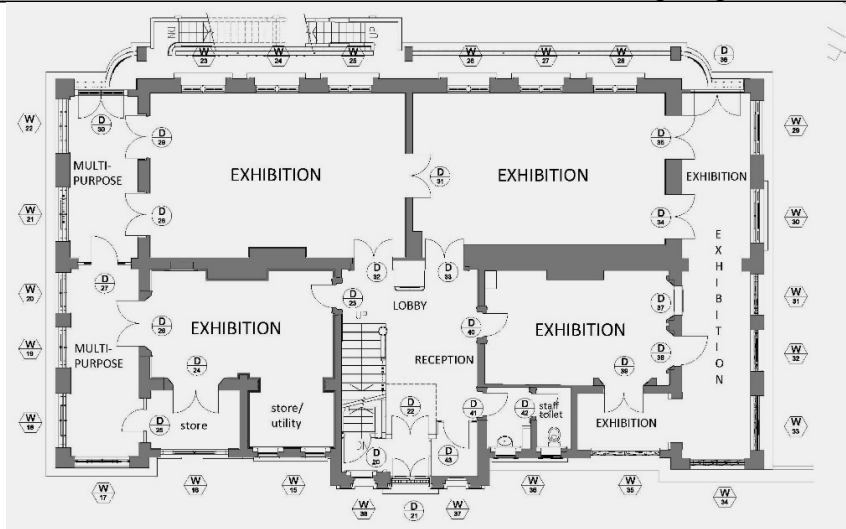
4.2.3 Requirement of Facilities

(a) Function of rooms

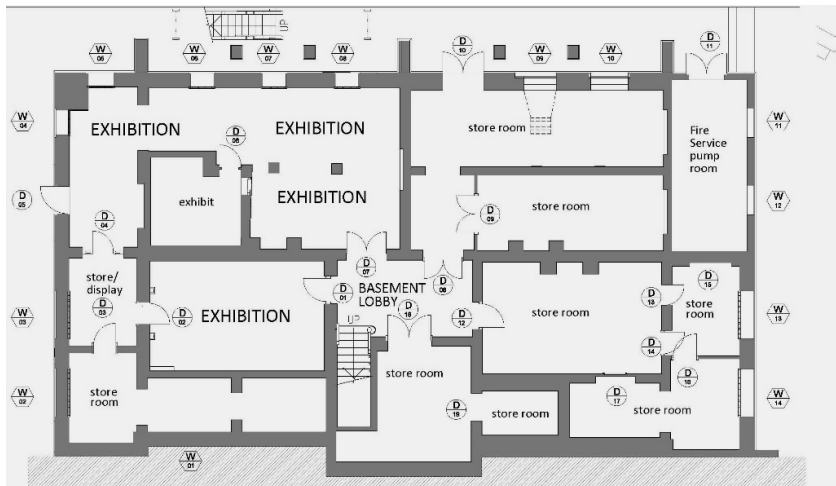
HKMMS has made use of the rooms as available. The functions of the main rooms in the Museum are marked on the layout diagrams below:



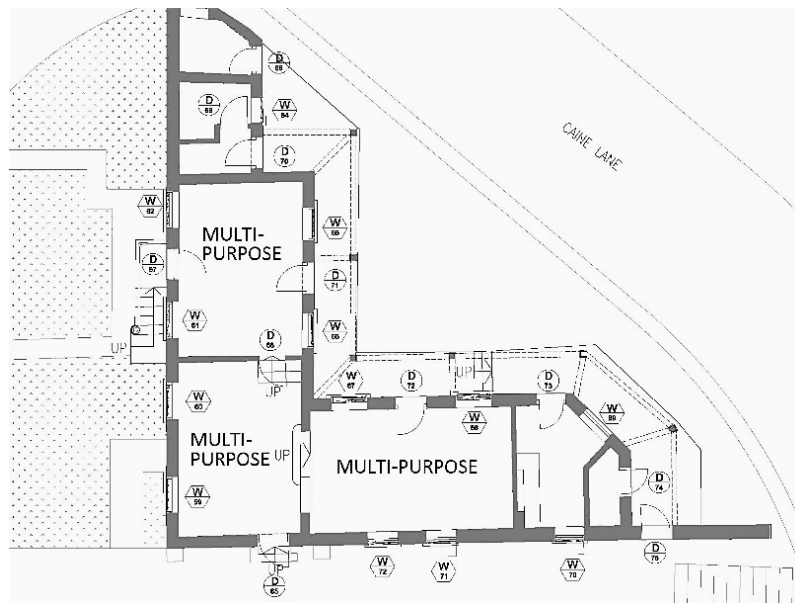
Main Building First Floor



Main Building Ground Floor (with main entrance)



Main Building Basement Floor (partly underground)



Annex Block

The function of some of these rooms may change depending on the content of the interpretation displays, technology then available, and expected visitor number. Some of the store rooms have controlled ambient temperature and humidity. Security Room, Meter rooms, and other rooms not open to the public are not marked on the diagrams. The Herbal Garden and another Fire Service pump room are located separately in the grounds.

(b) Requirements in energy and space

As the use of information and communication technologies (such as interactive exhibits, digital displays, augmented and virtual reality experience, mobile apps guided tours) is expected to increase further for interpretation displays and for improving visitor experience, there will be increased demand for energy and storage space. The challenge is whether the OPI can be appropriately refurbished to accommodate the need.

(c) Maintenance

Built against the slope, the OPI is 2-storied on its façade (south-west) side and 3-storied at the rear (north-east side). Thus, the basement is partly underground. The site collects a lot of rainwater from its surroundings: two retaining walls and the Caine Lane Garden. Since the HKSARG, as landlord, is responsible for repairs to the structure and the building exterior, and HKMMSS, as tenant, is responsible for interior repairs, it behoves the HKSARG and HKMMSS to improve communication and work together for the benefit of the OPI.

Among the goals, the most important is that of keeping out rainwater, particularly leakage from the roof and windows, and flooding of basement from water seeping in from inundated soil. Leakage from the roof has decreased since the planned maintenance in 2016, but leakage through the windows continue in several rooms. Flooding of the basement from seepage through the walls and ground during heavy rain has occurred several times in recent years. HKMMSS is currently carrying out repair works to the underground drainage within the OPI estate, funded by the FAS. However, the ultimate connection to the public drainage system has to await response from relevant government departments.

HKMMS would like to have regular maintenance of the roof and building exterior by the Landlord, better funding for HKMMSS works, and better dove-tailing of works to achieve better conservation of the OPI.

HKSARG and HKMMSS working together will make it possible for the public to see a fine historic building in beautiful condition for its age, enjoy the OPI's exterior and interior character defining architectural features, as well as learn from the Museum's displays about its cultural significance.

(d) Toilet facilities in neighbouring Caine Lane Garden

Toilet facilities in the 118-year-old OPI buildings are inadequate for the increasing masses of visitors who are already also using the facilities in the adjacent Caine Lane Garden. With rising tourism in Hong Kong, HKMMS would like these public facilities to be up to the expected sanitary level and regularly maintained.

4.3 STRUCTURAL APPRAISAL

Structural condition surveys were conducted from November 2022 to May 2024 by structural engineer with desktop study, site inspection and in-situ tests including rebound hammer test, covermeter test and open-up inspection.

(a) Structural System

The main building is a 3-storey structure, including a sub-basement and is built of timber, brick and reinforced concrete. The structural framework consists of timber joists supported by structural brick walls in the internal rooms, while reinforced concrete slabs are supported by brick walls in the verandah. The pitched roof is constructed with wooden king post trusses and pan-and-roll tiles, and all external and internal walls are formed by bricks.

(b) Physical Condition

No structural record or as-built drawings could be retrieved from the Buildings Department BRAVO system or the client. Overall, the structural elements of the building are in generally good condition, with no major defects observed in the stairs, landings, or floor slabs. Minor plaster cracks and peeling paint were observed.

(c) Loading Capacity

The building's design is presumed to comply with the Reinforced Concrete Regulations of the London County Council 1915 (LCC 1915), which were in effect at the time of construction. Based on in-situ tests, inspections, and structural assessments, the 1/F and G/F load capacity should remain at the original imposed load of 4.02 kPa, rather than the current Code of Practice for Dead and Imposed Loads 2011 (2021 edition), as structural verification indicates a capacity of 99.8%. In contrast, the stairs and landings can maintain their original imposed load of 5.75 kPa, which exceeds the design requirement of 5.0 kPa.

Based on the current use of the Museum with most of the exhibits located at the ground level and management of the number of visitors at the first floor, the control of loading capacity of stairs and each floor are fulfilled. The number of visitors is carefully monitored with registration policy before entering the Museum. Group visitors are split to avoid overloading of the floors.

It is noted that the Museum does not reach the ideal standard of the current Code of Practice for Dead and Imposed Loads 2011 (2021 edition). But considering existing physical constraints and well-established operations, these moderate existing shortcomings can be controlled. HKMMS currently exercise tailored management of visitors, and so far risks and inconvenience are mitigated.

5.0 CONSERVATION GUIDELINES AND PRINCIPLES

5.1 CONSERVATION OBJECTIVES

Based on the Statement of Significance and the assessment of the existing conditions of the historical Compound, the following are the Conservation Objectives for the Adaptive Reuse of the Old Pathological Institute into the Hong Kong Museum of Medical Sciences.

- To preserve and restore the existing building fabrics as practicable as possible and in the long term, to protect the buildings from further deterioration by effective management control;
- To provide interpretation of the cultural heritage values of the Bacteriological Institute and Pathological Institute and to raise people's awareness and appreciation of the heritage;
- To promote health and medical education at the Compound where Hong Kong's historical fight against infectious diseases actually took place;
- To engage different stakeholders and the general public to appreciate the cultural heritage values of the Compound, including its historical, architectural and social values. This will encourage informed and active participation of the community in caring for the Old Pathological Institute.

5.2 CONSERVATION STANDARD

- Burra Charter (2013) – The Australia ICOMOS Charter of Cultural Significances
- Venice Charter (1964) – ICOMOS International Charter for the Conservation and Restoration of Monuments and Sites UNESCO
- China Principles (2015) – Principles for the Conservation of Heritage Sites in China

Below are the key guiding principles of the conservation works, with general reference to international charters and other relevant conservation standards as considered appropriate.

5.3 CONSERVATION PRINCIPLES

5.3.1 Conserve Heritage Value

- Conserve the heritage value of a historic place, and respect its changes over time which represents a particular period of time.
- Restore any deformed, collapsed, or misplaced components. Any later additions considered of no significance or intrusive should be removed.

5.3.2 Retain Authenticity & Integrity

- Respect the original character or architectural style of the building fabric and retain its traditional

building materials or construction system as much as possible. Carry out any repairs necessary to keep the building in good working order.

- Do not create a false sense of historical development by adding elements from other historic places or by combining features of the same property built at different periods but never co-existed.

5.3.3 Minimum Intervention

- Keep any treatment or intervention to building fabric to the minimum and respect the heritage value when undertaking an intervention. Use the gentlest means possible for any intervention.
- Make any intervention physically and visually compatible and identifiable, and document the intervention for future reference. When new additions are necessary due to functional needs or statutory compliance, they should be properly designed not cause adverse visual impact to the CDEs and the exterior facades. The new additions should be placed in a less prominent location to prevent disturbing the integrity of the historical building.

5.3.4 Careful Documentation of the Working Process

- It is important to document the whole conservation work process so that future users and workers can refer to the changes in the historic building at different stages and understand the site more thoroughly.
- A detailed recording can help future users and conservation architects to develop appropriate designs which respect the building details and sites which bear cultural values and minimize any possible damages to the historical features due to misunderstanding.
- Surveys such as photographic and cartographic recordings should be carried out to record the building condition before and after any intervention works in detail for future reference. Regular site monitoring should also be conducted to ensure the CDEs and valuable features are under care or protected.

5.4 CONSERVATION POLICIES AND GUIDELINES

The following Policies and Guidelines are for guiding the future use of the existing Compound:

Management of Change of Use

Policy 5.4.1

The original use of the OPI was a bacteriological/pathological institute with laboratories for bacteriological and pathological testing of specimens, conducting research, teaching medical students, training staff, and vaccine production to protect the health of the Hong Kong community. It is noted that the current adapted use as a Museum to promote public understanding of medical sciences in Hong Kong, in particular the history of medical sciences and disease prevention associated with the OPI, is already appropriate in interpreting the heritage value of this place. It is recommended that the

museum operator concurrently also use this venue to include appreciation of local district history and architectural conservation.

Policy 5.4.2

It is recommended that the laboratory on the 1/F with its overall layout, interior fittings and furniture having remained largely intact, be retained as far as possible. It offers to the public an unique insight into the medical and architectural history of the compound.

Policy 5.4.3

It is recommended that the interpretation displays and programmes for the public include an introduction to the cultural significance of the compound, and that educational activities are not limited to health /medical themes so as to engage a wider public.

Guidelines:

- New services such as reception, exhibition areas, multi-purpose rooms, staff office, storerooms and herb garden etc., related to museum and education, should be allowed to be accommodated in the historical buildings.
- Laboratory on the 1/F with overall layout, interior fittings and furniture largely intact should be preserved as far as possible. They should all be considered for repair instead of replacement unless the fabrics are beyond repair.

Building Fabrics

Policy 5.4.4

The main façade of the Main Building being one of the key features of the historical building should be kept intact. Reverting the east side verandah to the very original status is not critical in comparison with other heritage aspects. The verandah was closed a long time ago and thus explained its evolving use which was also part of the history. The west side open verandah already shows all the CDEs of an open verandah of the original OPI building. Nevertheless, it is recommended that models, signs, and notices be displayed to explain to visitors the original status, and that CDEs like old floor drains or old mouldings or old balustrades of the east wing be made more visible to allow better appreciation of the original open status.

Policy 5.4.5

Minimum intervention to the key architectural features that contribute to its character and heritage value of the buildings is recommended. They should be retained as far as possible to preserve the architectural merits of the historical buildings.

Guidelines:

- The key Character Defining Elements (CDEs) and features identified in Sections 3.2 in this CMP should be retained and repaired according to the Recommended Treatments for CDEs as stated in Section 3.2.
- The identified features or elements should be retained in-situ for repair and restoration as far as practicable. Those that are considered to be of low significance or intrusive, can be either salvaged for reuse, altered or removed from the site, so as to recover the heritage value of the historical buildings.
- The verandahs with balustrades currently closed by modern windows and an added low brick wall can be considered for re-opening should there be change of use or renovation of the building in the future.
- The original fireplaces should be retained to allow public appreciation. They should not be permanently covered up. Temporary decorations and exhibits placed on top of the fireplaces should be easily removed without damaging or leaving any marking on the fireplaces.
- The existing encaustic floor tiles and teak strip floor deck in the Main Building are either original or built at the early period. They should be repaired/ salvaged for re-use as far as practicable.
- The existing floor finishes in the office, storerooms, plant rooms, and mechanical rooms, should be covered by carpet, plywood boards or protective plastic/ foam sheets to avoid natural deterioration due to daily operations. These covers can be removed in future without causing damage to the existing floor finishes. For areas with large number of visitors, cover for protection can also be considered, but enough exposed area should be left (such as at G/F) to allow for public appreciation.
- Alteration of door material to fire-rated door for fire protection can be considered if such alteration does not have significant visual impact on the main building facade. It is recommended that the new door be of similar design and matches with the existing style of the building.
- It is recommended that any new interior decorations, additional services and fittings designed for new installations should be reversible so that when it is removed in the future, unnecessary damage will not be caused to the existing structure.

Provision of Service

Policy 5.4.6

Additional building services provisions such water tanks and air conditioners should be located within the building or in a less obstructive area. Relocating the water tanks and air conditioner units already installed on the flat roofs is not critical as these are already set back and not affecting public view of the facades from the ground level. Nevertheless, the size of such installations, particularly the air conditioning units, should not be further increased.

Policy 5.4.7

New structures for housing building services provisions such as water tanks, mechanical and ventilation

installations are only allowed to be housed at less obstructive locations and with no visual impact to the main façade of the Main Building.

Policy 5.4.8

Any exposed services should be laid in a neat and tidy manner and distinguishable from the existing building. Main services or pipelines exposed at the ceilings, in particular the verandah and central halls, should be avoided as far as possible. It is recommended that the exposed services drain pipes already installed be well-maintained in the long term, and if damaged from wear and tear, to be replaced like with like as needed.

Policy 5.4.9

New services such as electrical and fire services installation which are unavoidable can be housed in the historical buildings but should be carefully arranged and installed to minimize unnecessary damage to the existing building fabrics.

Policy 5.4.10

The existing flat roof has in recent years proved inadequate for coping with torrential rain which is likely to become more severe with climate change. The builders in 1906 did not envisage the climate change of the 21st century. Therefore, when future opportunities arise, it is justified to explore upgrade from the 1906 provision by minor and discrete intervention, sensitively designed, to enhance conservation of the historical building.

Guidelines:

- New services and plant installation taking up large floor space or involving extensive alterations or excessive floor load, including new plant and pump rooms, air conditioning plants, fire services and sprinkler water tanks etc., except those necessary installations such as meter rooms, should be housed in additional structures located at the back of the existing buildings and set away from the existing wall surfaces.
- The overall height and extent of any proposed new lift or structures for provision of services and its associated works should be kept at a minimum in order to minimize any adverse visual impact to the overall setting of the site and its surrounding natural landscape including the trees on the slope.
- Any new enclosure for housing new services such as meter cabinets or telephone pipe ducts etc., should be carefully designed in an architectural style compatible and distinguishable from the existing building fabric.

Integration between Old and New

Policy 5.4.10

Conserve the heritage value of the preserved historical buildings while making new additions or related new constructions of compatible design. A new construction should be designed to integrate with yet distinguishable from the old buildings in order to enhance rather than diminish their architectural value.

Policy 5.4.11

A new construction should be set away or detached from an existing structure as practicable as possible, and where new materials interface with the old fabric, they should be distinguishable from each other.

Guidelines:

- Any additional staircases, lift, platforms, service rooms and glass cover structure etc., should be kept as simple as possible. New construction materials of steel, timber and glass can be used for new additions provided that the construction of such new structures is physically and visually distinguishable from and its design compatible with and subordinate to the original structures.

Setting and Landscape

Policy 5.4.12

The overall setting and landscape of the site should be protected and conserved as a whole so as to retain the integrity of the site. The Main Building shall be the highest to overview the Annex Block and the garden in front.

Policy 5.4.13

Since the surrounding slopes are maintained by respective government departments, it is necessary to ensure that their preservation and improvement work of the adjacent slopes and landscape can integrate well with the existing landscape and the historical buildings.

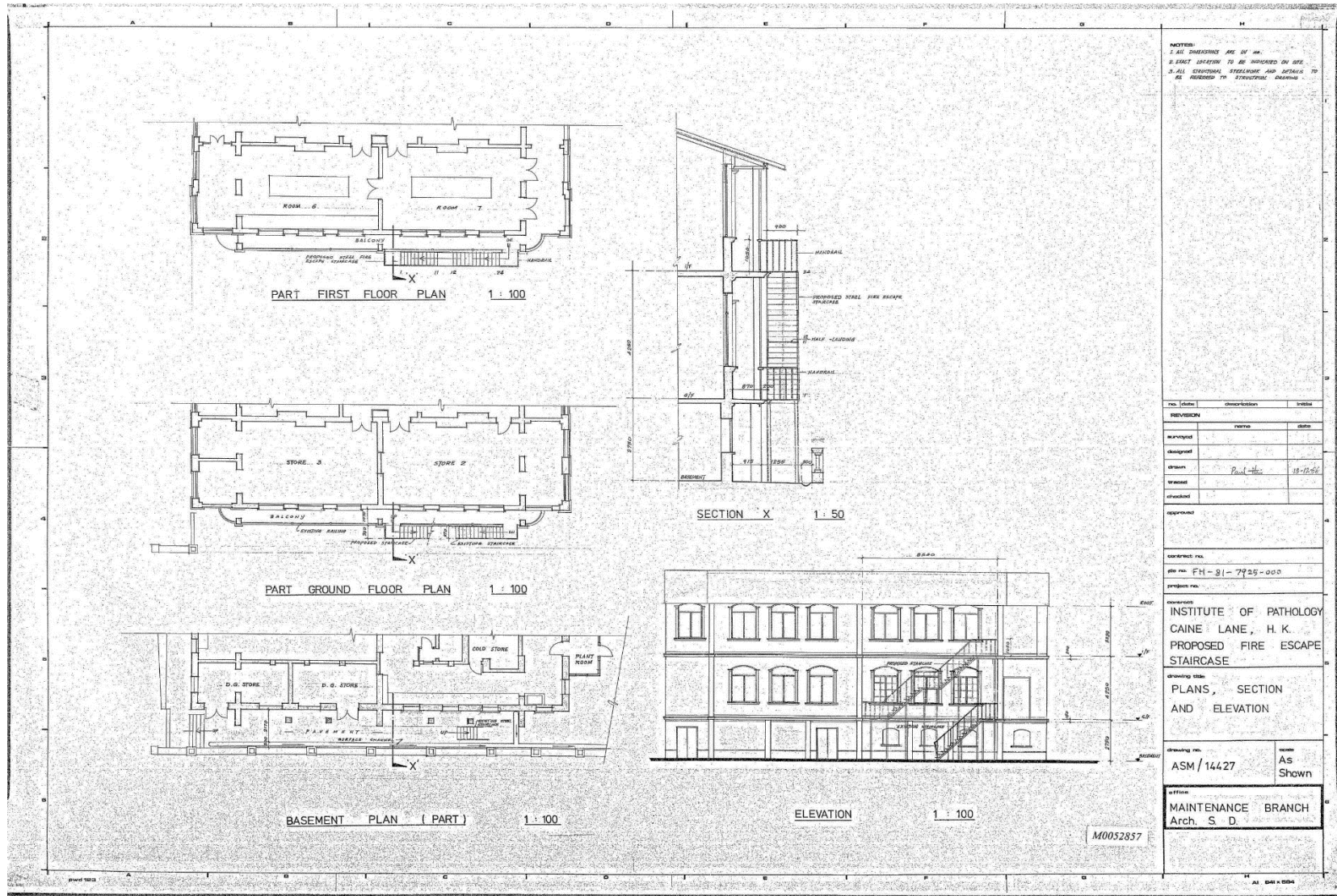
Guidelines:

- The Compound is located on a hilly area beneath Caine Lane. It is surrounded by retaining walls. The new and old retaining walls should be distinguished from each other.
- The landscape at the West side of Main Building was covered with grass according to some old photos in the 1950s. It is not recommended to restore it as it has no/low contribution to heritage significance.
- The landscape design should respect the existing natural vegetation and architectural style of the heritage buildings. It is recommended to integrate the existing trees and natural vegetation with the historical buildings and landscape design, and as much as possible make use of the natural greenery in designing new gardens or courtyard space.

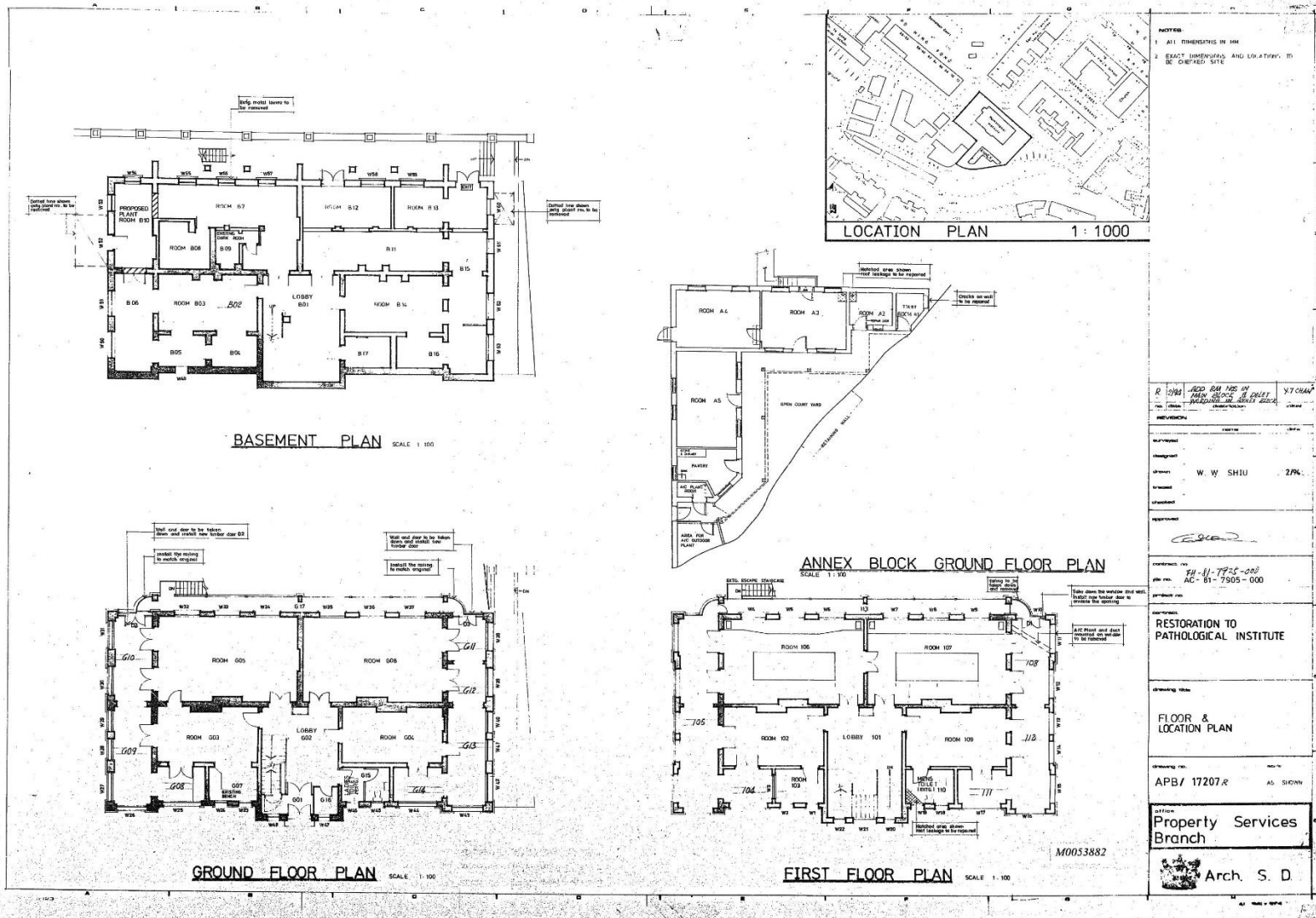
- The landscape should be designed to provide an ambience that enriches the existing use of the site. It is recommended that local flora or plants with medicinal use can be incorporated into the landscape design for purpose of education and related topics.

Appendix A

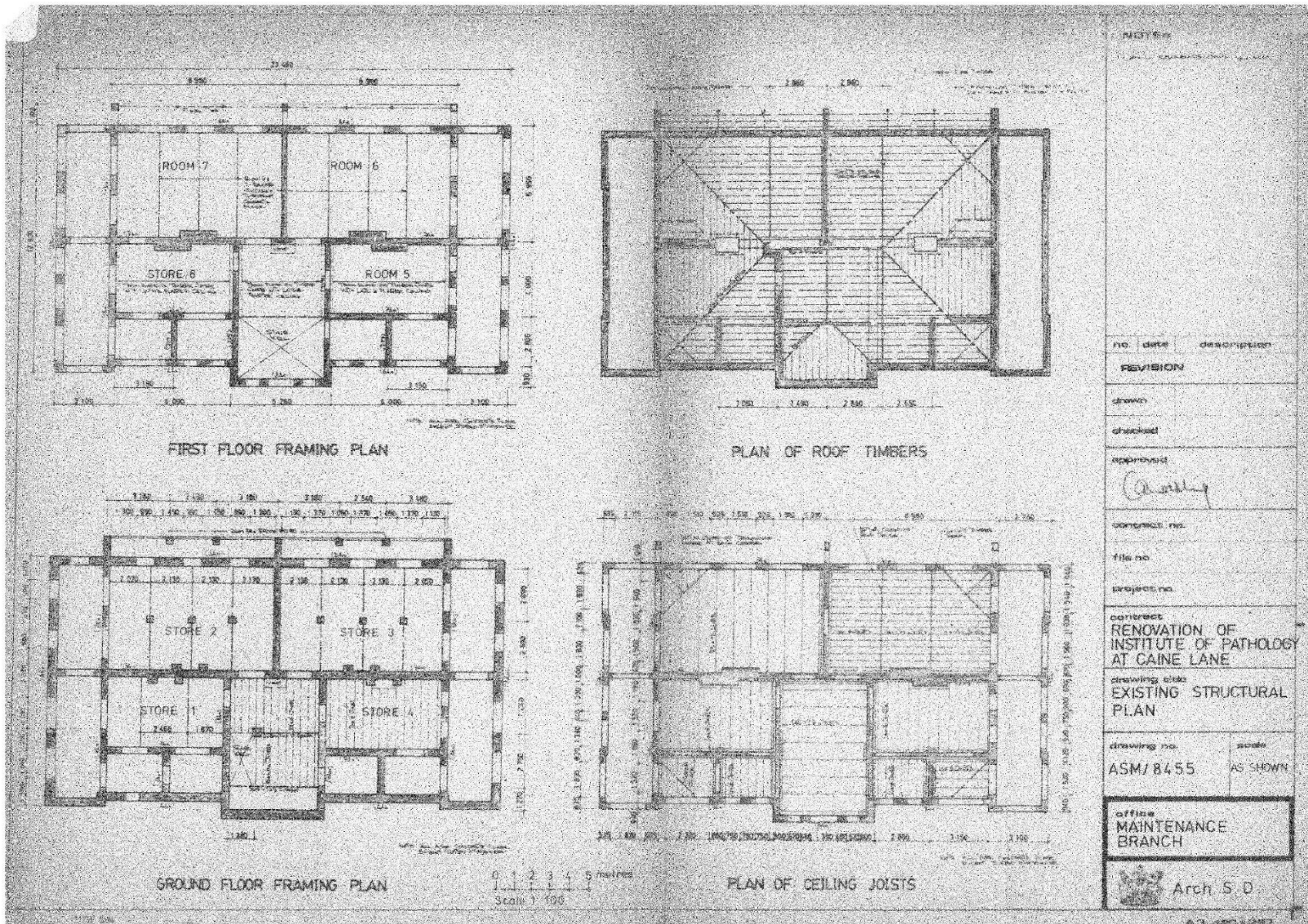
RECORD PLAN (1986-1994)



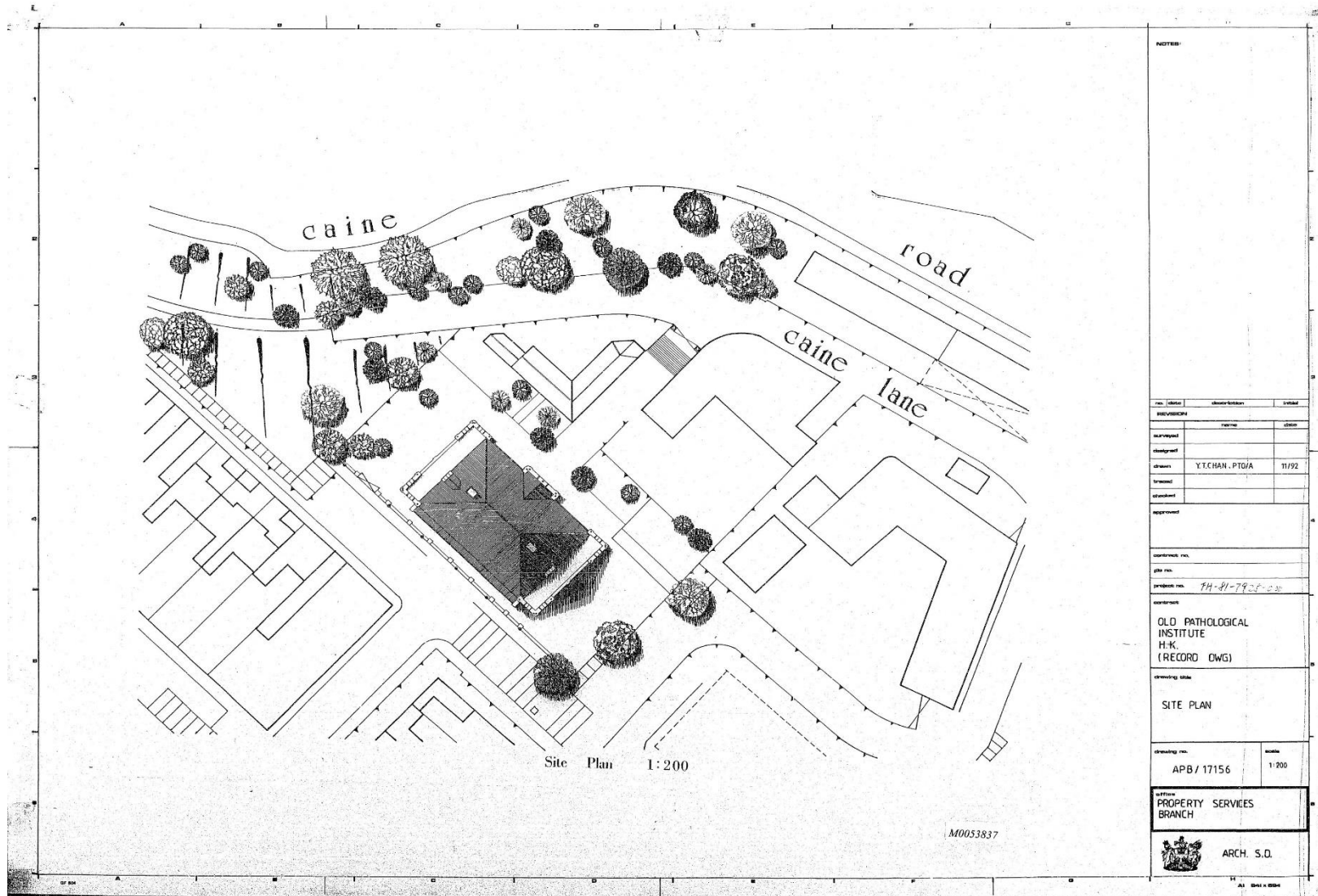
Part Plan 1986 (Source: Maintenance Branch ArchSD)



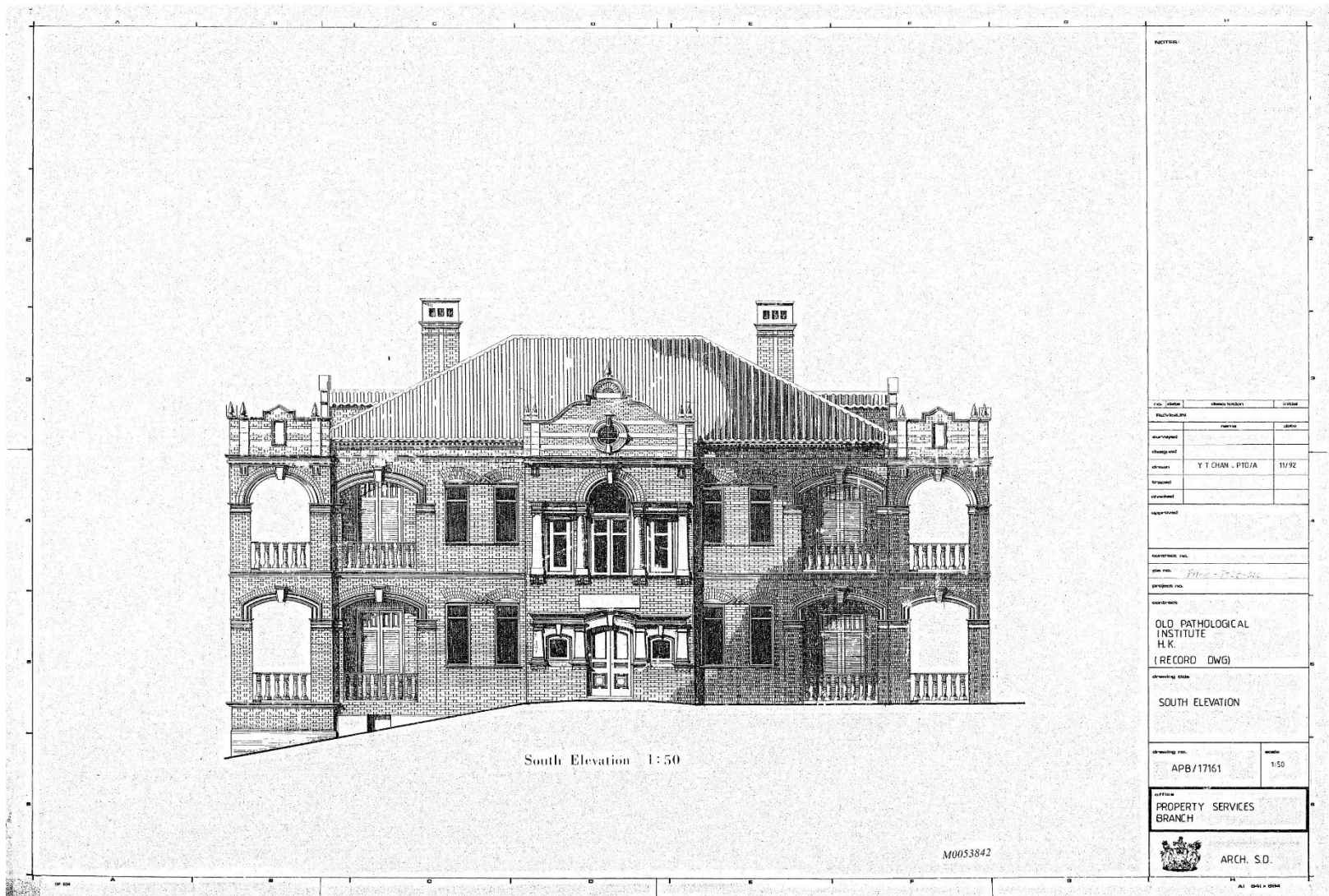
Floor Plan 1994 (Source: Property Service Branch ArchSD)



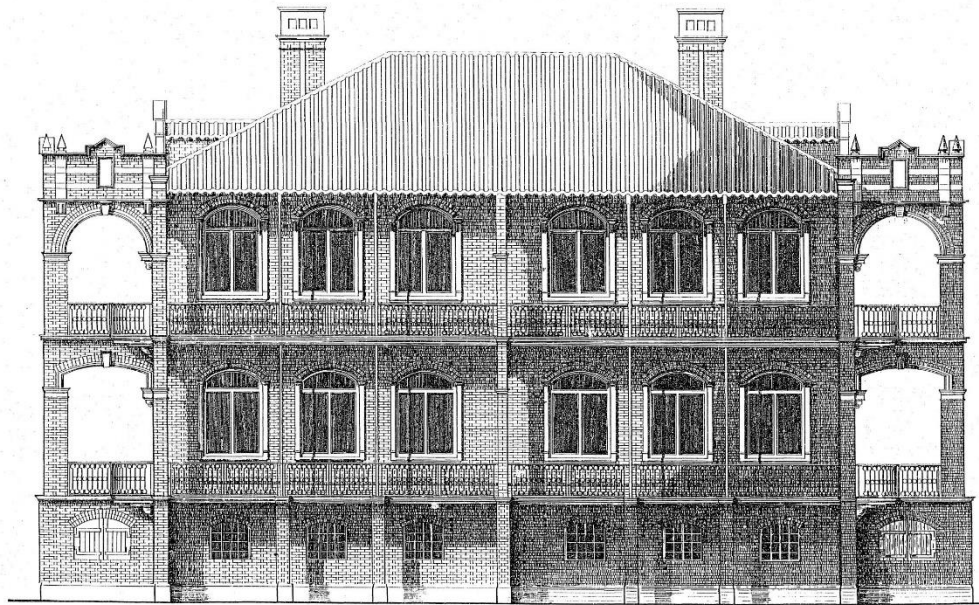
Structural (Frame) Plan (Source: Maintenance Branch ArchSD)



Site Plan 1992 (Source: Maintenance Branch ArchSD)



South Elevation 1992 (Source: Maintenance Branch ArchSD)



North Elevation 1:50

M0053841

NOTES:

REV. (DATE)	DESCRIPTION	BY
REVISION		
	NAME	DATE
DESIGNED BY		
DRAWN BY	YI CHAN .PID/A	11/92
CHECKED BY		
APPROVED BY		

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 SITE NO.
 PROJECT NO.

