



# Guidelines on Formulation of Fire Safety Requirements for New Railway Infrastructures

## 新鐵路基建設施 消防安全規定制訂指引

October 2016

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**GUIDELINES ON FORMULATION  
OF FIRE SAFETY REQUIREMENTS  
FOR  
NEW RAILWAY INFRASTRUCTURES**

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消防安全規定制訂指引**

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## PREAMBLE

The development of railway fire safety design in Hong Kong evolved from the first underground railway project in around 1970s. Without preceding project references and prescriptive requirements under the Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment (FSI Code), the Fire Services Department (FSD) in collaboration with railway corporations and other government departments, since then started to draw up fire safety requirements for railway infrastructures.

Owing to the unique and complex design nature of railway stations and their associated premises, performance-based fire safety designs have been widely adopted in the planning of railway projects. In principle, fire safety standards provided by the fire engineering approach should not be inferior to the prescriptive requirements as stipulated in relevant codes and standards. On top of fire engineering approach, sets of fire safety requirements drawing on local practice and experience with due reference to the international standards on railway safety, such as National Fire Protection Association 130 (NFPA 130) of the USA and Office of Rail Regulation (ORR) of the UK, have also been developed. In gist, the underlying fire safety design principles for railway infrastructures are to provide the best fire safety protection to passengers and operational staff as well as emergency personnel in the event of a fire and other calamities.

# 前言

本港鐵路消防安全設計的發展，源自一九七零年代的首個地下鐵路項目。由於沒有相關項目的參考資料，加上《最低限度之消防裝置及設備守則與裝置及設備之檢查、測試及保養守則》（《消防裝置守則》）未能完全套用在鐵路消防系統的設計上，消防處遂聯同鐵路公司及其他政府部門制訂有關鐵路基建設施的消防安全規定。

鑑於新鐵路站及其相關處所的獨特設計及複雜性，在策劃鐵路項目時，鐵路公司廣泛採用了以性能化消防安全設計。原則上，採用消防工程學方法的消防安全標準，不應遜於各有關守則及標準所載的訂明規定。為此，我們汲取本地的做法及經驗，並充分參考有關鐵路安全的國際標準（例如美國消防協會 130 及英國鐵路管理局）後，制訂了多套消防安全規定。扼要而言，鐵路項目的基本消防安全設計原則，乃是在發生火警及其他災難時，為乘客、操作人員及緊急救援人員提供最大的消防安全保障。

To facilitate stakeholders of the railway industry to adopt a consistent fire safety design towards new railway infrastructures in the future, this Guidelines serve to provide general guidance on formulating fire safety requirements by incorporating the latest fire safety measures of various railway lines under construction in Hong Kong. Railway corporations and fire engineering consultants will find this Guidelines useful in formulating fire safety requirements for new railway infrastructures in the future, including railway stations, depots, ancillary buildings and trackside areas.

This Guidelines comprises three parts in which the first part covers the general information and processing mechanism of Railway Projects, etc. The second part describes the fire safety requirements for Railway Infrastructure. Supplementary information and checklists of Fire Safety Requirements are provided at Appendices of this Guidelines.

This Guidelines should be read in conjunction with the current FSI Code (April 2012 Edition), FSD Circular Letters and the Code of Practice for Fire Safety in Buildings 2011 (FS Code) issued by the Buildings Department (BD). In case of special factors and circumstances, the Director of Fire Services may require additional fire safety requirements to be imposed before he is so satisfied. Moreover, the general fire safety measures relating to Means of Access (MoA), Means of Escape (MoE) and Fire Resisting Construction (FRC) stipulated in this Guidelines should be subject to the final satisfaction and agreement of BD. Yet, compliance with the fire safety requirements stipulated in this Guidelines should not be taken as compliance with the fire safety requirements under the Buildings Ordinance, which are under the jurisdiction of the BD.

為方便鐵路業持份者日後在發展新鐵路項目時，採用一致的消防安全設計，本指引收納了本港多條興建中鐵路線所採用的最新消防安全措施，藉以提供制訂消防安全規定的一般指引。當鐵路公司及消防工程顧問日後為新鐵路基建設施，包括鐵路車站、車廠、附屬建築物及軌旁區域，制訂消防安全規定時，本指引將具相當效用。

本指引由三部分組成。第一部分包括一般資訊、鐵路項目的審批機制等等。第二部分則介紹鐵路基礎設施的消防安全規定。補充資料與消防安全規定核對表則以附錄形式詳列於本指引內。

本指引應與現行的《消防裝置守則》(2012年4月版)、消防處通函，以及屋宇署發出的《2011年建築物消防安全守則》(《消防安全守則》)一併閱讀參考。而因應特殊因素及情況的個別項目，消防處處長或會要求遵從額外消防安全規定，方才接納有關標準符合要求。此外，指引內有關進出途徑、逃生途徑及耐火結構的一般消防安全措施，最終須經屋宇署按個別情況決定是否滿意及接納。因此，符合本指引所訂的消防安全規定，不得視作符合《建築物條例》所訂的消防安全規定，該方面屬屋宇署的職權範圍。

With regard to the fire safety issues to be addressed by the fire engineering approach, such as determination of fire size, assessment of tenability, design of smoke control system, evaluation of occupants evacuation time and pattern, etc., reference should be made to Part G of the FS Code and other well-recognized international standards and guidelines, including but not limited to CIBSE Guide E, SFPE Handbook, etc. The existing mechanism using Computational Fluid Dynamics (CFD) fire modeling, computational simulation of tunnel ventilation system, engineering calculation, fire risk assessment, etc. may also be accepted by FSD on a case-by-case basis. In fact, a practical and pragmatic approach would be adopted on a case-by-case basis when there are any physical constraints leading to non-fulfillment of the requirements stipulated in this Guidelines and the railway corporation has made its due efforts in meeting the requirements.

To meet the higher expectation on railway safety from the general public and align with the world's enhanced fire safety requirements, FSD will keep on reviewing the current fire safety measures and make amendments if necessary.

In case of inconsistency between the English and Chinese versions, the English version shall apply and prevail.

至於採用消防工程學方法處理的消防安全事宜，例如火災規模／功率的判定、火場環境容受度的評估、煙霧控制系統的設計、用戶疏散時間及模式的評估等等，應參考《消防安全守則》G部及其他廣泛認可的國際標準及指引，包括但不限於英國特許屋宇設備工程師學會的指引E、美國消防工程師學會SFPE手冊等。消防處會按個別情況，接納採用計算流體動力學的火災模型、隧道通風系統的計算模擬、工程計算、火警風險評估等的現行機制。事實上，如基於任何實質限制，致令未能符合本指引所規定的要求，而鐵路公司亦已盡力嘗試符合有關規定，消防處會採取明智務實的方法處理，就個別個案考慮專為鐵路基建項目而制訂的特定消防安全規定。

為配合市民大眾對鐵路安全的更高期望，並務求與國際已提升的消防安全規定接軌，消防處會持續檢討現行的鐵路消防安全措施，並在有需要時作出修訂。

中英文版本如有歧異，應以英文版本為準。



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## **Part I**

### **General**

#### **1.1 Title**

This document shall be titled “Guidelines on Formulation of Fire Safety Requirements for New Railway Infrastructures” hereinafter referred to as the “Guidelines”.

#### **1.2 Definitions**

##### **“Ancillary Building”**

A non-public area which is designed mainly for a wide range of functions, including but not limited to power supply, ventilation, substation and electrical/mechanical plant area. All ancillary buildings are, in general, unmanned and should not be accessible by the public.

##### **“Concession Area”**

A designated area for approved retail trades and commercial facilities/services located within the railway station. The design of such area shall be based on the “Cabin Concept” as described in Appendix I(a).