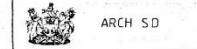
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 INSTITUTE
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 (RECORD DWG)

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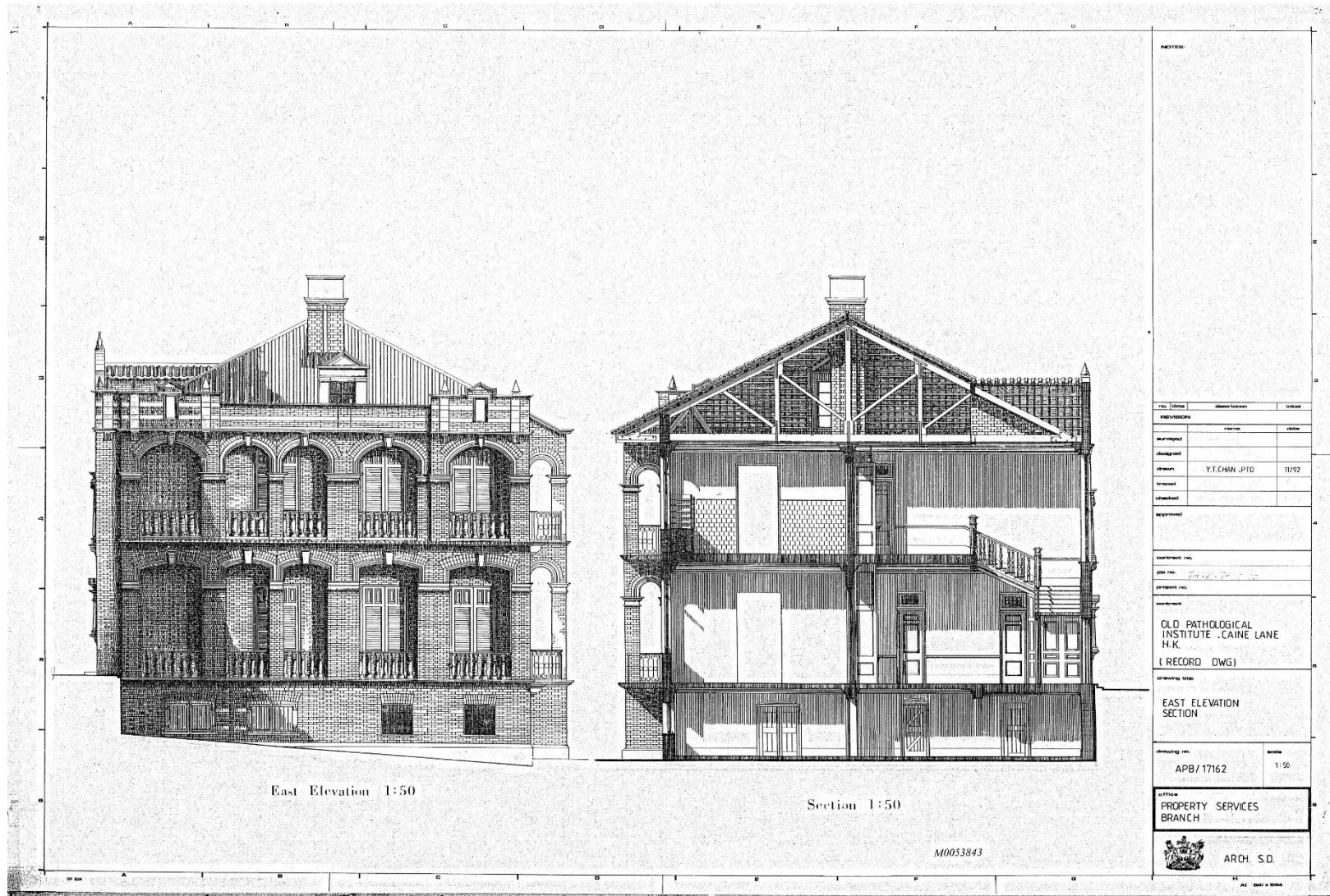
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SCALE
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OFFICE
 PROPERTY SERVICES
 BRANCH



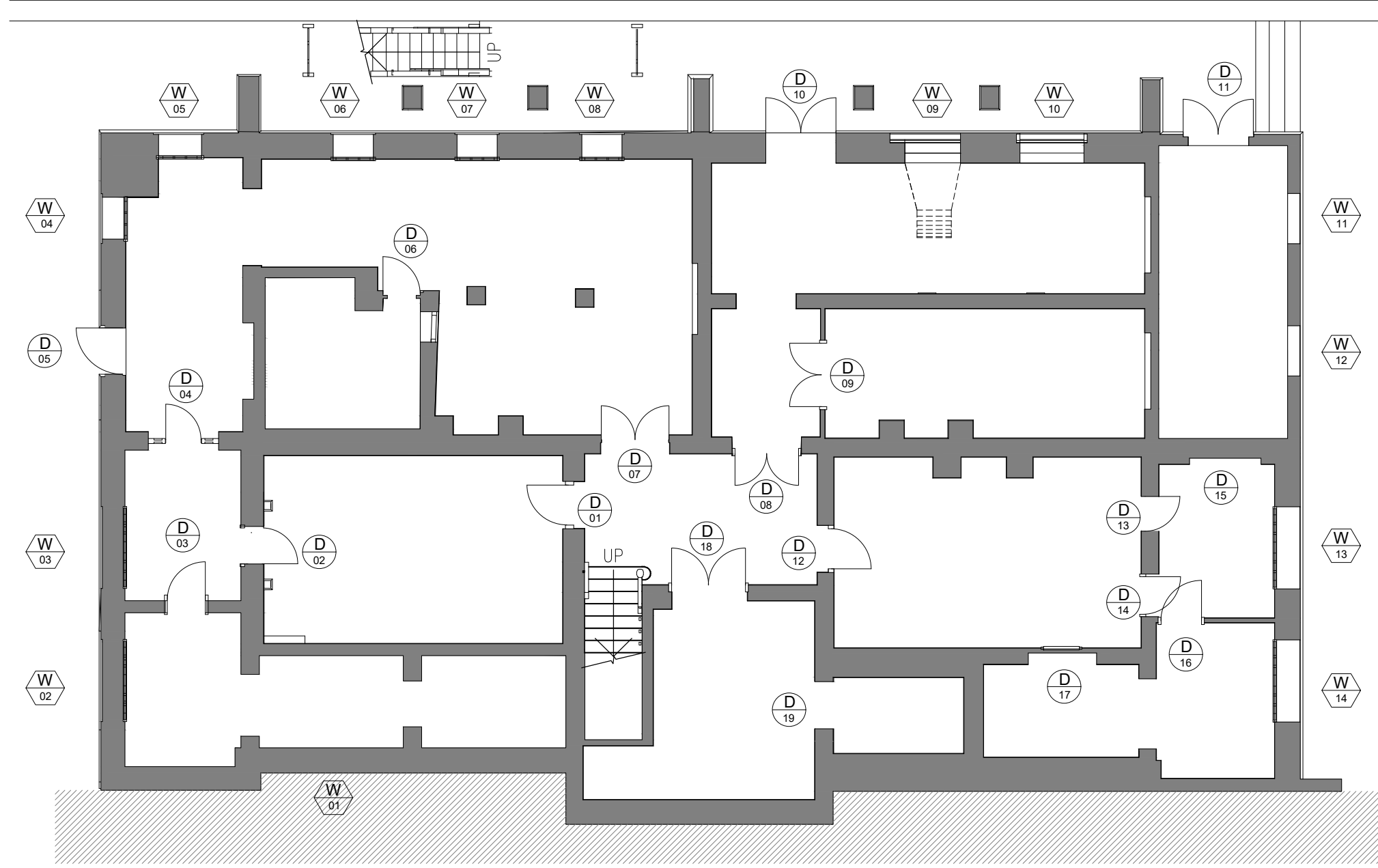
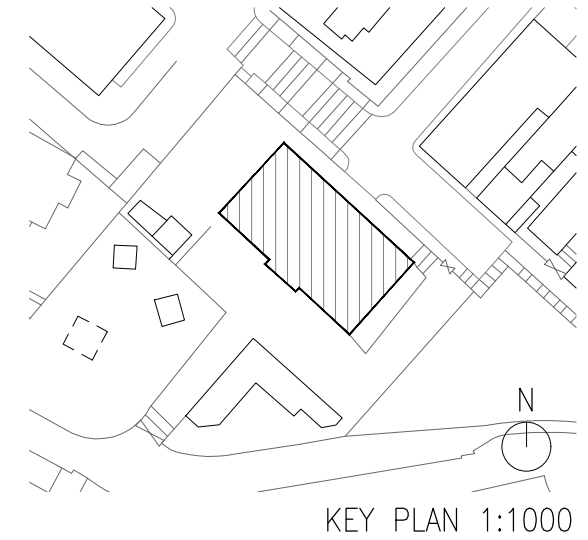
North Elevation 1992 (Source: Maintenance Branch ArchSD)



East Elevation and Section 1992 (Source: Maintenance Branch ArchSD)

Appendix B

RECORD DRAWING OF EXISTING CONDITION



BASEMENT PLAN 1:100



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

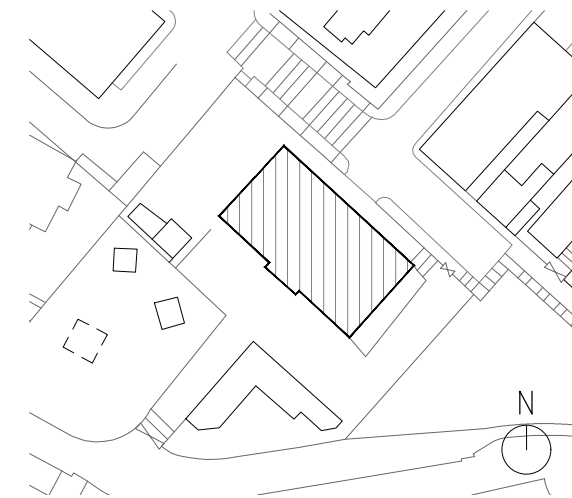
Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

Drawing Title:
BASEMENT PLAN

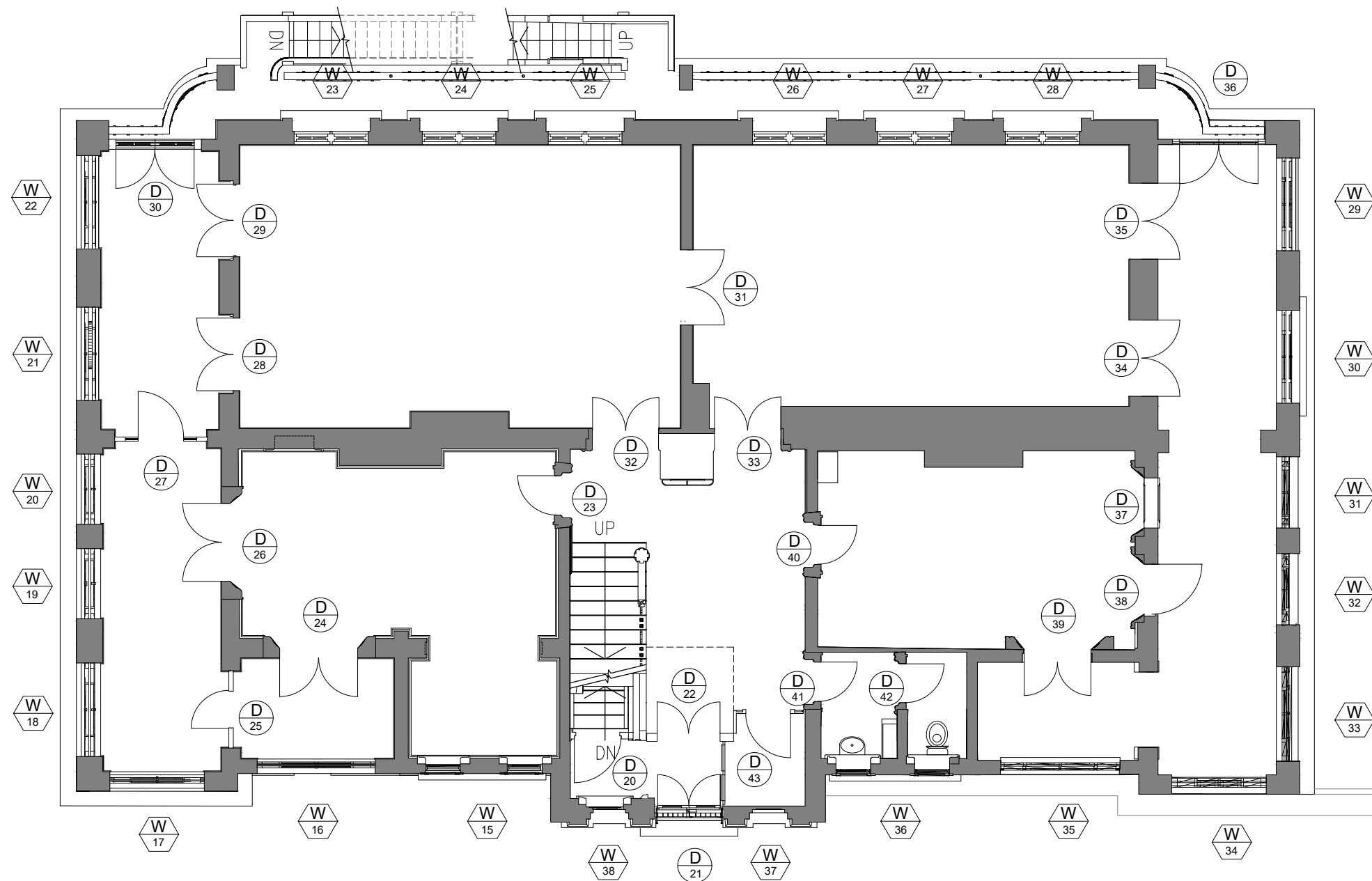
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KEY PLAN 1:1000



GROUND FLOOR PLAN 1:100



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

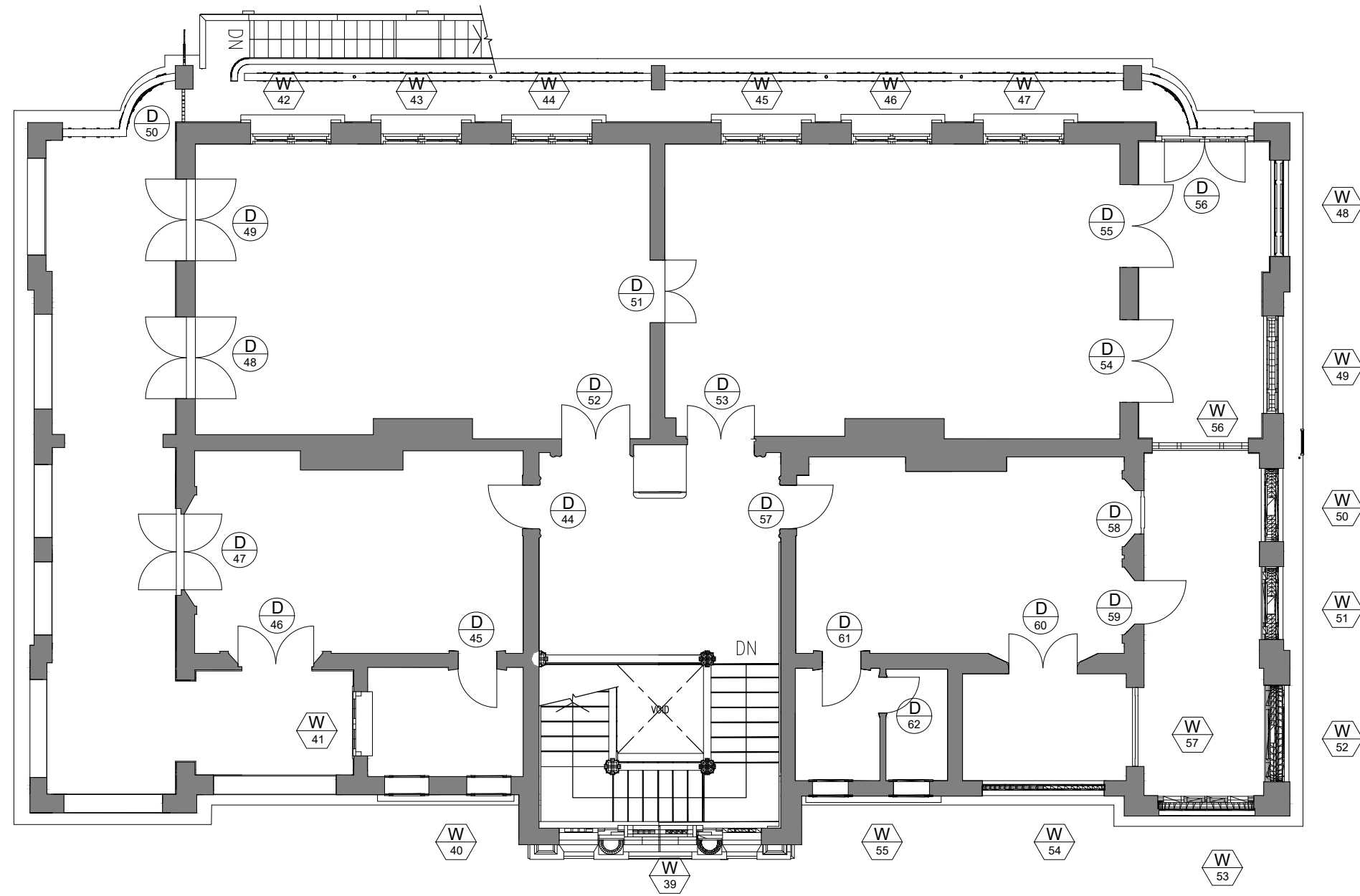
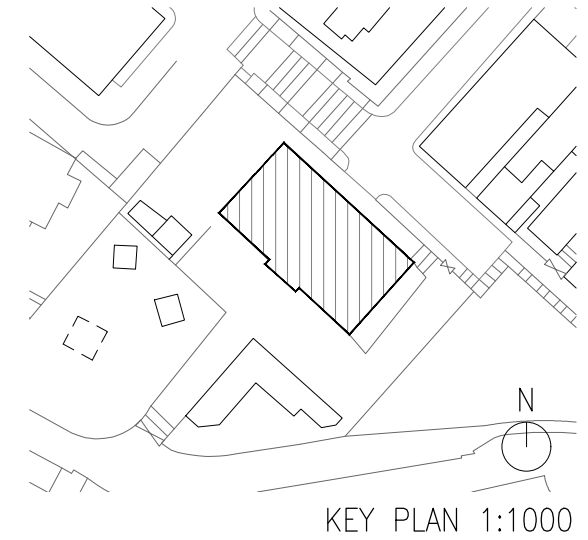
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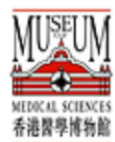
GROUND FLOOR PLAN

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DRAWING NO.				REV.	



FIRST FLOOR PLAN 1:100



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

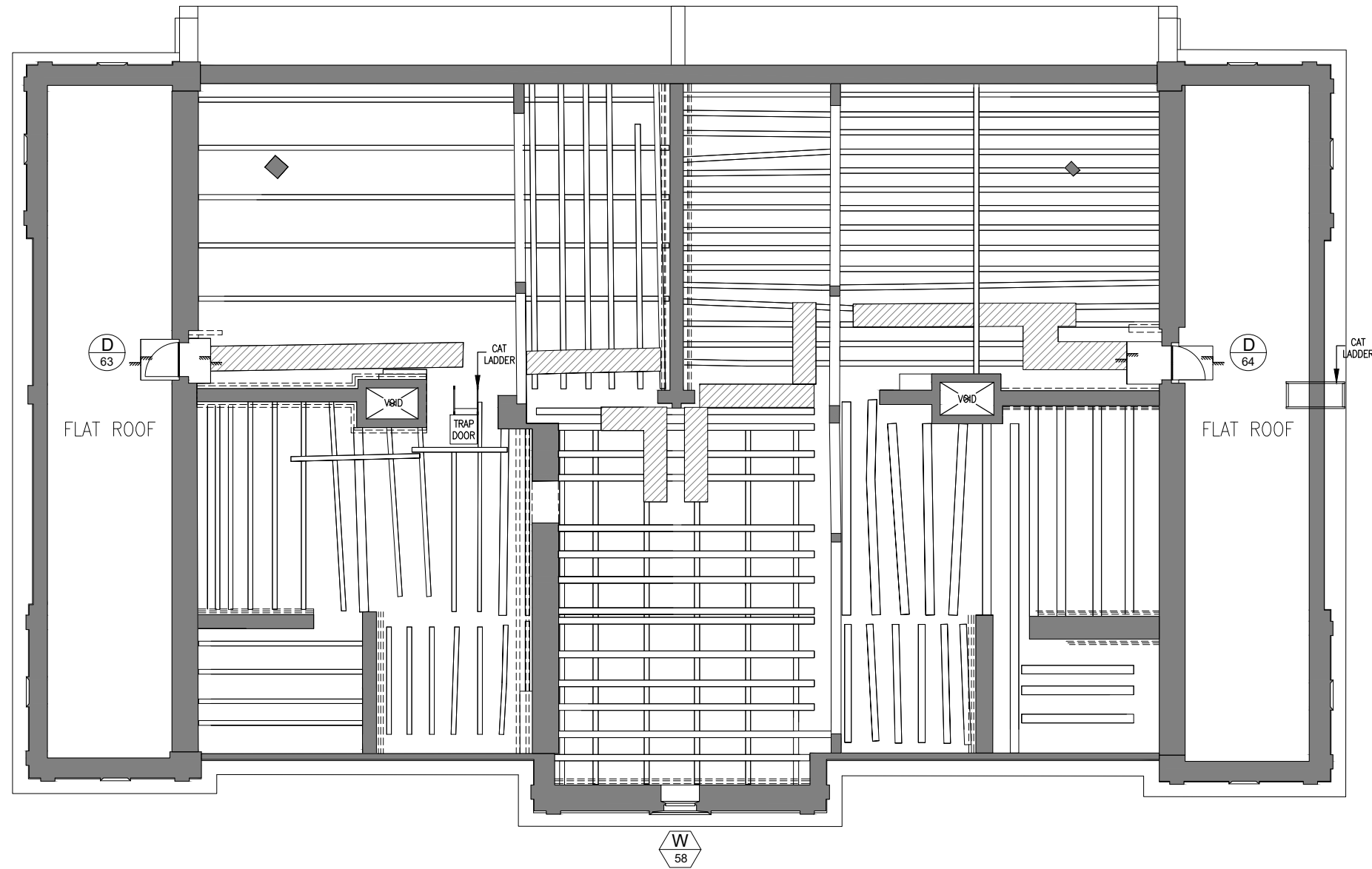
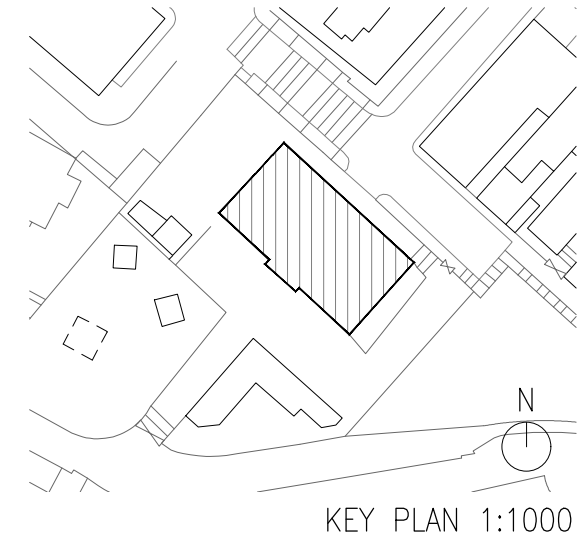
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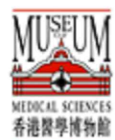
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 DRAWING NO. REV.



FLAT ROOF PLAN 1:100



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

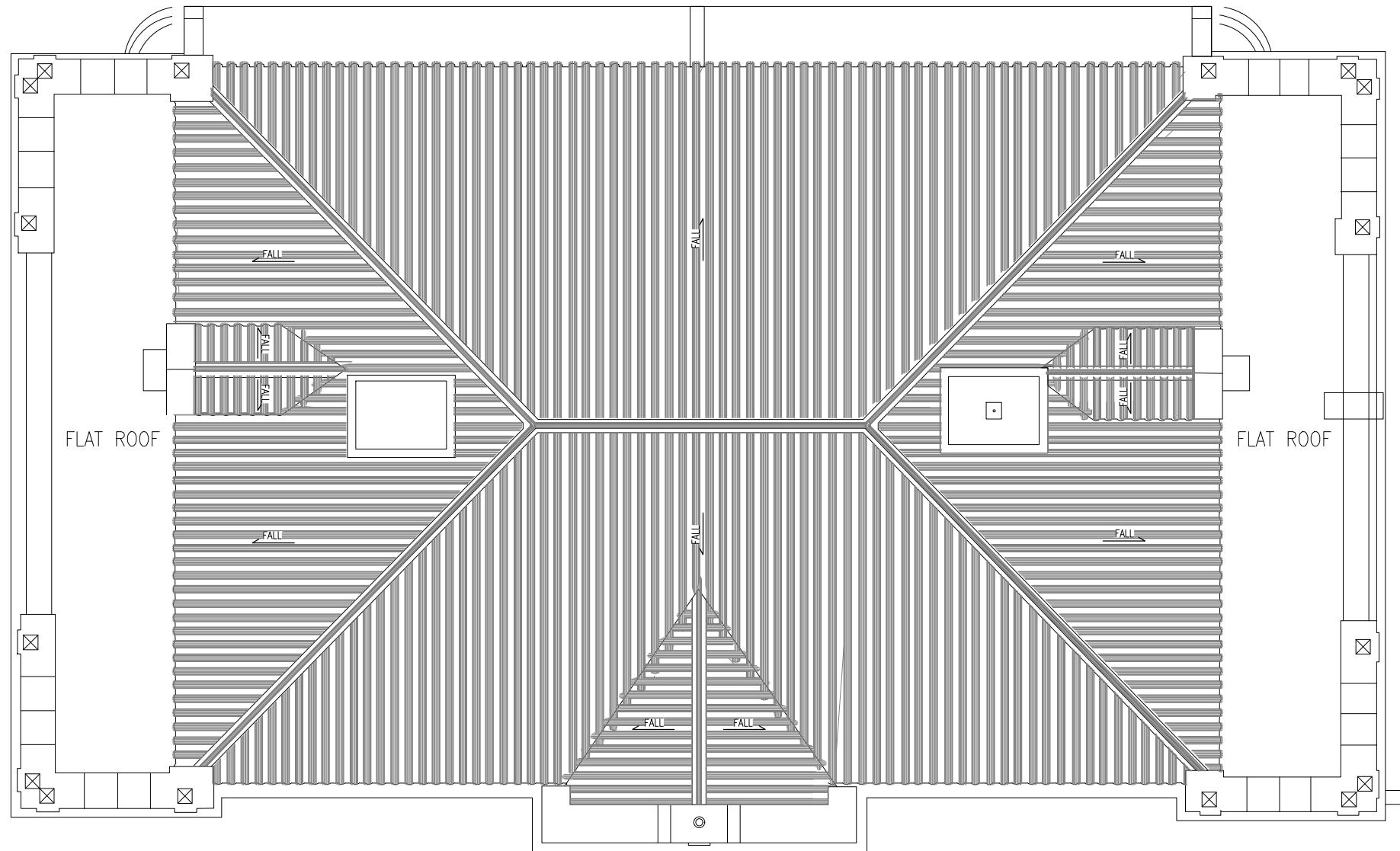
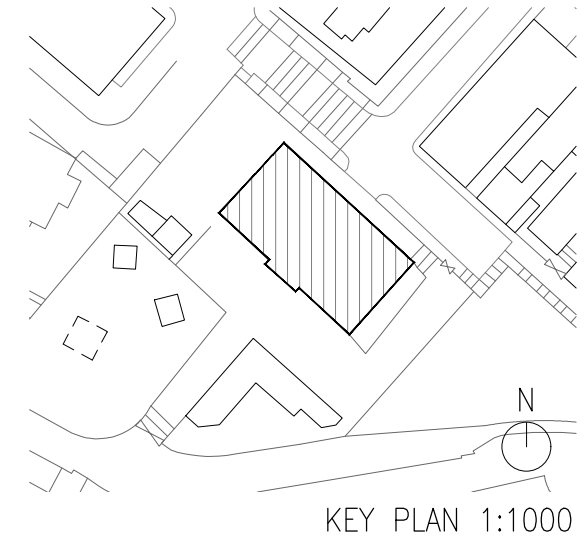
Drawing Title:

FLAT ROOF PLAN

Drawn: Checked: Scale: 1:100 @A3 Date:

DATE	REV.	PARTICULARS	INITIAL

DRAWING TYPE
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 SKETCH DWG. OTHERS:
 WORKING DWG.
 DRAWING NO. REV.



ROOF PLAN 1:100



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

Drawing Title:

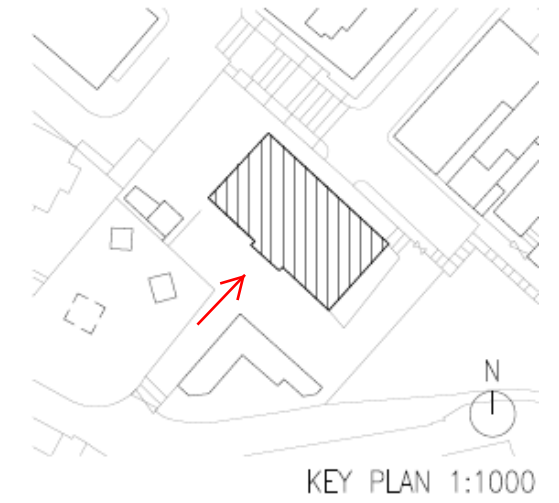
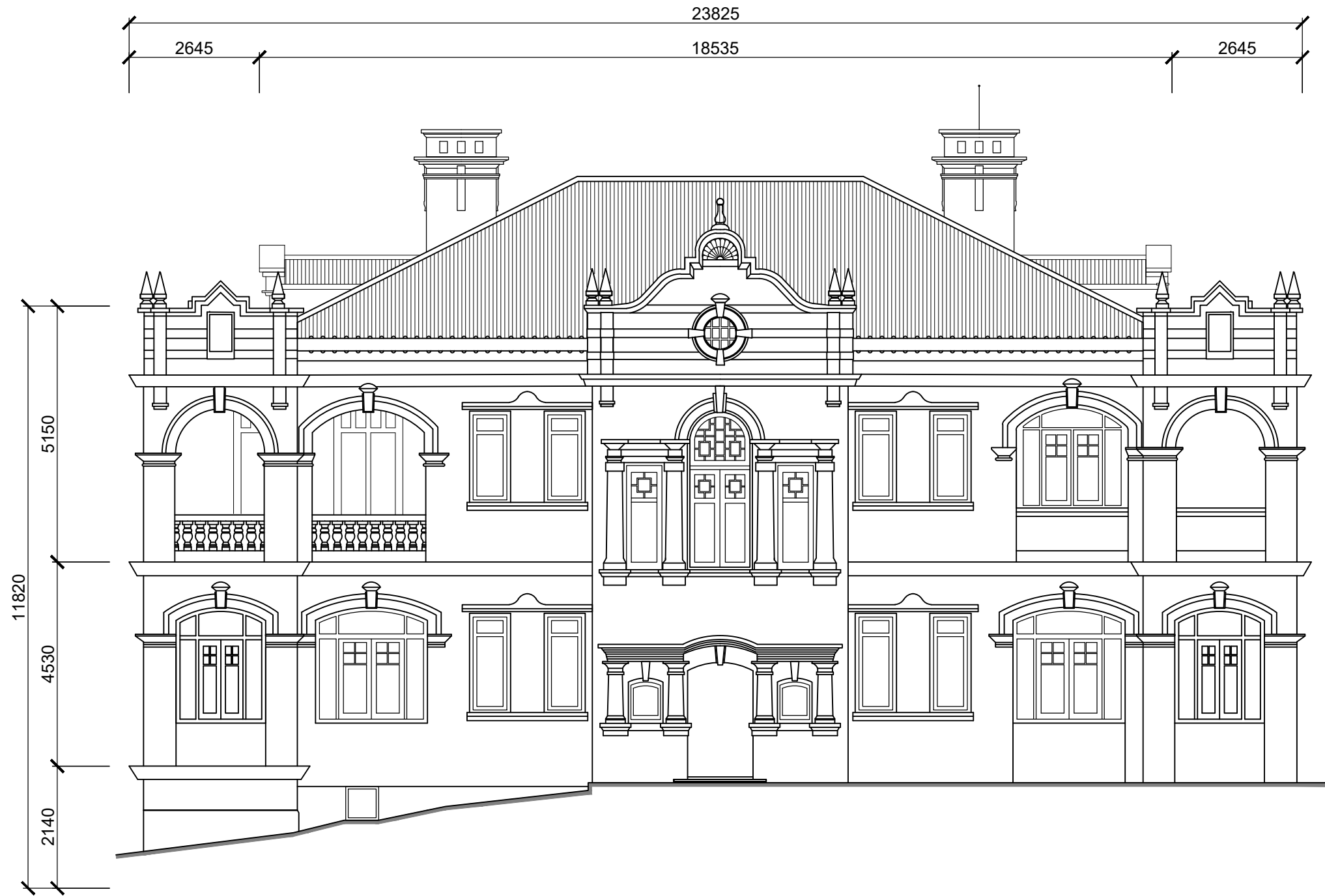
ROOF PLAN

Drawn: Checked: Scale: 1:100 @A3 Date:

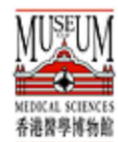
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DRAWING NO.		REV.

Main Buidling



1 **SOUTHWEST ELEVATION**
MAIN BLOCK



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HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

Drawing Title:
MAIN BUILDING – SOUTHWEST ELEVATION

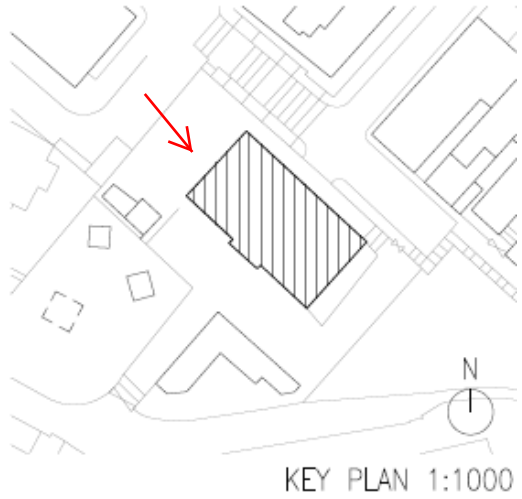
Drawn: N.C.	Checked: A.P.	Scale: 1:100@A3	Date: 2022.11.28
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DATE	REV.	PARTICULARS	INITIAL

DRAWING TYPE
 DESIGN DWG.
 SKETCH DWG.
 WORKING DWG.
 OTHERS:
 RECORD DRAWING

DRAWING NO. MB-E-01
 REV. 0

Main Buidling



1 NORTHWEST ELEVATION
MAIN BLOCK



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HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

Drawing Title:
MAIN BUILDING – NORTHWEST ELEVATION

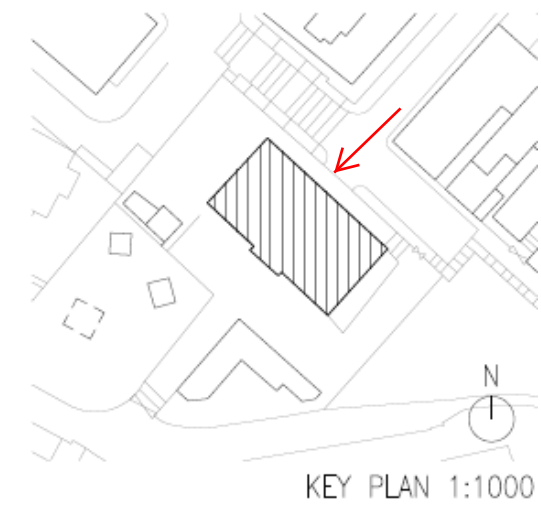
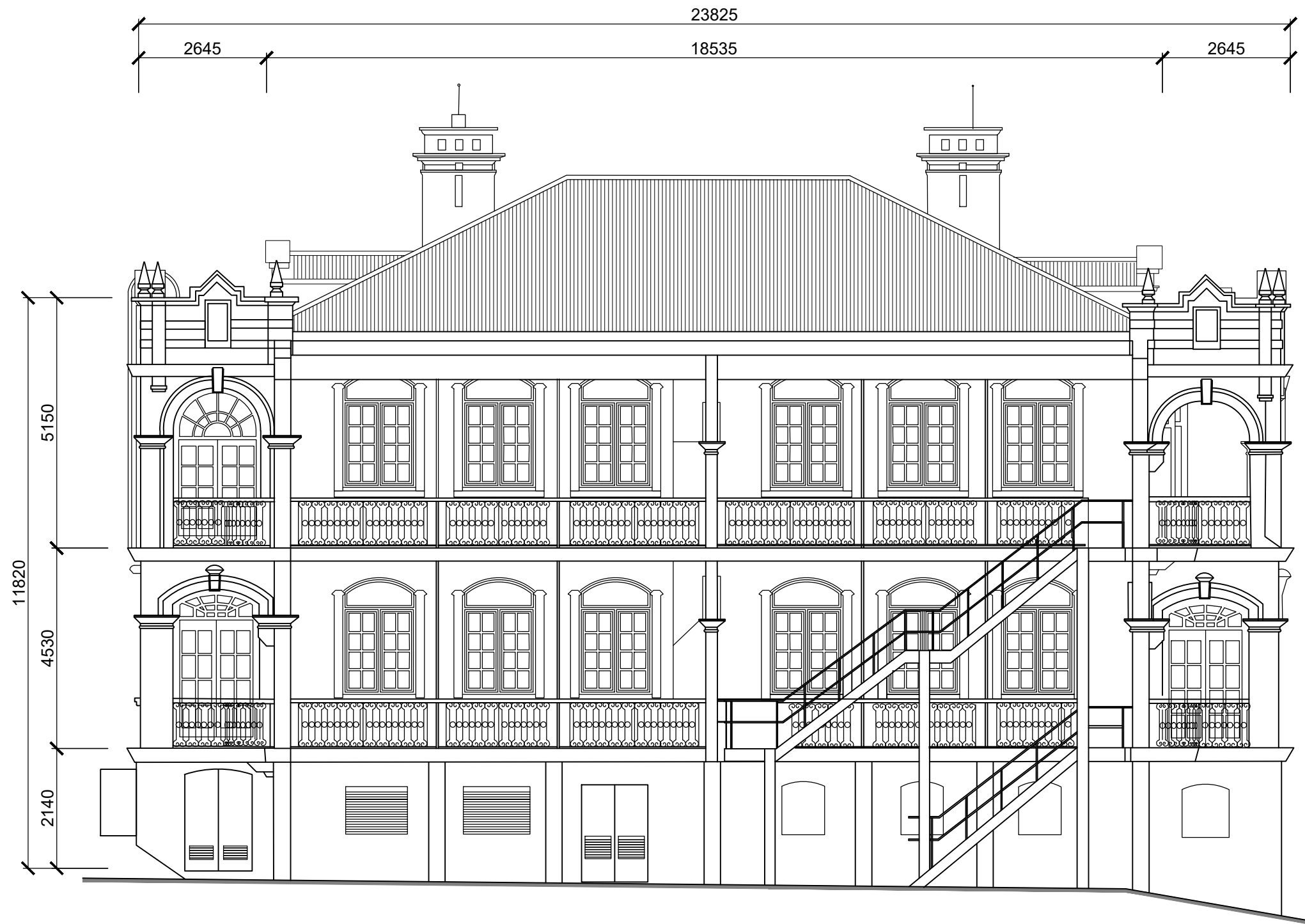
Drawn: N.C.	Checked: A.P.	Scale: 1:100@A3	Date: 2022.11.28
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DATE	REV.	PARTICULARS	INITIAL

DRAWING TYPE
 DESIGN DWG.
 SKETCH DWG.
 WORKING DWG.
 SHOP DRAWING
 OTHERS:
 RECORD DRAWING

DRAWING NO. MB-E-02
 REV. 0

Main Buidling



1 NORTHEAST ELEVATION
MAIN BLOCK



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HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

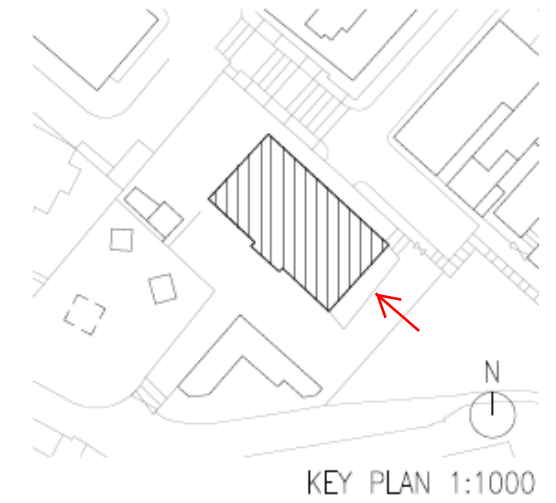
Drawing Title:
MAIN BUILDING - NORTHEAST ELEVATION

Drawn: N.C.	Checked: A.P.	Scale: 1:100@A3	Date: 2022.11.28
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DATE	REV.	PARTICULARS	INITIAL

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DRAWING NO.	REV.
MB-E-03	0

Main Buidling



1 SOUTHEAST ELEVATION
MAIN BLOCK



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

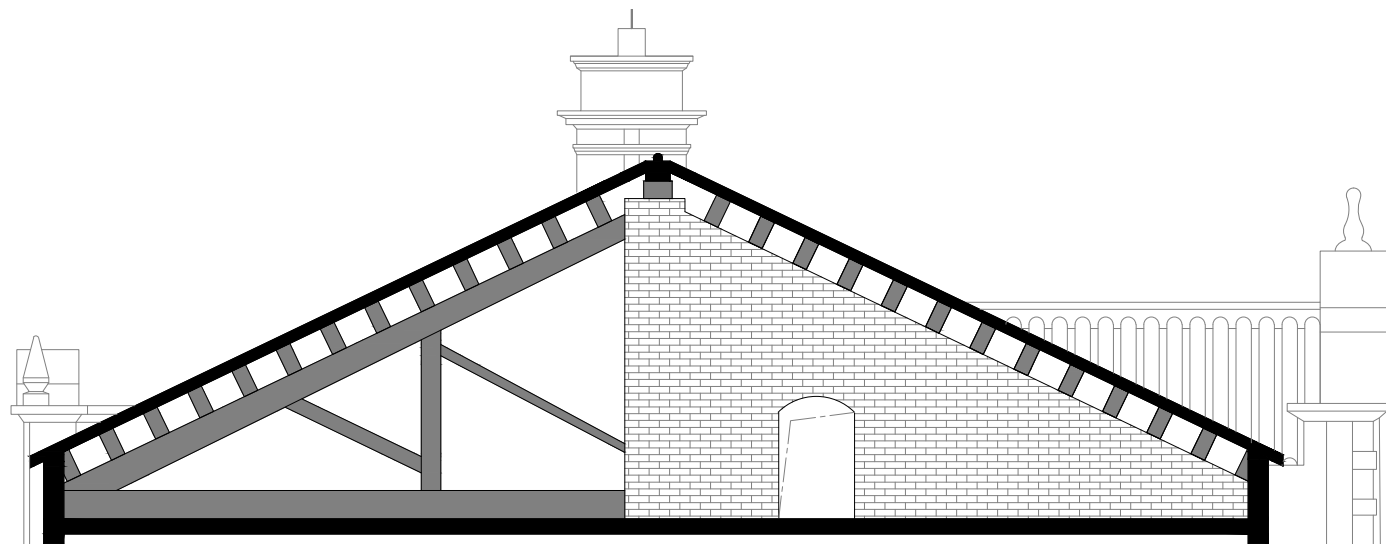
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Drawn: N.C.	Checked: A.P.	Scale: 1:100@A3	Date: 2022.11.28
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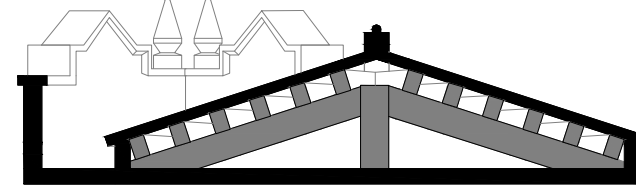
DATE	REV.	PARTICULARS	INITIAL

DRAWING TYPE
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 SKETCH DWG.
 WORKING DWG.
 OTHERS:
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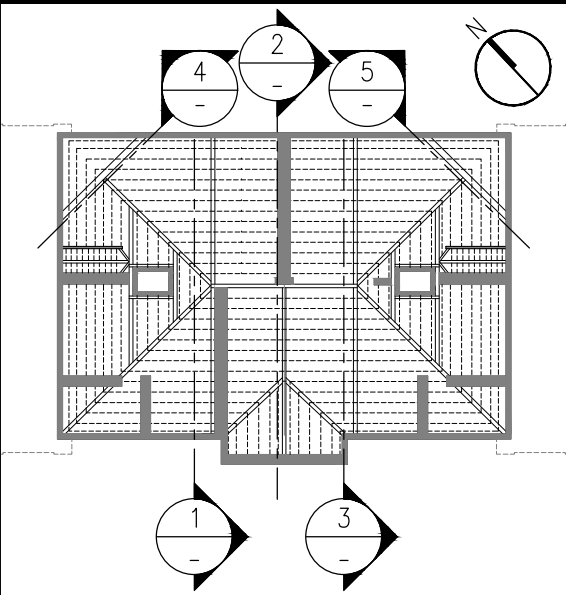
DRAWING NO. MB-E-04
 REV. 0