##### **“Depot”**

A building area which is designed to carry out essential railway depot functions, including but not limited to stabling of trains, permanent way facilities and engineering train sidings, etc.

# 第一部

## 總論

### 1.1 標題

本文件題為《新鐵路基建設施消防安全規定制訂指引》，下稱「本指引」。

### 1.2 釋義

#### 「附屬建築物」

主要為多種用途而設的非公眾地方，包括但不限於供電、通風、變壓站及機電裝置機房設施。所有公眾是不能進入附屬建築物。

#### 「專營範圍」

在車站內專為被核准零售業及商業設施／服務而設的指定區域，其設計須符合附錄（一）（甲）所載的「艙房概念」。

#### 「車廠」

為進行鐵路車廠主要功能而設的建築用地，其中包括但並不限於列車停放處、永久軌道設施及工程車停放處等。

### **“Designated Emergency Entrance (DEE)”**

An emergency access point at each station/ancillary building/depot, designated as the primary access point for emergency personnel. Fire protection facilities such as Fire Services inlets, sprinkler inlets, Fire Services control panels, automatic fire alarm panels, FSD telephone panel and remote unlocking devices will be installed in the vicinity.

### **“Emergency Access Point (EAP)”**

A location designated as the access point for emergency personnel, leading from street level or at grade to the trackside area.

### **“Emergency Egress Point (EEP)”**

A location designated as the egress point for detained passengers to leave the trackside area safely and reach the Ultimate Place of Safety.

### **“Escape Route”**

A continuous path or paths taken by passengers and/or other station occupants to reach the Ultimate Place of Safety.

### **“Firefighting and Rescue Stairway (FRS)”**

A stairway accommodating an access staircase and a fireman’s lift.

### 「指定緊急入口」

各車站／附屬建築物／車廠的緊急救援入口，指定為緊急救援人員的主要入口處。防火設施如消防入水掣、花灑入水掣、消防控制板、自動火警警報控制板、消防處電話控制板及遙控解鎖裝置會位於這個入口附近。

### 「緊急救援入口」

指定為緊急救援人員的入口處，從路面或地面通往軌旁區域。

### 「緊急出口」

指定為緊急離開車廂的乘客安全離開軌旁區域前往最終安全地點的出口處。

### 「逃生路線」

乘客及／或其他車站用戶可取道前往最終安全地點的一條或多條連續的路徑。

### 「消防和救援樓梯間」

此樓梯設有通道樓梯及消防員升降機。



### **“Fire Resistance Rating (FRR)”**

The period of time for which any element of construction, wall, door, fire shutter or other components of a building is capable of resisting the action of fire when tested in accordance with BS 476: Parts 20 to 24, or as specified in the Code of Practice for Fire Safety in Buildings 2011 (FS Code). In the Guidelines, only overall FRR in hour is specified. Reference should be made to the FS Code for detailed FRR criteria in terms of stability, integrity and insulation for elements of construction, fire barriers and other components.

### **“Fire Separated Corridor”**

A designated fire services access corridor constructed with walls, floor and ceiling having an FRR of not less than 2 hours. It is equipped with a sprinkler system, pressurization system and smoke detection system with no unprotected services other than fire service installations provided within the corridor.

### **“Integrated Entrance”**

An entrance to the station which leads directly from the adjoining property development area with a physical connection to the railway station. Such entrance will be under the direct control of the corporation station management. It will be provided with a fire shutter having an FRR of not less than 4 hours and will not be treated as MoE in the event of a fire.

### **“Long Adit”**

A normal public circulation route under the direct control of the corporation station management and in the form of a long corridor or pedestrian subway over 50 m in length forming part of the Station Area.

### 「耐火時效」

任何建築構件、牆壁、門、防火捲閘或建築物其他組成部分按英國標準 476：第 20 至 24 部所訂標準進行測試後所顯示耐火時效，或《消防安全守則》訂明的耐火時效。本指引只訂明以小時計算的整體耐火時效。至於建築構件、隔火屏障及建築物其他組成部分在穩定性、完整性及隔熱方面的耐火時效的詳細準則，應參閱《消防安全守則》。

### 「隔火走廊」

以不少於 2 小時耐火時效的牆壁、地板及天花板建造的指定消防入口通道，配備花灑系統、增壓系統及煙霧偵測系統，除了消防裝置之外，通道內並無其他無防護的設施。

### 「綜合車站出入口」

從毗鄰物業發展區域可經由實體通道直達車站的入口，由鐵路公司車站管理人員直接管轄，裝設不少於 4 小時耐火時效的防火捲閘，發生火警時不會用作逃生途徑。

### 「長通道」

由鐵路公司車站管理人員直接管轄的一般公眾通路，是長度逾 50 米的長走廊或行人隧道，屬車站區域的一部分。

### **“Non-public Area”**

A station area which is not accessible by the general public and should be used for daily railway operations, including office, staff area, plant room and other building services, relating to the station only. All non-public areas shall be separated from station public areas by a physical separation having an FRR of not less than 2 hours.

### **“Place of Safe Passage”**

A passage under the direct control of the corporation station management through which passengers and other station occupants will pass for evacuation in the event of a fire. Inside the passage, a smoke clear height of not less than 2.5 m is maintained by the smoke extraction system for a minimum period of 60 minutes for evacuation. This will normally be on the floor immediately above or below or an area adjacent to where a fire occurred. Place of Safe Passage shall be provided with stairway and/or escalator to the next level or Ultimate Place of Safety as defined herein.

### **“Point of Safety”**

An entrance to the Place of Safe Passage or a protected route which leads to the Ultimate Place of Safety as defined herein.

### **“Primary Substation (Zone Substation)”**

A primary substation or zone substation is a substation receiving power from extra high voltage substations or bulk infeed substations as defined by the Hong Kong Planning Standards and Guidelines issued by the Planning Department.

### 「非公眾地方」

公眾不可進入的車站區域，只應用於與鐵路日常營運有關的用途，包括辦公室、員工專用區、機房及其他屋宇裝備。而非公眾地方一概應以不少於 2 小時耐火時效的實體耐火間隔與車站的公眾地方分隔開來。

### 「安全通道」

由鐵路公司車站管理人員直接管轄的通道，發生火警時乘客及其他車站佔用人可經此疏散。在通道內，以排煙系統維持不少於 2.5 米的無煙淨空高度最少達 60 分鐘，以供疏散。此等通道一般會位於緊接火警地點的上一層或下一層，或毗連發生火警的區域。安全通道須設有樓梯及／或自動梯，通往最緊接的樓層或本指引所界定的最終安全地點。

### 「安全地點」

安全通道的入口，或通往本指引界定為最終安全地點的防護通道的入口。

### 「主配電站（分區配電站）」

按規劃署發布的《香港規劃標準與準則》所界定，總變電站或分區電力站是由超高壓變電站或大容量變壓站供電的電力分站。

### **“Property Development Area”**

An area which is not under the direct control of the corporation station management. Property development areas shall be separated from the station areas by means of a fire separation having an FRR of not less than 4 hours.

### **“Protected Route”**

A route including protected lobby, corridor, stairways, ramp and passageway leading from the Point of Safety to the Ultimate Place of Safety providing physical fire separation from adjacent areas with an FRR of not less than 2 hours. It shall be equipped with sprinkler system, fire hydrant/hose reel system, smoke detection system, directional/exit signs and emergency lighting, and has no unprotected services other than fire service installations provided within the corridor.

### **“Public Area”**

A station area, including platform, concourse, paid area, unpaid area, concession area, long adit and entrance, which is accessible by the general public and used for railway operation and its associated activities. All station public areas shall be separated from non-public areas by means of a fire separation with an FRR of not less than 2 hours.

### 「物業發展區域」

該區域並非由鐵路公司車站管理人員直接管轄，須以不少於 4 小時耐火時效的隔火設施與車站區域分隔開來。

### 「防護通道」

此通道包括防護的門廊、走廊、樓梯、斜路及通道，由安全地點通往最終安全地點，設有不少於 2 小時耐火時效的實體隔火設施，將通道與毗鄰區域分隔開來，並裝設花灑系統、消防栓／消防喉轆、煙霧偵測系統、方向／出路指示牌及緊急照明系統，除了消防裝置之外，通道內並無其他無防護的設施。

### 「公眾地方」

可容許公眾進入及用作鐵路營運及相關活動的車站區域，包括月台、大堂、已付車費區域、非付車費區域、專營範圍、長通道及入口。車站的公眾地方一概須以不少於 2 小時耐火時效的隔火設施與非公眾地方分隔開來。

### **“Supplementary Emergency Entrance (SEE)”**

A supplementary emergency access point at each station/ancillary building/depot, designated as the secondary access point for emergency personnel. Fire protection facilities such as Fire Services inlets, sprinkler inlets, Fire Services repeater panels, FSD telephone panel and remote unlocking devices will be installed in the vicinity.

### **“Station”**

The entire railway station in which one or more of the following areas are included:

- (i) Station area
- (ii) Station related area
- (iii) Integrated entrance

### **“Station Area”**

An area used for railway activities and services, including public area, concession area, staff accommodation, plant room and other non-public areas.

### **“Station Related Area”**

An area under the direct control of the corporation station management and essential to the operation of the station. It includes vehicle drop-off, pick-up and queuing areas and access roads where prescriptive requirements of relevant local codes shall be followed.

### 「輔助緊急入口」

各車站／附屬建築物／車廠的輔助緊急救援入口，指定為緊急救援人員的備用入口處。防火設施如消防入水掣、花灑入水掣、消防處無線電轉發器控制板、消防處電話控制板及遙控解鎖裝置會設於這個入口附近。

### 「車站」

整個火車站，包括下列一個或以上的區域：

- (i) 車站區域
- (ii) 車站相關區域
- (iii) 綜合車站出入口

### 「車站區域」

用作鐵路運作及服務用途的區域，包括公眾地方、專營範圍、員工辦公地方、機房及其他非公眾地方。

### 「車站相關區域」

由鐵路公司車站管理人員直接管轄的區域，對於車站營運十分重要。此區域包括車輛上落客點、排隊輪候區及通路，在此須遵守該區相關守則的訂明規定。



### **“Trackside Area”**

An area used for supporting the movement of rolling stocks and railway activities.

### **“Ultimate Place of Safety”**

A location in open air at street level or at grade where occupants are protected from the effects of fire and offered with adequate provisions for safe evacuation.

### 「軌旁區域」

用於支援列車移動及鐵路運作的區域。

### 「最終安全地點」

在地面或路面的露天地點，在該處用戶不受火警影響，並獲得足夠設備作出安全疏散。

### 1.3 Abbreviation

AFA	Automatic Fire Detection and Alarm System
BAV	Backup Access Vehicle
BD	Buildings Department
BS	British Standard
CEDD	Civil Engineering and Development Department
CFATS	Computerized Fire Alarm Transmission System
CFD	Computational Fluid Dynamics
CIBSE	Chartered Institution of Building Services Engineers
CSO	Construction Site Office
DEE	Designated Emergency Entrance
DTRS	Digital Trunked Radio System
EAP	Emergency Access Point
EEP	Emergency Egress Point
EMSD	Electrical and Mechanical Services Department
ERB	Emergency Rail Bus
ESO	Engineering Site Office
EVA	Emergency Vehicular Access
FCR	Fire Control Room
FH/HR	Fire Hydrant/Hose Reel

### 1.3 縮寫

(沒有翻譯文本)

FRC	Fire Resisting Construction
FRP	Fire Resistance Period
FRR	Fire Resistance Rating
FRS	Firefighting and Rescue Stairway
FS Code	Code of Practice for Fire Safety in Buildings 2011
FSD	Fire Services Department
FSI	Fire Service Installation
FSI Code	Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment (April 2012 Edition)
HKPF	Hong Kong Police Force
HyD	Highways Department
IoE	Instrument of Exemption
LandsD	Lands Department
LPC	Loss Prevention Council
MIV	Motorized Isolation Valve
MoA	Means of Access
MoE	Means of Escape
MTR	Mass Transit Railway
NFPA	National Fire Protection Association
OCC	Operations Control Centre
ORR	Office of Rail Regulation
PA	Public Address

(沒有翻譯文本)

PlanD	Planning Department
RDO	Railway Development Office
SCR	Station Control Room
SEE	Supplementary Emergency Entrance
SFPE	Society of Fire Protection Engineers
SSCC	Safety and Security Coordinating Committee
STIC	Station and Transport Integration Committee
TD	Transport Department
TSSC	Trackside Safety and Security Committee
UPS	Uninterruptable Power Supply

(沒有翻譯文本)



## **1.4 Processing Mechanism of Railway Projects**

Having regard to the exceptional nature of railway projects, the Building Authority may, under the provisions of section 54(2) of the Mass Transit Railway Ordinance (Cap. 556), issue an Instrument of Exemption (IoE) to exempt such building works from the Buildings Ordinance (Cap. 123). Such exemption is confined to those procedures and requirements relating to the appointment of Authorized Person and Registered Structural Engineer as appropriate, approval of plans, consent to commencement and resumption of works and occupation of buildings under sections 4, 14 to 17A and 19 to 21 of the Buildings Ordinance, such that the Building Authority's duties and sanctioning power to ensure standards of health and safety are not undermined. Instead of submitting building plans through the Centralised Processing System for ordinary building projects, the following Committees with specific "Terms of Reference" are formed to ensure that railway infrastructures are designed, built and operated to the required safety standards.

### **1.4.1 Station and Transport Integration Committee (STIC)**

- (a) STIC is chaired by the Railway Development Office, Highways Department (HyD). STIC members comprise representatives from Fire Services Department (FSD), Buildings Department (BD), Transport Department (TD), Hong Kong Police Force (HKPF), Planning Department (PlanD), Lands Department (LandsD), Civil Engineering and Development Department (CEDD), Regional Office of HyD and the railway corporation.

## 1.4 鐵路項目的審批機制

建築事務監督可在顧及鐵路項目的特殊性質後，根據《香港鐵路條例》(第 556 章)第 54 條第 2 款，發出豁免文書，使該等建築工程不受《建築物條例》(第 123 章)任何條文所規限。該等豁免只限於與根據《建築物條例》第 4、14 至 17A 條及第 19 至 21 條而委任認可人士及註冊結構工程師(視何者屬適當而定)、批准圖則、同意展開及恢復暫停的工程及佔用建築物相關的程序及規定，務使建築事務監督在確保健康與安全方面的職務及懲處權力不受削弱。當局並非透過實施處理一般建築工程的中央處理建築圖則制度，而是透過成立以下具特定職權範圍的委員會，確保鐵路基建設施按所需的安全標準予以設計、建造及營運。

### 1.4.1 車站及運輸綜合委員會

- (a) 該委員會由路政署的鐵路拓展處擔任主席，成員包括消防處、屋宇署、運輸署、警務處、規劃署、地政總署、土木工程拓展署、路政署的路政區辦事處及鐵路公司的代表。

- (b) STIC provides a forum for the discussion and agreement, mainly on the integration into the built environment, construction of new railway stations, ancillary buildings, depots, or modification to the existing facilities; provision of pedestrian accesses to station entrances; and integration of other transport modes with railway services.