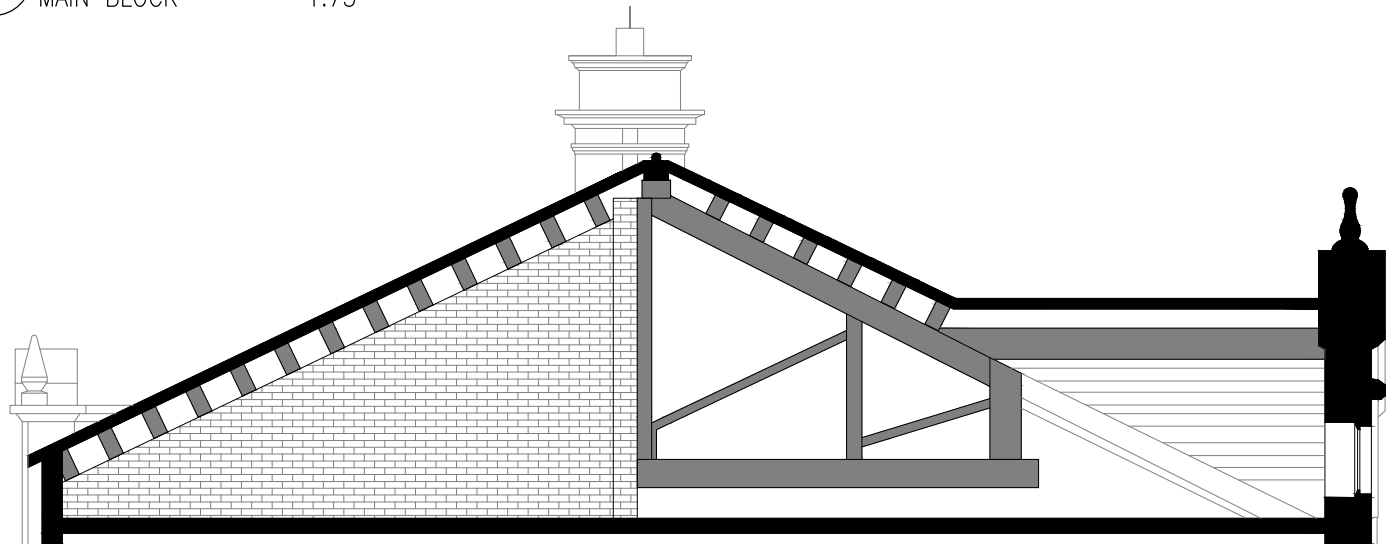
1 TRUSS 1
MAIN BLOCK 1:75



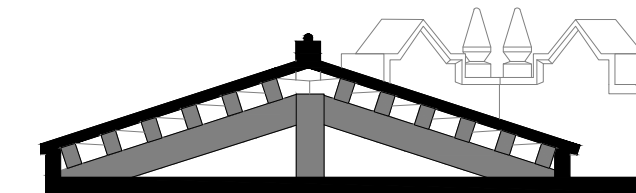
4 TRUSS 4
MAIN BLOCK 1:75



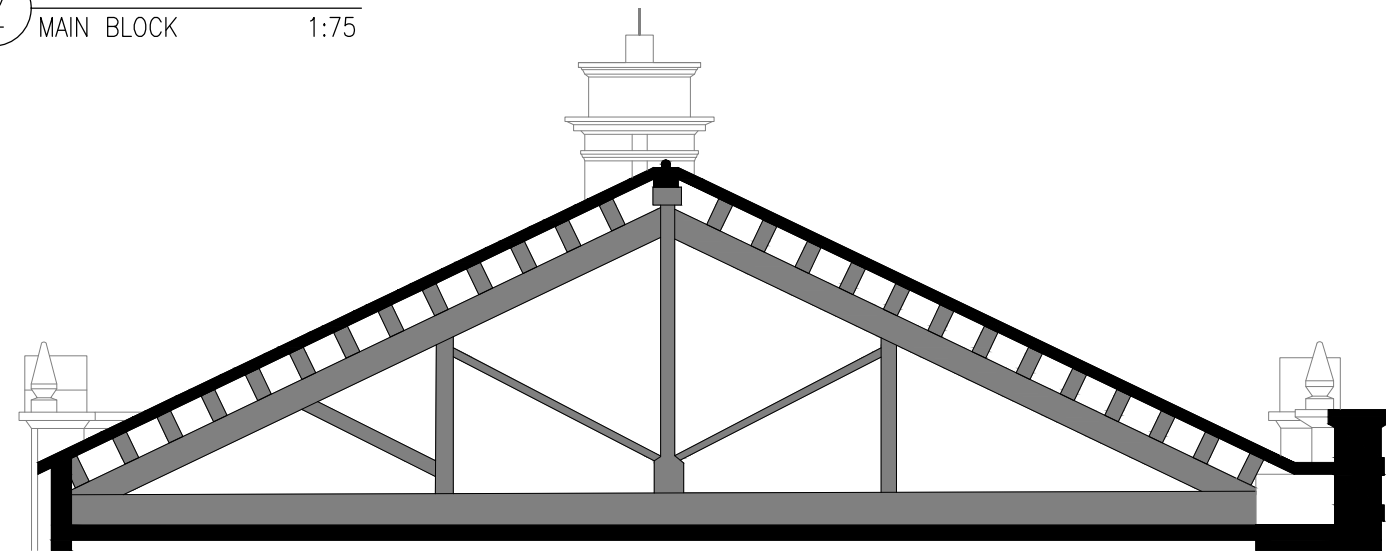
BLOCK PLAN



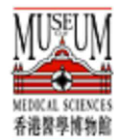
2 TRUSS 2
MAIN BLOCK 1:75



5 TRUSS 5
MAIN BLOCK 1:75



3 TRUSS 3
MAIN BLOCK 1:75



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

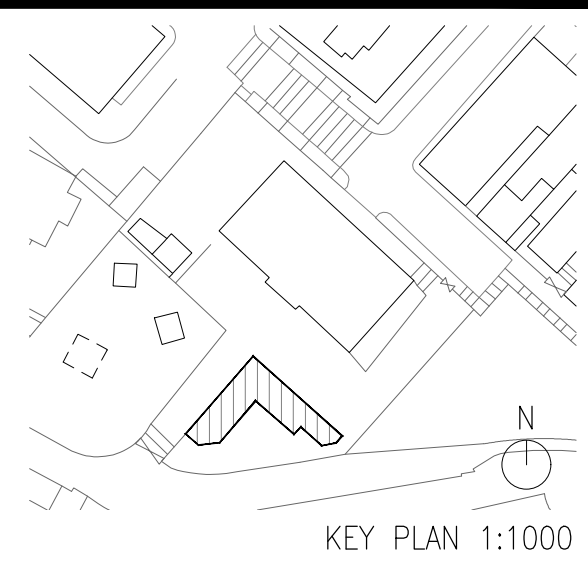
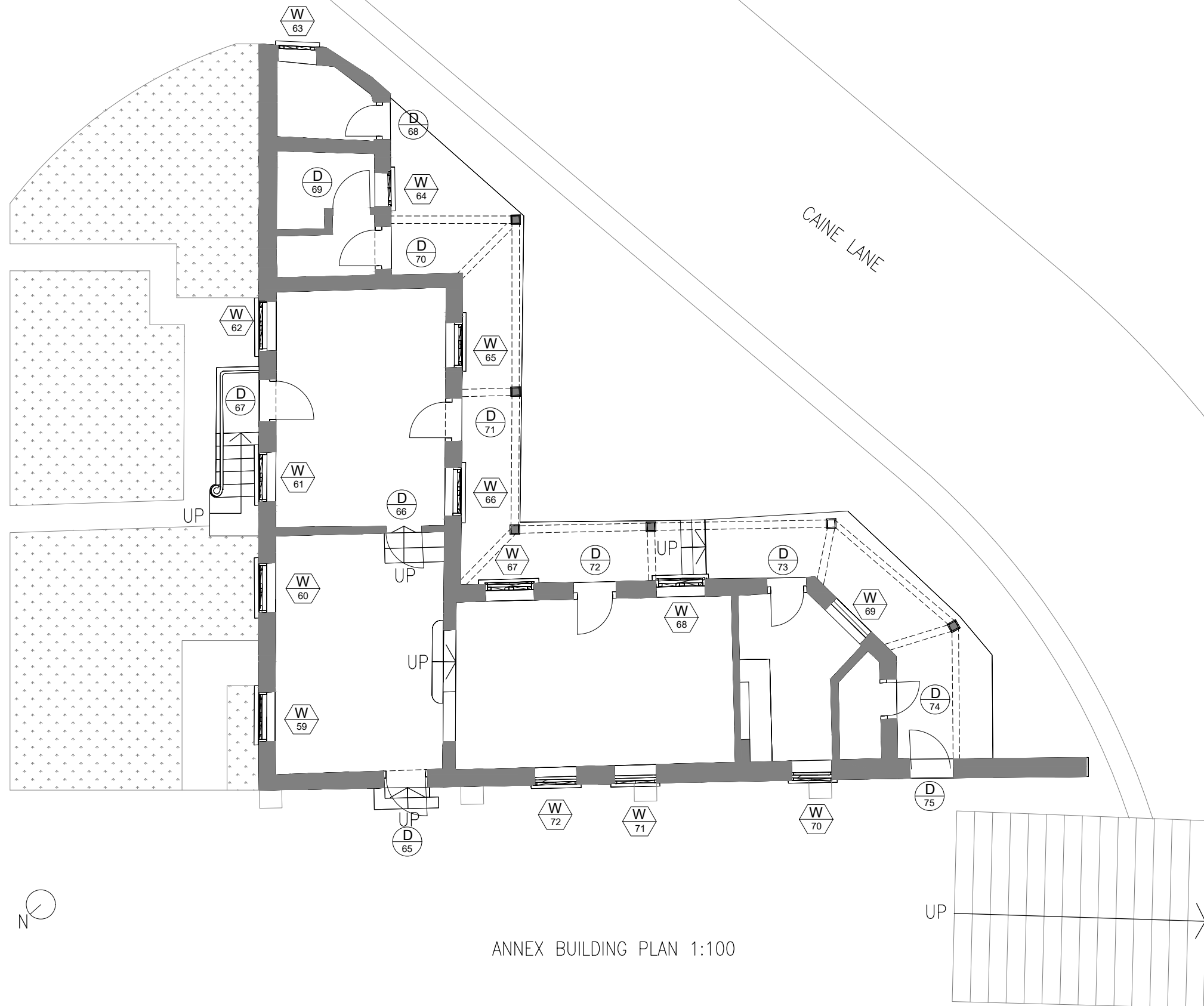
Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

Drawing Title:
TRUSS OF MAIN BUILDING

Drawn: N.C.	Checked: A.P.	Scale: A.S. @A3	Date: 2024.06.25
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DATE	REV.	PARTICULARS	INITIAL
2024.06.25	0	1ST SUBMISSION	N.C.

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	<input type="checkbox"/> WORKING DWG.	RECORD DRAWING
DRAWING NO.	MMS-SE-118	REV. 0



ANNEX BUILDING PLAN 1:100



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

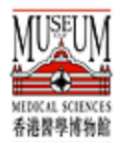
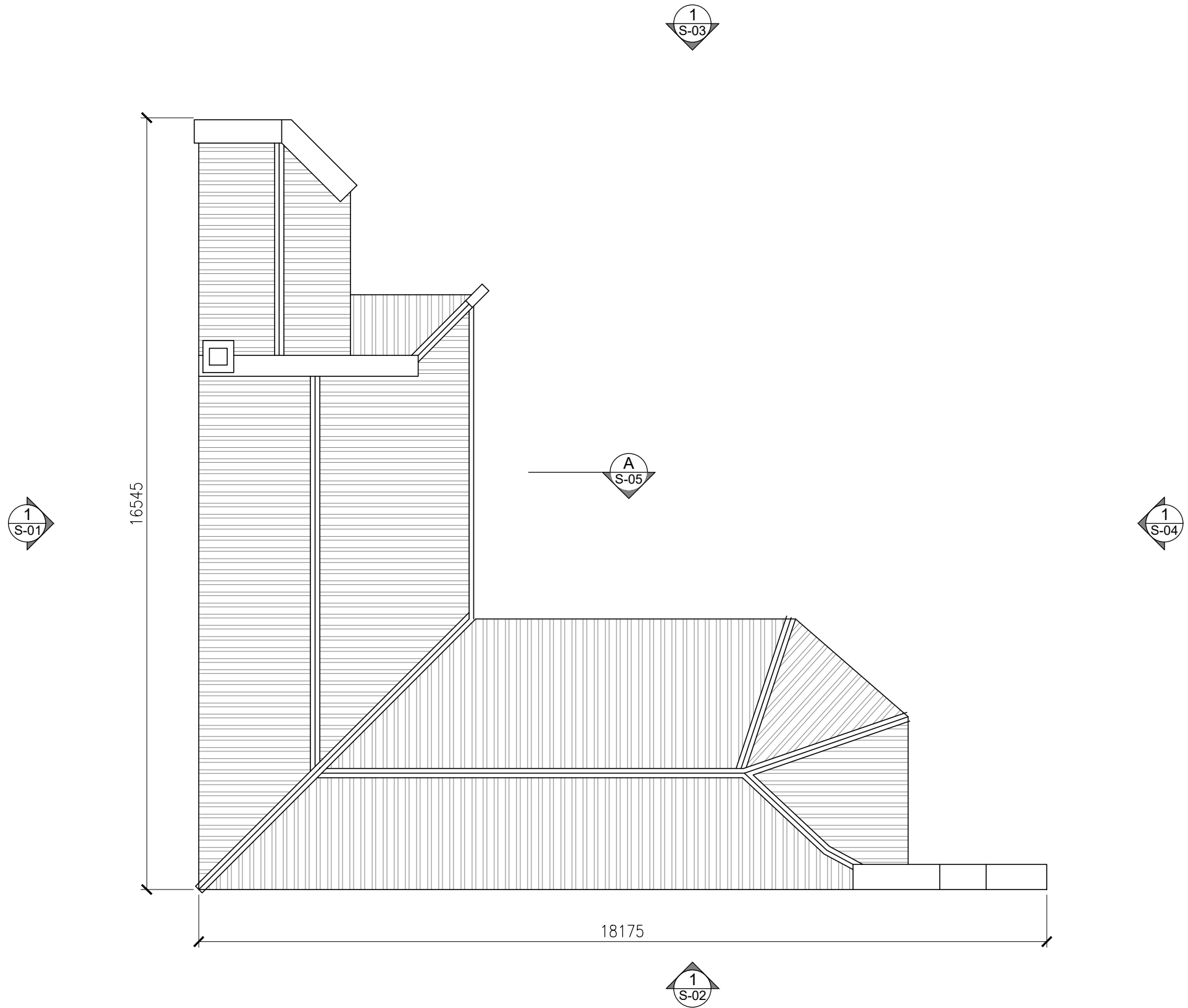
Drawn: Checked: Scale: 1:100 @A3 Date:

Drawing Title:
ANNEX BUILDING PLAN

DATE	REV.	PARTICULARS	INITIAL

DRAWING TYPE
 DESIGN DWG. SHOP DRAWING
 SKETCH DWG. OTHERS:
 WORKING DWG.

DRAWING NO. REV.



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

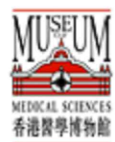
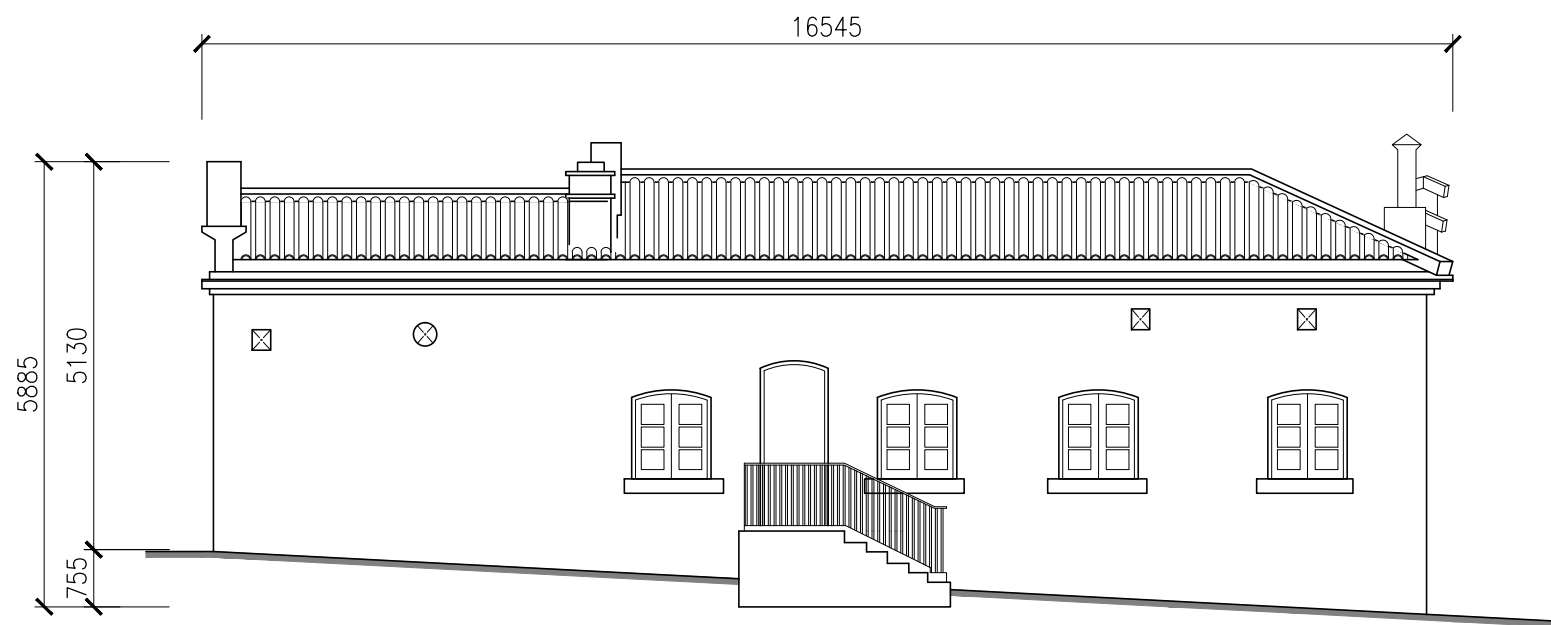
Drawing Title:
MUSEUM ANNEX - ROOF PLAN

Drawn: N.C.	Checked: A.P.	Scale: 1:100@A3	Date: 2022.11.28
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DATE	REV.	PARTICULARS	INITIAL

DRAWING TYPE
 DESIGN DWG. SHOP DRAWING
 SKETCH DWG. OTHERS:
 WORKING DWG. RECORD DRAWING

DRAWING NO. MA-P-02	REV. 0
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HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

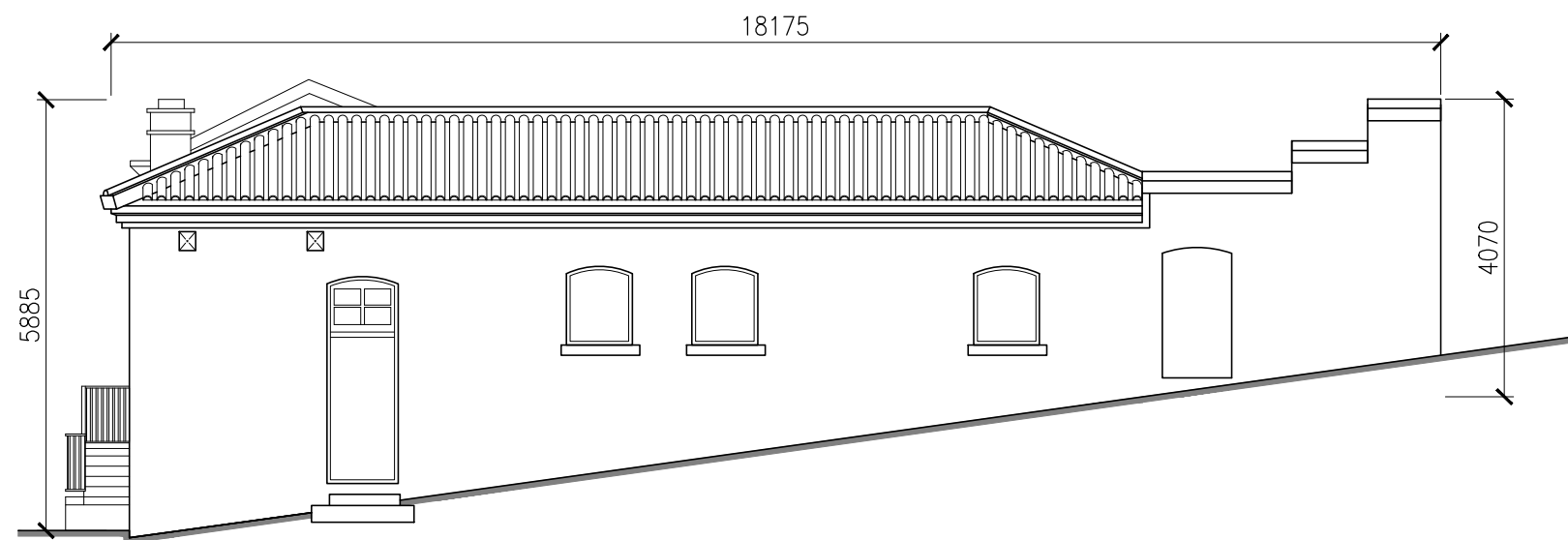
Drawing Title:
MUSEUM ANNEX - NORTHEAST ELEVATION

Drawn: N.C.	Checked: A.P.	Scale: 1:100@A3	Date: 2022.11.28
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DATE	REV.	PARTICULARS	INITIAL

DRAWING TYPE
 DESIGN DWG.
 SKETCH DWG.
 WORKING DWG.
 SHOP DRAWING
 OTHERS:
 RECORD DRAWING

DRAWING NO. MA-E-01
 REV. 0



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

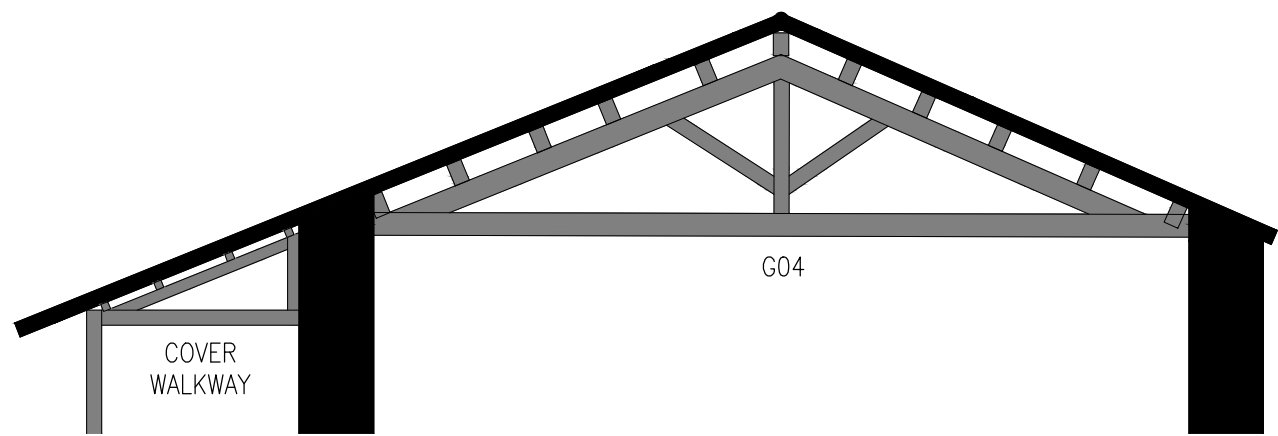
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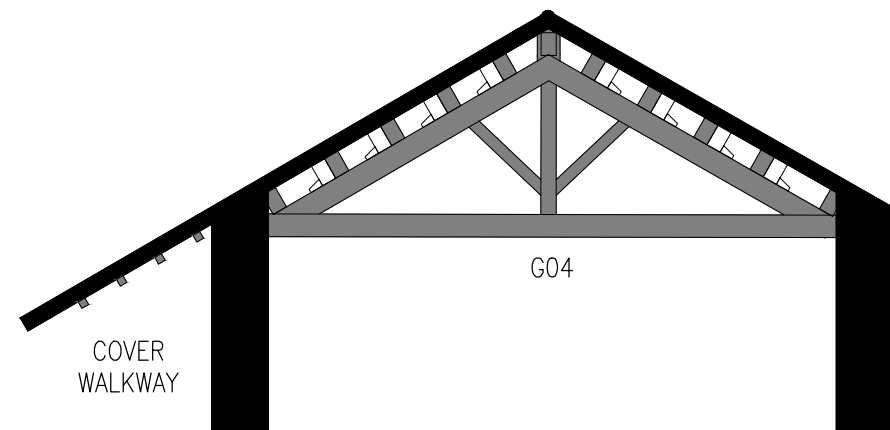
DATE	REV.	PARTICULARS	INITIAL

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 WORKING DWG. RECORD DRAWING

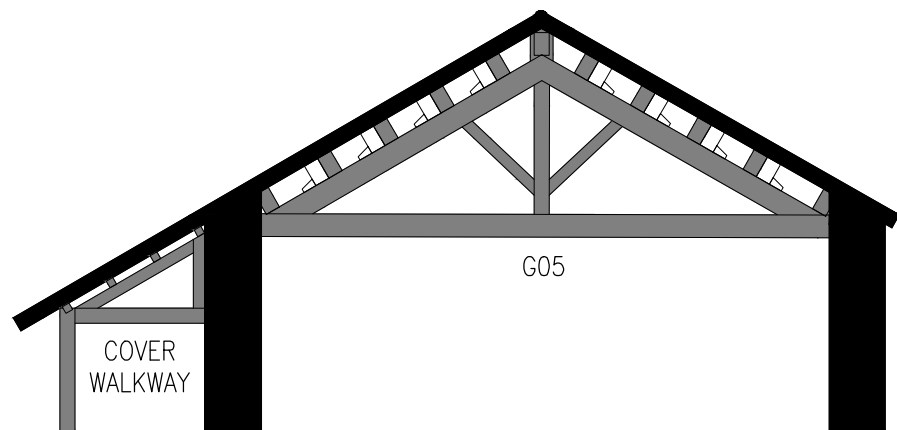
DRAWING NO. MA-E-02	REV. 0
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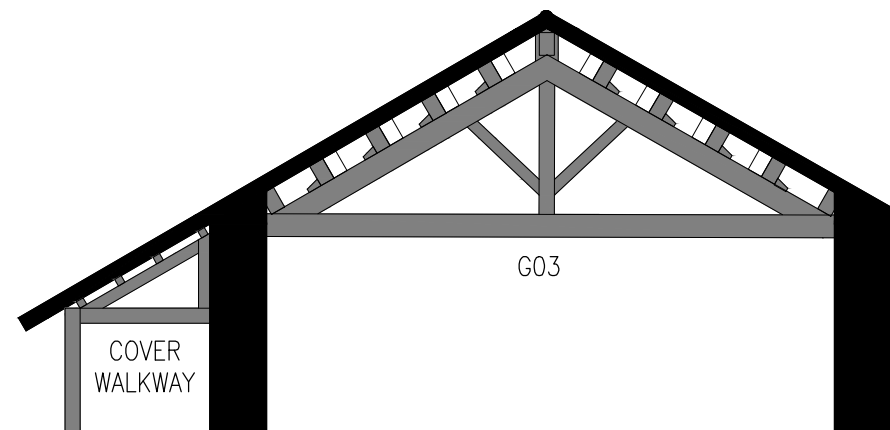
① TRUSS 1
MUSEUM ANNEX 1:50



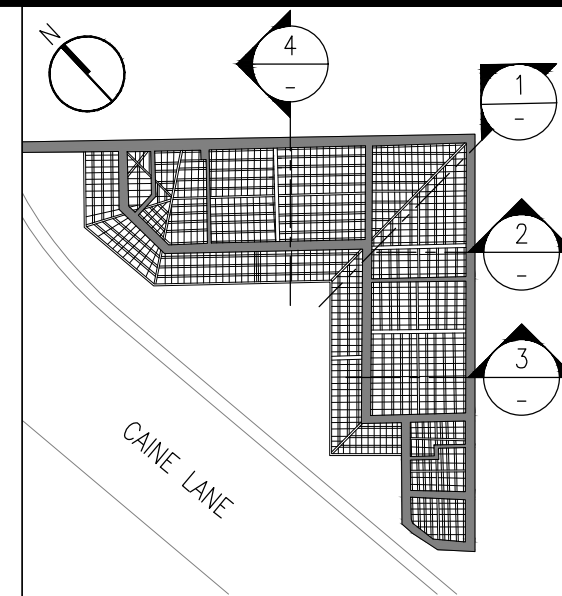
② TRUSS 2
MUSEUM ANNEX 1:50



③ TRUSS 3
MUSEUM ANNEX 1:50



④ TRUSS 4
MUSEUM ANNEX 1:50



BLOCK PLAN



香港醫學博物館
HONG KONG MUSEUM OF MEDICAL SCIENCES

Project:
HONG KONG MUSEUM OF MEDICAL SCIENCES

Drawing Title:
TRUSS OF MUSEUM ANNEX

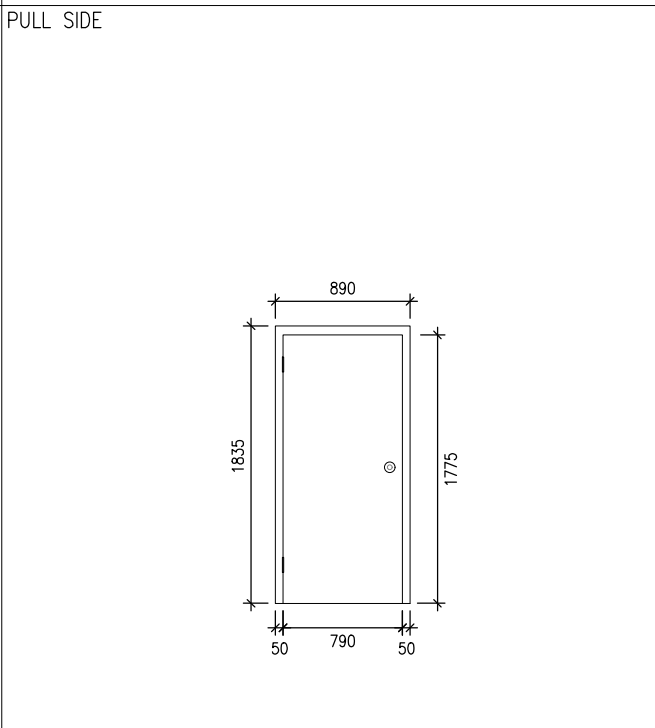
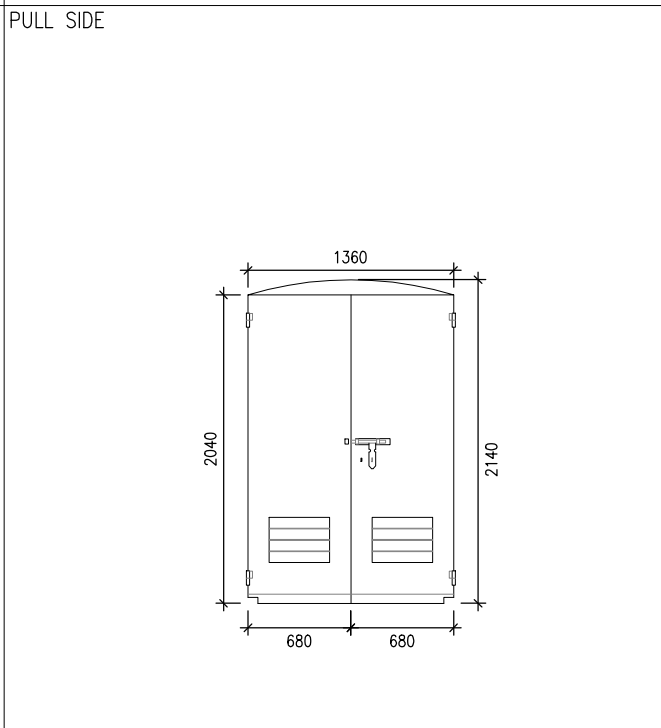
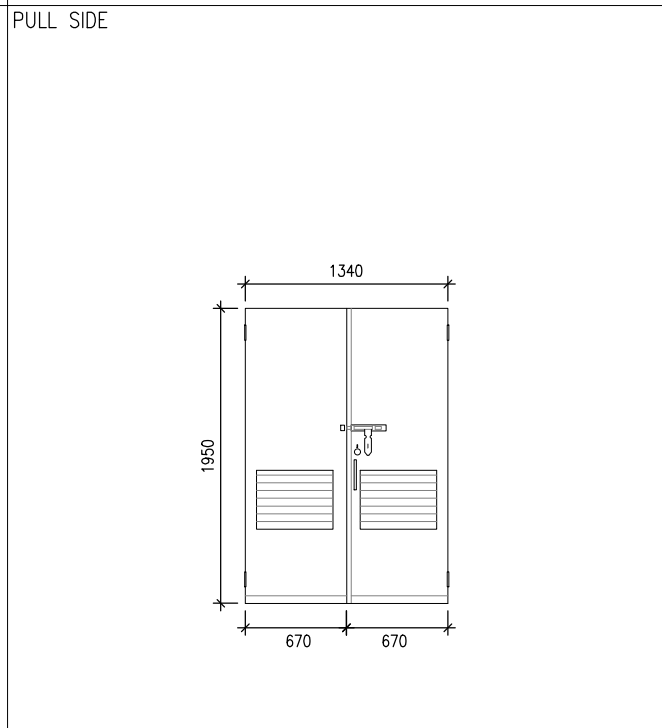
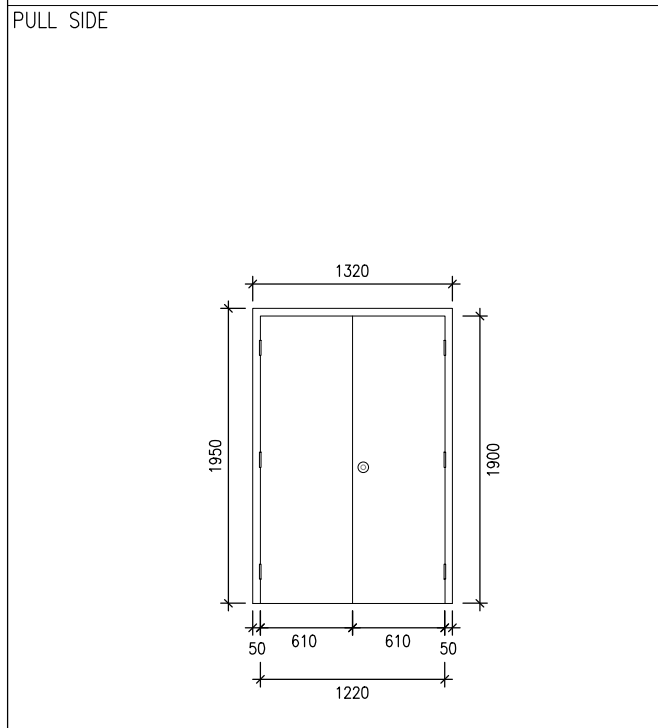
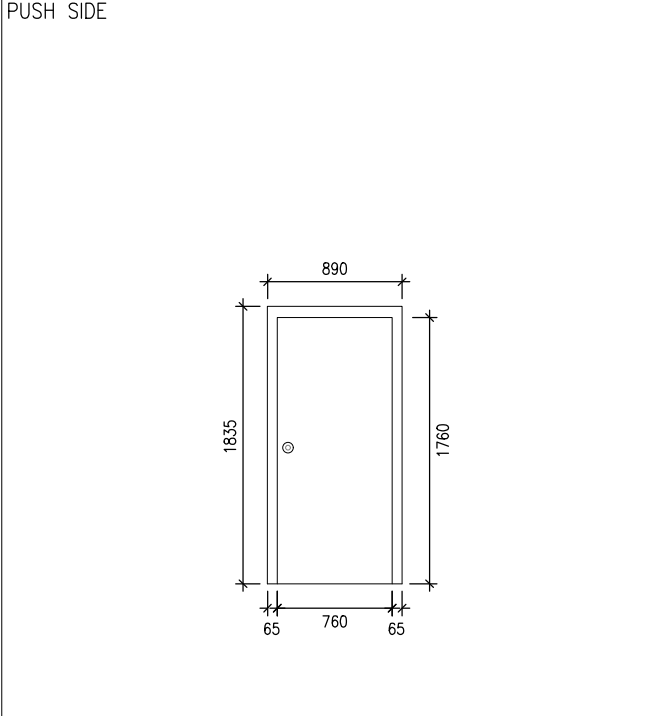
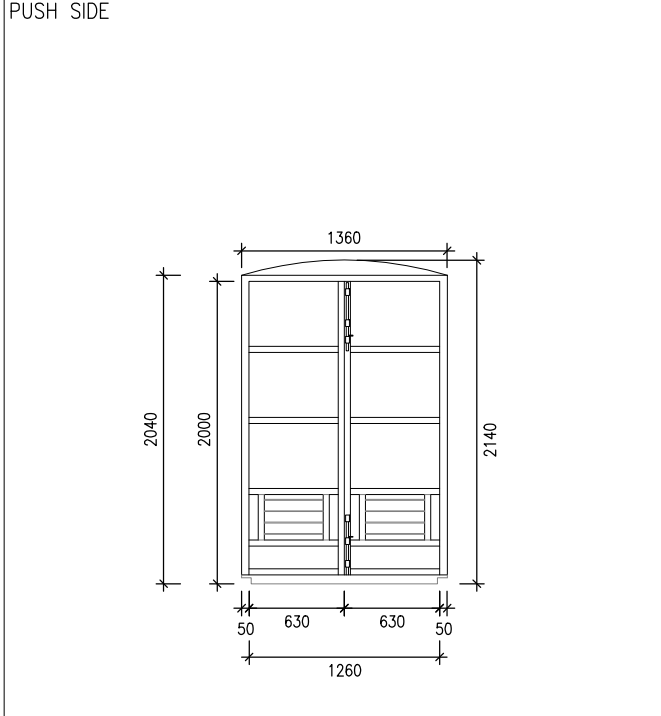
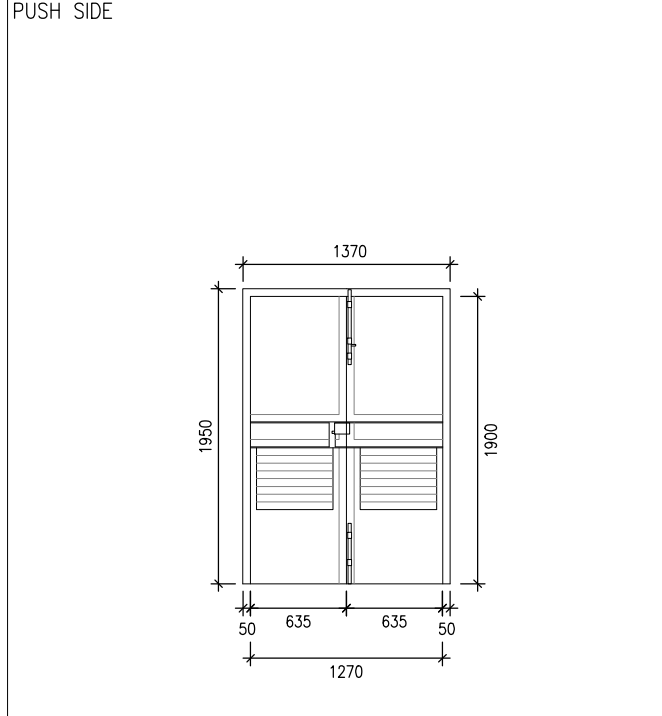
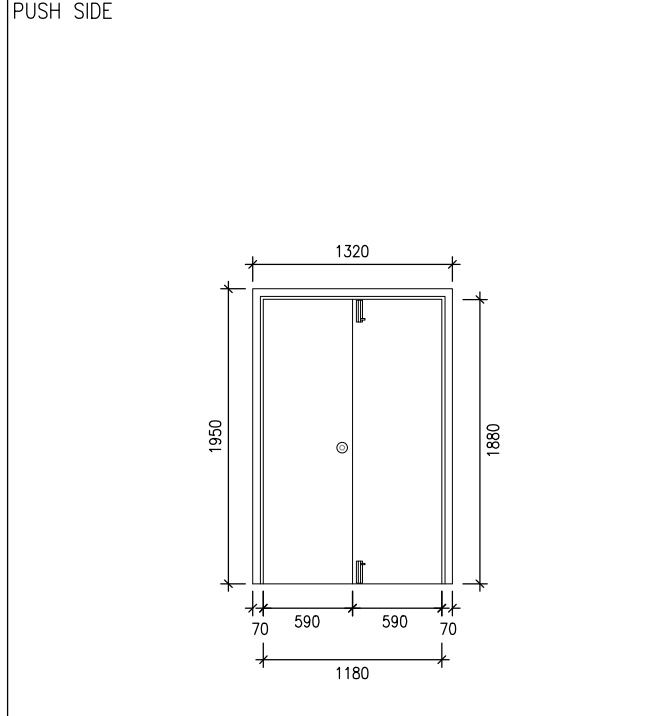
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DATE	REV.	PARTICULARS	INITIAL
2024.06.25	0	1ST SUBMISSION	N.C.

DRAWING TYPE
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 SKETCH DWG.
 WORKING DWG.
 OTHERS:
 SHOP DRAWING
 RECORD DRAWING

DRAWING NO. MMS-SE-205
 REV. 0

1 DOOR ELEVATION – D09	SCALE 1:50	2 DOOR ELEVATION – D10	SCALE 1:50	3 DOOR ELEVATION – D11	SCALE 1:50	4 DOOR ELEVATION – D12	SCALE 1:50
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LOCATION	LOCATION	LOCATION	LOCATION
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MAIN BUILDING – BASEMENT	MAIN BUILDING – BASEMENT	MAIN BUILDING – BASEMENT	MAIN BUILDING – BASEMENT
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DOOR	DOOR	DOOR	DOOR
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STRUCTURAL OPENING (W) x (H)	1320 x 1950	STRUCTURAL OPENING (W) x (H)	1370 x 1950	STRUCTURAL OPENING (W) x (H)	1360 x 2140	STRUCTURAL OPENING (W) x (H)	890 x 1835
DOOR LEAF (W) x (H)	1220 x 1900	DOOR LEAF (W) x (H)	1340 x 1950	DOOR LEAF (W) x (H)	1360 x 2040	DOOR LEAF (W) x (H)	790 x 1775
CLEAR WIDTH (W) x (H)	1180 X 1880	CLEAR WIDTH (W) x (H)	1270 X 1900	CLEAR WIDTH (W) x (H)	1260 X 2000	CLEAR WIDTH (W) x (H)	760 X 1760
FIRE RESISTANCE RATING	-	FIRE RESISTANCE RATING	-	FIRE RESISTANCE RATING	-	FIRE RESISTANCE RATING	-
CONSTRUCTION	-	CONSTRUCTION	-	CONSTRUCTION	-	CONSTRUCTION	-
DOOR THICKNESS	-	DOOR THICKNESS	-	DOOR THICKNESS	-	DOOR THICKNESS	-
DOOR FINISH	PULL	DOOR FINISH	PULL	DOOR FINISH	PULL	DOOR FINISH	PULL
	PUSH		PUSH		PUSH		PUSH
GLAZED PANEL / LOUVRE	-	GLAZED PANEL / LOUVRE	-	GLAZED PANEL / LOUVRE	-	GLAZED PANEL / LOUVRE	-

FRAME	FRAME	FRAME	FRAME
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MATERIAL	-	MATERIAL	-	MATERIAL	-	MATERIAL	-
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IRONMONGERY	IRONMONGERY	IRONMONGERY	IRONMONGERY	IRONMONGERY	IRONMONGERY	IRONMONGERY	IRONMONGERY
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HINGE	6	HANDLE	-	HINGE	4	HANDLE	-	HINGE	2	HANDLE	-
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DOOR CLOSER	-	DOOR STOP	-	DOOR CLOSER	-	DOOR STOP	-	DOOR CLOSER	-	DOOR STOP	-
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LOCK	1	DOOR BOLT	2	LOCK	1	DOOR BOLT	3	LOCK	1	DOOR BOLT	-
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REMARKS	REMARKS	REMARKS	REMARKS
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- PRINTS WITHOUT AN AUTHORIZED SIGNATURE IN THE CHECKED AND APPROVED SPACES BELOW AND AFTER THE LAST REVISION ABOVE ARE NOT VALID FOR USE OUTSIDE SRL.

NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :
DOOR SCHEDULE 3

DRAWING NO.:	SCALE: 1:50(A3)
	REV:
CHECKED	APPROVED
	DATE:

1 DOOR ELEVATION - D17		SCALE 1:50		2 DOOR ELEVATION - D18		SCALE 1:50		3 DOOR ELEVATION - D19		SCALE 1:50		4 DOOR ELEVATION - D20		SCALE 1:50	
PUSH SIDE				PUSH SIDE				PUSH SIDE				PUSH SIDE			
PULL SIDE				PULL SIDE				PULL SIDE				PULL SIDE			
								/							
LOCATION				LOCATION				LOCATION				LOCATION			
MAIN BUILDING - BASEMENT				MAIN BUILDING - BASEMENT				MAIN BUILDING - BASEMENT				MAIN BUILDING - BASEMENT			
DOOR				DOOR				DOOR				DOOR			
STRUCTURAL OPENING (W) x (H)		1370 x 1850		STRUCTURAL OPENING (W) x (H)		1520 x 1880		STRUCTURAL OPENING (W) x (H)		900 x 1950		STRUCTURAL OPENING (W) x (H)		895 x 1860	
DOOR LEAF (W) x (H)		-		DOOR LEAF (W) x (H)		1420 x 1830		DOOR LEAF (W) x (H)		-		DOOR LEAF (W) x (H)		935 x 1880	
CLEAR WIDTH (W) x (H)		-		CLEAR WIDTH (W) x (H)		1380 X 1810		CLEAR WIDTH (W) x (H)		-		CLEAR WIDTH (W) x (H)		895 X 1860	
FIRE RESISTANCE RATING		-		FIRE RESISTANCE RATING		-		FIRE RESISTANCE RATING		-		FIRE RESISTANCE RATING		-	
CONSTRUCTION		-		CONSTRUCTION		-		CONSTRUCTION		-		CONSTRUCTION		-	
DOOR THICKNESS		-		DOOR THICKNESS		-		DOOR THICKNESS		-		DOOR THICKNESS		-	
DOOR FINISH		PULL PUSH		DOOR FINISH		PULL PUSH		DOOR FINISH		PULL PUSH		DOOR FINISH		PULL PUSH	
GLAZED PANEL / LOUVRE		-		GLAZED PANEL / LOUVRE		-		GLAZED PANEL / LOUVRE		-		GLAZED PANEL / LOUVRE		-	
FRAME				FRAME				FRAME				FRAME			
MATERIAL		-		MATERIAL		-		MATERIAL		-		MATERIAL		-	
FINISH		-		FINISH		-		FINISH		-		FINISH		-	
IRONMONGERY				IRONMONGERY				IRONMONGERY				IRONMONGERY			
HINGE		-		HINGE		6		HINGE		-		HINGE		2	
DOOR CLOSER		-		DOOR CLOSER		-		DOOR CLOSER		-		DOOR CLOSER		1	
LOCK		-		LOCK		1		LOCK		-		LOCK		1	
REMARKS				REMARKS				REMARKS				REMARKS			
THE STRUCTURAL OPENING IS FILLED.															

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 - PRINTS WITHOUT AN AUTHORIZED SIGNATURE IN THE CHECKED AND APPROVED SPACES BELOW AND AFTER THE LAST REVISION ABOVE ARE NOT VALID FOR USE OUTSIDE SRL.

NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :

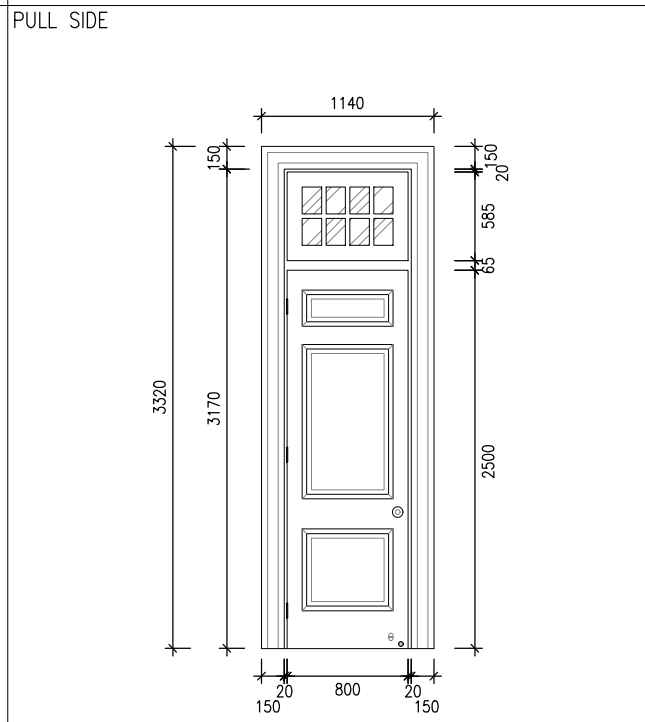
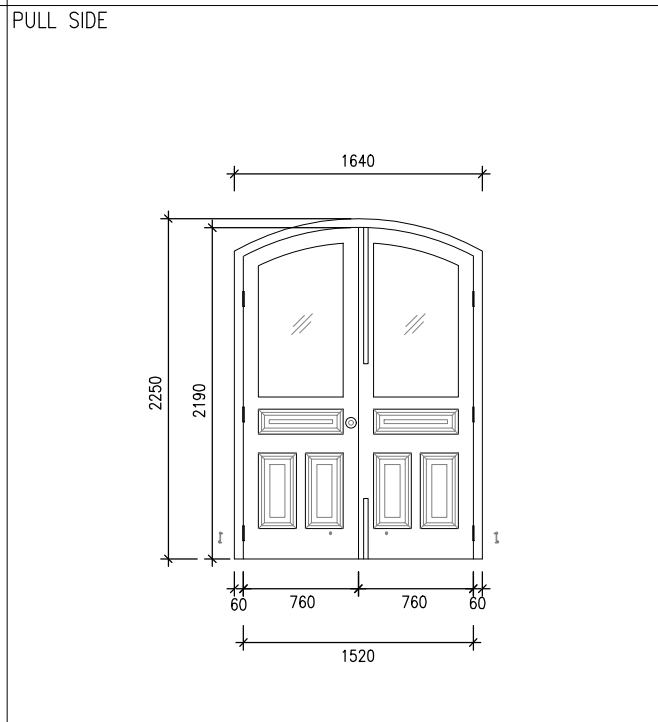
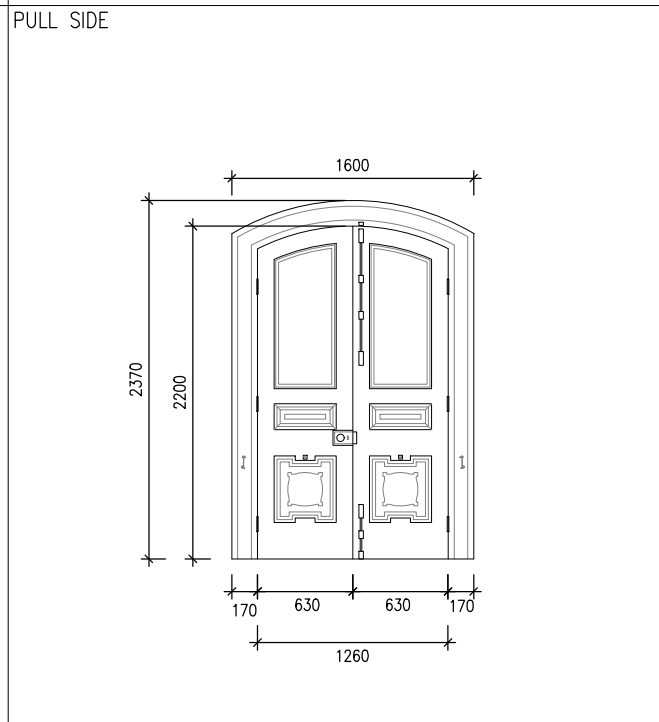
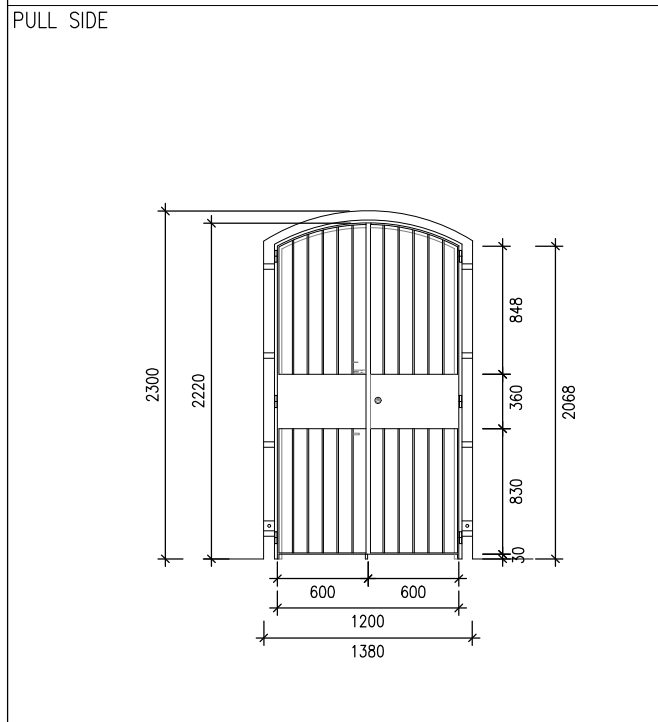
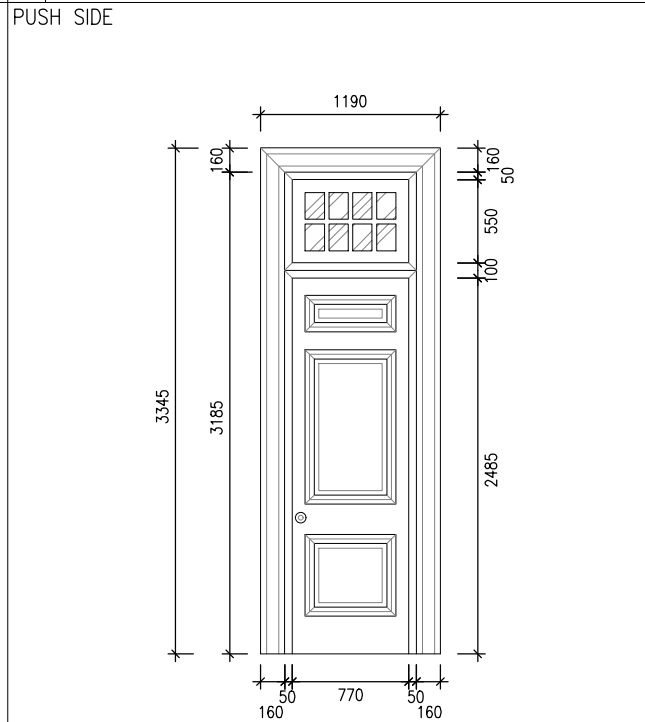
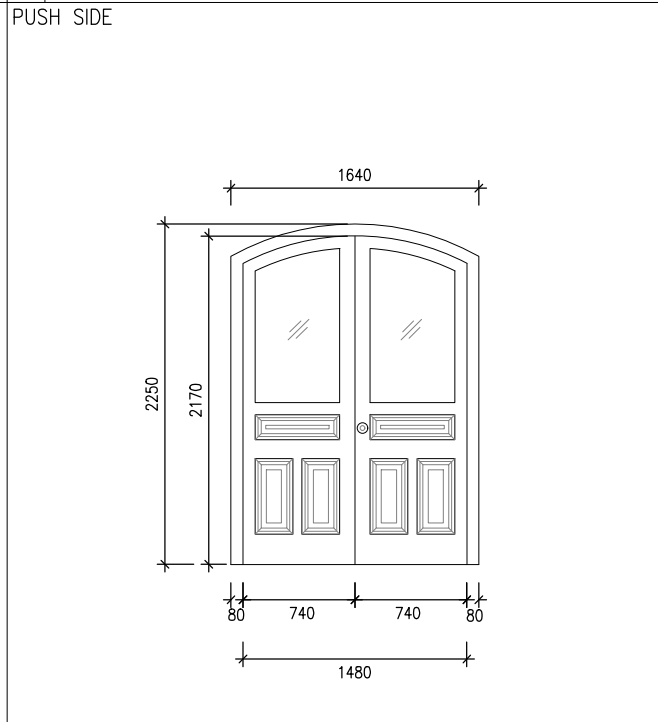
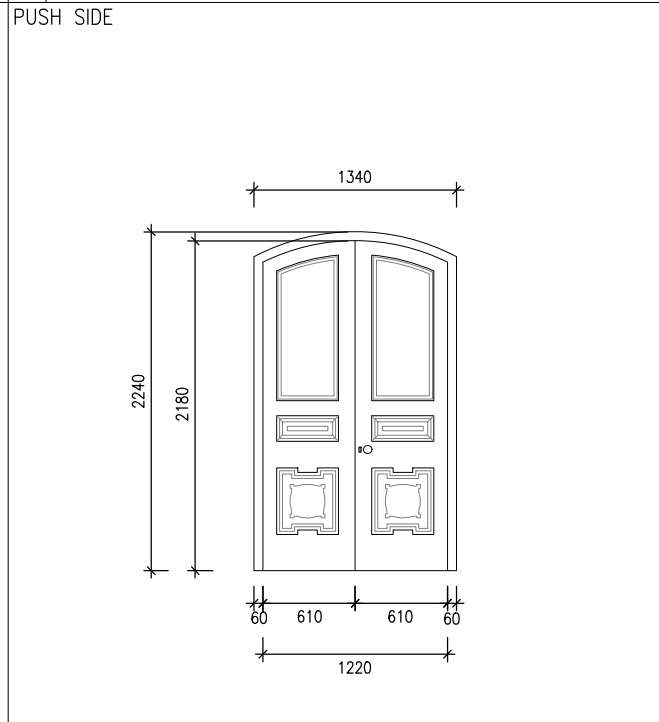
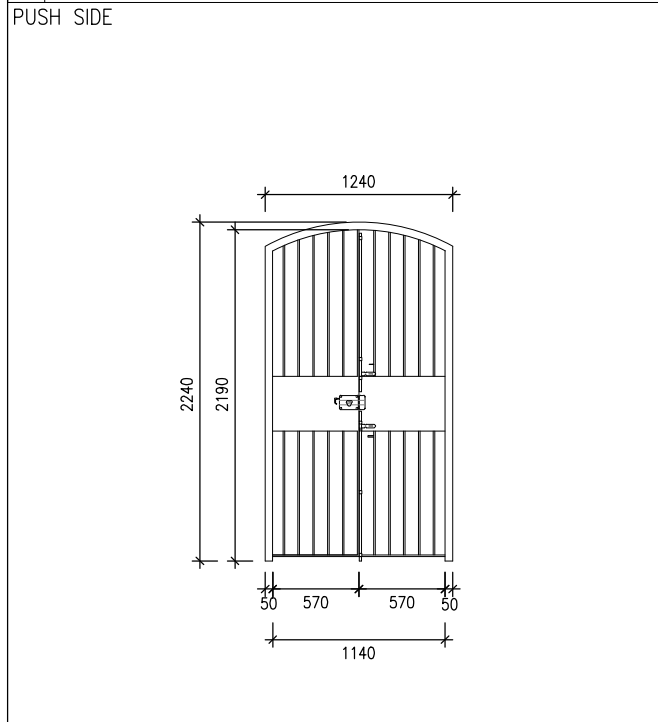
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :

DOOR SCHEDULE 5

DRAWING NO.:		SCALE:	
		1:50(A3)	
CHECKED		REV:	
APPROVED		DATE:	

1 DOOR ELEVATION - D21.1 SCALE 1:50 2 DOOR ELEVATION - D21.2 SCALE 1:50 3 DOOR ELEVATION - D22 SCALE 1:50 4 DOOR ELEVATION - D23 SCALE 1:50



LOCATION
MAIN BUILDING - GROUND FLOOR

LOCATION
MAIN BUILDING - GROUND FLOOR

LOCATION
MAIN BUILDING - GROUND FLOOR

LOCATION
MAIN BUILDING - GROUND FLOOR

DOOR			
STRUCTURAL OPENING (W) x (H)	1380 x 2300		
DOOR LEAF (W) x (H)	1200 x 2220		
CLEAR WIDTH (W) x (H)	1140 x 2190		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	
	PUSH	-	
GLAZED PANEL / LOUVRE	-		
FRAME			
MATERIAL	-	FINISH	-
IRONMONGERY			
HINGE	6	DOOR STOP	-
DOOR CLOSER	-	DOOR BOLT	2
LOCK	1	DOOR HOOK	-

DOOR			
STRUCTURAL OPENING (W) x (H)	1340 x 2240		
DOOR LEAF (W) x (H)	1260 x 2200		
CLEAR WIDTH (W) x (H)	1220 X 2180		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	
	PUSH	-	
GLAZED PANEL / LOUVRE	-		
FRAME			
MATERIAL	-	FINISH	-
IRONMONGERY			
HINGE	6	DOOR STOP	-
DOOR CLOSER	-	DOOR BOLT	2
LOCK	1	DOOR HOOK	2

DOOR			
STRUCTURAL OPENING (W) x (H)	1640 x 2250		
DOOR LEAF (W) x (H)	1520 x 2190		
CLEAR WIDTH (W) x (H)	1480 X 2170		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	
	PUSH	-	
GLAZED PANEL / LOUVRE	-		
FRAME			
MATERIAL	-	FINISH	-
IRONMONGERY			
HINGE	6	HANDLE	-
DOOR CLOSER	-	DOOR BOLT	2
LOCK	1	DOOR HOOK	2

DOOR			
STRUCTURAL OPENING (W) x (H)	1140 x 3320		
DOOR LEAF (W) x (H)	800 x 2500		
CLEAR WIDTH (W) x (H)	770 X 2485		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	
	PUSH	-	
GLAZED PANEL / LOUVRE	-		
FRAME			
MATERIAL	-	FINISH	-
IRONMONGERY			
HINGE	3	HANDLE	-
DOOR CLOSER	-	DOOR STOP	1
LOCK	1	DOOR HOOK	1

REMARKS

REMARKS

REMARKS

REMARKS

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

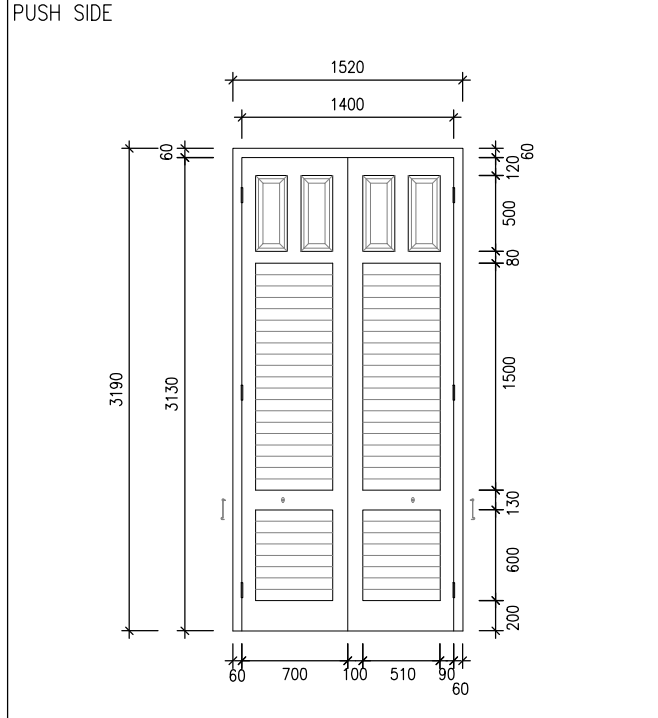
DRAWING TITLE :
DOOR SCHEDULE 6

DRAWING NO.:	SCALE:
	1:50(A3)
CHECKED	REV:
APPROVED	DATE:

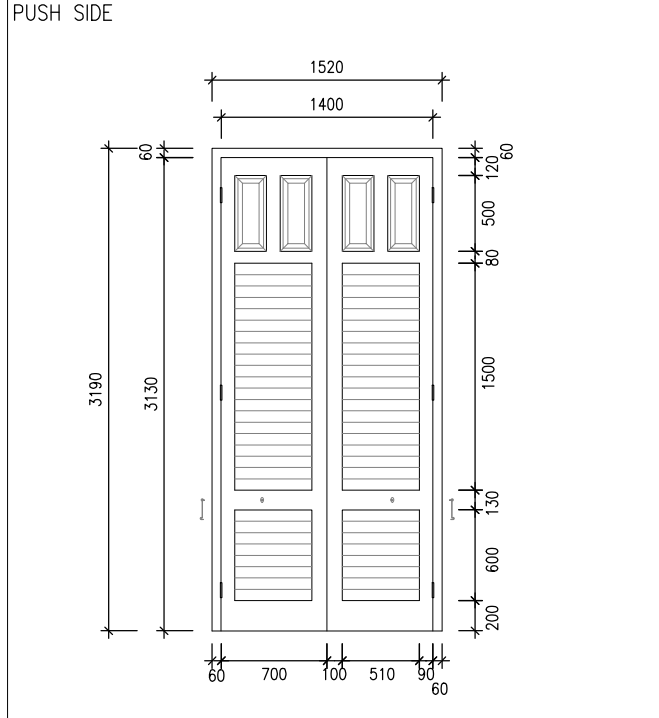
1 DOOR ELEVATION - D24				2 DOOR ELEVATION - D25				3 DOOR ELEVATION - D26				4 DOOR ELEVATION - D27			
PUSH SIDE				PUSH SIDE				PUSH SIDE				PUSH SIDE			
LOCATION				LOCATION				LOCATION				LOCATION			
MAIN BUILDING - GROUND FLOOR				MAIN BUILDING - GROUND FLOOR				MAIN BUILDING - GROUND FLOOR				MAIN BUILDING - GROUND FLOOR			
DOOR				DOOR				DOOR				DOOR			
STRUCTURAL OPENING (W) x (H)		1340 x 3170		STRUCTURAL OPENING (W) x (H)		1500 x 3460		STRUCTURAL OPENING (W) x (H)		1530 x 3200		STRUCTURAL OPENING (W) x (H)		1800 x 3500	
DOOR LEAF (W) x (H)		1240 x 2500		DOOR LEAF (W) x (H)		700 x 2680		DOOR LEAF (W) x (H)		1410 x 2500		DOOR LEAF (W) x (H)		800 x 2660	
CLEAR WIDTH (W) x (H)		1200 X 2480		CLEAR WIDTH (W) x (H)		670 X 2665		CLEAR WIDTH (W) x (H)		1380 X 2485		CLEAR WIDTH (W) x (H)		770 X 2645	
FIRE RESISTANCE RATING		-		FIRE RESISTANCE RATING		-		FIRE RESISTANCE RATING		-		FIRE RESISTANCE RATING		-	
CONSTRUCTION		-		CONSTRUCTION		-		CONSTRUCTION		-		CONSTRUCTION		-	
DOOR THICKNESS		-		DOOR THICKNESS		-		DOOR THICKNESS		-		DOOR THICKNESS		-	
DOOR FINISH		PULL		DOOR FINISH		PULL		DOOR FINISH		PULL		DOOR FINISH		PULL	
		PUSH				PUSH				PUSH		DOOR FINISH		PUSH	
GLAZED PANEL / LOUVRE		-		GLAZED PANEL / LOUVRE		-		GLAZED PANEL / LOUVRE		-		GLAZED PANEL / LOUVRE		-	
FRAME				FRAME				FRAME				FRAME			
MATERIAL		-		FINISH		-		MATERIAL		-		FINISH		-	
IRONMONGERY				IRONMONGERY				IRONMONGERY				IRONMONGERY			
HINGE		10		HANDLE		-		HINGE		10		HANDLE		2	
DOOR CLOSER		-		DOOR BOLT		3		DOOR CLOSER		-		DOOR BOLT		6	
LOCK		1		DOOR HOOK		6		LOCK		-		DOOR HOOK		5	
REMARKS				REMARKS				REMARKS				REMARKS			

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5. PRINTS WITHOUT AN AUTHORIZED SIGNATURE IN THE CHECKED AND APPROVED SPACES BELOW AND AFTER THE LAST REVISION ABOVE ARE NOT VALID FOR USE OUTSIDE SRL.			
NO.	DATE	DESCRIPTION	INITIAL
CLIENT/ EMPLOYER			
ARCHITECT			
STRUCTURAL ENGINEER			
BUILDING SERVICES ENGINEER			
LANDSCAPE ARCHITECT			
CONTRACT NO.:			
FILE NO.:			
PROJECT NO.: 2719			
PROJECT TITLE :			
HONG KONG MUSEUM OF MEDICAL SCIENCES			
DRAWING TITLE :			
DOOR SCHEDULE 7			
DRAWING NO.:		SCALE:	
		1:50(A3)	
		REV:	
CHECKED	APPROVED	DATE:	

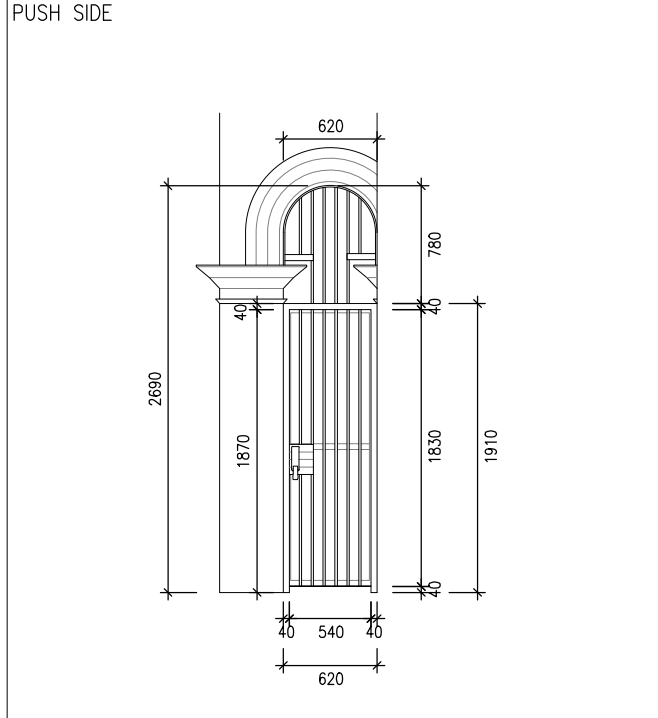
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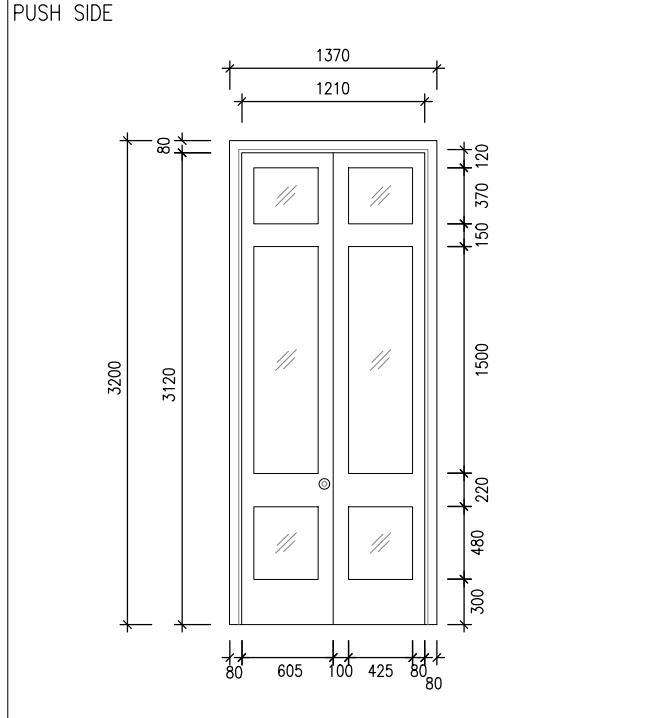
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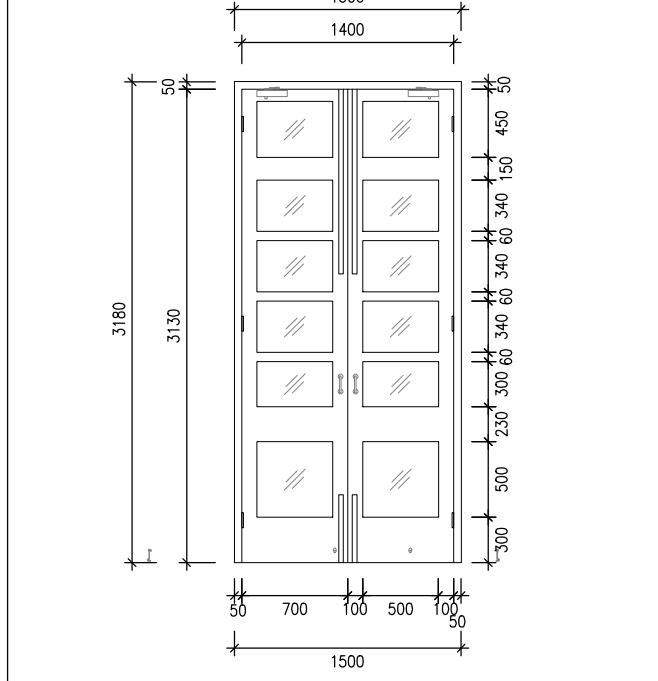
3 | DOOR ELEVATION - D50 SCALE 1:50



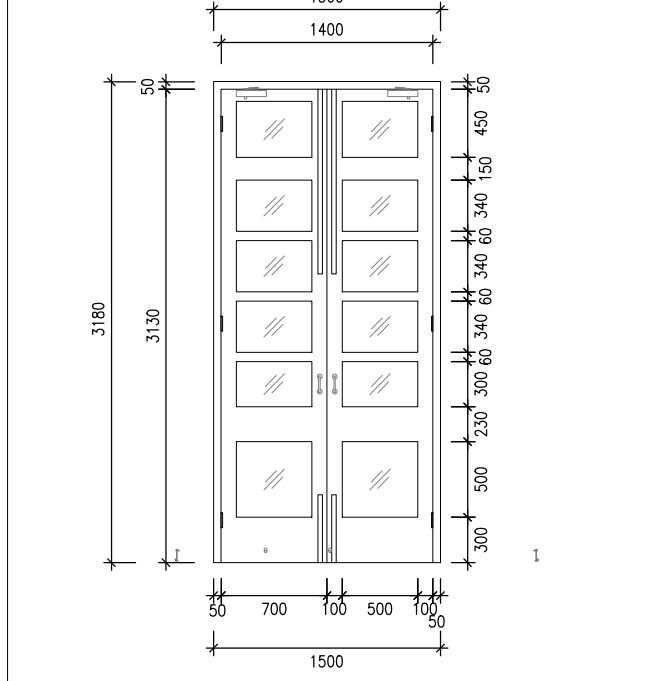
4 | DOOR ELEVATION - D51 SCALE 1:50



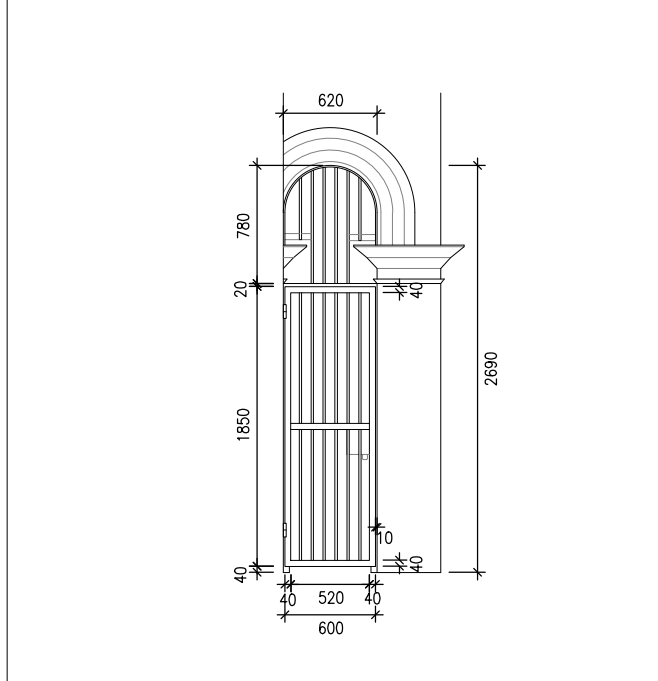
PULL SIDE



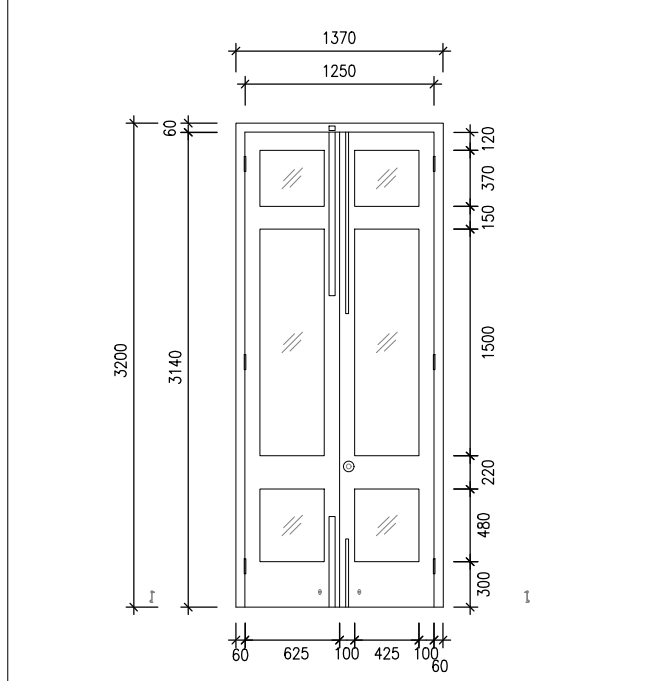
PULL SIDE



PULL SIDE



PULL SIDE



LOCATION
MAIN BUILDING - FIRST FLOOR

LOCATION
MAIN BUILDING - FIRST FLOOR

LOCATION
MAIN BUILDING - FIRST FLOOR

LOCATION
MAIN BUILDING - FIRST FLOOR

DOOR

STRUCTURAL OPENING (W) x (H)	1500 x 3180
DOOR LEAF (W) x (H)	1400 x 3130
CLEAR WIDTH (W) x (H)	1400 X 3130
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL PUSH
GLAZED PANEL / LOUVRE	-

DOOR

STRUCTURAL OPENING (W) x (H)	1500 x 3180
DOOR LEAF (W) x (H)	1400 x 3130
CLEAR WIDTH (W) x (H)	1400 X 3130
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL PUSH
GLAZED PANEL / LOUVRE	-

DOOR

STRUCTURAL OPENING (W) x (H)	620 x 2690
DOOR LEAF (W) x (H)	600 x 1850
CLEAR WIDTH (W) x (H)	540 X 1870
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL PUSH
GLAZED PANEL / LOUVRE	-

DOOR

STRUCTURAL OPENING (W) x (H)	1370 x 3200
DOOR LEAF (W) x (H)	1250 x 3140
CLEAR WIDTH (W) x (H)	1210 X 3120
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL PUSH
GLAZED PANEL / LOUVRE	-

FRAME

MATERIAL	-	FINISH	-
----------	---	--------	---

FRAME

MATERIAL	-	FINISH	-
----------	---	--------	---

FRAME

MATERIAL	-	FINISH	-
----------	---	--------	---

FRAME

MATERIAL	-	FINISH	-
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IRONMONGERY

HINGE	12	HANDLE	2
DOOR CLOSER	2	DOOR BOLT	4
LOCK	-	DOOR HOOK	4

IRONMONGERY

HINGE	12	HANDLE	2
DOOR CLOSER	2	DOOR BOLT	4
LOCK	-	DOOR HOOK	4

IRONMONGERY

HINGE	2	HANDLE	-
DOOR CLOSER	-	DOOR STOP	-
LOCK	1		

IRONMONGERY

HINGE	6	HANDLE	-
DOOR CLOSER	-	DOOR BOLT	4
LOCK	1	DOOR HOOK	2

REMARKS

REMARKS

REMARKS

REMARKS

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

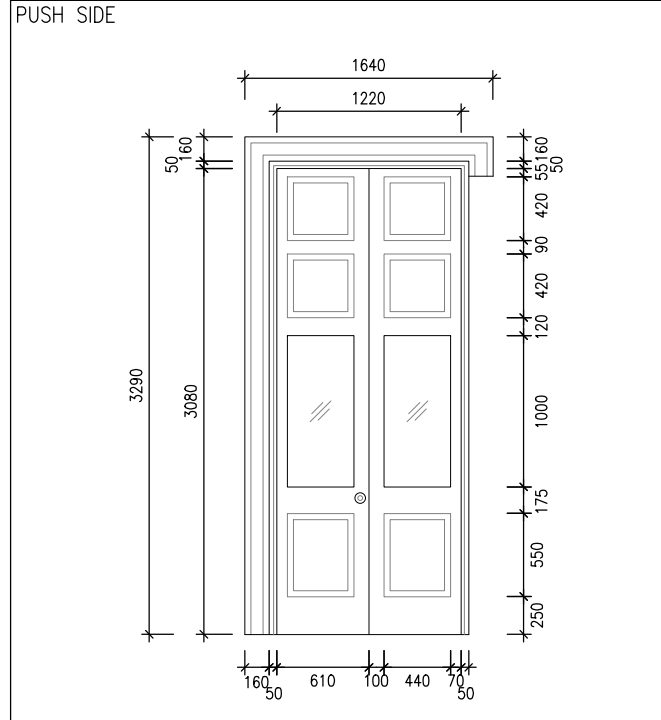
DRAWING TITLE :

DOOR SCHEDULE 13

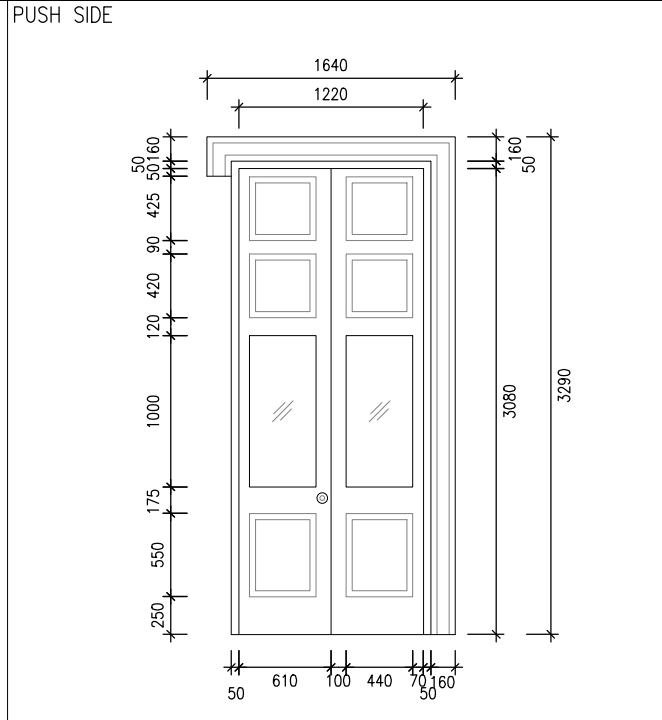
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	REV:

CHECKED	APPROVED	DATE:
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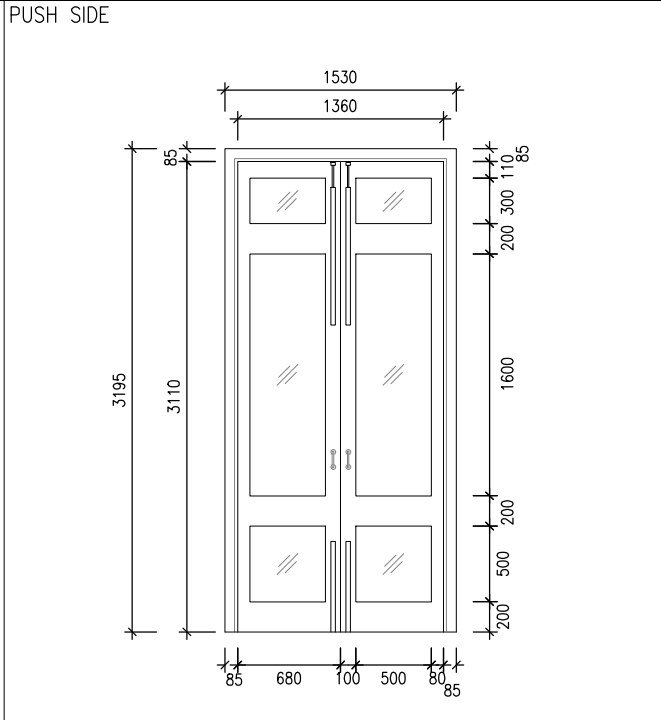
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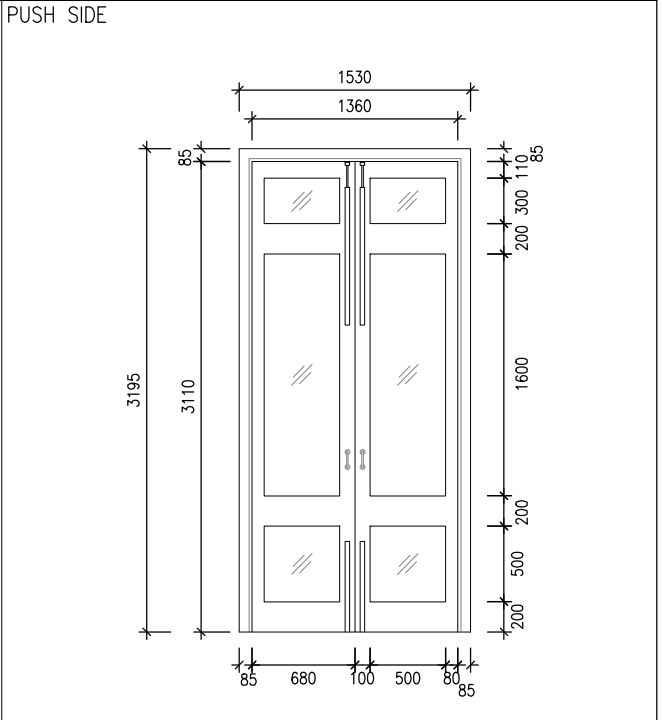
2 | DOOR ELEVATION - D53 SCALE 1:50