#### **1.4.2 Safety and Security Coordinating Committee (SSCC)**

- (a) SSCC is chaired by the Railways Branch of Electrical and Mechanical Services Department (EMSD). SSCC members comprise representatives from FSD, BD, HyD, HKPF and the railway corporation.
- (b) SSCC provides a forum for discussions and agreement on the safety and security related issues of railway stations, depots and/or other associated structures for which an IoE has been issued by the Building Authority, including existing and new facilities, permanent and temporary structures (e.g. Construction Site Office (CSO) / Engineering Site Office (ESO), please see Appendix VI for Minimum Fire Service Installations and Equipment for CSO / ESO) and modification to the existing facilities.

#### **1.4.3 Trackside Safety and Security Committee (TSSC)**

- (a) TSSC is also chaired by the Railways Branch of EMSD. TSSC members comprise representatives from FSD, BD, HyD, HKPF and the railway corporation.

- (b) 委員會提供討論及協商的平台，主要議題為融合鐵路基建與建築環境；興建新鐵路站、附屬建築物及車廠；改裝現有設施；設置通往車站入口的行人通道，以及令鐵路服務能配合整體交通運輸模式。

#### **1.4.2 安全及保安統籌委員會**

- (a) 該委員會由機電工程署鐵路科擔任主席，成員包括消防處、屋宇署、路政署、警務處及鐵路公司的代表。
  
- (b) 委員會提供討論及協商的平台，議題為與已獲建築事務監督發出豁免文書的鐵路站、車廠及／或其他附連構築物相關的安全及保安事宜，涵蓋現有及新建設施、永久及臨時構築物（例如建築地盤辦公室／工程工地辦公室，有關建築地盤辦公室／工程工地辦公室的最低限度消防裝置及設備請參閱附錄（六）），以及現有設施的改裝工程。

#### **1.4.3 軌道安全及保安委員會**

- (a) 該委員會亦是由機電工程署鐵路科擔任主席，成員包括消防處、屋宇署、路政署、警務處和鐵路公司的代表。

- (b) TSSC provides a forum for discussions and agreement on the safety and security related issues of railway tracksides and associated facilities for which an IoE has been issued by the Building Authority, including existing and new facilities, permanent and temporary structures and modification to the existing facilities.

## **1.5 Formulation of Fire Safety Requirements**

**1.5.1** As one of the core members of STIC, SSCC and TSSC, FSD is responsible for giving advice on fire safety requirements to railway projects. The fire safety requirements stipulated in Part II of the Guidelines are formulated by making due reference to previous standards of railway projects, international standards, fire engineering studies, prescriptive codes, etc. For railway premises/structures of special designs or hazards which necessitate special considerations, FSD may accept, on a case-by-case basis, fire engineering approach as an alternative provided that safety standards provided by the fire engineering approach should not be inferior to the prescriptive requirements. Methodology for application of the fire engineering approach should outline a structured fire engineering principle(s) to the assessment of total fire safety effectiveness and to the achievement of pre-identified design objective(s) having taken into consideration of the objectives of fire safety requirements for the protection of life including operation staff and emergency personnel and property within the railway premises/structures in the event of emergency.

- (b) 委員會提供討論及協商的平台，議題為與已獲建築事務監督發出豁免文書的鐵路軌道及相關設施的安全和保安事宜，涵蓋現有及新建設施、永久及臨時構築物，以及現有設施的改裝工程。

## 1.5 消防安全規定的制訂

- 1.5.1 消防處是車站及運輸綜合委員會、安全及保安統籌委員會和軌道安全及保安委員會的核心成員，負責就鐵路項目的消防安全規定提供意見。消防處在制訂載於本指引第二部分的消防安全規定時，已充分參考過往的鐵路項目所採用的標準，以及有關國際標準、消防工程學研究和訂明規定等。至於那些因設計特別或具危險而需予特別考慮的鐵路處所／構築物，消防處可因應個案情況，接納採用消防工程學方法以作替代，惟採用消防工程學方法而達至的安全標準，不應遜於訂明規定所達至的安全標準。採用消防工程學方法，應制訂一套清晰的消防工程原則，以評估樓宇消防安全方面的總成效及達至預期的設計目標。在制訂有關原則時，須考慮在緊急情況下，就保障鐵路處所／構築物內的人命（包括操作人員和緊急救援人員）和財產而制訂的消防安全規定。

**1.5.2** In general, prescriptive requirements (Deemed-to-Comply provisions) of the following local codes or circular letters shall also be adhered to:

- (i) ***Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment April 2012 (FSI Code)*** which stipulate the minimum fire service installations and equipment to be provided and give guidance as to the conduct of inspections and tests in order to satisfy the Director of Fire Services;
- (ii) ***FSD Circular Letters*** which are published from time to time by the Director of Fire Services requiring Authorized Persons and other concerned parties to comply with the latest requirement on fire safety provisions; and
- (iii) ***Code of Practice for Fire Safety in Buildings 2011 (FS Code)*** which stipulates the requirements for fire resisting construction, means of escape, means of access and emergency vehicular access. In addition, it also provides guidelines on the testing standards for the fire properties of building elements and components, fire safety management of buildings and the alternative approach in fire safety design, i.e. fire engineering approach. Insofar as the Buildings Ordinance is concerned, the FS Code shall apply to railway works that are submitted through SSCC, TSSC and STIC and the works of which have not yet been commenced on or before 1 April 2012.

**1.5.2** 一般而言，下列本地守則及通函內的訂明規定（應視為須予遵守的條文）亦須予以遵行：

- (i) 《最低限度之消防裝置及設備守則與裝置及設備之檢查、測試及保養守則》（2012年4月版）（《消防裝置守則》）

此守則訂明最低限度須安裝的消防裝置及設備，並就如何進行檢查和測試以令消防處處長滿意提供指引；

- (ii) 消防處通函

消防處處長不時發出通函，要求認可人士及其他相關人士遵從有關消防安全設施的最新規定；及

- (iii) 《2011年建築物消防安全守則》（《消防安全守則》）

此守則訂明對耐火結構、逃生途徑、進出途徑和緊急車輛通道的規定。此外，亦提供以下方面的指引：建築物件和構件的燃燒特性測試標準、建築物的消防安全管理，以及消防安全設計的替代方法（即採用消防工程學方法）。就《建築物條例》而言，《消防安全守則》適用於通過安全及保安統籌委員會、軌道安全及保安委員會和車站及運輸綜合委員會提交，且於二零一二年四月一日或之前尚未展開的鐵路工程。



## Part II

### General Fire Safety Requirements for Railway Infrastructures

#### 2.1 Station

##### 2.1.1 Fire Service Installations (FSI)

**Requirements – Systems/Installations/Equipment for:**

- (i) Audio/visual advisory system
- (ii) Automatic actuating devices
- (iii) Automatic fixed installation other than water
- (iv) Emergency power supply
- (v) Emergency lighting
- (vi) Exit sign
- (vii) Fire alarm system
- (viii) Fire control centre
- (ix) Fire detection system
- (x) Fire hydrant/hose reel system
- (xi) Fire Services communication system
- (xii) Fireman's lift
- (xiii) Firefighting and rescue stairway
- (xiv) Portable hand-operated approved appliance
- (xv) Pressurization of staircase
- (xvi) Sprinkler system
- (xvii) Static or dynamic smoke extraction system
- (xviii) Street fire hydrant system
- (xix) Special equipment/requirement
- (xx) Ventilation/air conditioning control system