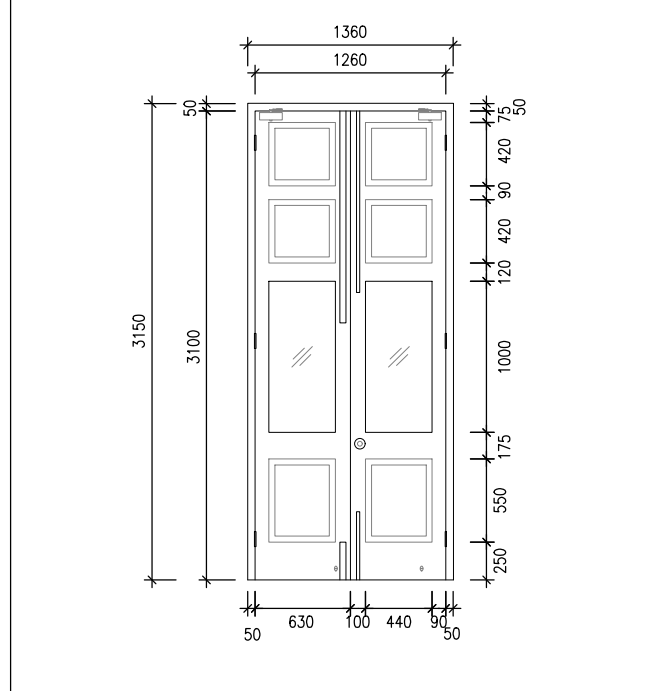
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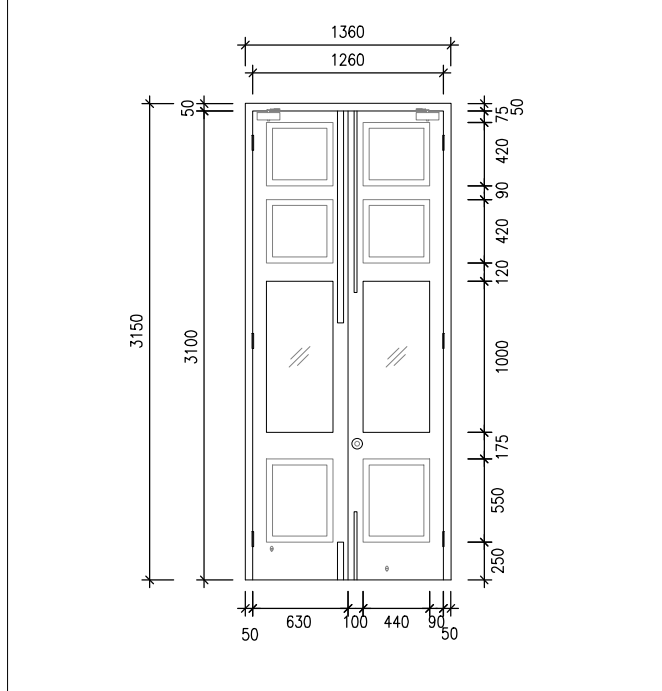
4 | DOOR ELEVATION - D55 SCALE 1:50



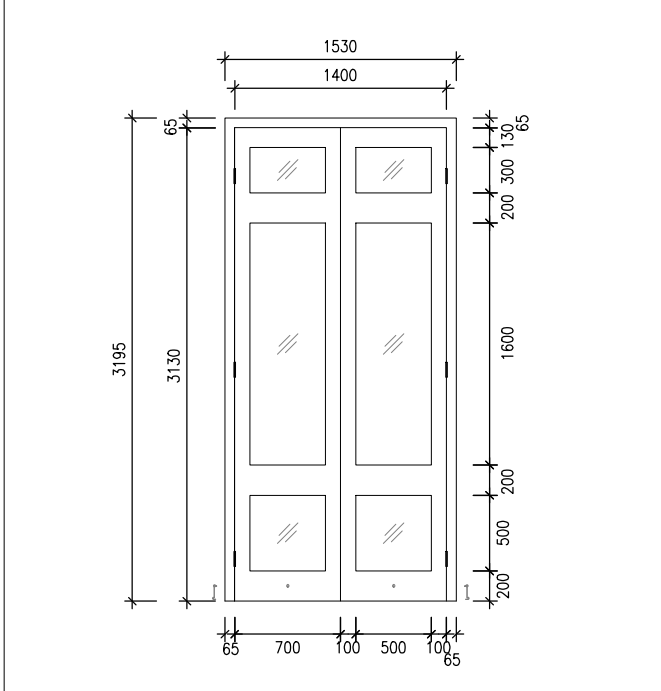
PULL SIDE



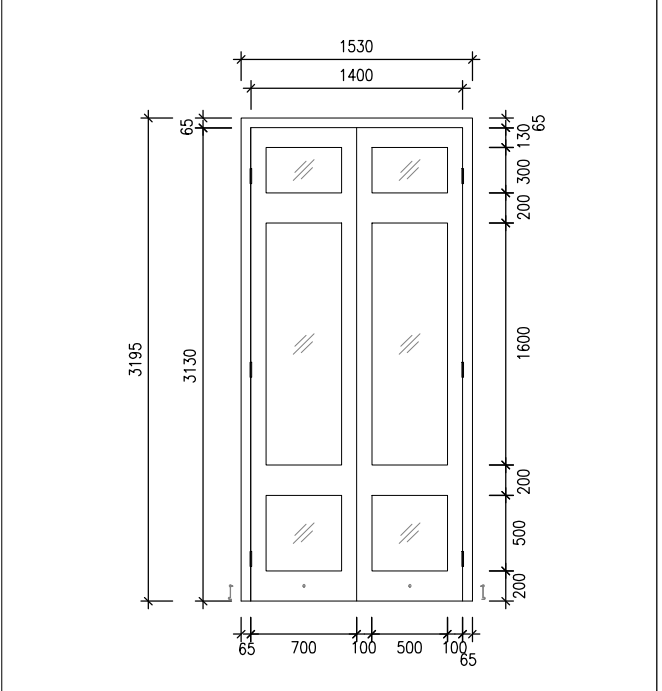
PULL SIDE



PULL SIDE



PULL SIDE



LOCATION

MAIN BUILDING - FIRST FLOOR

DOOR	
STRUCTURAL OPENING (W) x (H)	1360 x 3150
DOOR LEAF (W) x (H)	1260 x 3100
CLEAR WIDTH (W) x (H)	1220 X 3080
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL
	PUSH
GLAZED PANEL / LOUVRE	-

FRAME

MATERIAL	FINISH
-	-

IRONMONGERY

HINGE	HANDLE	DOOR CLOSER	DOOR BOLT	LOCK	DOOR HOOK
6	-	2	4	1	2

REMARKS

LOCATION

MAIN BUILDING - FIRST FLOOR

DOOR	
STRUCTURAL OPENING (W) x (H)	1360 x 3150
DOOR LEAF (W) x (H)	1260 x 3100
CLEAR WIDTH (W) x (H)	1220 X 3080
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL
	PUSH
GLAZED PANEL / LOUVRE	-

FRAME

MATERIAL	FINISH
-	-

IRONMONGERY

HINGE	HANDLE	DOOR CLOSER	DOOR BOLT	LOCK	DOOR HOOK
6	-	2	4	1	2

REMARKS

LOCATION

MAIN BUILDING - FIRST FLOOR

DOOR	
STRUCTURAL OPENING (W) x (H)	1530 x 3195
DOOR LEAF (W) x (H)	1400 x 3130
CLEAR WIDTH (W) x (H)	1360 X 3110
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL
	PUSH
GLAZED PANEL / LOUVRE	-

FRAME

MATERIAL	FINISH
-	-

IRONMONGERY

HINGE	HANDLE	DOOR CLOSER	DOOR BOLT	LOCK	DOOR HOOK
6	2	-	4	-	2

REMARKS

LOCATION

MAIN BUILDING - FIRST FLOOR

DOOR	
STRUCTURAL OPENING (W) x (H)	1530 x 3195
DOOR LEAF (W) x (H)	1400 x 3130
CLEAR WIDTH (W) x (H)	1360 X 3110
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL
	PUSH
GLAZED PANEL / LOUVRE	-

FRAME

MATERIAL	FINISH
-	-

IRONMONGERY

HINGE	HANDLE	DOOR CLOSER	DOOR BOLT	LOCK	DOOR HOOK
6	2	-	4	-	2

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

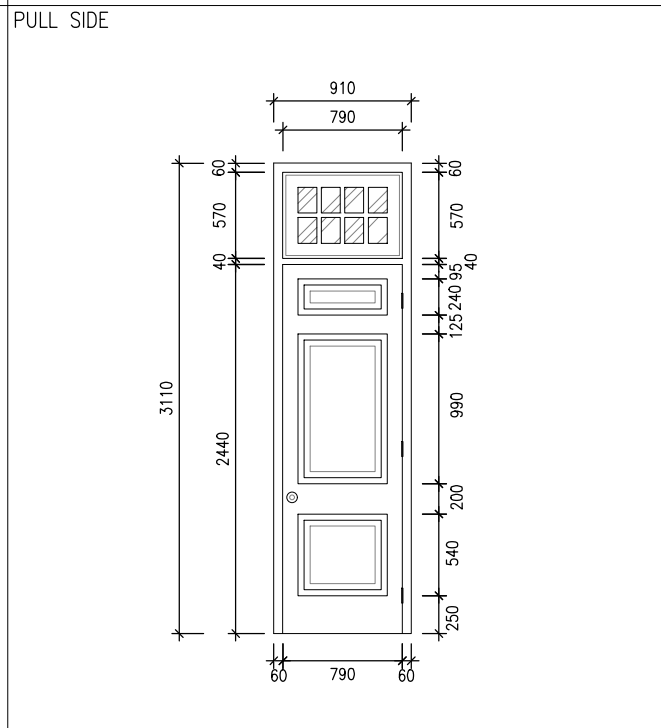
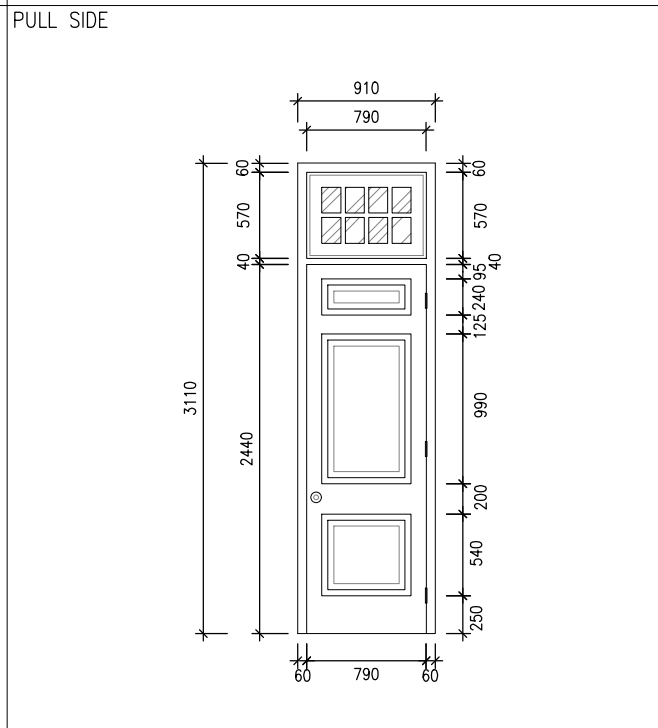
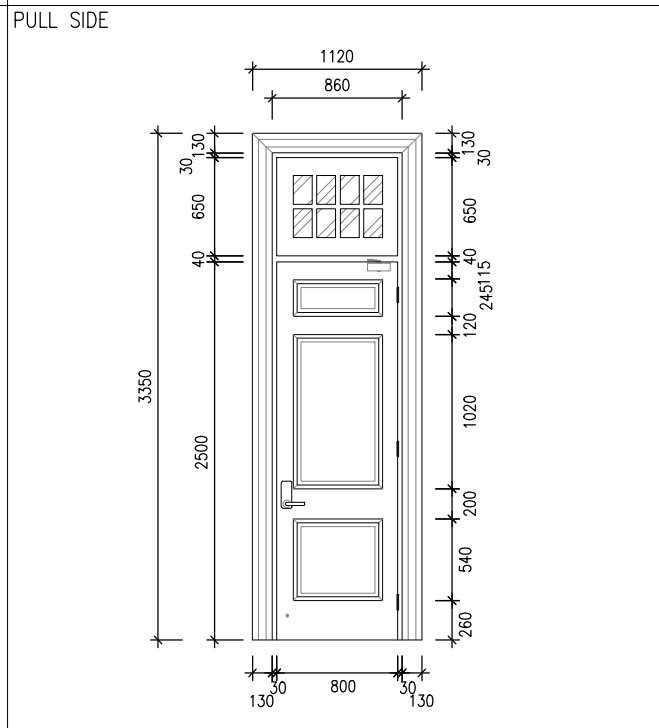
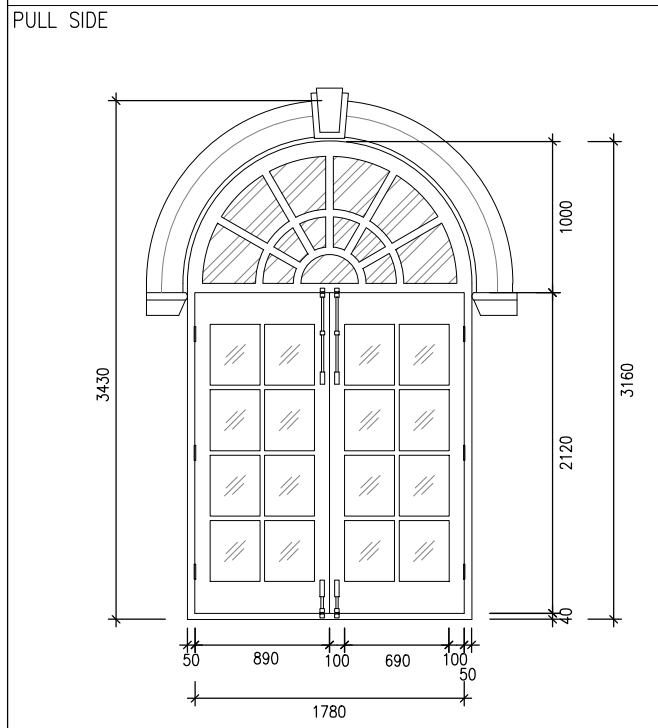
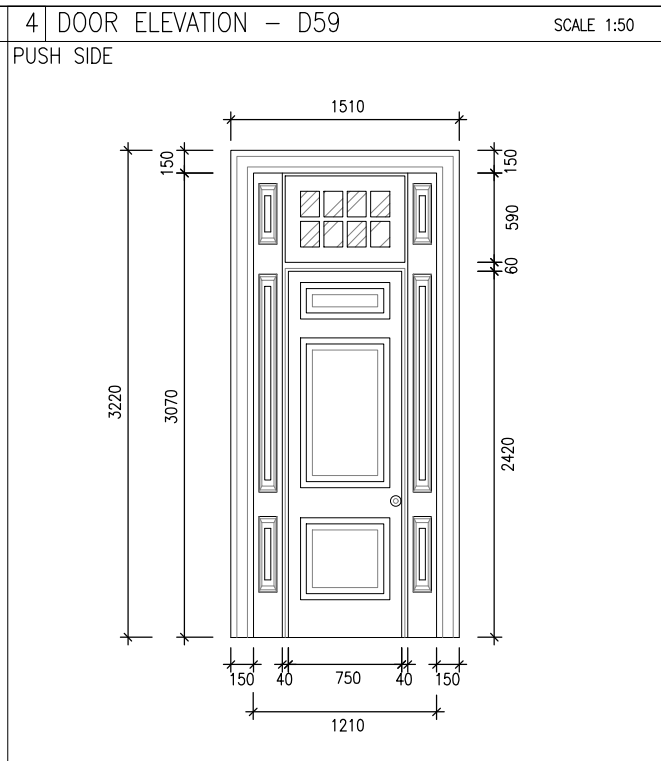
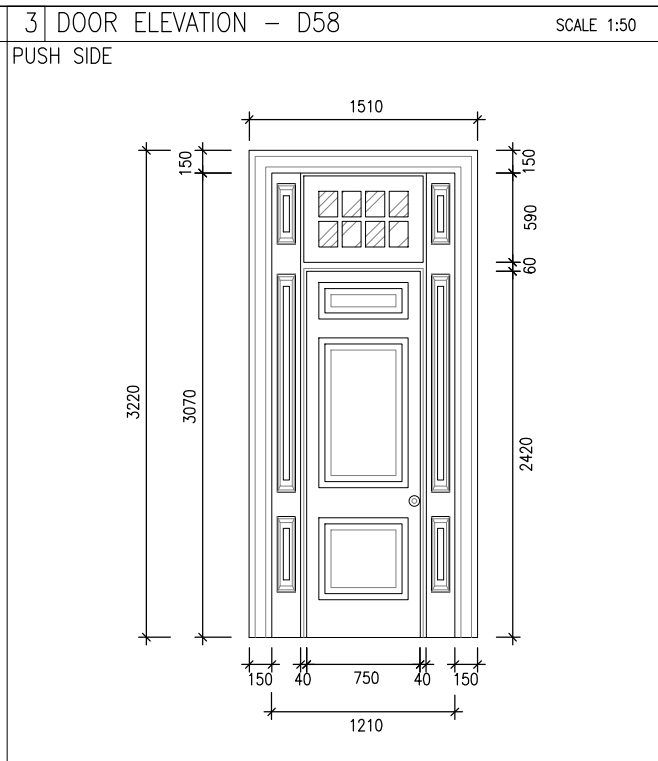
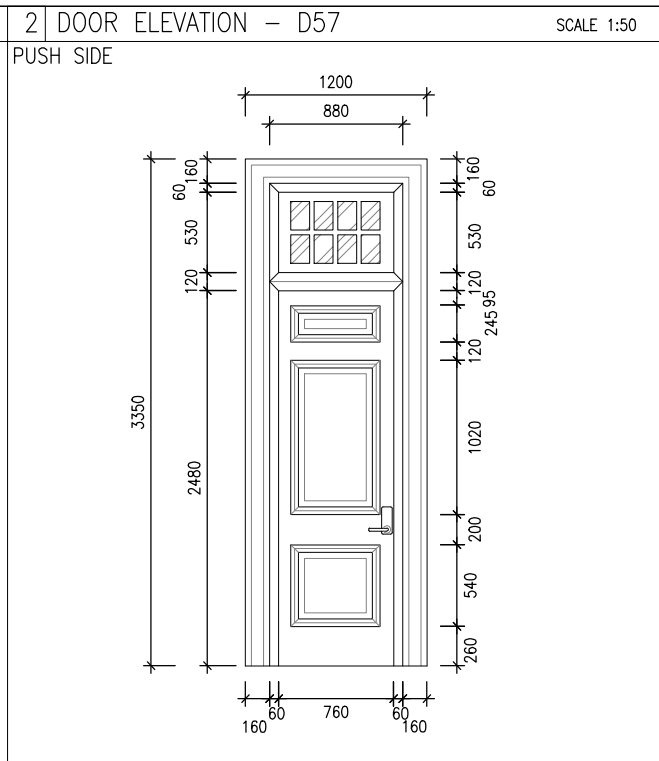
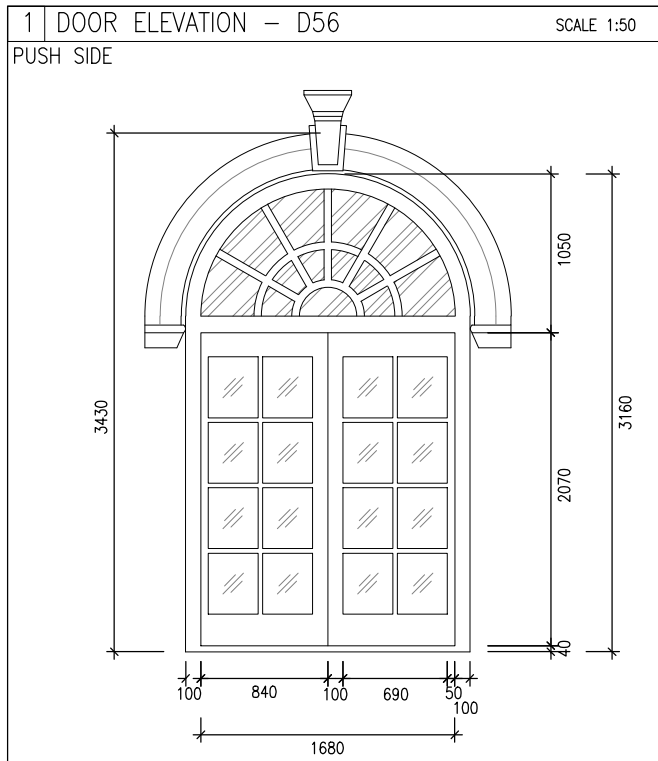
PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :

DOOR SCHEDULE 14

DRAWING NO.:	SCALE: 1:50(A3)
	REV:

CHECKED	APPROVED	DATE:
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LOCATION
MAIN BUILDING - FIRST FLOOR

DOOR

STRUCTURAL OPENING (W) x (H)	1880 x 3160		
DOOR LEAF (W) x (H)	1780 x 2120		
CLEAR WIDTH (W) x (H)	1680 X 2070		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	-
	PUSH	-	-
GLAZED PANEL / LOUVRE	-		

FRAME

MATERIAL	-	FINISH	-
----------	---	--------	---

IRONMONGERY

HINGE	6	HANDLE	-
DOOR CLOSER	-	DOOR BOLT	4
LOCK	-		

REMARKS

LOCATION
MAIN BUILDING - FIRST FLOOR

DOOR

STRUCTURAL OPENING (W) x (H)	1120 x 3350		
DOOR LEAF (W) x (H)	800 x 2500		
CLEAR WIDTH (W) x (H)	760 X 2480		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	-
	PUSH	-	-
GLAZED PANEL / LOUVRE	-		

FRAME

MATERIAL	-	FINISH	-
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IRONMONGERY

HINGE	3	HANDLE	-
DOOR CLOSER	1	DOOR HOOK	1
LOCK	1		

REMARKS

LOCATION
MAIN BUILDING - FIRST FLOOR

DOOR

STRUCTURAL OPENING (W) x (H)	910 x 3110		
DOOR LEAF (W) x (H)	790 x 2440		
CLEAR WIDTH (W) x (H)	750 X 2420		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	-
	PUSH	-	-
GLAZED PANEL / LOUVRE	-		

FRAME

MATERIAL	-	FINISH	-
----------	---	--------	---

IRONMONGERY

HINGE	3	HANDLE	-
DOOR CLOSER	-	DOOR STOP	-
LOCK	1		

REMARKS

LOCATION
MAIN BUILDING - FIRST FLOOR

DOOR

STRUCTURAL OPENING (W) x (H)	910 x 3110		
DOOR LEAF (W) x (H)	790 x 2440		
CLEAR WIDTH (W) x (H)	750 X 2420		
FIRE RESISTANCE RATING	-		
CONSTRUCTION	-		
DOOR THICKNESS	-		
DOOR FINISH	PULL	-	-
	PUSH	-	-
GLAZED PANEL / LOUVRE	-		

FRAME

MATERIAL	-	FINISH	-
----------	---	--------	---

IRONMONGERY

HINGE	3	HANDLE	-
DOOR CLOSER	-	DOOR STOP	-
LOCK	1		

REMARKS

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

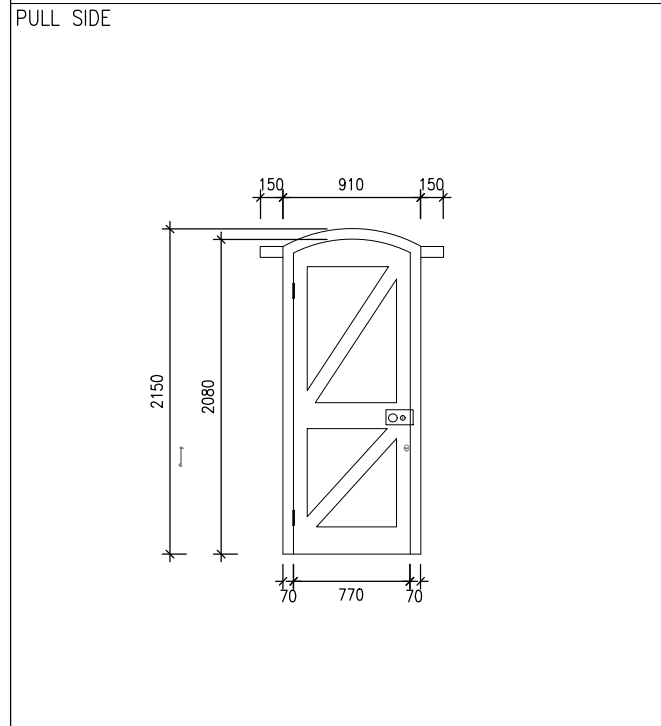
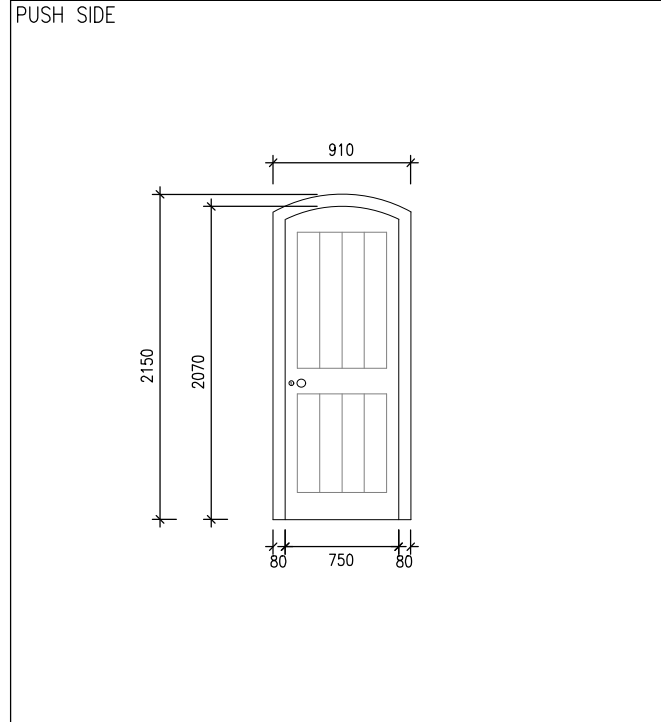
DRAWING TITLE :
DOOR SCHEDULE 15

DRAWING NO.:	SCALE: 1:50(A3)	
CHECKED	APPROVED	DATE:

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<p>REMARKS</p>		<p>REMARKS</p>		<p>REMARKS</p>		<p>REMARKS</p>																																																																									

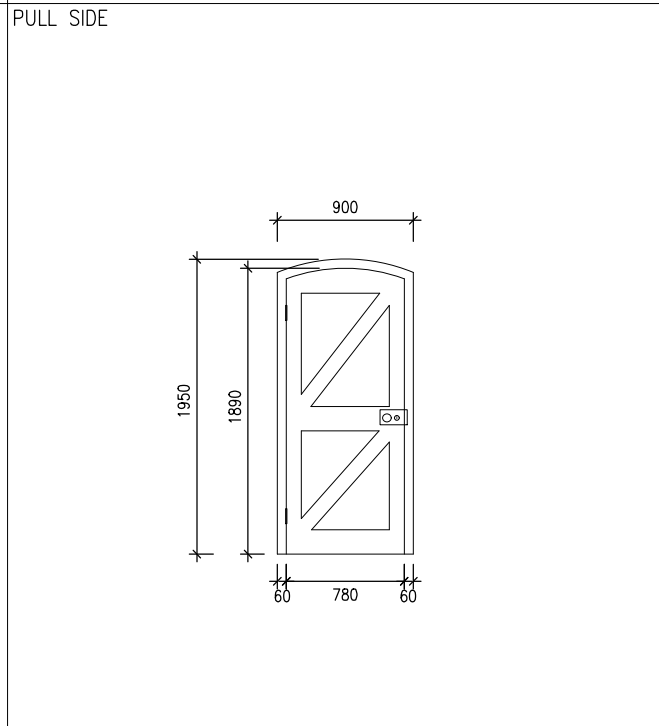
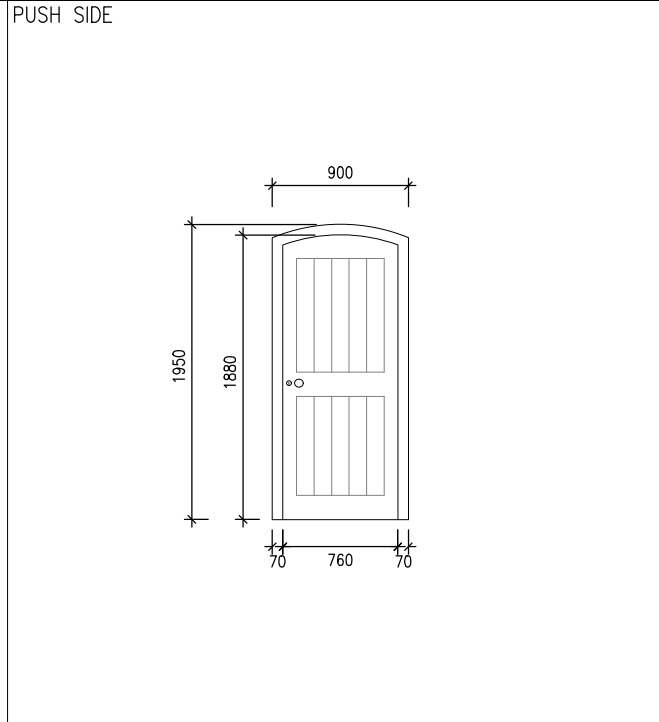
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NO.	DATE	DESCRIPTION	INITIAL
CLIENT/ EMPLOYER			
ARCHITECT			
STRUCTURAL ENGINEER			
BUILDING SERVICES ENGINEER			
LANDSCAPE ARCHITECT			
CONTRACT NO.:			
FILE NO.:			
PROJECT NO.: 2719			
PROJECT TITLE :			
HONG KONG MUSEUM OF MEDICAL SCIENCES			
DRAWING TITLE :			
DOOR SCHEDULE 18			
DRAWING NO.:		SCALE:	
		1:50	
		REV:	
CHECKED	APPROVED	DATE:	

1 | DOOR ELEVATION – D72 SCALE 1:50



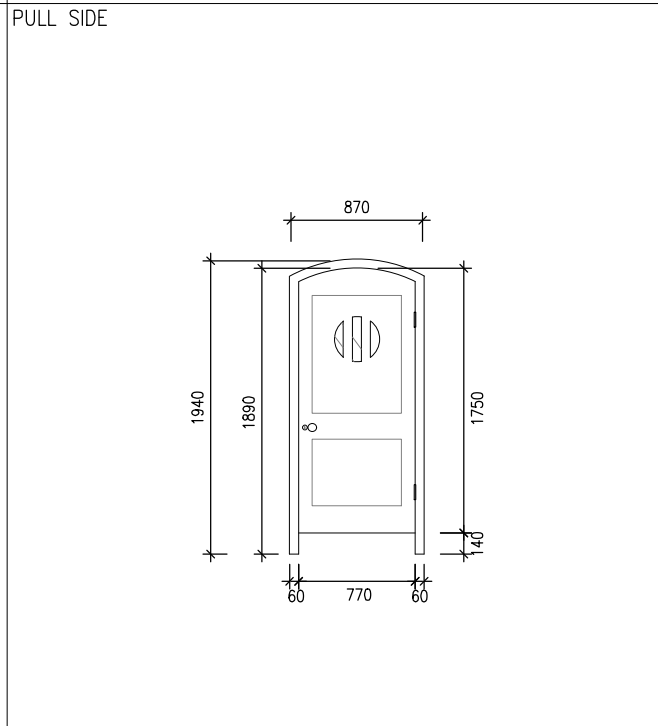
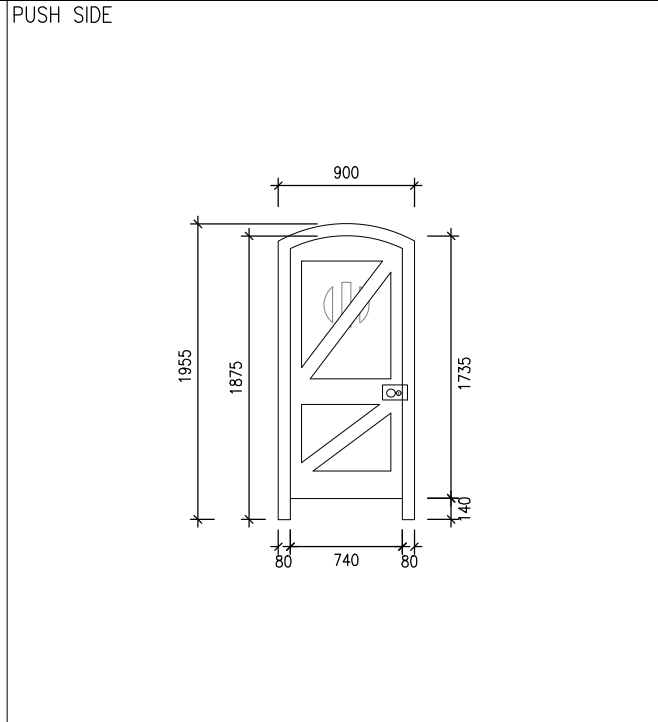
LOCATION	
ANNEX BLOCK	
DOOR	
STRUCTURAL OPENING (W) x (H)	910 x 2150
DOOR LEAF (W) x (H)	770 x 2080
CLEAR WIDTH (W) x (H)	750 X 2070
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL - PUSH -
GLAZED PANEL / LOUVRE	-
FRAME	
MATERIAL	- FINISH -
IRONMONGERY	
HINGE	2 HANDLE -
DOOR CLOSER	- DOOR HOOK 1
LOCK	1
REMARKS	

2 | DOOR ELEVATION – D73 SCALE 1:50



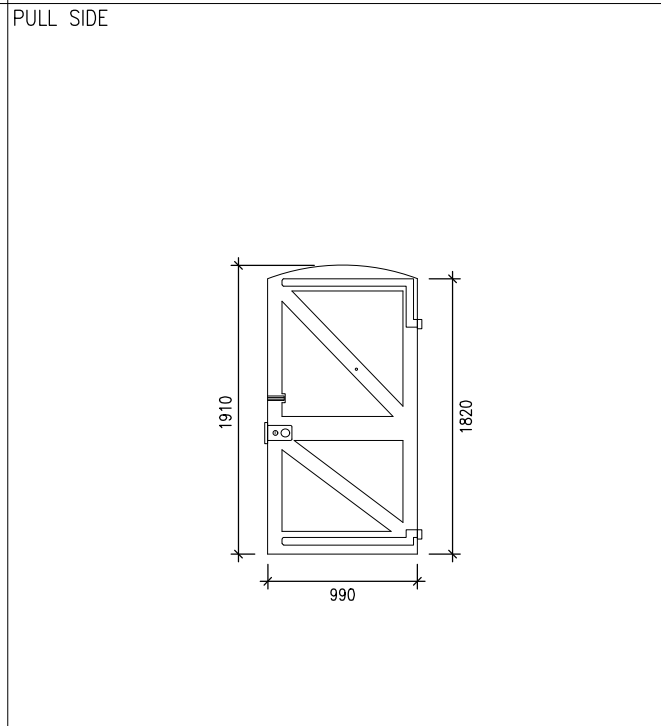
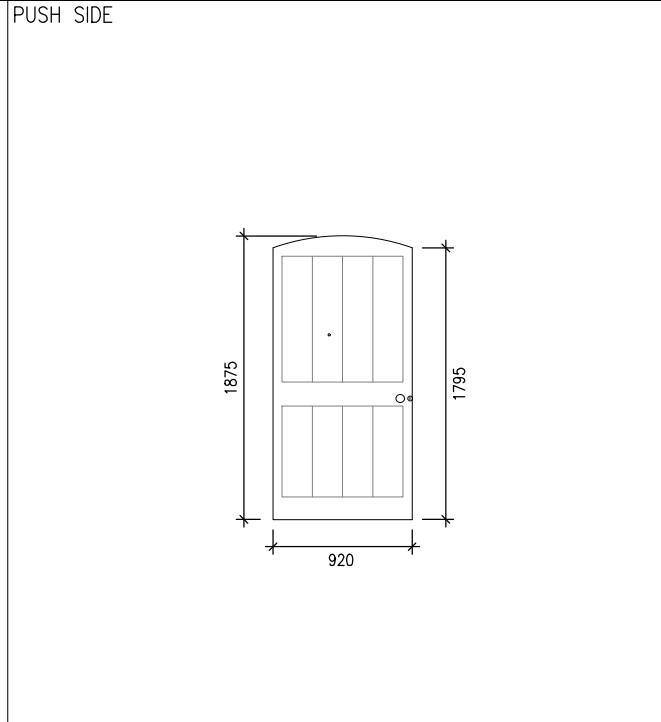
LOCATION	
ANNEX BLOCK	
DOOR	
STRUCTURAL OPENING (W) x (H)	900 x 1950
DOOR LEAF (W) x (H)	780 x 1890
CLEAR WIDTH (W) x (H)	760 X 1880
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL - PUSH -
GLAZED PANEL / LOUVRE	-
FRAME	
MATERIAL	- FINISH -
IRONMONGERY	
HINGE	2 HANDLE -
DOOR CLOSER	- DOOR STOP -
LOCK	1
REMARKS	

3 | DOOR ELEVATION – D74 SCALE 1:50



LOCATION	
ANNEX BLOCK	
DOOR	
STRUCTURAL OPENING (W) x (H)	870 x 1940
DOOR LEAF (W) x (H)	770 x 1750
CLEAR WIDTH (W) x (H)	740 X 1735
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL - PUSH -
GLAZED PANEL / LOUVRE	-
FRAME	
MATERIAL	- FINISH -
IRONMONGERY	
HINGE	2 HANDLE -
DOOR CLOSER	- DOOR STOP -
LOCK	1
REMARKS	

4 | DOOR ELEVATION – D75 SCALE 1:50



LOCATION	
ANNEX BLOCK	
DOOR	
STRUCTURAL OPENING (W) x (H)	920 x 1875
DOOR LEAF (W) x (H)	990 x 1910
CLEAR WIDTH (W) x (H)	920 X 1875
FIRE RESISTANCE RATING	-
CONSTRUCTION	-
DOOR THICKNESS	-
DOOR FINISH	PULL - PUSH -
GLAZED PANEL / LOUVRE	-
FRAME	
MATERIAL	- FINISH -
IRONMONGERY	
HINGE	2 HANDLE -
DOOR CLOSER	- DOOR BOLT 1
LOCK	1 PEEPHOLE 1
REMARKS	

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ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :
DOOR SCHEDULE 19

DRAWING NO.:	SCALE: 1:50(A3)
CHECKED	APPROVED
DATE:	

1 WINDOW ELEVATION – W05		2 WINDOW ELEVATION – W06		3 WINDOW ELEVATION – W07		4 WINDOW ELEVATION – W08	
SCALE 1:50		SCALE 1:50		SCALE 1:50		SCALE 1:50	
FRONT		FRONT		FRONT		FRONT	
REAR		REAR		REAR		REAR	
WINDOW MARK	W05	WINDOW MARK	W06	WINDOW MARK	W07	WINDOW MARK	W08
LOCATION	MAIN BUILDING – BASEMENT	LOCATION	MAIN BUILDING – BASEMENT	LOCATION	MAIN BUILDING – BASEMENT	LOCATION	MAIN BUILDING – BASEMENT
NUMBERS	1	NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-	FIRE RATED	-
REMARKS		REMARKS		REMARKS		REMARKS	