## 第二部

### 鐵路基建設施的消防安全規定

#### 2.1 鐵路車站

##### 2.1.1 消防裝置

須裝設的系統／裝置／設備：

- (i) 聲響／視像警報系統
- (ii) 自動啟動裝置
- (iii) 不含水的滅火劑自動固定裝置
- (iv) 應急供電設備
- (v) 應急照明系統
- (vi) 出口指示牌
- (vii) 火警警報系統
- (viii) 消防控制中心
- (ix) 火警偵測系統
- (x) 消防栓／喉轆系統
- (xi) 消防通訊系統
- (xii) 消防員升降機
- (xiii) 消防和救援樓梯間
- (xiv) 認可的人手操作手提器具
- (xv) 樓梯增壓
- (xvi) 花灑系統
- (xvii) 靜態式或機械式排煙系統
- (xviii) 街道消防栓系統
- (xix) 特別設備／規定
- (xx) 通風／空氣調節控制系統

**Extent**

- (i) Flashing exit signs/directional signs and Public Address (PA) System shall be provided in station public circulation areas as part of the audio/visual advisory system to direct passengers towards the designated exits.
- (ii) As required by that equipment which requires to be automatically actuated.
- (iii) To be provided to areas where the use of water is undesirable for the risk.
- (iv) An independently powered generator or dual power supply from two independent primary substations (zone substations) of sufficient electrical capacity to meet the essential services it is required to provide.
- (v) Emergency lighting shall be provided throughout the entire station and all exit routes leading to the Ultimate Place of Safety.
- (vi)
  - (a) Sufficient directional and exit signs shall be provided to ensure that all exit routes from any floor/premises within the station are clearly indicated as required by the configuration of escape routes serving the station.
  - (b) All directional and exit signs in public areas shall be internally illuminated and of flashing type. During emergency evacuation, the directional and exit signs within the public area shall be switched on and flashing to indicate the appropriate exit routes to the Ultimate Place of Safety.

## 應用範圍

- (i) 須在車站的公眾通道地方設置閃動的出口指示牌／方向指示牌和廣播系統，作為聲響／視像警報系統的一部分，以便引領乘客前往指定出口。
- (ii) 配合須自動啟動的設備。
- (iii) 設置在不宜用水救火的地方。
- (iv) 須設置發電量充足的獨立發電機或由兩個獨立主配電站（分區配電站）雙重供電，為各項必要服務提供所需的電力。
- (v) 整個車站及通往最終安全地點的所有出口路線均須安裝應急照明系統。
- (vi) (a) 須按照車站的逃生路線設計，設置足夠的方向指示牌及出口指示牌，以確保清楚指示車站內各個樓層／處所的所有出口路線。  
  
(b) 公眾地方的所有方向指示牌和出口指示牌均須設有內部照明裝置，而且能夠閃動。當緊急疏散時，應將公眾地方的方向指示牌和出口指示牌亮着並閃動，以指示前往最終安全地點的適當出口路線。

- (c) “Hidden flashing exit signs” are designed for emergency evacuation. It shall be provided for escalators which would normally run against the direction of escape routes and would stop under emergency situation.
- (d) “MTR graphic type” directional/exit signs are acceptable in public areas. However, non-public areas shall follow the relevant prescriptive requirements.



- (vii)
  - (a) For non-public area, one actuating point and one audio warning device are to be located at each hose reel point. Visual alarm signals shall be provided where necessary in accordance with the current Design Manual - Barrier Free Access. This actuating point shall include facilities for starting fire pump and initiating audio/visual warning device.
  - (b) For public area, one actuating point is to be located at each hose reel point. This actuating point shall include facilities for starting fire pump.

- (c) 在行走方向通常與逃生路線相反及在緊急情況下停止運行的自動梯，須設置專為緊急疏散而設計的「隱藏式閃動出口指示牌」。
- (d) 公眾地方可以容許使用「港鐵圖像式」的方向／出口指示牌，惟非公眾地方則須遵守相關的訂明規定。



- (vii) (a) 在非公眾地方，每個消防喉轆裝置處均須安裝啟動按鈕及聲響警報裝置各一個。如有需要，須遵照現行《設計手冊：暢通無阻的通道》的規定提供視像火警信號。啟動按鈕必須可以啟動消防泵及聲響／視像警報裝置。
- (b) 在公眾地方，每個消防喉轆裝置處均須安裝啟動按鈕。啟動按鈕必須可以啟動消防泵。

- (c) An “Acknowledgement” button shall be provided on the local Integrated Backup Control Panel. Upon acknowledgement of an alarm signal, Mass Transit Railway (MTR) staff shall investigate the cause of the alarm. If the fire alarm is not acknowledged within the pre-defined delay period (1 minute), fire evacuation operation will be activated. Evacuation message shall be automatically transmitted via the Public Address (PA) System to all station public areas. The PA system shall be used to broadcast pre-recorded evacuation message to passengers. Exit signs shall flash to direct passengers towards the exits.
- (d) A “Confirm” button shall be provided on the local Integrated Backup Control Panel to activate automatic fire evacuation operation when the fire alarm is confirmed.
- (viii) Minimum of one, additional to be provided according to the complexity of the station. It shall normally be located at ground floor level on the main face of the building, preferably adjacent to the main entrance, and be continuously manned by trained personnel/promptly attended by trained personnel in case of emergency. For typical station with station control room accommodated with the Fire Services control panels and automatic fire alarm panels, it could be accepted as an alternative provision.
- (ix) The entire station area shall be covered by a fire detection system, except above ground lavatory where automatic fixed installation is provided.

- (c) 車站的綜合備用控制板須裝有「知悉」掣。港鐵職員在收到警報信號之後，須調查警報的原因。若無人在預先設定的延時期限（一分鐘）內按「知悉」掣以示知悉火警警報，系統便會立即啟動火警疏散行動。疏散信息會自動通過廣播系統向車站的所有公眾地方播放。須用廣播系統向乘客廣播預先錄製的疏散信息。出口指示牌須閃動以引領乘客前往出口。
  
- (d) 車站的綜合備用控制板須裝有「確認」掣。在確認發生火警後，應按此掣以啟動自動火警疏散行動。
  
- (viii) 須至少設立一個消防控制中心，並視乎車站的複雜程度增設。消防控制中心一般須設於建築物正面的地面層水平，最好鄰近主要入口，並由受過訓練的人員持續駐守，或由受過訓練的人員在緊急時迅速前往該中心。典型車站的車站控制室均裝有消防控制板和自動火警警報控制板，此類車站控制室可被接受為消防控制中心。
  
- (ix) 火警偵測系統須覆蓋整個車站範圍，但裝有自動固定裝置的地面洗手間除外。



- (x) (a) There shall be sufficient fire hydrants (with twin-hydrant outlets or two single-hydrant outlets) and hose reels to ensure that every part of the station can be reached by a length of not more than 30 m of Fire Services hose and hose reel tubing.
- (b) The fire hydrant/hose reel system of the railway station shall also serve the fire hydrant system of associated tunnels or viaducts.
- (xi) To be provided to enable three separate talk groups of FSD personnel to communicate effectively and efficiently by using their FSD radio equipment for trunk radio communication within the station simultaneously. In addition, the radio coverage shall also be extended to the area within a radius of 50 m from DEE/SEE of the station at grade level. Direct line telephone housed in a dedicated FSD telephone panel at the entrances of DEE/SEE and trackside EAP shall be provided for communication with the Operations Control Centre and Station Control Room.
- (xii) As required by the FS Code. In addition, the car of a fireman's lift in DEE should have a minimum dimension of 1 400 mm × 2 400 mm. The minimum dimension of a fireman's lift in SEE usually follows the prescriptive requirements stipulated in the FS Code provided that the DEE could provide access to all station levels/areas.
- (xiii) As required by the FS Code.
- (xiv) As required by the occupancy.

- (x) (a) 須設有足夠消防栓（具備雙出水口或兩個單出水口）及消防喉轆，以確保長度不超過 30 米的滅火喉及喉轆軟喉可達至車站的任何部分。
- (b) 鐵路站的消防栓／喉轆系統須同時可供相連隧道或高架鐵路的消防栓系統使用。
- (xi) 所設通訊系統須能供 3 個獨立通話組別的消防人員於同一時間在車站內以所攜的消防處無線電設備進行有效而具效率的集束無線電通訊。此外，該車站的無線電覆蓋範圍亦須達車站地面各個緊急入口 50 米半徑範圍。位於指定緊急入口、輔助緊急入口及軌旁的緊急救援入口的消防處專用電話控制板須設置直線電話，以便與車務控制中心和車站控制室聯絡。
- (xii) 須遵照《消防安全守則》的規定。此外，指定緊急入口的消防員升降機機廂的最低限度尺寸應為 1 400 毫米 × 2 400 毫米。輔助緊急入口的消防員升降機的最低限度尺寸一般須符合《消防安全守則》所訂的訂明規定，但前提是該車站的指定緊急入口能提供通道前往車站所有樓層／範圍。
- (xiii) 須遵照《消防安全守則》的規定。
- (xiv) 視乎車站使用的性質而定。

- (xv) (a) Required for above ground portion of the station exceeding 30 m above the point of staircase exit to open air at ground floor level or ultimate place of safety where:-
- (1) natural venting of staircase is not provided for above ground portion of the station;
  - (2) the cubical extent of the above ground portion of the station exceeds 28 000 cubic metres; and
  - (3) the aggregate area of openable windows of the above ground station does not exceed 6.25% of the floor area of the station, calculated on a floor by floor basis or such windows are not so situated that effective cross ventilation can be provided.
- (b) Required for the basement portion of the station where:-
- (1) no open air access routes to the basement portion for firemen are provided; and
  - (2) the cubical extent of the basement portion exceeds 7 000 cubic metres.
- (c) The number of pressurized staircases to be provided shall be determined by the table stipulated under the definition of “Pressurization of staircase” in Part II of the FSI Code and the number of pressurized staircases required shall not exceed the total number of staircases as required by the FS Code.

(xv) (a) 如車站地面部分在通往地面層露天地方或最終安全地點的樓梯出口之上超過 30 米，或屬以下情況，須為樓梯增壓：

(1) 車站地面部分沒有自然通風的樓梯；

(2) 車站地面部分的立體空間超過 28 000 立方米；及

(3) 地面車站的可開啟窗口總面積按層計不超過車站樓面面積的 6.25%，或該等窗口因所在位置不能達至有效的對流通風效果。

(b) 如車站地庫部分：

(1) 沒有通往地庫部分的露天通道供消防員使用；及

(2) 立體空間超過 7 000 立方米，則須為樓梯增壓。

(c) 須予增壓的樓梯數目按《消防裝置守則》內《最限度之消防裝置及設備守則》第二部「樓梯增壓」一詞的釋義項下的列表所釐定，惟所需增壓的樓梯數目不得超逾《消防安全守則》規定的樓梯總數。

(xvi) Required to cover all parts of the station except above ground plant rooms and areas covered by (iii) above.

(xvii) (a) Required for:

(1) atrium of the station, if the compartment of the atrium exceeds 28 000 cubic metres, or any basement level or floor of the station forming part of that compartment; or

(2) any fire compartment exceeding 7 000 cubic metres in the station where:-

- the aggregate area of openable windows of the compartment does not exceed 6.25% of the floor area of that compartment; or

- such windows are not so situated that effective cross ventilation can be provided.

(3) station public areas at any basement level; or

(4) station non-public areas, including all back-of-house areas and plant rooms (except service ducts, plenums, plant rooms with gas flooding protection system and small plant rooms with site constraints, etc.), at the basement of three or more levels; or

(xvi) 須覆蓋車站各個部分的範圍，但上述第(iii)項的裝置所覆蓋的地面機房及地方則屬除外。

(xvii) (a) 在以下地方須予裝設：

(1) 車站中庭，如該中庭的隔室體積超過 28 000 立方米；或屬隔室一部分的任何車站地庫層或樓層；或

(2) 車站內任何體積超過 7 000 立方米的隔室，如：

– 該隔室內可開啟窗口的總面積不超過該隔室樓面面積的 6.25%；或

– 該等窗口因所在位置不能達至有效的對流通風效果。

(3) 車站內任何地庫層的公眾地方；或

(4) 3 層或以上地庫內的非公眾地方，包括所有後勤地方和機房（喉管槽、吸音槽、有氣體湧滅系統的機房、受場地限制的小機房等除外）；或

- (5) basement, irrespective of the number of levels, exceeding a depth of 30 m from the floor level of the ground storey above the basement to the floor level of the lowest storey in the basement, except service ducts, plenums, plant rooms with gas flooding protection system and small plant rooms with site constraints, etc.
- (b) Hot smoke test will be required for the following compartments if considered necessary by FSD:
  - (1) with a headroom of 12 m or more; or
  - (2) with irregular geometrical dimensions or extraordinary large size or long length.
- (xviii) Spacing between fire hydrants should be 100 m staggered on alternate sides of the roadway wherever applicable. Wherever possible, there should be at least two street fire hydrants within the site of the station concerned and they should be strategically fixed within 30 m as far as possible but not less than 6 m from the DEE/SEE of the station they are intended to protect.
- (xix) As required by FSD.
- (xx) When a ventilation/air conditioning control system to the station is provided, it shall stop the mechanically induced air movement within a designated fire compartment.

(5) 地庫，不論層數多少，只要由該地庫之上的地面樓層的樓面水平至地庫最底樓層的樓面水平（喉管槽、吸音槽、有氣體湧滅系統的機房、受場地限制的小機房等除外），深度超過 30 米。

(b) 消防處如認為有需要，會要求為隔室進行熱煙測試：

(1) 淨空高度達 12 米或以上的隔室；或

(2) 形狀不規則或面積特大或特長的隔室。

(xviii) 如情況合適，應於街道兩旁每隔 100 米交錯地安裝街道消防栓。如情況許可，有關車站的範圍內應設置最少兩個街道消防栓，兩者距離應策略性地定於 30 米範圍內，但應距離所保障車站的指定或輔助緊急入口不少於 6 米。

(xix) 須遵照消防處的規定。

(xx) 如車站內裝設有通風／空氣調節控制系統，則該系統須能阻止指定隔火室內由機械引發的氣流。



### *Additional Requirements*

- (i) All concession areas in the station shall be protected by the Cabin Concept as described in Appendix I(a).
- (ii) All linings for acoustic and thermal insulation purposes in ductings and concealed locations shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (iii) All linings for acoustic, thermal insulation and decorative purposes within the protected means of escape shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (iv) In general, dangerous goods shall not be used or stored in the station. Any intended use or storage of dangerous goods as defined in Chapter 295 of the Laws of Hong Kong shall make separate application to FSD for approval.
- (v) The glazing (solar control tempered glass panel) shall not be of the type which melts and forms burning droplets under fire situation. Also, when it is shattered, it does not form sharp and harmful pieces.