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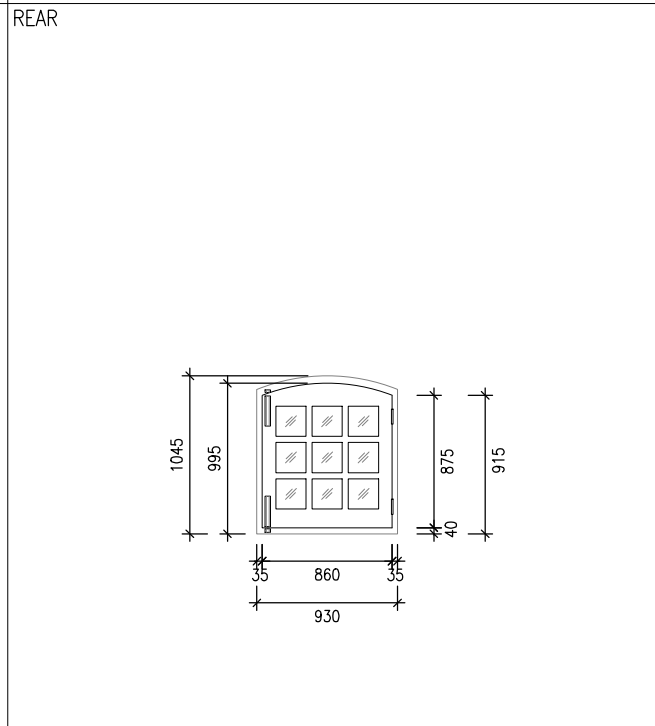
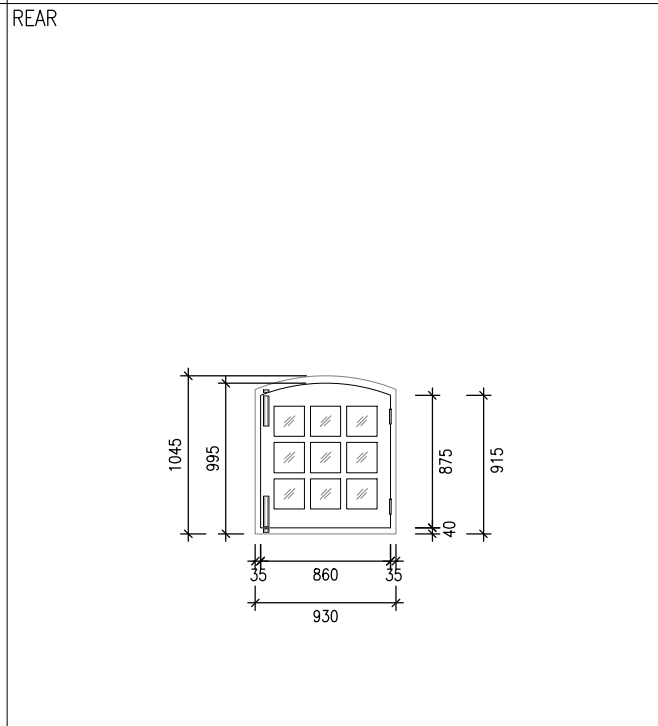
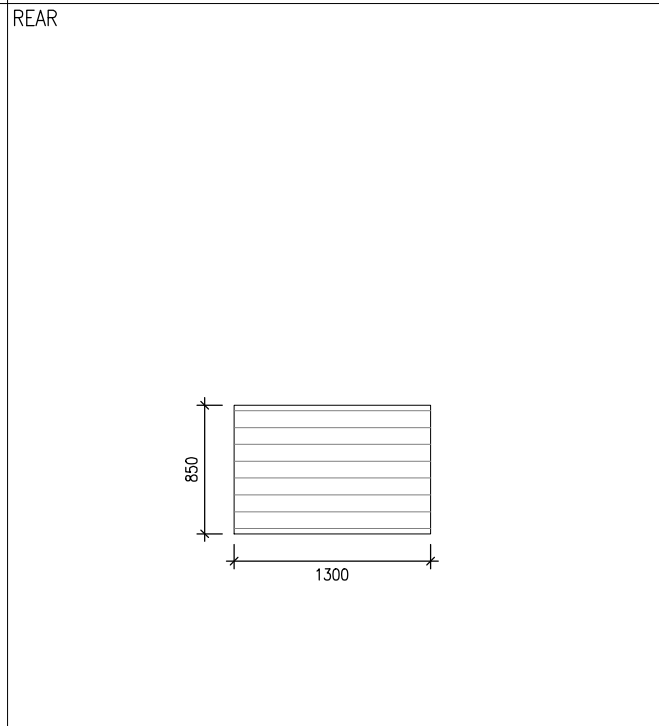
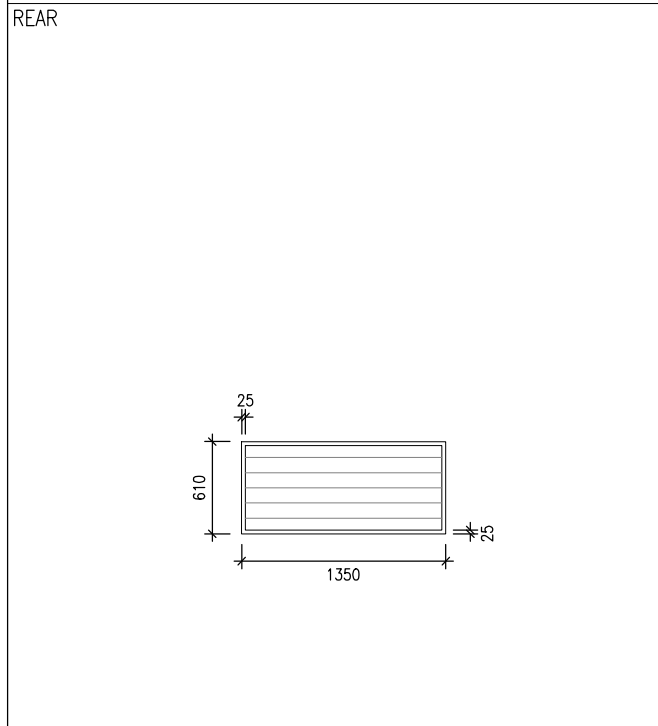
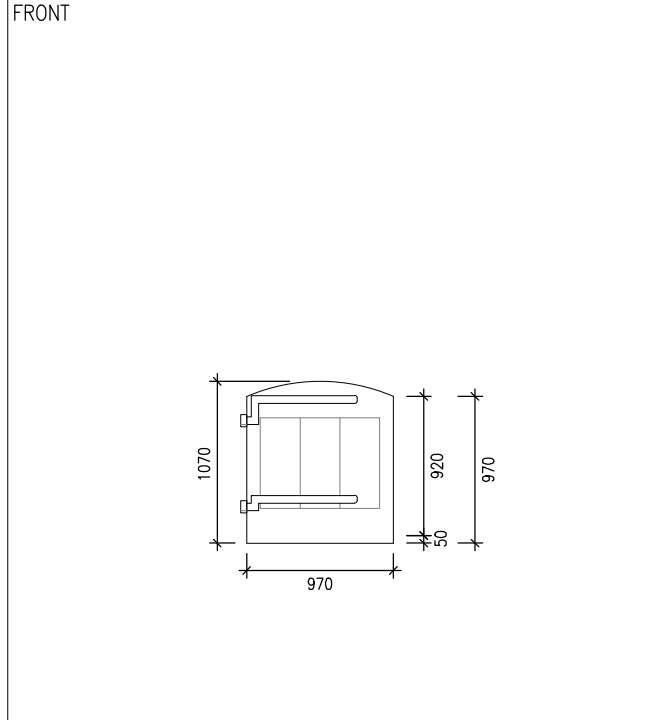
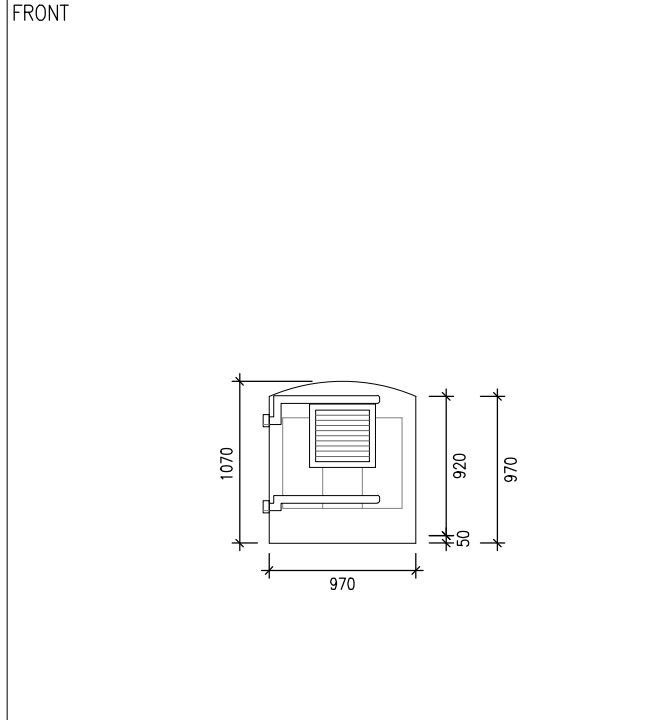
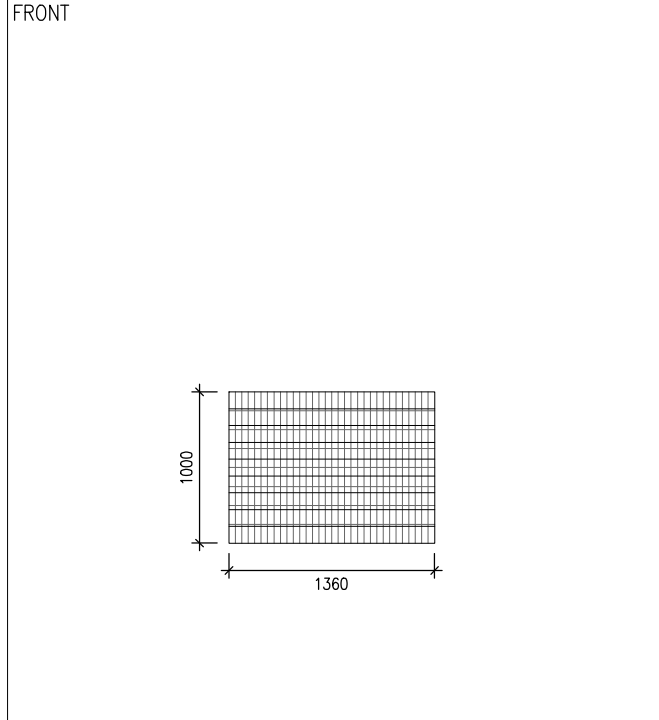
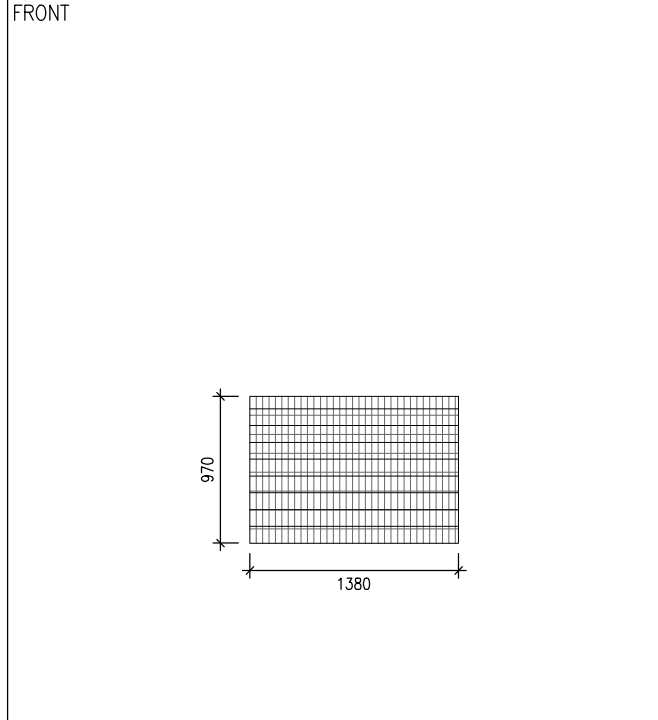
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :

WINDOW SCHEDULE 2

DRAWING NO.:	SCALE:
	1:50(A3)
	REV:
CHECKED	APPROVED
	DATE:

1 WINDOW ELEVATION – W09	SCALE 1:50	2 WINDOW ELEVATION – W10	SCALE 1:50	3 WINDOW ELEVATION – W11	SCALE 1:50	4 WINDOW ELEVATION – W12	SCALE 1:50
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WINDOW MARK							
LOCATION	MAIN BUILDING – BASEMENT	LOCATION	MAIN BUILDING – BASEMENT	LOCATION	MAIN BUILDING – BASEMENT	LOCATION	MAIN BUILDING – BASEMENT
NUMBERS	1	NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-	FIRE RATED	-

REMARKS

REMARKS

REMARKS

REMARKS

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

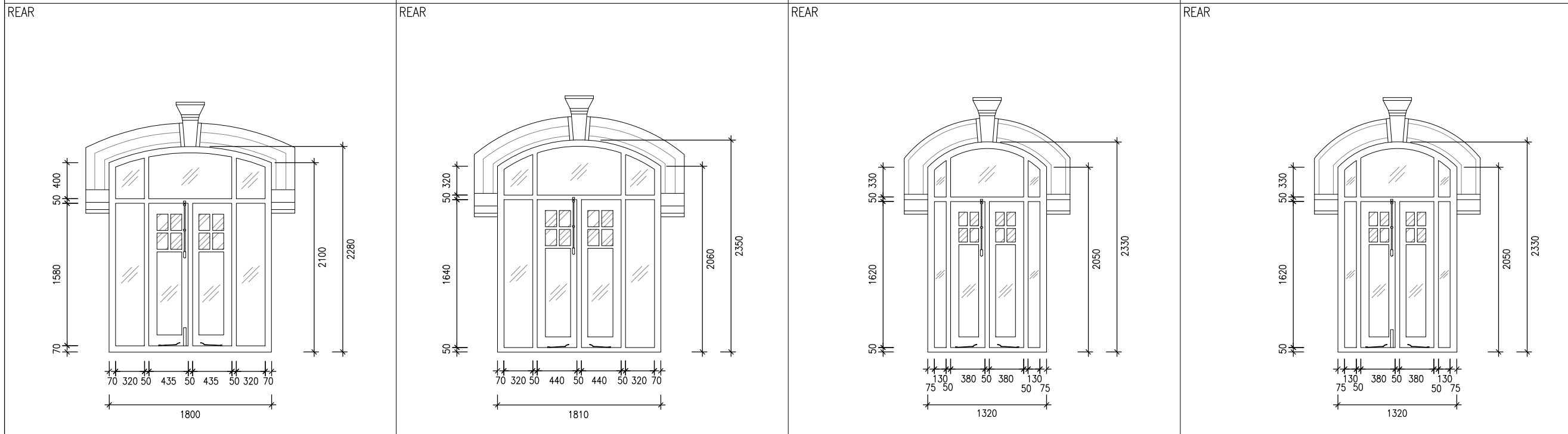
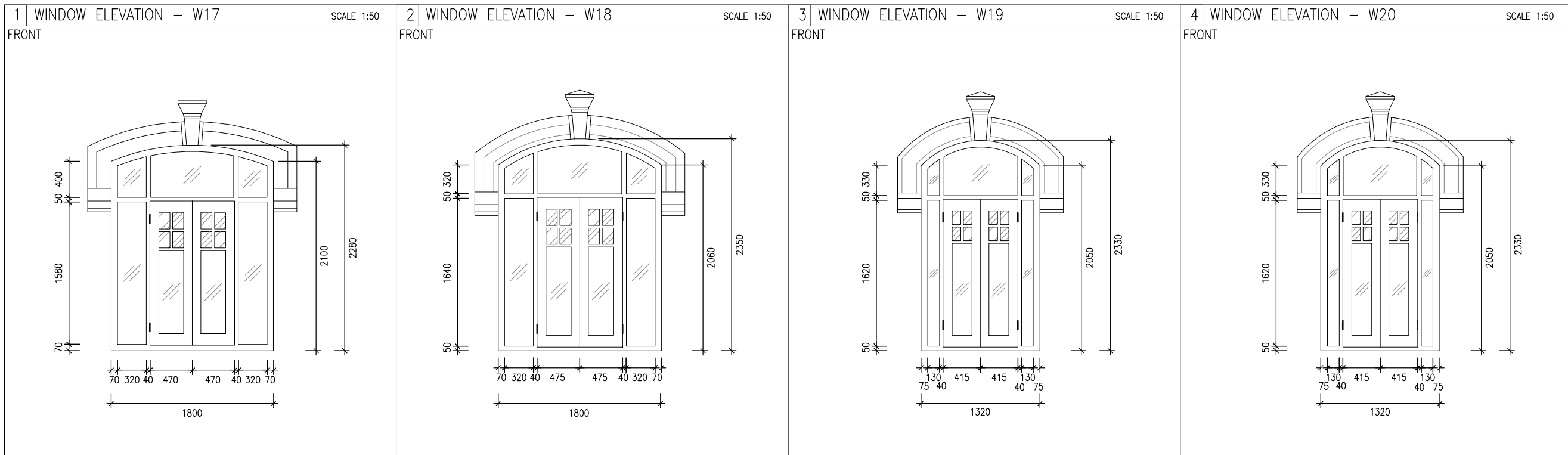
FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :
WINDOW SCHEDULE 3

DRAWING NO.:	SCALE: 1:50(A3)
	REV:
CHECKED	APPROVED
	DATE:



WINDOW MARK	W17	WINDOW MARK	W18	WINDOW MARK	W19	WINDOW MARK	W20
LOCATION	MAIN BUILDING - GROUND FLOOR	LOCATION	MAIN BUILDING - GROUND FLOOR	LOCATION	MAIN BUILDING - GROUND FLOOR	LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1	NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-	FIRE RATED	-

REMARKS		REMARKS		REMARKS		REMARKS	
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NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

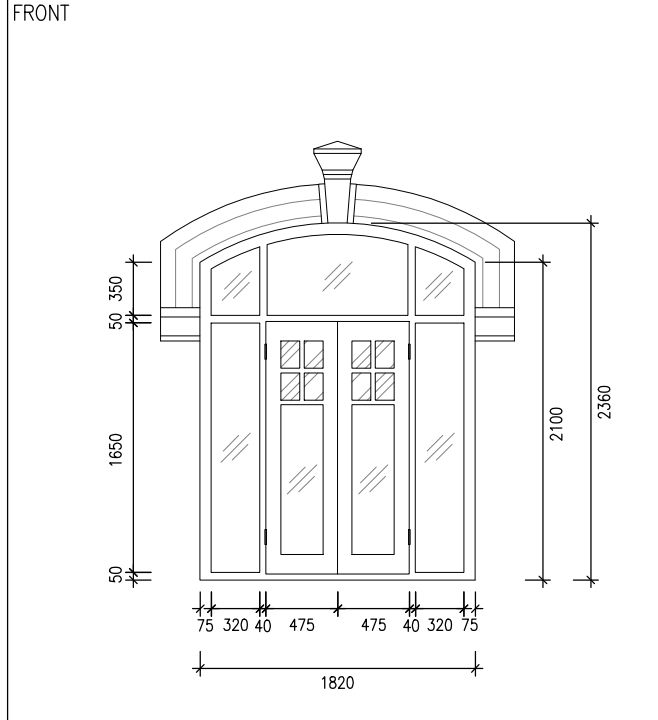
PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

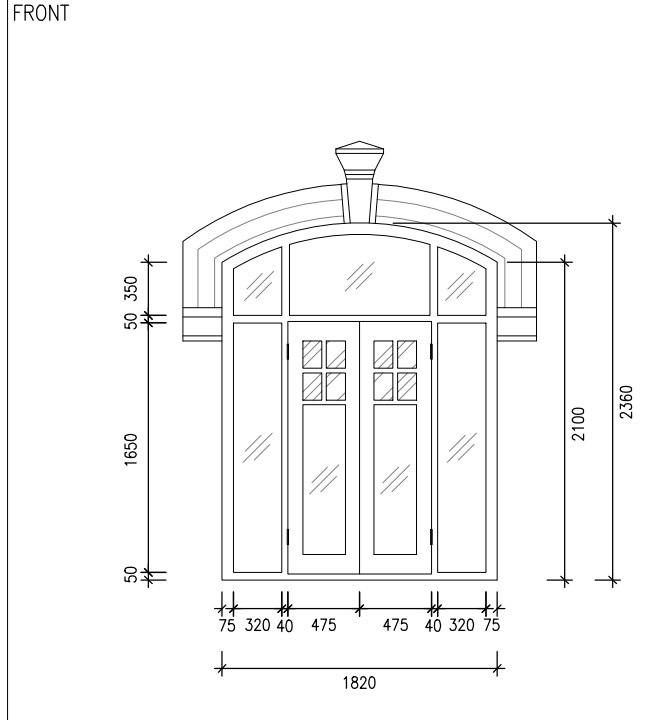
DRAWING TITLE :
WINDOW SCHEDULE 5

DRAWING NO.:	SCALE:
	1:50(A3)
	REV:
CHECKED	APPROVED
	DATE:

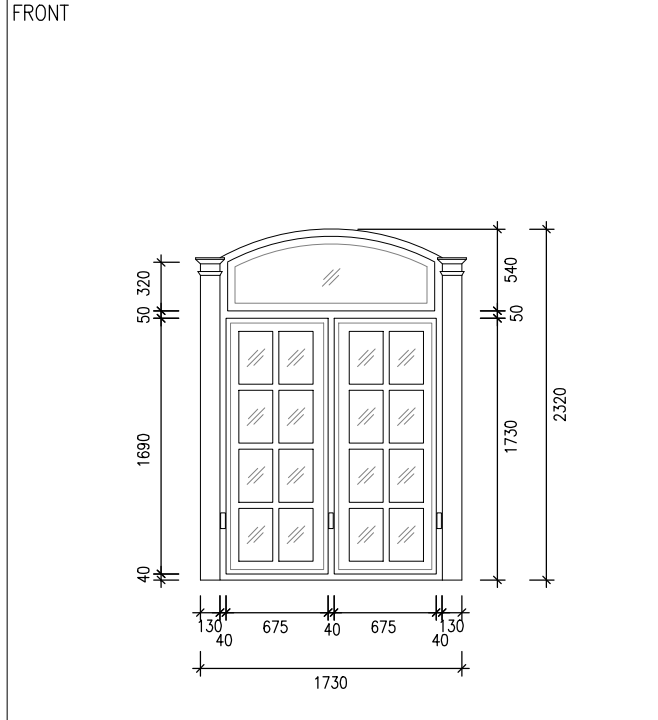
1 WINDOW ELEVATION – W21 SCALE 1:50



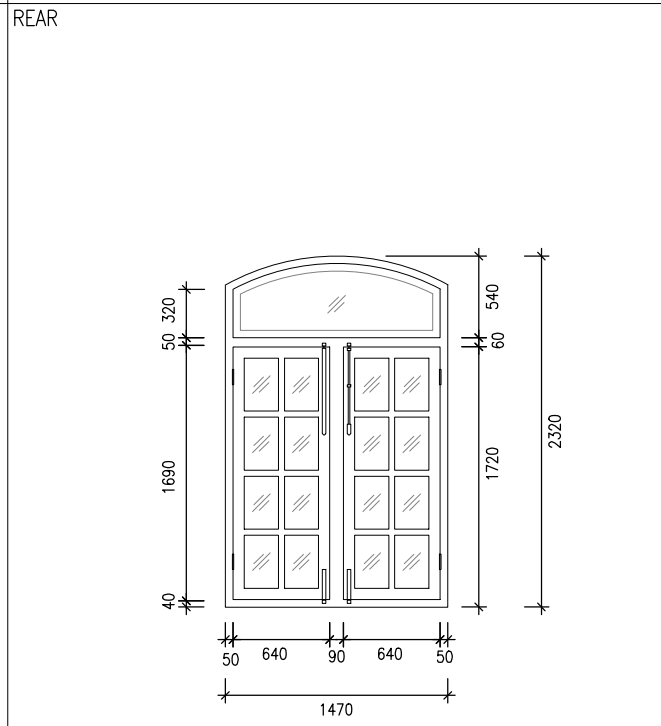
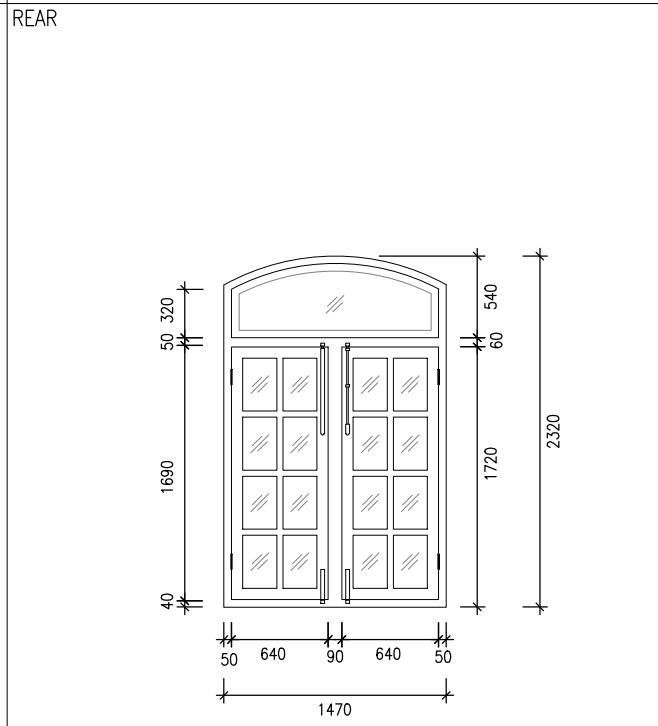
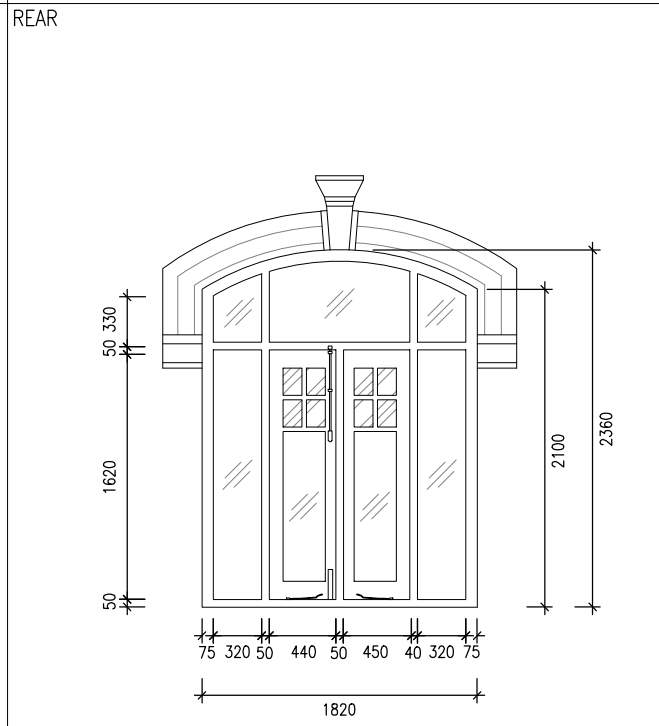
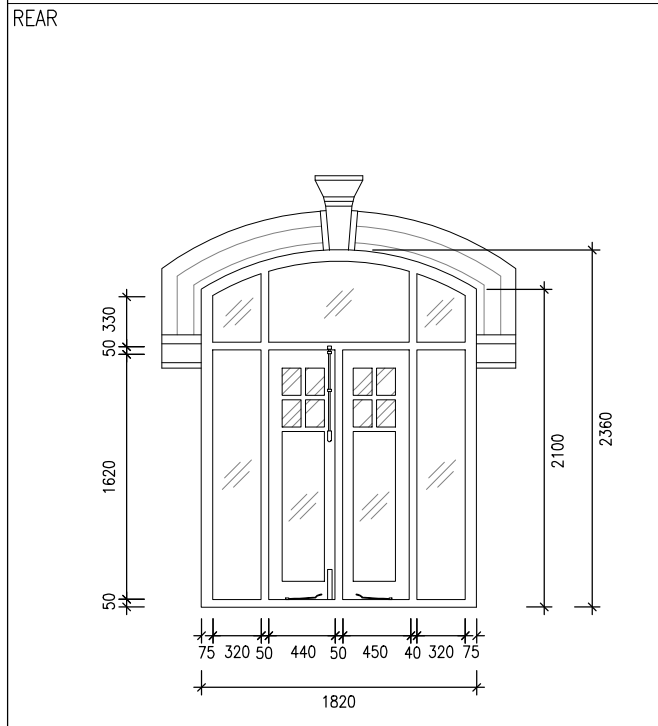
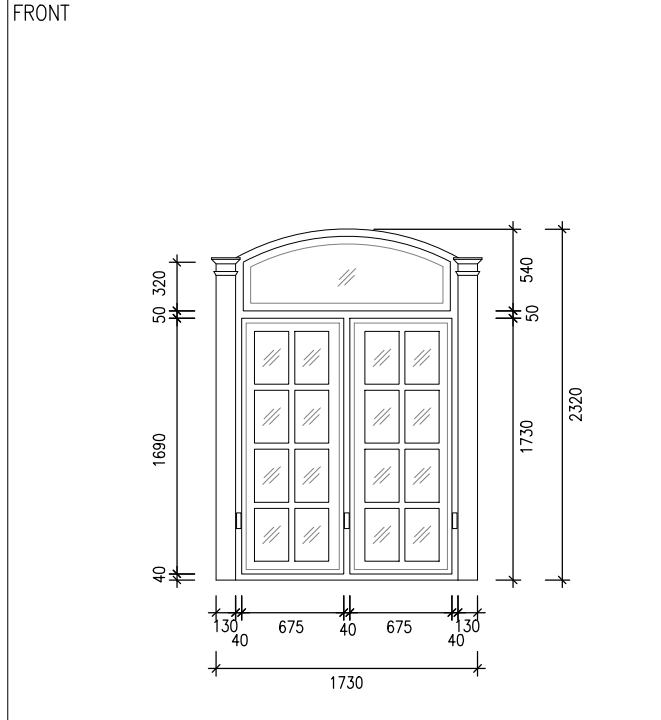
2 WINDOW ELEVATION – W22 SCALE 1:50



3 WINDOW ELEVATION – W23 SCALE 1:50



4 WINDOW ELEVATION – W24 SCALE 1:50



WINDOW MARK	
LOCATION	MAIN BUILDING – GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

WINDOW MARK	
LOCATION	MAIN BUILDING – GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

WINDOW MARK	
LOCATION	MAIN BUILDING – GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

WINDOW MARK	
LOCATION	MAIN BUILDING – GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

REMARKS

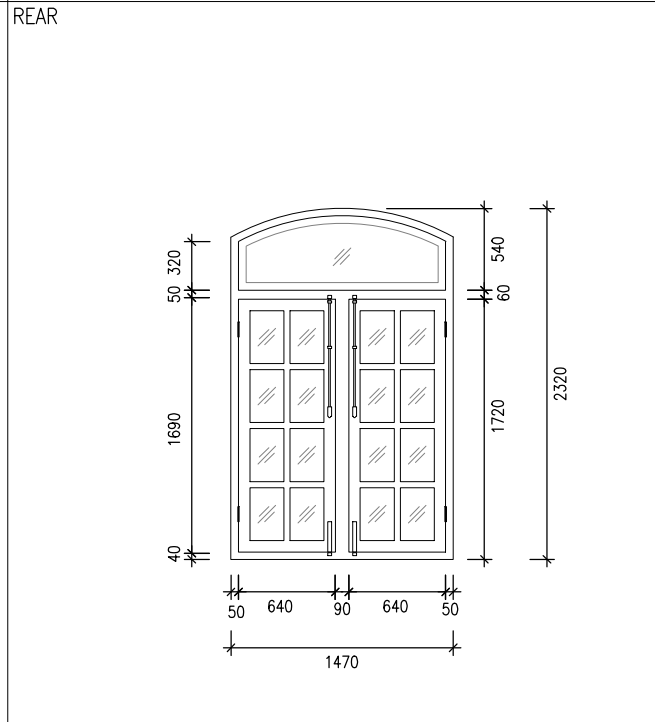
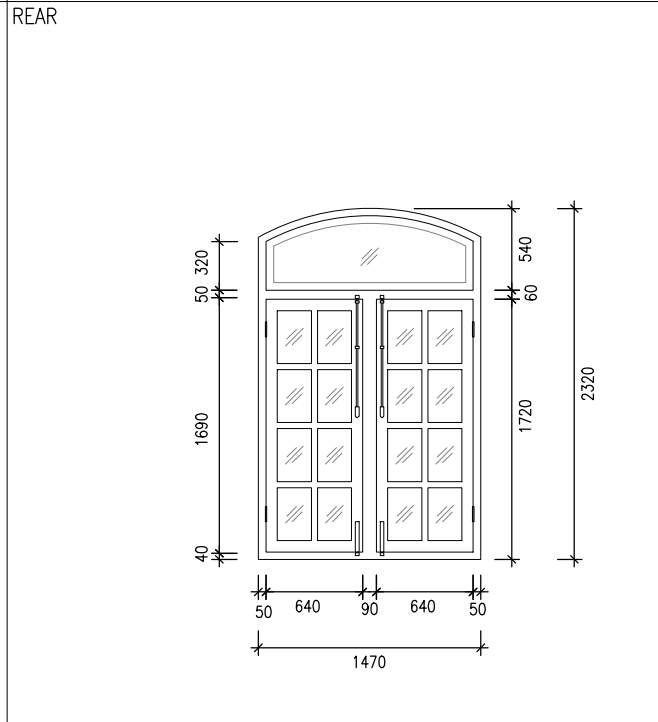
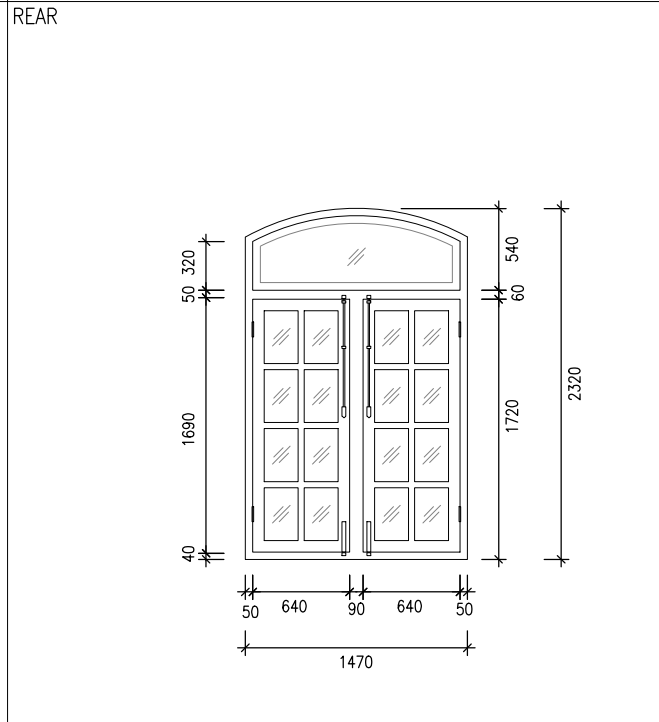
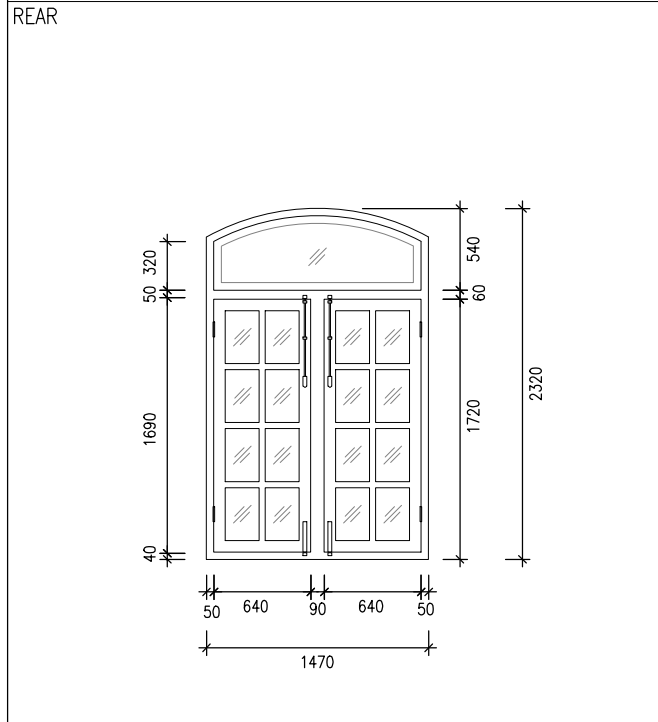
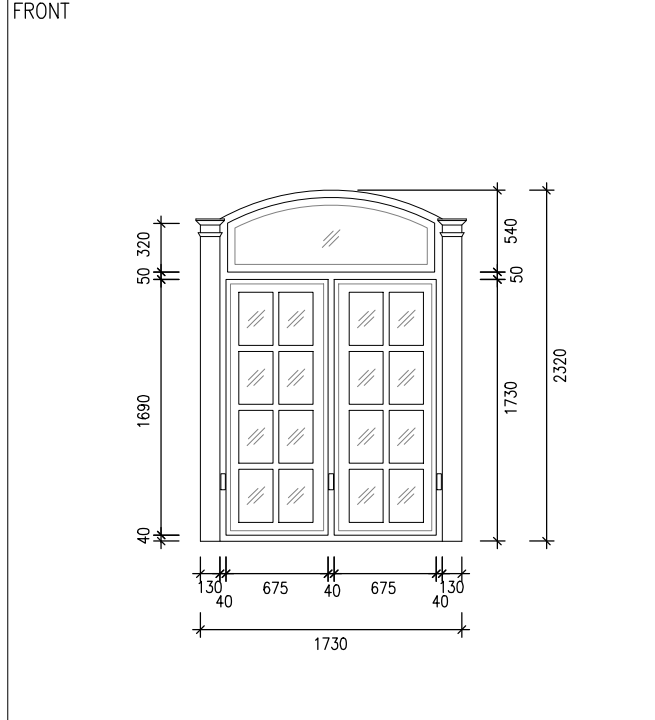
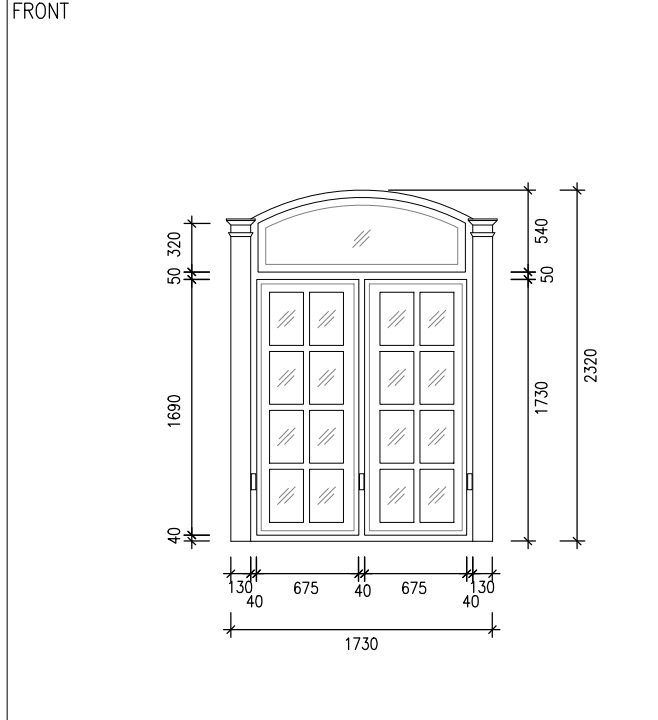
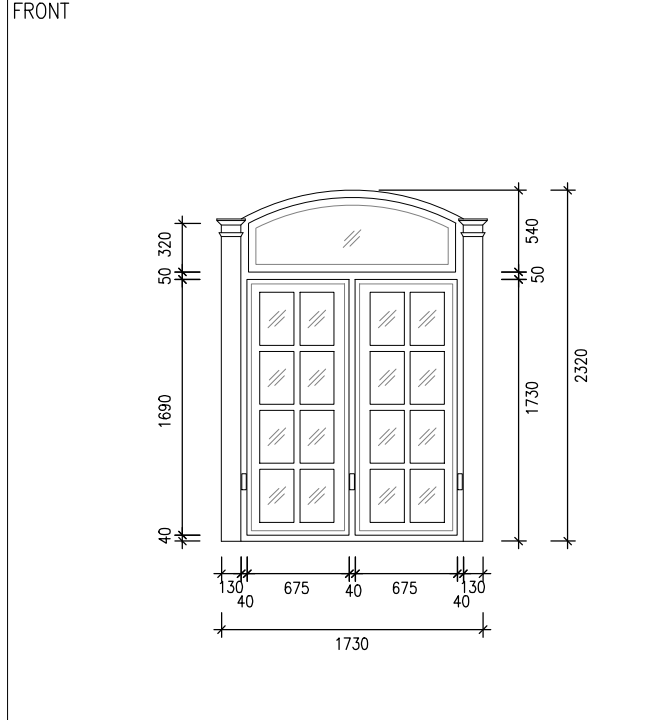
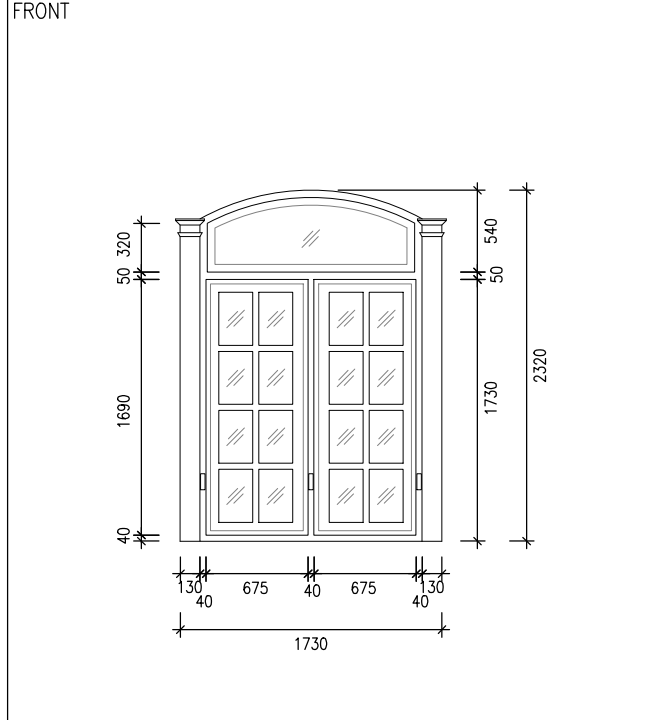
REMARKS

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NO.	DATE	DESCRIPTION	INITIAL
CLIENT/ EMPLOYER			
ARCHITECT			
STRUCTURAL ENGINEER			
BUILDING SERVICES ENGINEER			
LANDSCAPE ARCHITECT			
CONTRACT NO.:			
FILE NO.:			
PROJECT NO.: 2719			
PROJECT TITLE :			
HONG KONG MUSEUM OF MEDICAL SCIENCES			
DRAWING TITLE :			
WINDOW SCHEDULE 6			
DRAWING NO.:		SCALE:	
		1:50(A3)	
		REV:	
CHECKED	APPROVED	DATE:	

1 WINDOW ELEVATION – W25 SCALE 1:50 2 WINDOW ELEVATION – W26 SCALE 1:50 3 WINDOW ELEVATION – W27 SCALE 1:50 4 WINDOW ELEVATION – W28 SCALE 1:50



WINDOW MARK	W25	WINDOW MARK	W26	WINDOW MARK	W27	WINDOW MARK	W28
LOCATION	MAIN BUILDING – GROUND FLOOR	LOCATION	MAIN BUILDING – GROUND FLOOR	LOCATION	MAIN BUILDING – GROUND FLOOR	LOCATION	MAIN BUILDING – GROUND FLOOR
NUMBERS	1	NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-	FIRE RATED	-

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

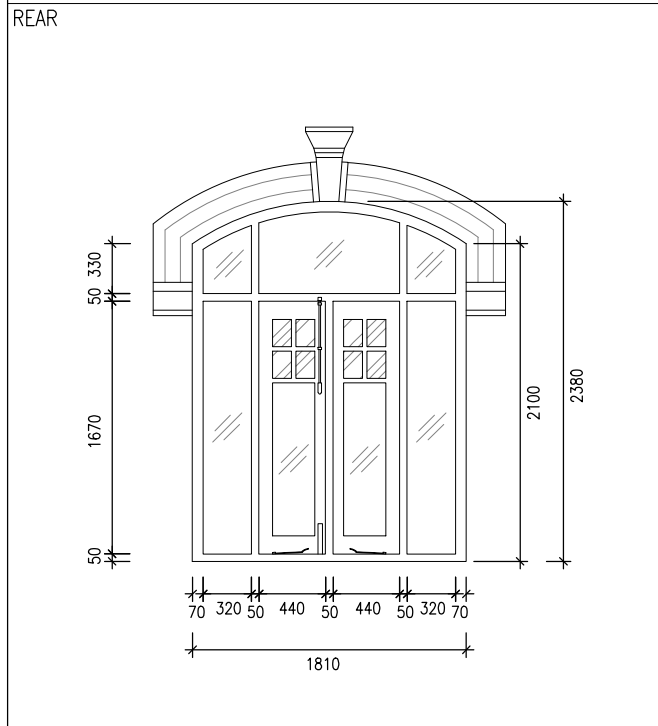
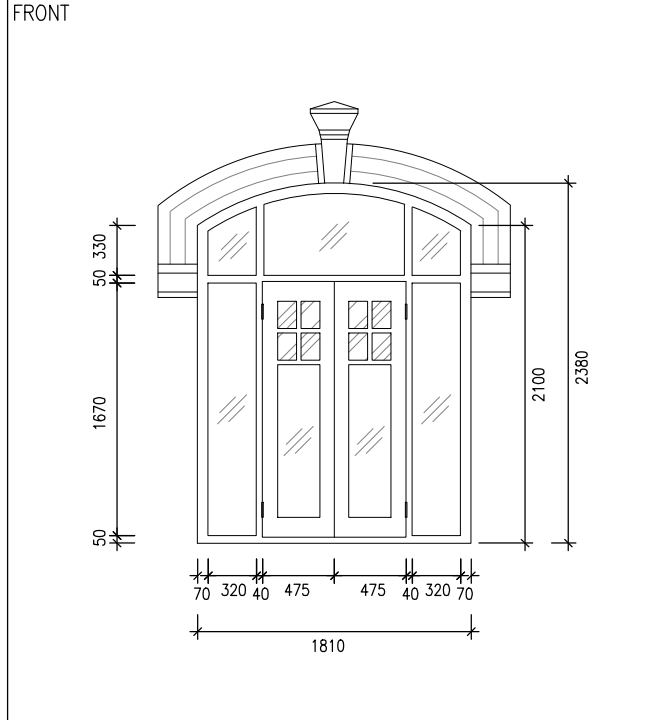
PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :
WINDOW SCHEDULE 7

DRAWING NO.:	SCALE:
	1:50(A3)
CHECKED	REV:
	DATE:

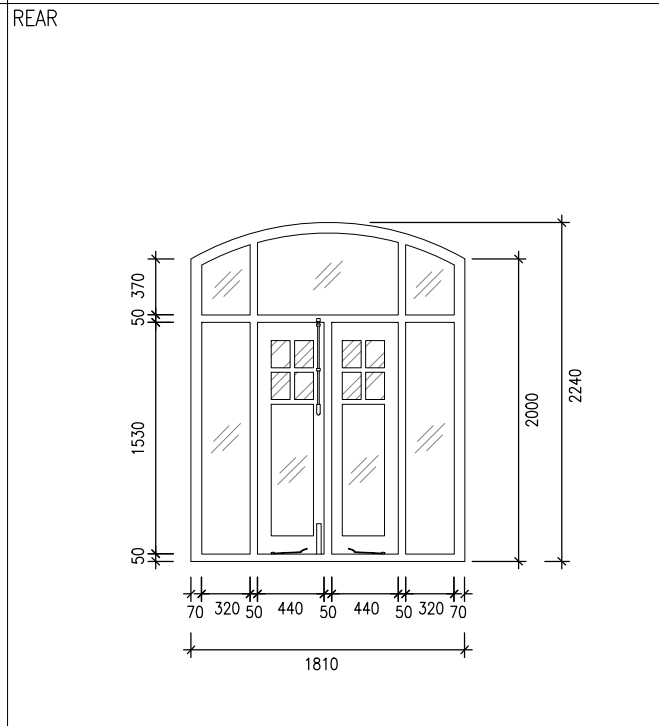
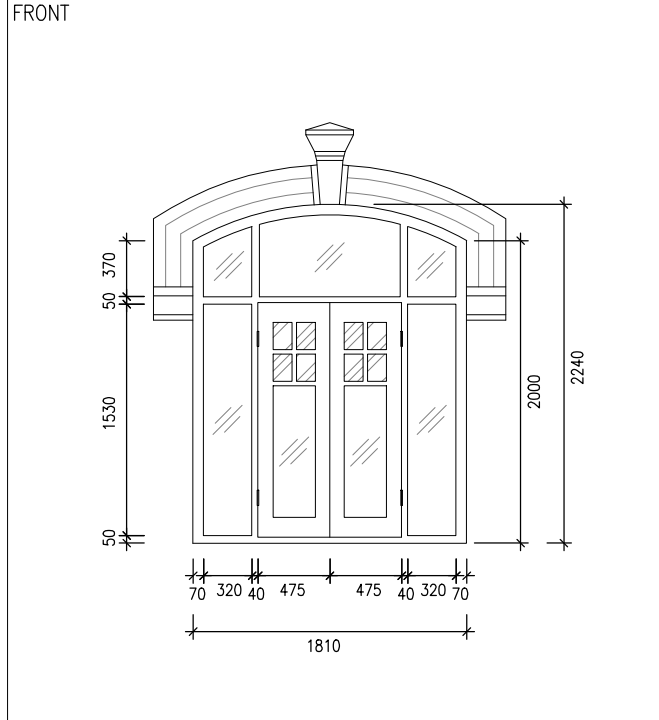
1 WINDOW ELEVATION - W29 SCALE 1:50



WINDOW MARK	
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

REMARKS

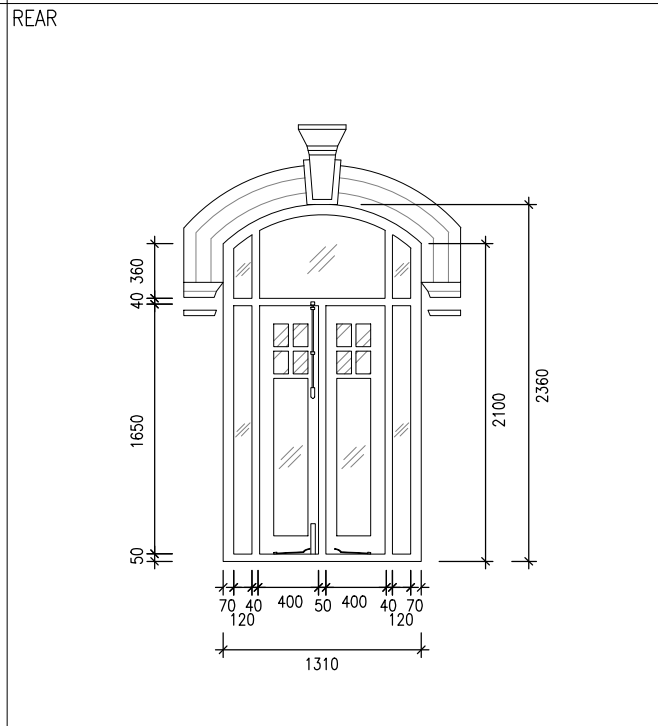
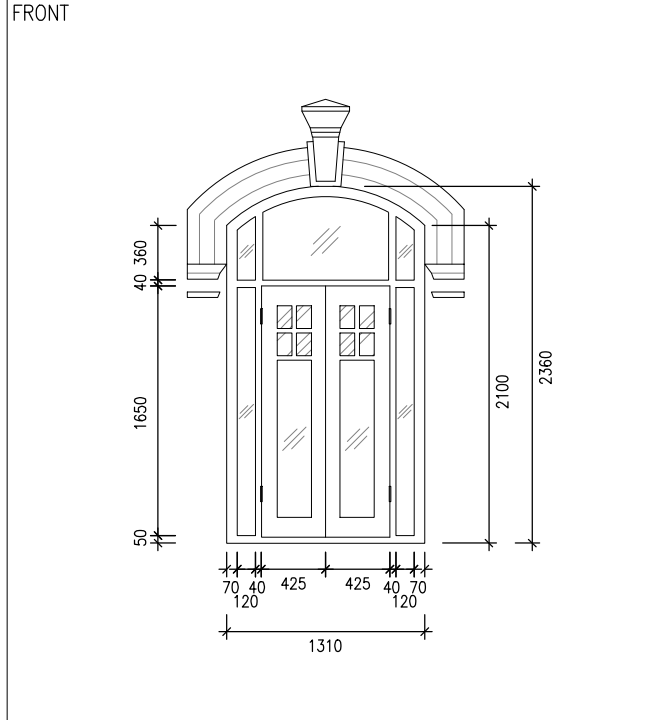
2 WINDOW ELEVATION - W30 SCALE 1:50



WINDOW MARK	
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

REMARKS

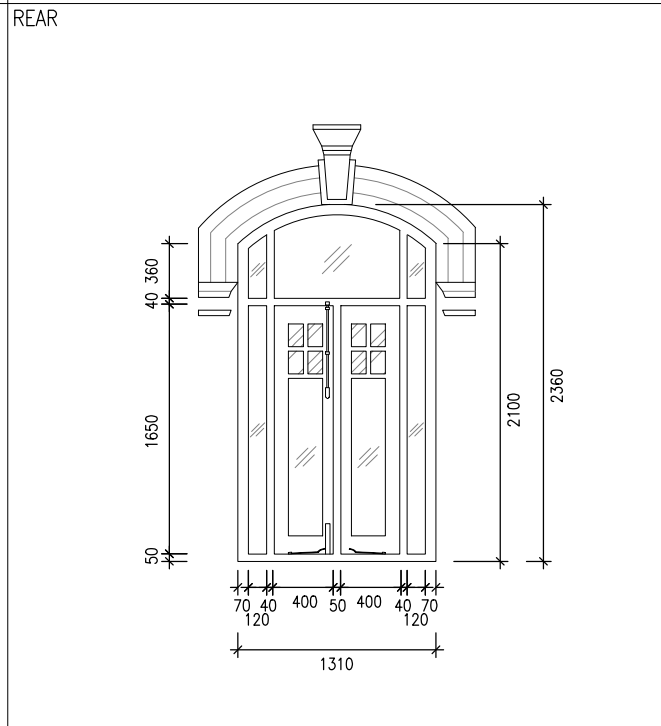
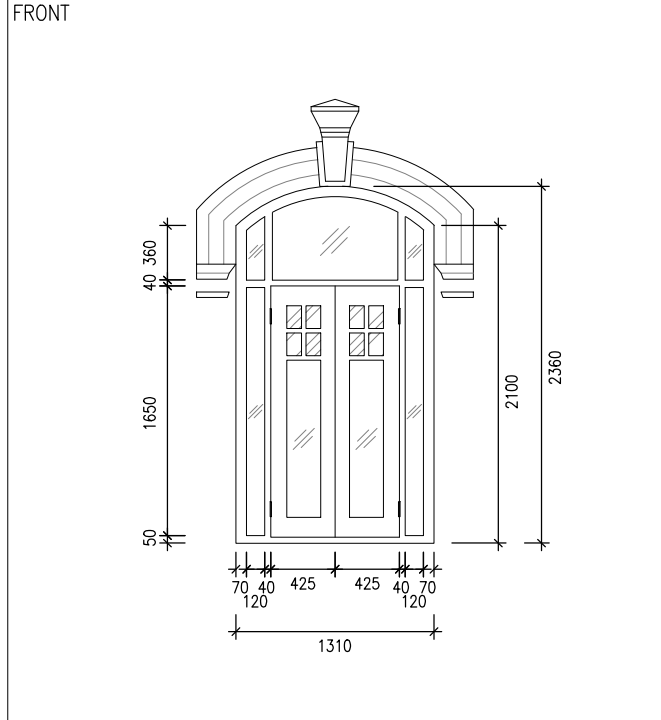
3 WINDOW ELEVATION - W31 SCALE 1:50



WINDOW MARK	
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

REMARKS

4 WINDOW ELEVATION - W32 SCALE 1:50



WINDOW MARK	
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

REMARKS

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

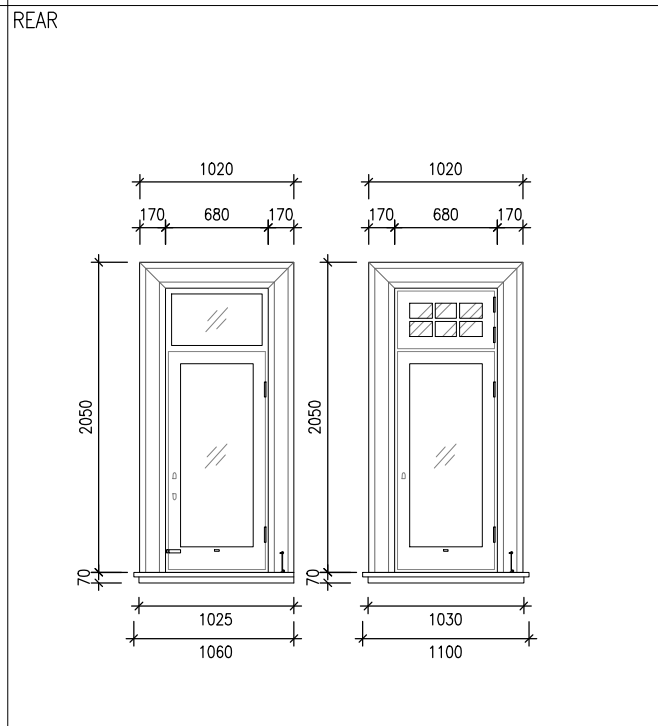
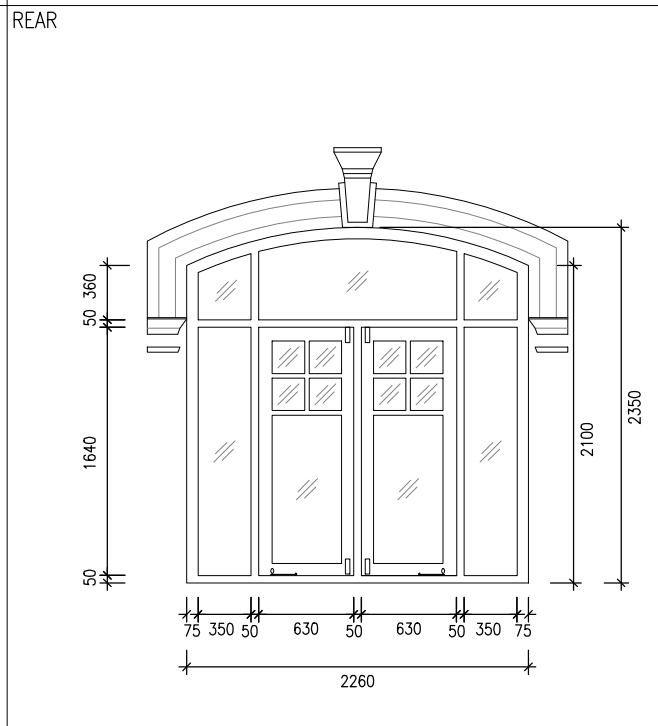
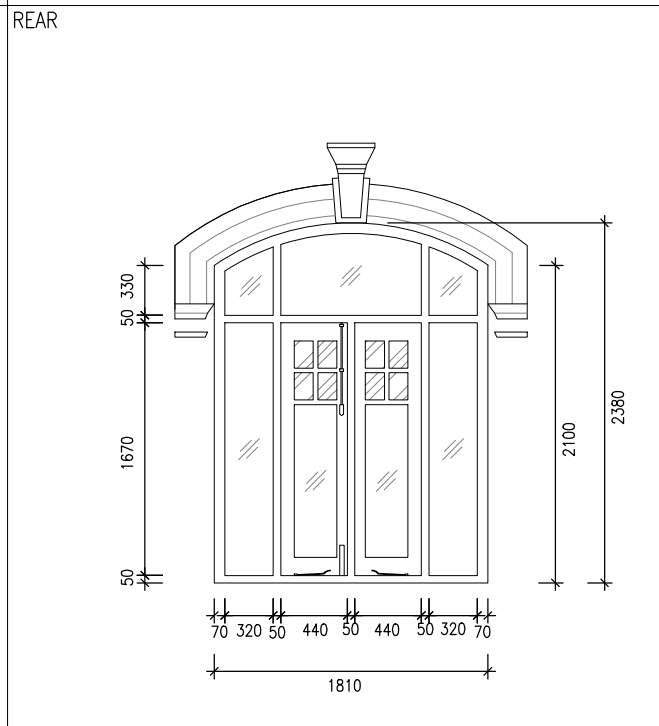
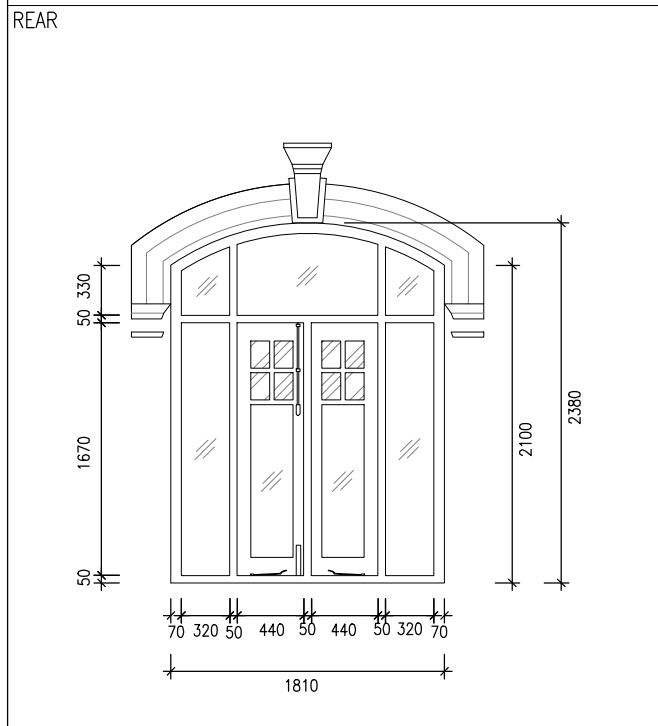
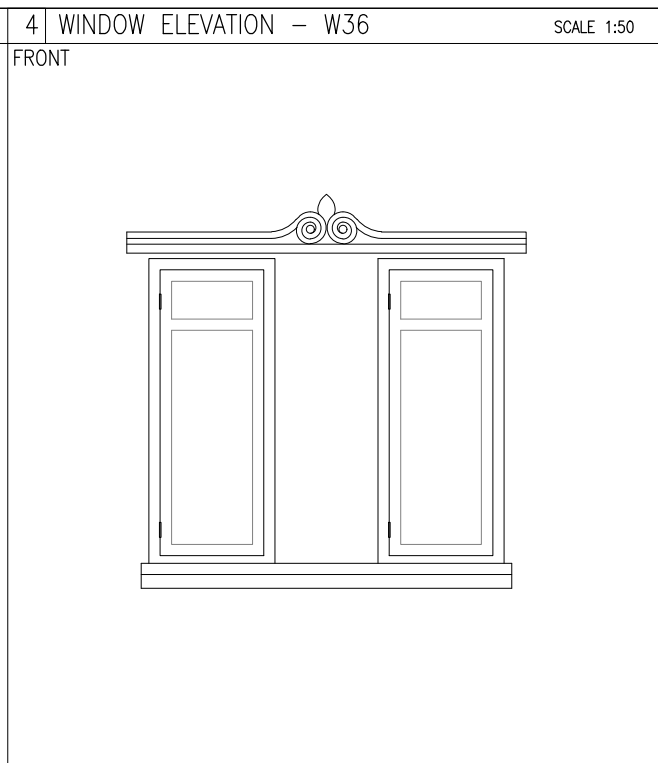
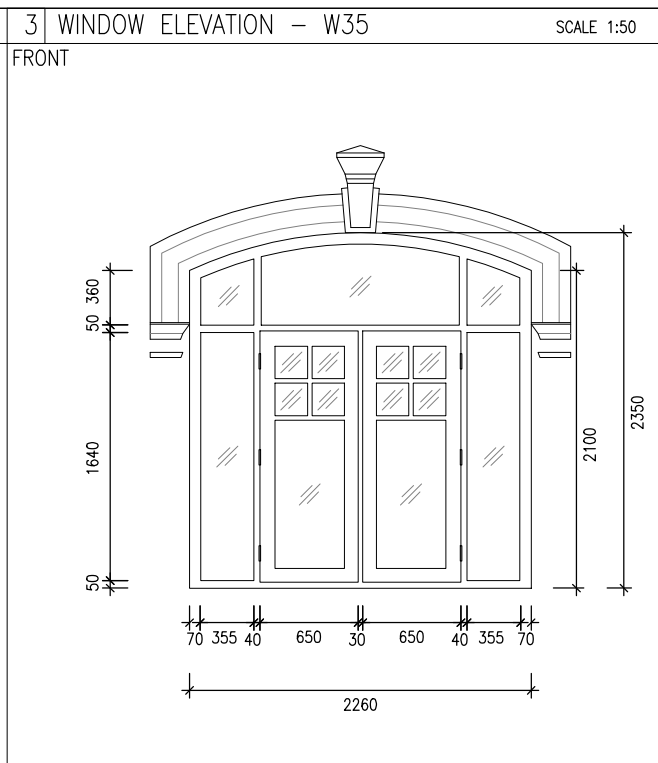
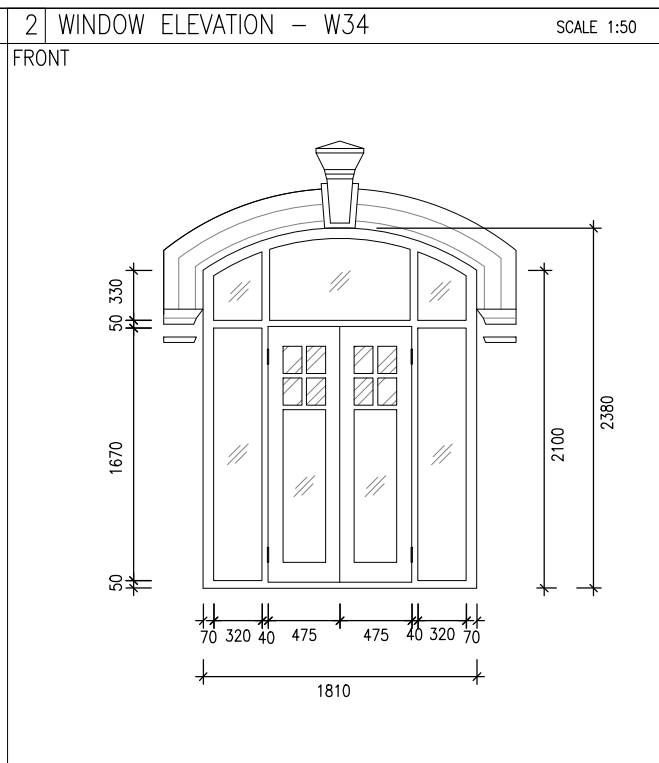
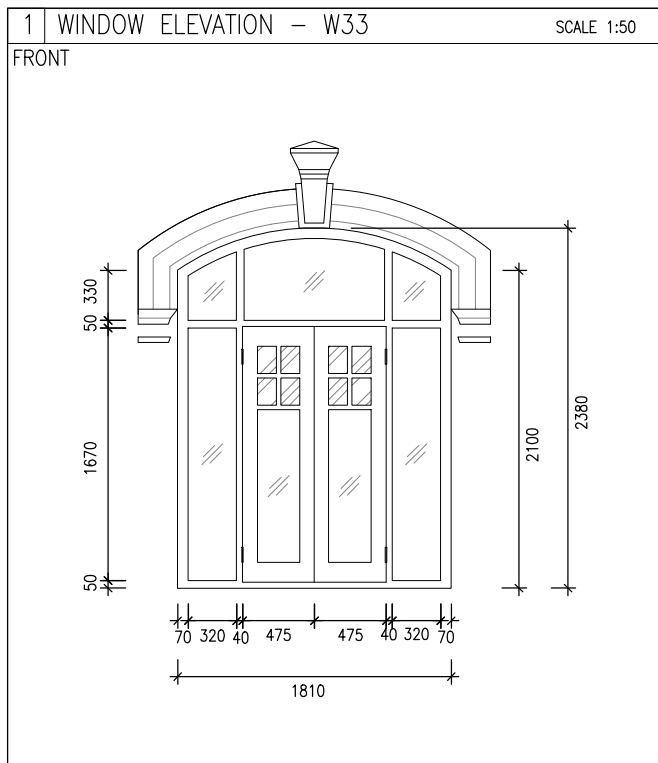
PROJECT TITLE :

HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :

WINDOW SCHEDULE 8

DRAWING NO.:	SCALE:
	1:50(A3)
REV:	
CHECKED	APPROVED
	DATE:



WINDOW MARK	W33
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W34
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W35
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W36
LOCATION	MAIN BUILDING - GROUND FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :

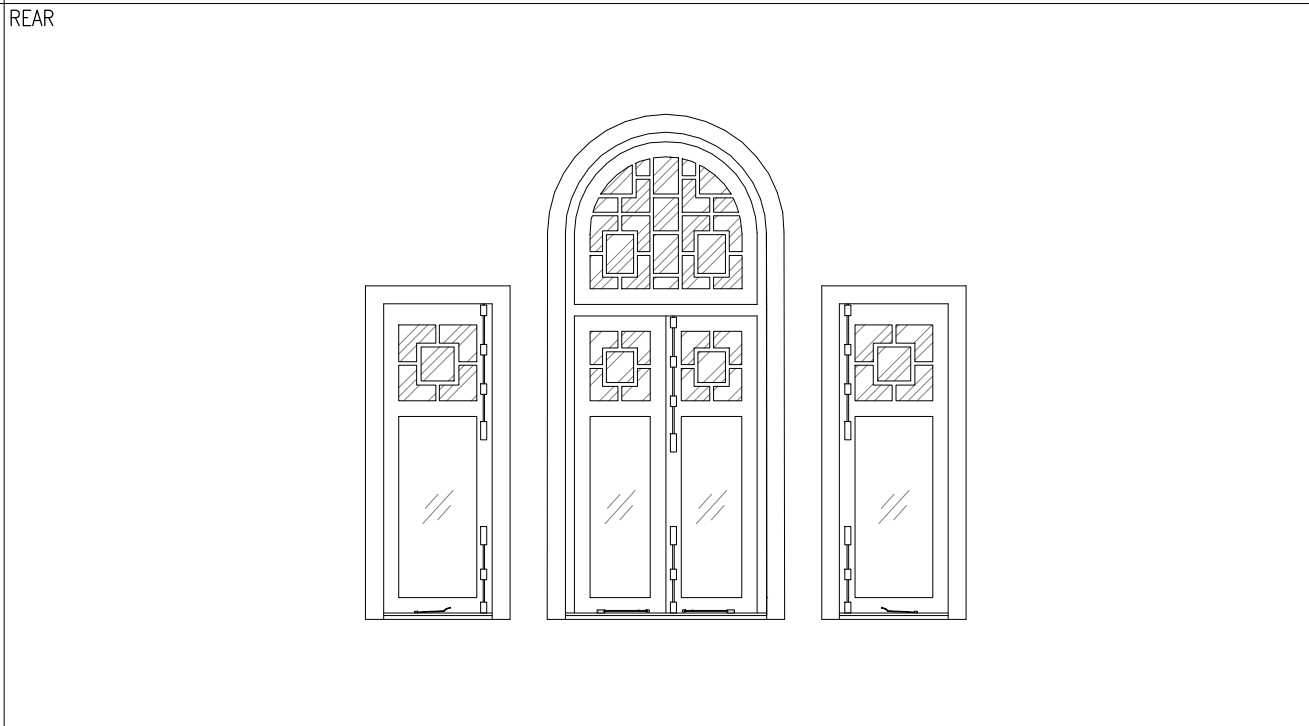
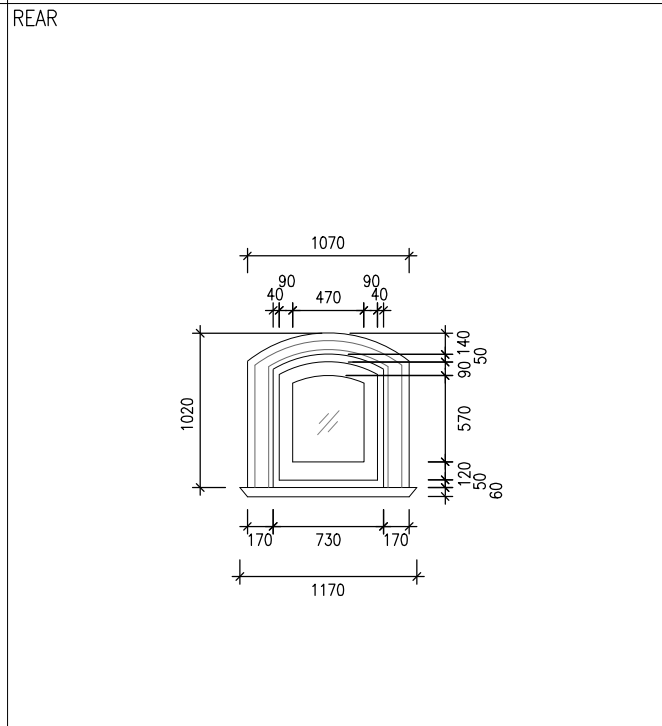
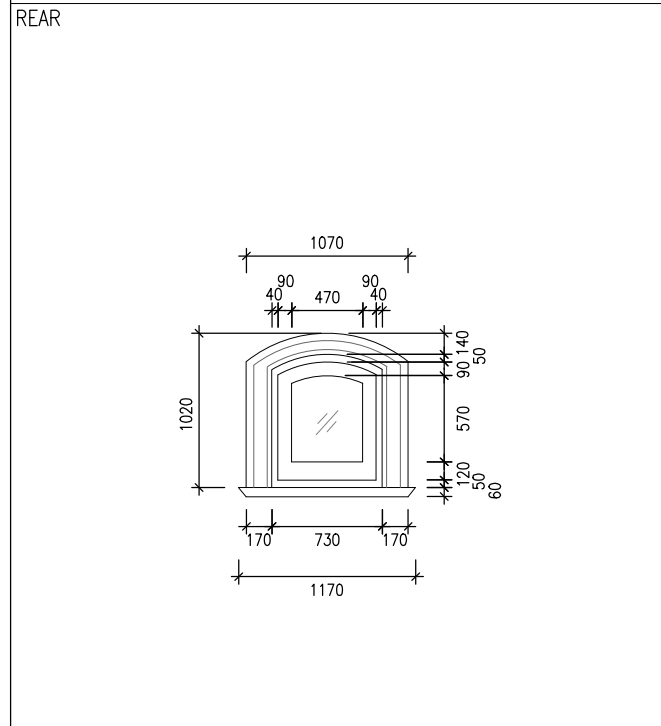
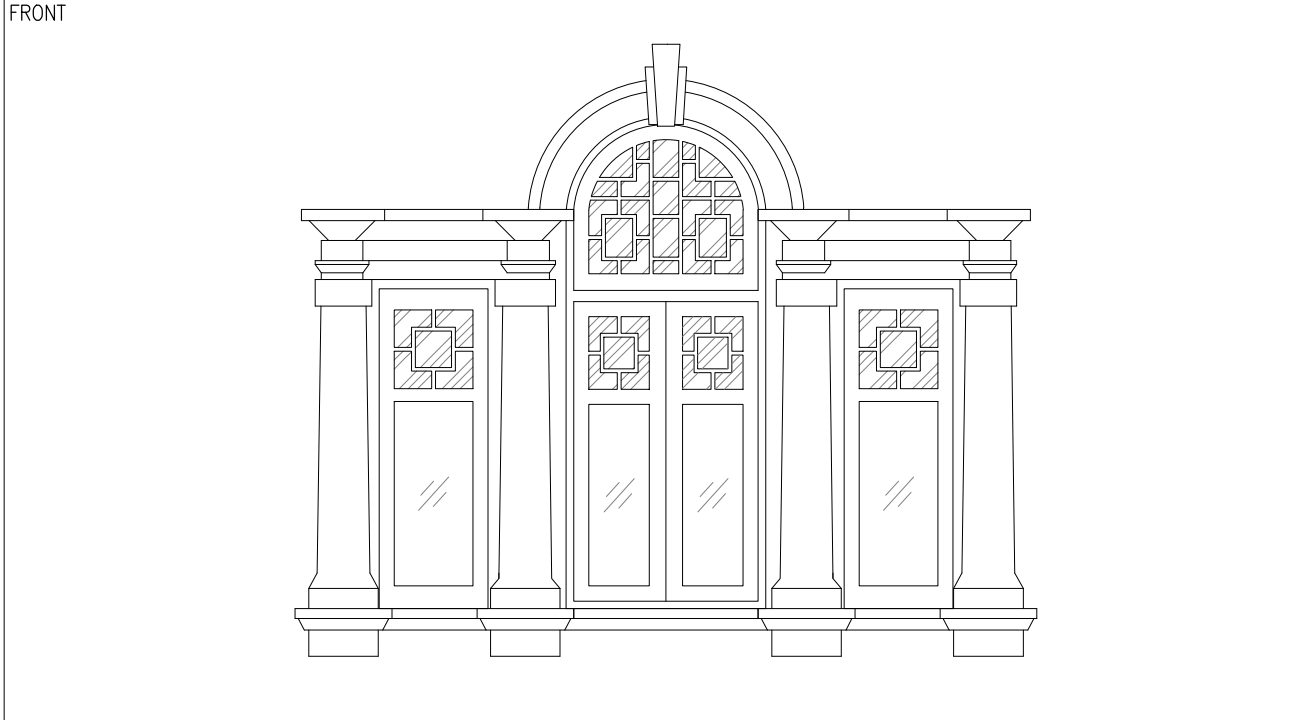
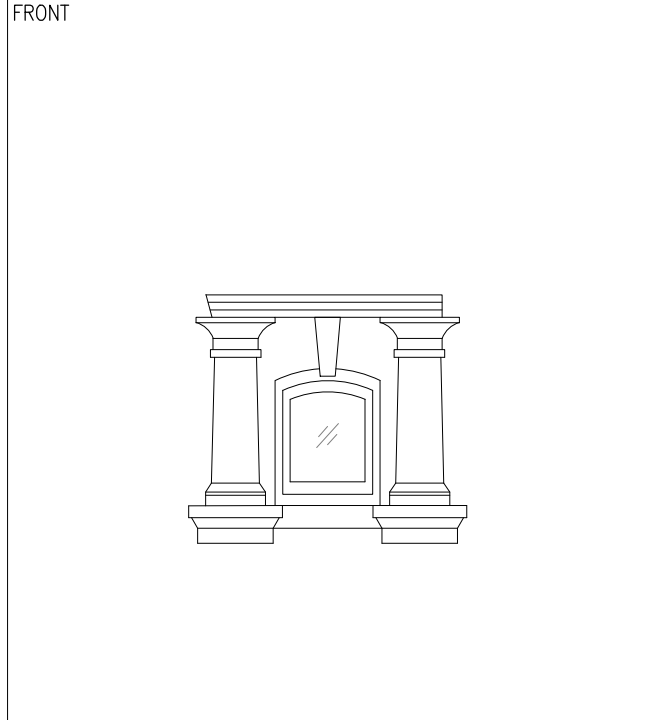
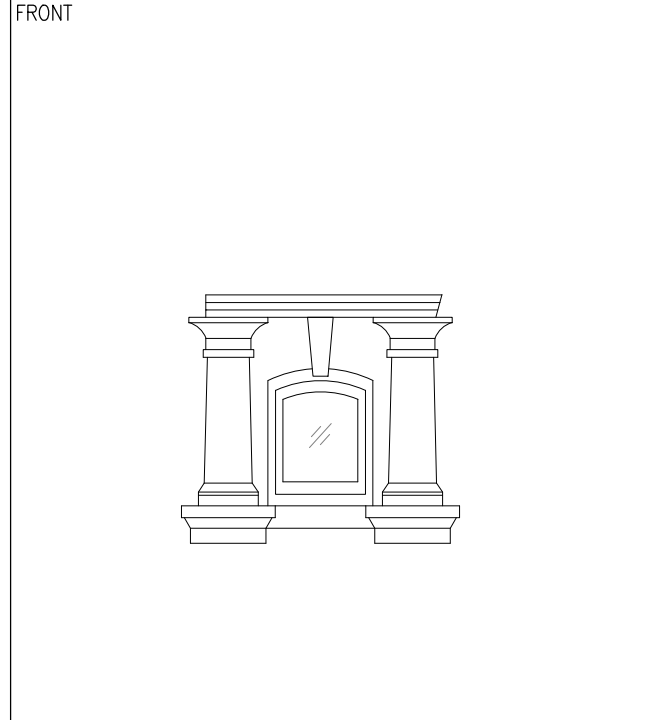
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :

WINDOW SCHEDULE 9

DRAWING NO.:	SCALE:
	1:50(A3)
	REV:
CHECKED	APPROVED
	DATE:

1 WINDOW ELEVATION – W37	SCALE 1:50	2 WINDOW ELEVATION – W38	SCALE 1:50	3 WINDOW ELEVATION – W39	SCALE 1:50
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WINDOW MARK		WINDOW MARK		WINDOW MARK	
LOCATION	MAIN BUILDING – GROUND FLOOR	LOCATION	MAIN BUILDING – GROUND FLOOR	LOCATION	MAIN BUILDING – FIRST FLOOR
NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-

REMARKS		REMARKS		REMARKS	
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NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

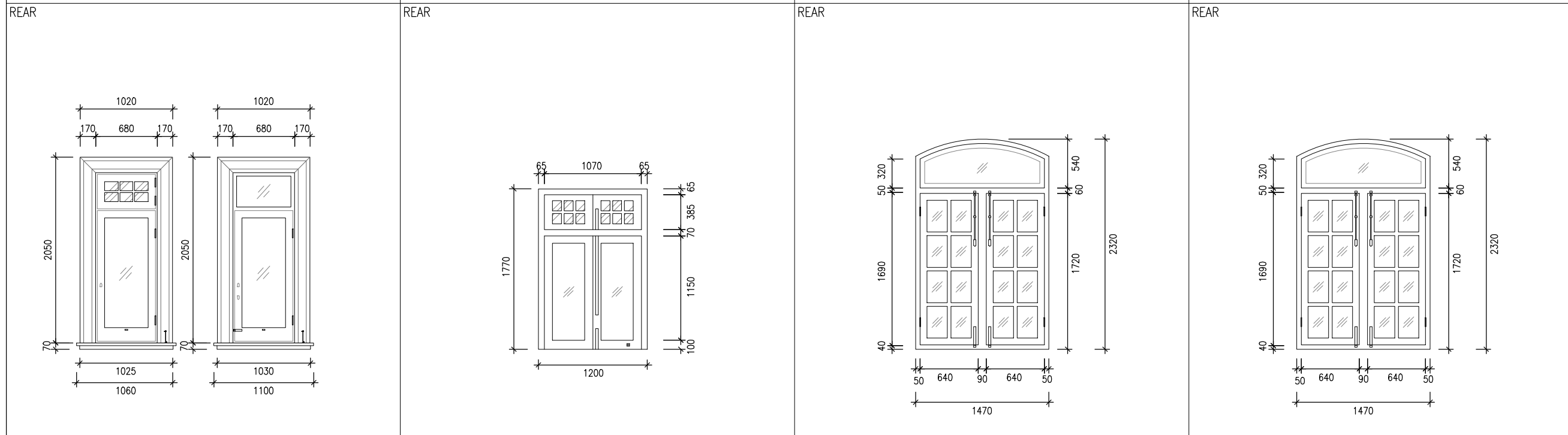
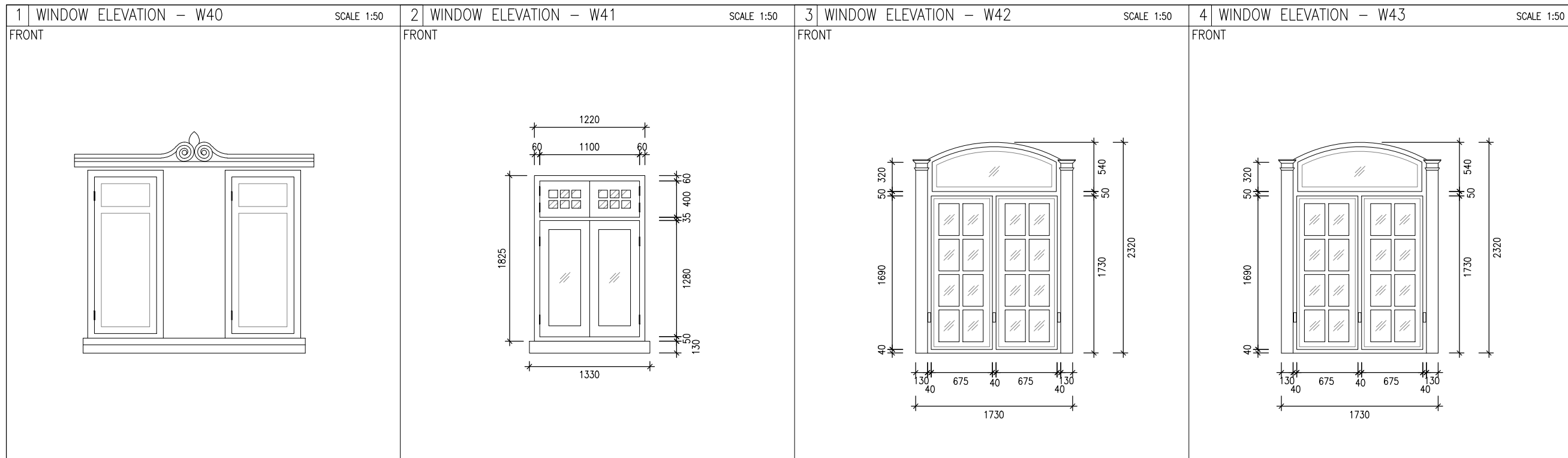
FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :
WINDOW SCHEDULE 10

DRAWING NO.:	SCALE: 1:50(A3)
	REV:
CHECKED	APPROVED
	DATE:



WINDOW MARK	W40	WINDOW MARK	W41	WINDOW MARK	W42	WINDOW MARK	W43
LOCATION	MAIN BUILDING - FIRST FLOOR	LOCATION	MAIN BUILDING - FIRST FLOOR	LOCATION	MAIN BUILDING - FIRST FLOOR	LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1	NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-	FIRE RATED	-
REMARKS		REMARKS		REMARKS		REMARKS	