### 額外規定

- (i) 車站所有專營範圍均受附錄（一）（甲）所載的「艙房概念」所防護。
- (ii) 管道及隱蔽位置內所有作隔音及隔熱用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等標準，或利用認可的抗火產品提高水平至同等標準。
- (iii) 防護逃生途徑內所有作隔音、隔熱及裝飾用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等標準，或利用認可的抗火產品提高水平至同等標準。
- (iv) 一般而言，車站不應使用或貯存危險品。如擬使用或貯存香港法例第 295 章界定為危險品的物品，須另行向消防處申請批准。
- (v) 窗玻璃（隔熱強化玻璃嵌板）不得為遇火時會熔化成灼熱液滴的類別，碎裂時亦不會構成鋒利及有害的碎片。

### 2.1.2 Means of Escape (MoE)

- (i) There shall be adequate means of escape for all calculated population under the worst scenario, as agreed in STIC and SSCC Stage 1 Submissions, to escape safely from the fire scene to an adjacent Place of Safe Passage within 4.5 minutes without being overwhelmed by the effects of fire and smoke. Inside the passage, a smoke clear height of not less than 2.5 m is maintained by the smoke extraction system for a minimum period of 60 minutes for evacuation. This will normally be on the floor immediately above or below or an area adjacent to where a fire occurred. Place of Safe Passage shall be provided with stairway and/or escalator to the next level or Ultimate Place of Safety.
- (ii) The maximum travel distance in public areas, including platform, concourse, paid area, unpaid area and concession area, from the egress point to the foot of the stair or escalator or other Points of Safety, leading to the Place of Safe Passage at another level or the Ultimate Place of Safety, shall not be more than 50 m (25 m for dead end situation) measured in actual walking distance. This principle is not applied by just reaching an adjacent smoke zone maintained as a Place of Safe Passage. In case there are site constraints rendering it impossible to fully comply with the above requirements, an alternative approach will be adopted on a case-by-case basis, such as the case of long adit scenario. (Examples showing special MoE arrangements are enclosed at Appendix I(b) for reference.)
- (iii) The maximum travel distance in unoccupied non-public areas to the Point of Safety shall not be more than 50 m (25 m for dead end situation).

## 2.1.2 逃生途徑

- (i) 須有足夠的逃生途徑供在最惡劣的情況下，提供所有預計人口在 4.5 分鐘內安全地逃離火警現場，到達鄰近的安全通道而不致被煙火籠罩。「最惡劣情況」的預計人口在車站及運輸綜合委員會和安全及保安統籌委員會的第一階段審批項目已有訂明。在安全通道內，以排煙系統維持不少於 2.5 米的無煙淨空高度最少達 60 分鐘，以供疏散。此等通道一般會位於緊接火警地點的上一層或下一層，或毗連發生火警的區域。安全通道須設有樓梯及／或自動梯，通往最緊接的樓層或最終安全地點。
  
- (ii) 於公眾地方（包括月台、大堂、已付車費區域、非付費區域和專營範圍），從出口點前往通往位於另一層的安全通道或最終安全地點的樓梯或自動梯的底部或其他安全通道，最長行走距離（以實際步行距離計算）不得多於 50 米（在盡頭路的情況下，則為 25 米）。如僅是到達附近充當安全通道的煙霧區，則此原則並不適用。若受制於場地環境而無法完全遵從上述規定，須視乎個別情況（例如長通道情況），採取實際可行的方法。（附錄（一）（乙）載有逃生途徑特別措施的例子，以供參考。）
  
- (iii) 從未佔用的非公眾地方前往安全地點的最長行走距離不得多於 50 米（在盡頭路的情況下，則為 25 米）。

- (iv) The maximum travel distance in occupied non-public areas, such as government offices, station staff offices and staff/administrative rooms in railway terminus (except typical station), shall comply with the prescriptive requirements of the FS Code.
  
- (v) A long adit, apart from forming part of the Place of Safe Passage, also serves as an escape route from the station. It may connect various areas of the station via a series of smoke zones, e.g. platform and concourse or concourse and entrance. The long adit shall be constructed of low combustible materials and finishes due to long travel distance. Setting up of vending machines and concession areas along the long adit or in any of the related lift lobby areas are not desirable. The types, numbers and positions of advertising panels shall be restricted and limited to the minimum in the long adit. Previously agreed requirements for long adit in the West Island Line are listed below for reference:
  - (a) Non-LCD/Plasma or similar type;
  
  - (b) In 4-sheet size [1 115 mm (W) × 1 640 mm (H) × 150 mm (Thick)]; and
  
  - (c) The 4-sheet advertising panels will be mounted in pair. Spacing between each pair of advertising panels on the same wall will not be less than 6 m whereas the spacing to the opposite pair will not be less than 4.5 m. They are also designed with almost zero combustibles (metal frame and toughened glass) and comply with high standard of electrical installation requirements.

- (iv) 從佔用的非公眾地方，例如政府辦公室、車站職員辦公室和位於鐵路總站的職員室／行政室（典型車站除外），前往安全地點的最長行走距離，須遵照《消防安全守則》的訂明規定。
  
- (v) 長通道不但構成安全通道的一部分，也是離開車站的逃生路線，可以透過多個煙霧區與車站的各個區域連接（例如：月台與車站大堂連接，或車站大堂與車站入口連接）。由於行走距離較長，長通道應以低燃物料和飾面建造。沿着長通道或在任何相關的升降機大堂範圍設置售賣機或專營範圍的做法是不可取。長通道內廣告板的種類、數目和擺放位置應受限制，並盡可能減至最少。現將先前就西港島綫的長通道議定的規定臚列如下，以供參考：
  - (a) 須為非液晶顯示屏／等離子顯示屏，或類似顯示屏；
  
  - (b) 須為四封大小[ 1 115 毫米(闊) × 1 640 毫米(高) × 150 毫米(厚)]；及
  
  - (c) 四封廣告燈箱須成對地安裝。在同一堵牆上，每對廣告燈箱之間須留有少於 6 米的空位，與對面一對的距離則須不少於 4.5 米。這些廣告燈箱並須以近乎不含可燃物料(即以金屬框架和強化玻璃)製造，同時須遵從高標準的電力裝置規定。

### **2.1.3 Means of Access (MoA)**

- (i) At least one designated emergency entrance (DEE) and one supplementary emergency entrance (SEE) shall be provided from street level. Additional DEE/SEE may be required due to unique layout or topographic nature.
- (ii) Parking spaces for 7 numbers of 12 m long fire appliances shall be provided near the DEE/SEE of the station.
- (iii) Every part of the station shall be within the distance of 60 m from the door of the lobby to the Firefighting and Rescue Stairway (FRS) or fireman access point measured along actual passages. Provision of fire separated corridors extending from the FRS as a mitigation measure shall be subject to the acceptance of FSD on a case-by-case basis and other enhancement measures may be required as considered necessary.
- (iv) The configuration of the fireman's lift and fireman's staircase shall adhere to the FS Code for FRS. Fireman's lift shall be provided when any above ground floor exceeds 15 m or when any basement floor exceeds 9 m from the mean level of the lowest street.
- (v) The fireman's lift and fireman's staircase at the DEE, if required, shall lead from the entrance at ground level to the station control room or fire control room.

### 2.1.3 進出途徑

- (i) 須於路面至少設置一個指定緊急入口及一個輔助緊急入口，因應車站的獨特佈局或地形性質，或須設置額外的指定緊急入口／輔助緊急入口。
- (ii) 在車站的指定緊急入口或輔助緊急入口附近，須設置 7 個可供 12 米長消防車輛停泊的停車位。
- (iii) 沿實際通道量度，車站各部分與通往消防和救援樓梯間門廊的門或消防員入口處的距離須在 60 米範圍內。如擬設置從消防和救援樓梯間延伸的隔火走廊作為緩解措施，須得到消防處按個別情況而決定接納與否，也可能同時需要採取其他改善措施。
- (iv) 消防員升降機及消防員專用樓梯的設計須遵照《消防安全守則》有關消防和救援樓梯間的規定。如由最低街道的平均水平起計，任何地面層的高度超逾 15 米，或任何地庫層的深度超逾 9 米，則須設置消防員升降機。
- (v) 如規定須於指定緊急入口設置消防員升降機和消防員專用樓梯，則此二者須能由地面層的入口通往車站控制室或消防控制中心。



- (vi) Horizontal MoA route connection by fire separated corridor will be provided between FRS and station control room or fire control room. (Examples showing special MoA arrangements are enclosed at Appendix I(b) for reference.)
- (vii) Fire protection facilities such as Fire Services inlets, sprinkler inlets, Fire Services control panels, automatic fire alarm panels, FSD telephone panel and remote unlocking devices will be located in the vicinity of DEE/SEE.

#### **2.1.4 Fire Resisting Construction (FRC)**

- (i) All elements of construction of the basement as well as fire barriers forming the fire compartment between the ground storey and a basement shall have an FRR of not less than 4 hours. This includes all required staircases serving the basement.
- (ii) Fire barriers forming fire compartment walls within basements shall have an FRR of not less than 2 hours.
- (iii) Ventilation ducts, ventilation shafts and plenums extending from tunnels or underground areas to discharge outlets shall have an FRR of not less than 4 hours.
- (iv) Overhead track extraction ducts along the station trackside shall have an FRR of not less than 2 hours provided that such ducts will not run across any fire compartment with an FRR greater than 2 hours.
- (v) Separation at the integrated entrance which leads directly from the adjoining property development area shall be provided with an FRR of not less than 4 hours.

- (vi) 消防和救援樓梯間和車站控制室或消防控制中心之間須設置以隔火走廊形式連接的橫向進出途徑。(附錄(一)(乙)載有進出途徑特別措施的例子，以供參考。)
- (vii) 防火設施如消防入水掣、花灑入水掣、消防控制板、自動火警警報控制板、消防處電話控制板及遙控解鎖裝置會位於指定緊急入口／輔助緊急入口附近。

#### 2.1.4 耐火結構

- (i) 地庫的所有建築構件，以及構成地面樓層和地庫之間隔火室的所有建築構件須有不少於 4 小時的耐火時效。地庫所有規定設置的樓梯亦須符合此規定。
- (ii) 地庫內構成隔火牆分隔的防火屏障須有不少於 2 小時的耐火時效。
- (iii) 從隧道或地底範圍通往排煙出口的通風槽、通風井和吸音槽須有不少於 4 小時的耐火時效。
- (iv) 車站軌旁的高架軌道抽氣槽須有不少於 2 小時的耐火時效，但前提是這些抽氣槽並非跨越任何耐火時效高於 2 小時的隔火室。
- (v) 直接從毗鄰物業發展範圍延伸至綜合車站出入口的分隔設施須有不少於 4 小時的耐火時效。

- (vi) Doors in openings of compartment walls shall have an FRR of not less than that of the walls.
- (vii) All removal panels or dampers provided in the compartment wall or on the floor shall have the same FRR as that of the wall or floor.
- (viii) All station non-public areas shall be separated from public areas with a separation having an FRR of not less than 2 hours and each plant room shall form a separate compartment.
- (ix) For concession areas, separation walls between cabins and back of the house area as well as the cabin's enclosure walls shall have an FRR of not less than 2 hours.
- (x) Transformer and the associated switchboards of different supply sources shall be separated from each other in different fire compartments.
- (xi) All transformers and high hazard utilities associated with high fire or electrical hazard should be located in the periphery of the station box at ground floor level as far as practicable, while transformers fed from the internal power transmission network of the railway line have to be located underground due to electrical design considerations. Besides, low-fire-risk transformers should be used in rooms with FRR of not less than 4 hours and equipped with gas flooding protection system.

**2.1.5** A checklist of FS Requirements for Station is enclosed at Appendix II for reference.

- (vi) 在分隔牆開口所裝設的門，耐火時效不可低於分隔牆。
- (vii) 在分隔牆或地板開設的所有檢修門或調節風門，耐火時效須與分隔牆或地板相同。
- (viii) 車站所有公眾地方須以分隔設施與非公眾地方分隔，該設施須有不少於 2 小時的耐火時效。此外，任何機房均須構成獨立的隔室。
- (ix) 在專營範圍，艙房和後勤地方之間的隔火牆，以及艙房本身的圍封牆，兩者須有不少於 2 小時的耐火時效。
- (x) 各個供電電源的變壓器及相關的電掣板須互相分隔，設置於不同的隔火室。
- (xi) 所有變壓器和具高度火警或電力危險的高危公用設施應設於車站外圍的地面樓層。然而，基於電力設計的考慮，由鐵路線的內部輸電網絡供電的變壓器必須置於地底。此外，低火警風險的變壓器應在耐火時效不少於 4 小時且裝有氣體湧滅系統的房間使用。

**2.1.5** 附錄（二）載有鐵路車站消防安全規定核對表，以供參考。

## 2.2 Depot

### 2.2.1 Fire Service Installations (FSI)

#### **Requirements – Systems/Installations/Equipment for:**

- (i) Automatic actuating devices
- (ii) Automatic fixed installation other than water
- (iii) Emergency power supply
- (iv) Emergency lighting
- (v) Exit sign
- (vi) Fire alarm system
- (vii) Fire control centre
- (viii) Fire detection system
- (ix) Fire hydrant/hose reel system
- (x) Fire Services communication system
- (xi) Fireman's lift
- (xii) Firefighting and rescue stairway
- (xiii) Portable hand-operated approved appliance
- (xiv) Pressurization of staircase
- (xv) Ring main system with fixed pump
- (xvi) Sprinkler system
- (xvii) Static or dynamic smoke extraction system
- (xviii) Street fire hydrant system
- (xix) Special equipment/requirement
- (xx) Ventilation/air conditioning control system

## 2.2 車廠

### 2.2.1 消防裝置

#### 須裝設的系統／裝置／設備：

- (i) 自動啟動裝置
- (ii) 不含水的滅火劑自動固定裝置
- (iii) 應急供電設備
- (iv) 應急照明系統
- (v) 出口指示牌
- (vi) 火警警報系統
- (vii) 消防控制中心
- (viii) 火警偵測系統
- (ix) 消防栓／喉轆系統
- (x) 消防通訊系統
- (xi) 消防員升降機
- (xii) 消防和救援樓梯間
- (xiii) 認可的人手操作手提器具
- (xiv) 樓梯增壓
- (xv) 裝有固定水泵的環形水管系統
- (xvi) 花灑系統
- (xvii) 靜態式或機械式排煙系統
- (xviii) 街道消防栓系統
- (xix) 特別設備／規定
- (xx) 通風／空氣調節控制系統

### *Extent*

- (i) As required by that equipment which requires to be automatically actuated.
- (ii) To be provided to areas where the use of water is undesirable for the risk.
- (iii) An independently powered generator or dual power supply from two independent primary substations (zone substations) of sufficient electrical capacity to meet the essential services it is required to provide.
- (iv) Emergency lighting shall be provided throughout the entire depot and all exit routes leading to the Ultimate Place of Safety. In addition, such lighting shall also be provided to ensure adequate external illumination to permit safe evacuation to the outside of the site boundary.
- (v) Sufficient directional and exit signs shall be provided to ensure that all exit routes from any floor/premises within the depot are clearly indicated as required by the configuration of escape routes serving the depot.
- (vi) One actuating point and one audio warning device are to be located at each hose reel point. Visual alarm signals shall be provided where necessary in accordance with the current Design Manual - Barrier Free Access. This actuating point should include facilities for starting fire pump and initiating audio/visual warning device.

## 應用範圍

- (i) 配合須自動啟動的設備。
- (ii) 設置在不宜用水救火的地方。
- (iii) 須設置發電量充足的獨立發電機或由兩個獨立主配電站（分區配電站）雙重供電，為各項必要服務提供所需的