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

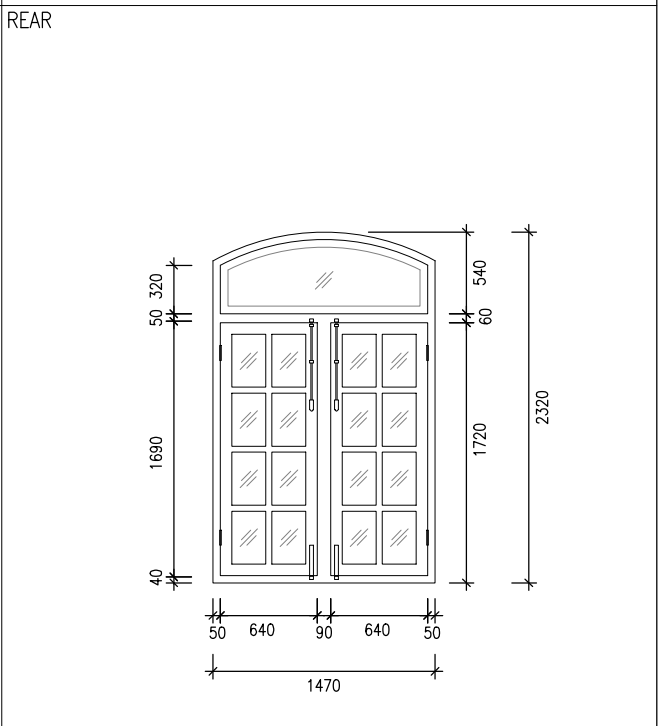
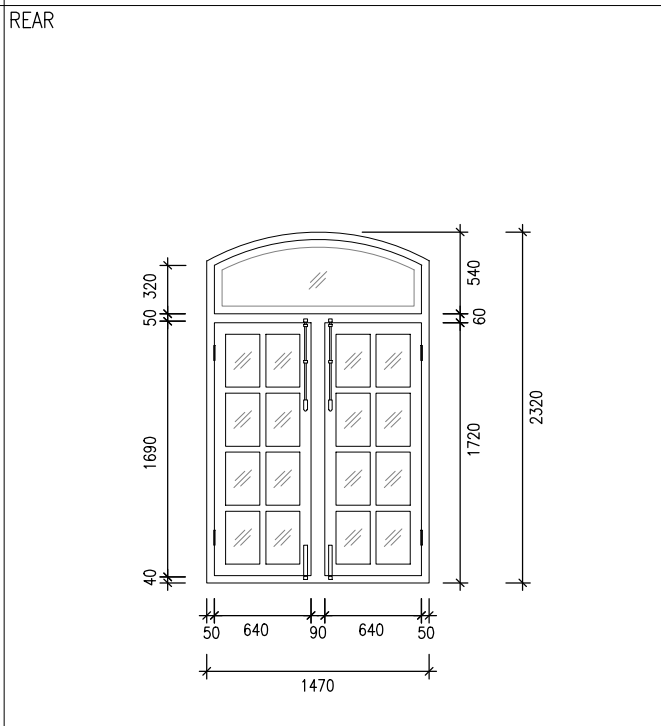
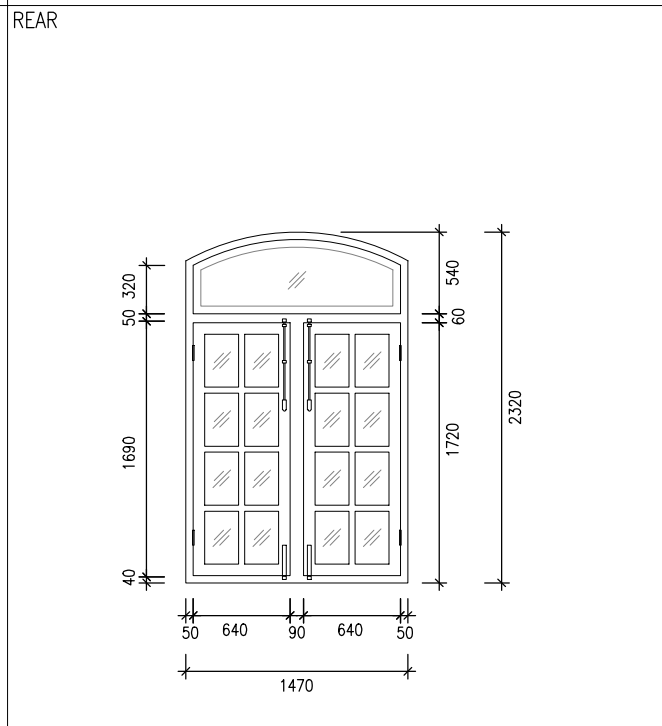
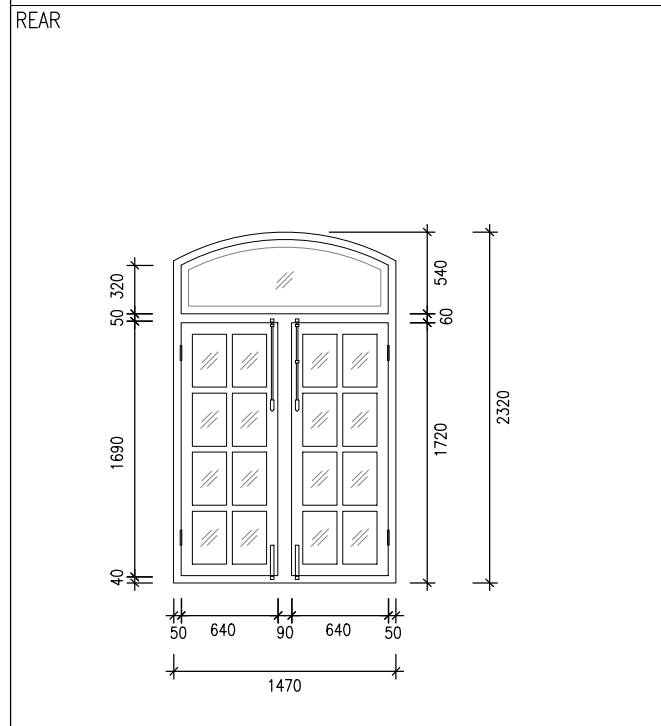
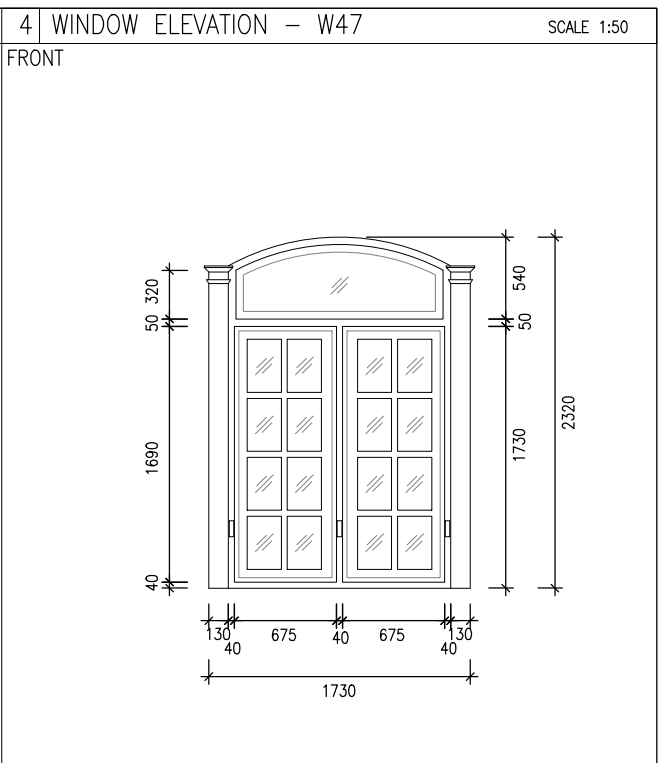
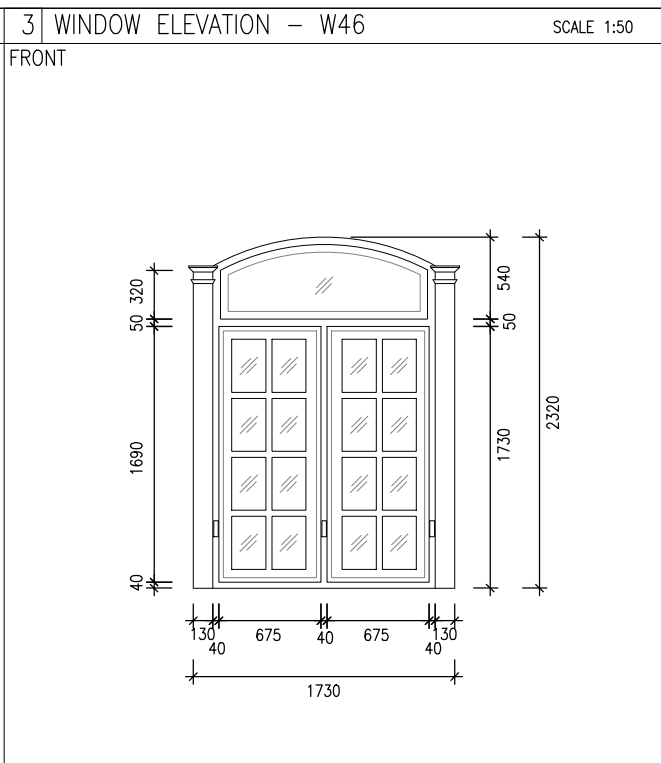
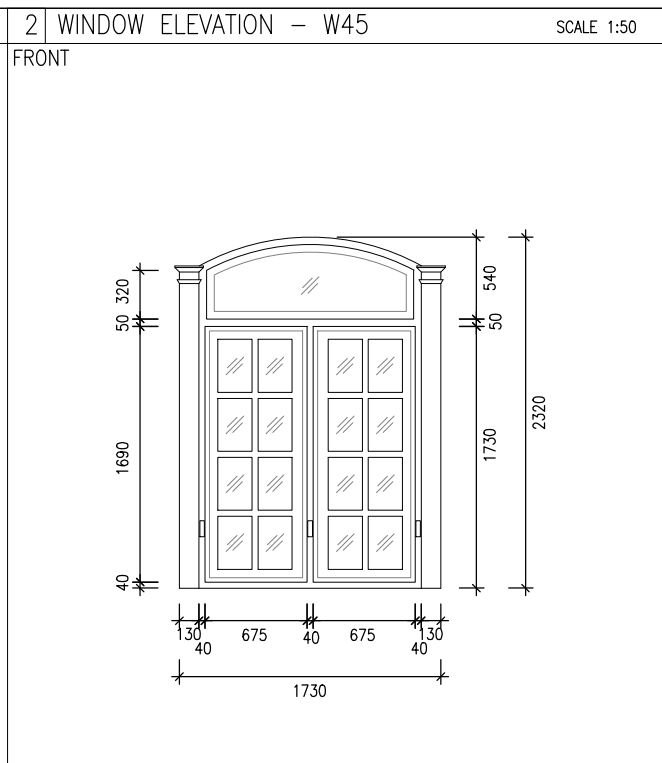
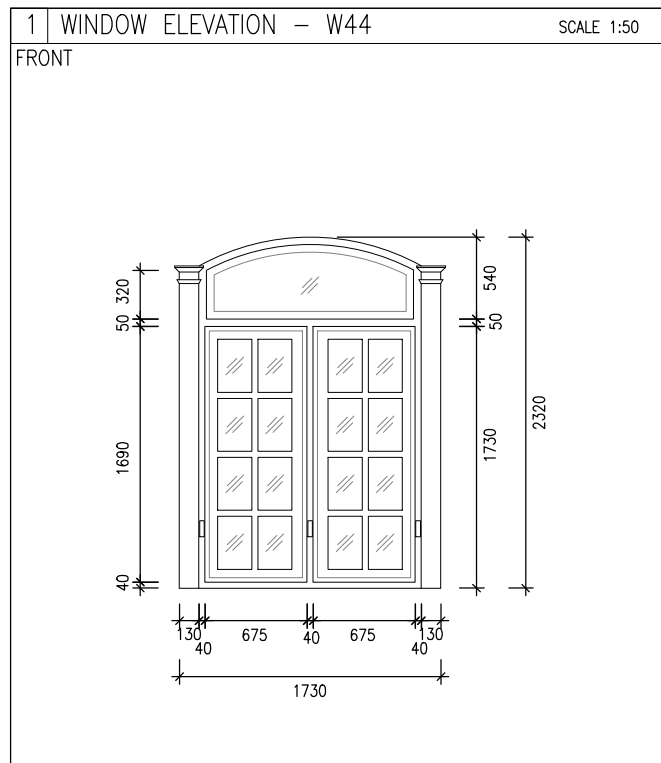
PROJECT TITLE :

HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :

WINDOW SCHEDULE 11

DRAWING NO.:	SCALE: 1:50(A3)
CHECKED	APPROVED
	DATE:



WINDOW MARK	W44
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W45
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W46
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W47
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

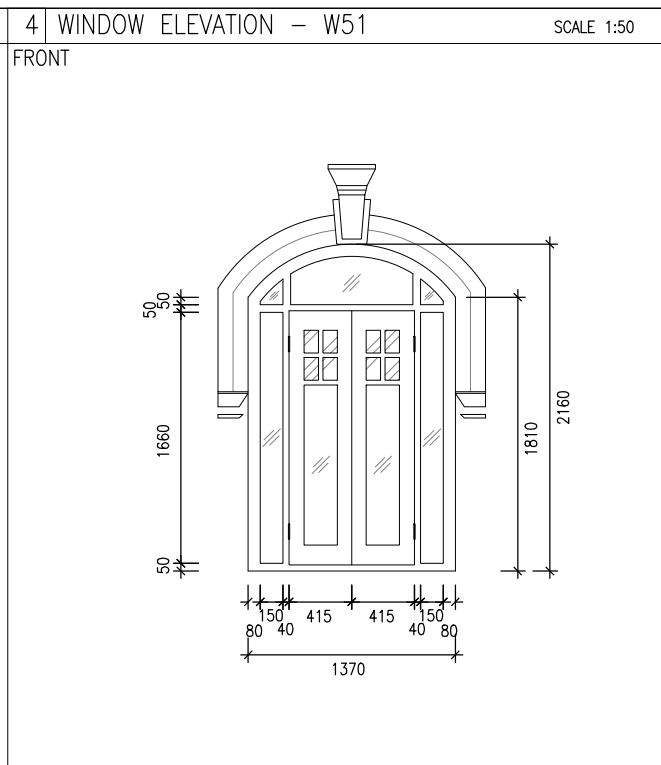
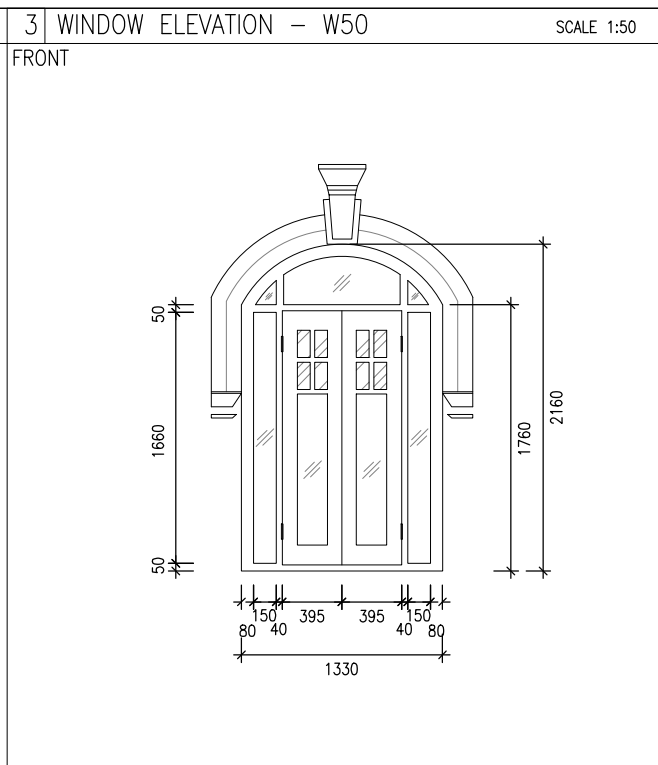
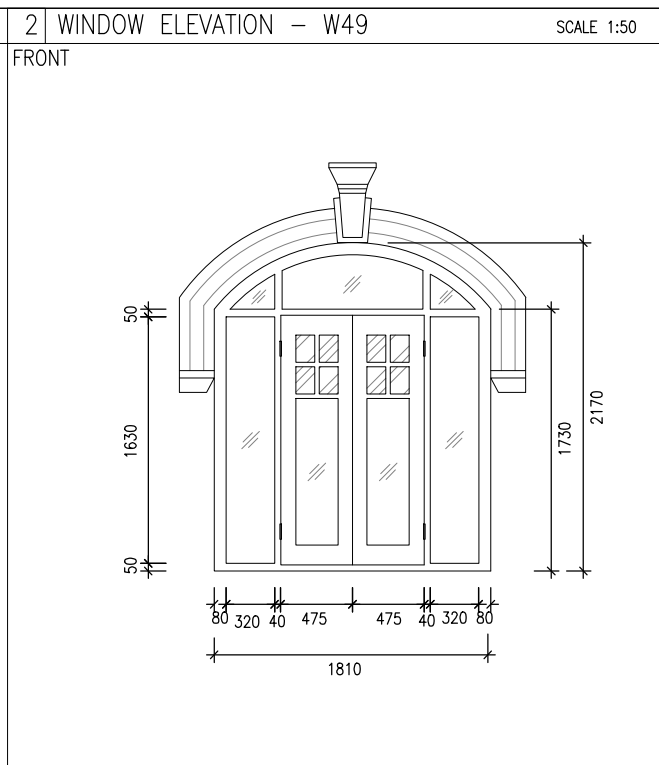
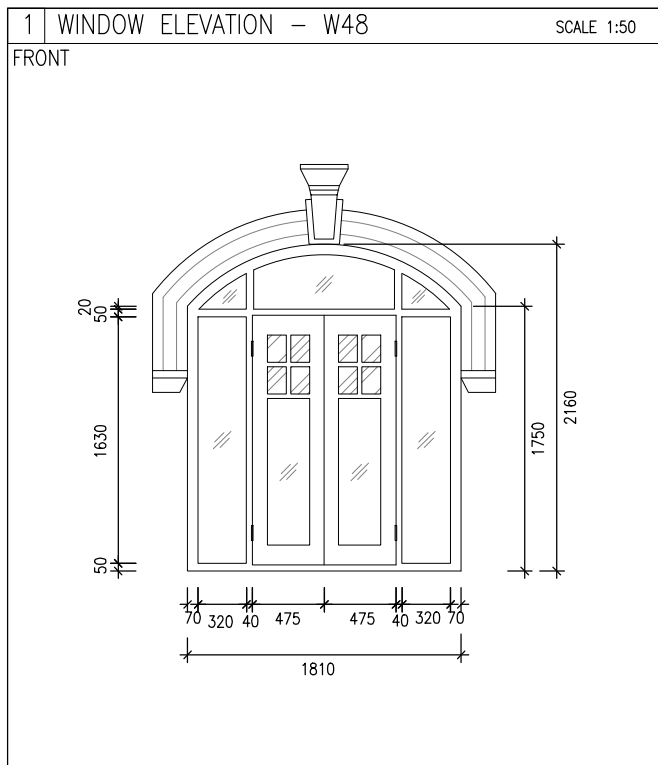
FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

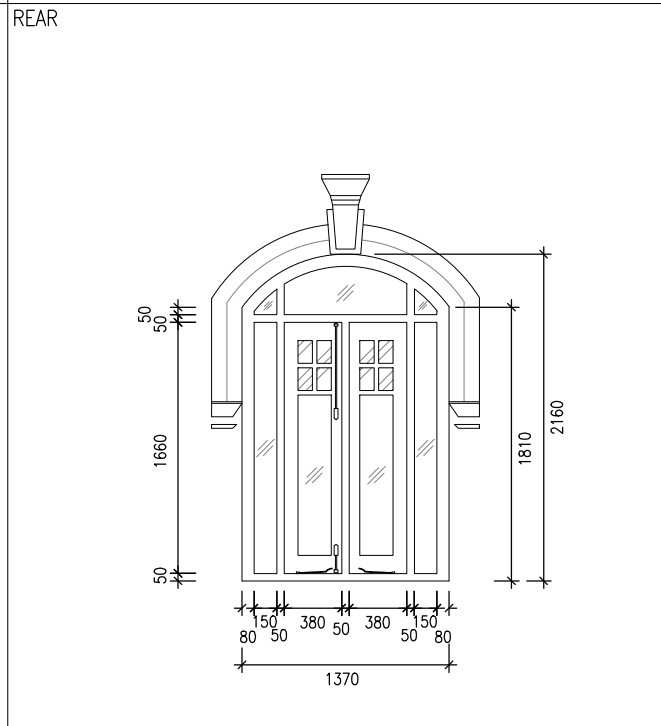
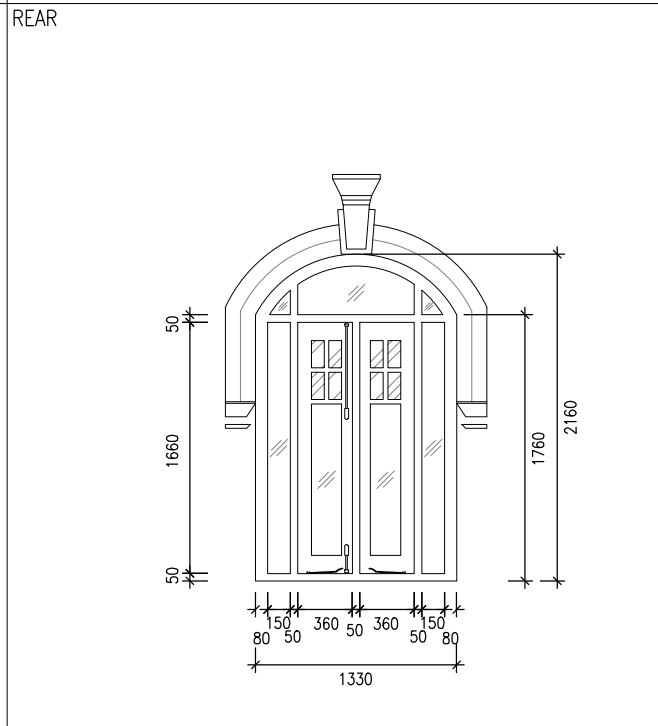
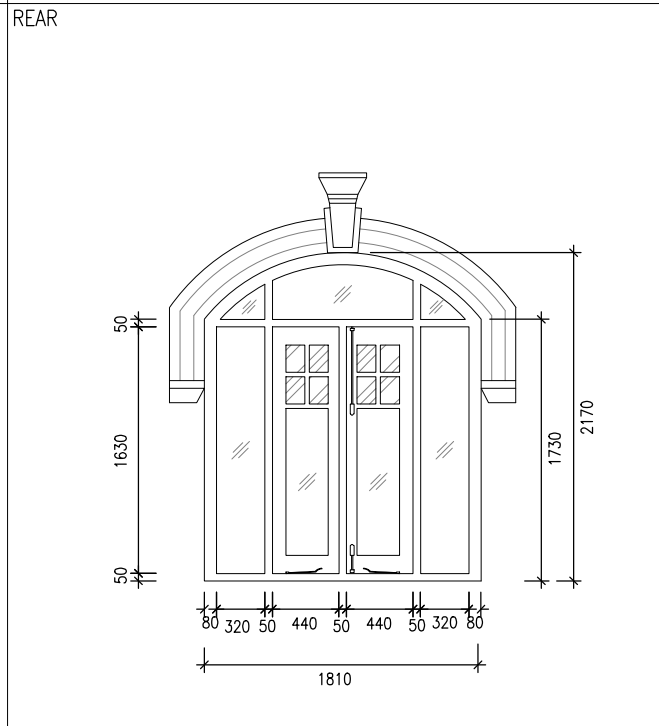
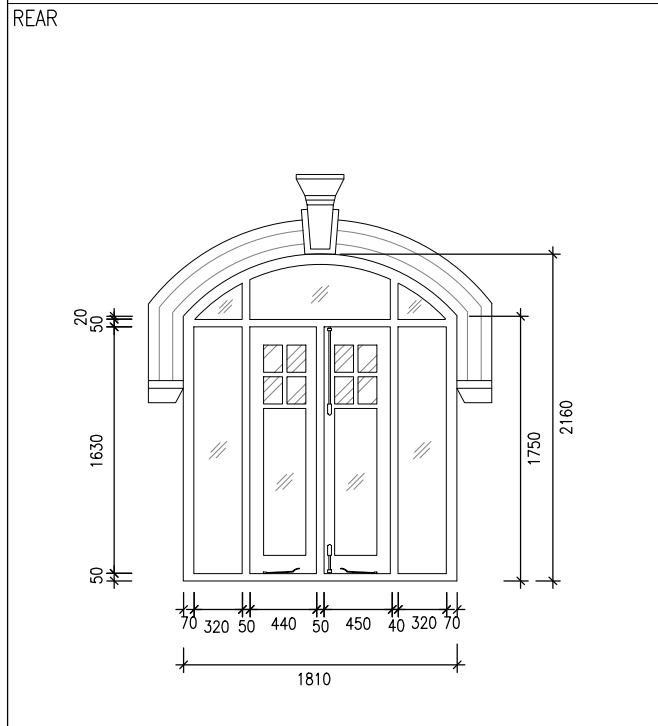
DRAWING TITLE :
WINDOW SCHEDULE 12

DRAWING NO.:	SCALE: 1:50(A3)
CHECKED	APPROVED
	DATE:



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NO.	DATE	DESCRIPTION	INITIAL



CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :

HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :

WINDOW SCHEDULE 13

DRAWING NO.:	SCALE:
	1:50(A3)
	REV:

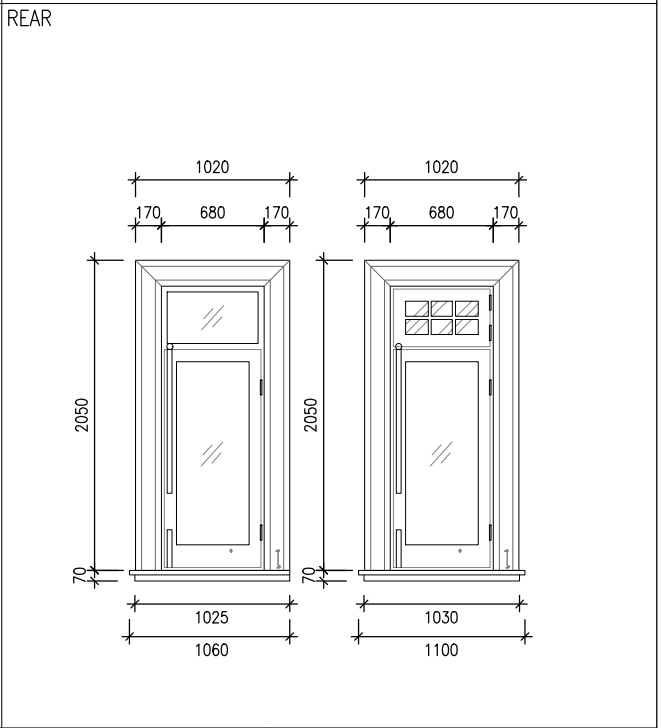
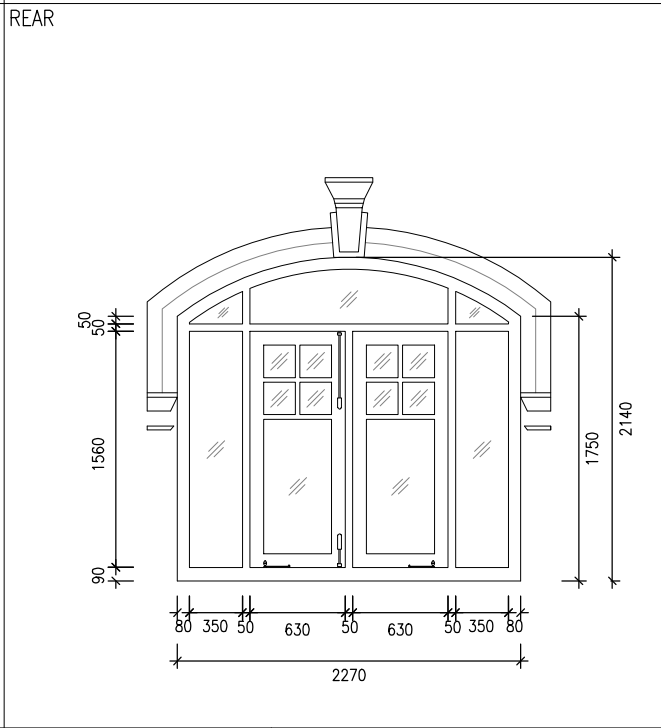
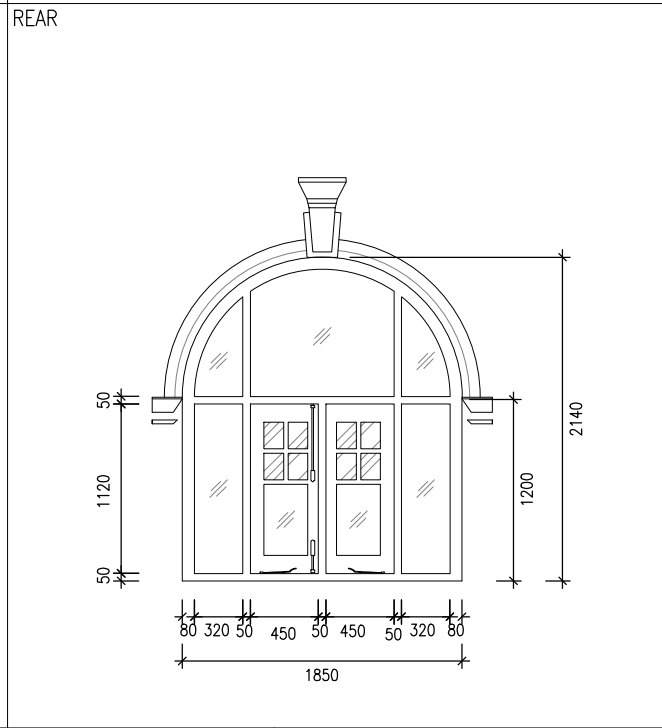
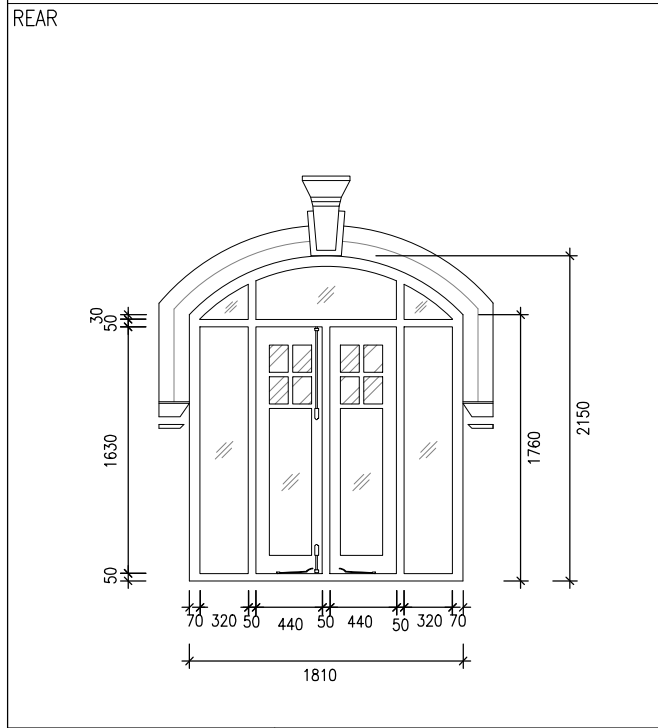
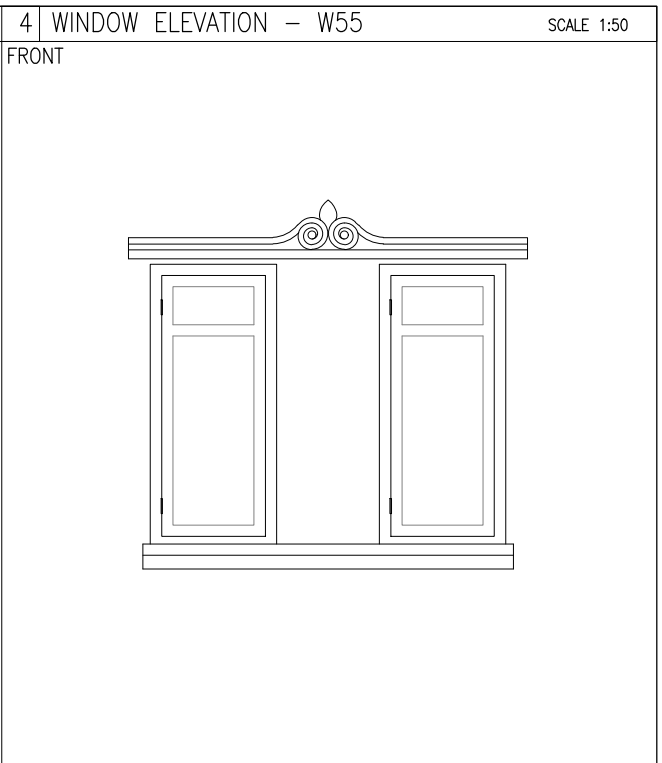
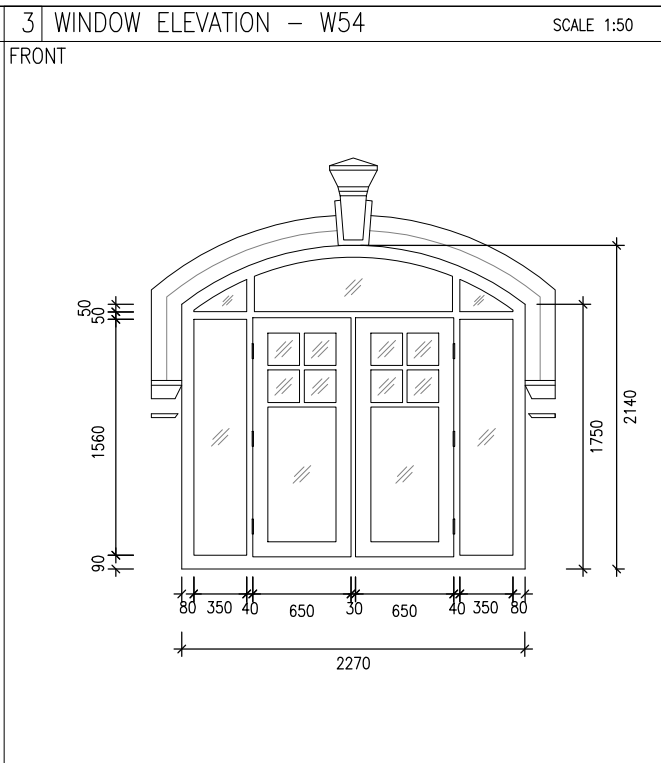
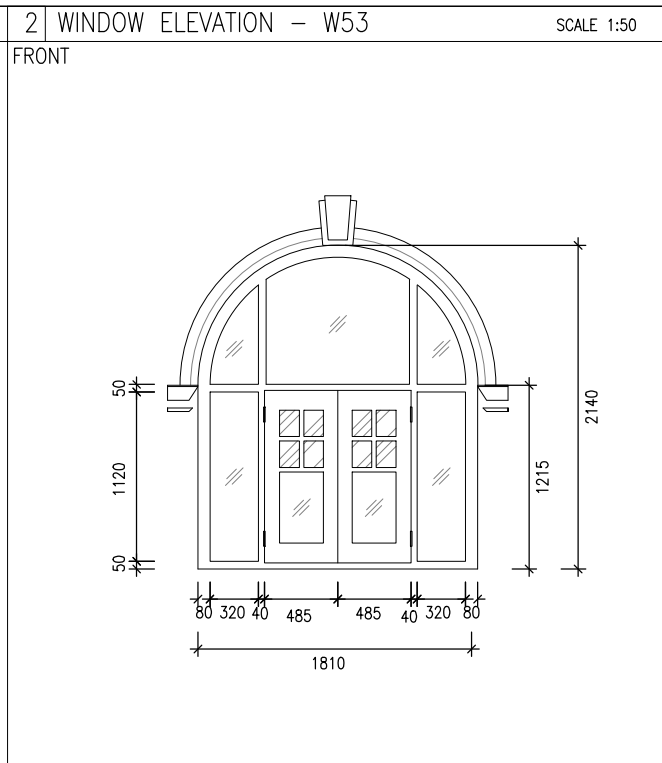
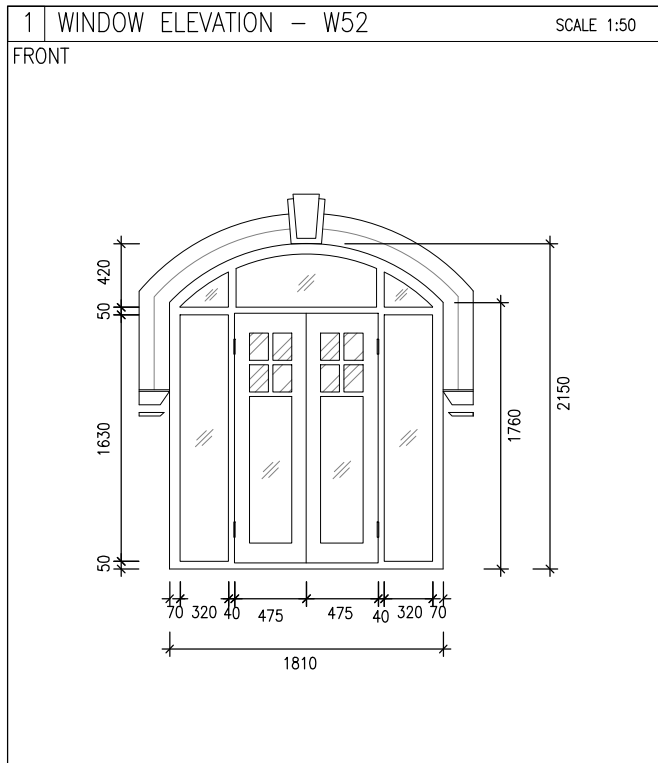
CHECKED	APPROVED	DATE:

WINDOW MARK	W48
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W49
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W50
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	

WINDOW MARK	W51
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-
REMARKS	



WINDOW MARK	W52
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

WINDOW MARK	W53
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

WINDOW MARK	W54
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

WINDOW MARK	W55
LOCATION	MAIN BUILDING - FIRST FLOOR
NUMBERS	1
SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-

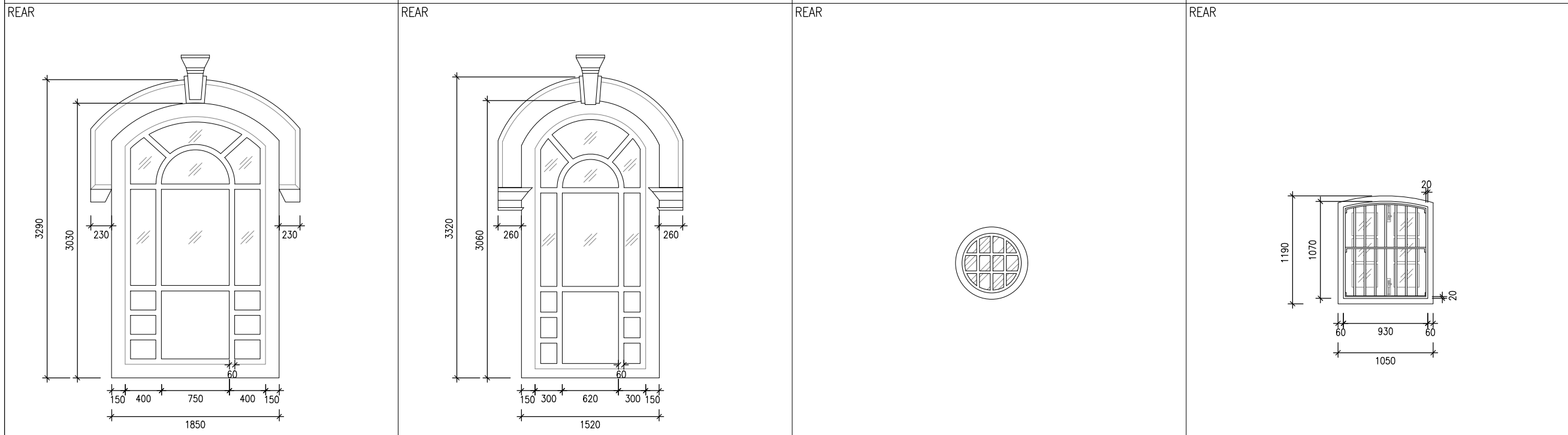
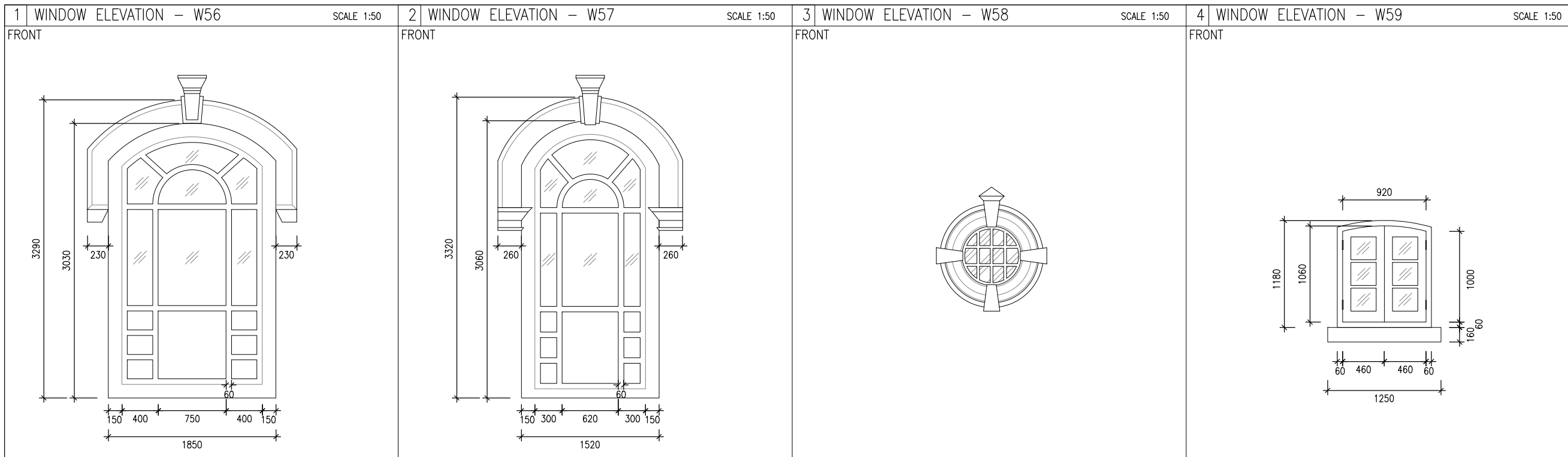
REMARKS

REMARKS

REMARKS

REMARKS

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NO.	DATE	DESCRIPTION	INITIAL
CLIENT/ EMPLOYER			
ARCHITECT			
STRUCTURAL ENGINEER			
BUILDING SERVICES ENGINEER			
LANDSCAPE ARCHITECT			
CONTRACT NO.:			
FILE NO.:			
PROJECT NO.: 2719			
PROJECT TITLE :			
HONG KONG MUSEUM OF MEDICAL SCIENCES			
DRAWING TITLE :			
WINDOW SCHEDULE 14			
DRAWING NO.:		SCALE:	
		1:50(A3)	
		REV:	
CHECKED	APPROVED	DATE:	



WINDOW MARK	W56	WINDOW MARK	W57	WINDOW MARK	W58	WINDOW MARK	W59
LOCATION	MAIN BUILDING – FIRST FLOOR	LOCATION	MAIN BUILDING – FIRST FLOOR	LOCATION	MAIN BUILDING – ROOF	LOCATION	ANNEX BLOCK
NUMBERS	1	NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-	FIRE RATED	-
REMARKS		REMARKS		REMARKS		REMARKS	

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :
WINDOW SCHEDULE 15

DRAWING NO.:	SCALE: 1:50(A3)
	REV:
CHECKED	APPROVED
	DATE:

1 WINDOW ELEVATION – W64 SCALE 1:50 FRONT	2 WINDOW ELEVATION – W65 SCALE 1:50 FRONT	3 WINDOW ELEVATION – W66 SCALE 1:50 FRONT	4 WINDOW ELEVATION – W67 SCALE 1:50 FRONT

REAR	REAR	REAR	REAR

WINDOW MARK		WINDOW MARK		WINDOW MARK		WINDOW MARK	
LOCATION	ANNEX BLOCK	LOCATION	ANNEX BLOCK	LOCATION	ANNEX BLOCK	LOCATION	ANNEX BLOCK
NUMBERS	1	NUMBERS	1	NUMBERS	1	NUMBERS	1
SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-	SECTION DETAIL / FINISH	-
GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-	GLAZING THICKNESS	-
DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION	DIMENSION	REFER TO WINDOW ELEVATION
FIRE RATED	-	FIRE RATED	-	FIRE RATED	-	FIRE RATED	-

REMARKS	REMARKS	REMARKS	REMARKS
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CLIENT / EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

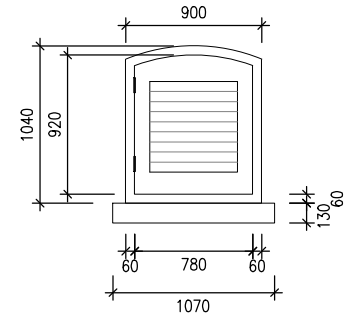
DRAWING TITLE :
WINDOW SCHEDULE 17

DRAWING NO.:	SCALE: 1:50(A3)
CHECKED	APPROVED
DATE:	DATE:

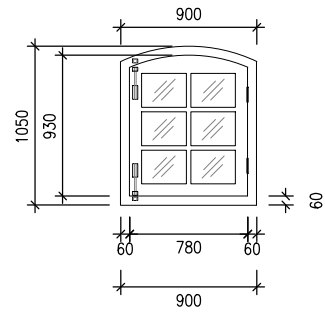
1 WINDOW ELEVATION - W72

SCALE 1:50

FRONT



REAR



WINDOW MARK							
LOCATION	ANNEX BLOCK						
NUMBERS	1						
SECTION DETAIL / FINISH	-						
GLAZING THICKNESS	-						
DIMENSION	REFER TO WINDOW ELEVATION						
FIRE RATED	-						

REMARKS

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NO.	DATE	DESCRIPTION	INITIAL

CLIENT/ EMPLOYER

ARCHITECT

STRUCTURAL ENGINEER

BUILDING SERVICES ENGINEER

LANDSCAPE ARCHITECT

CONTRACT NO.:

FILE NO.:

PROJECT NO.: 2719

PROJECT TITLE :
HONG KONG MUSEUM OF MEDICAL SCIENCES

DRAWING TITLE :
WINDOW SCHEDULE 19

DRAWING NO.:	SCALE:
	1:50(A3)
REV:	

CHECKED	APPROVED	DATE: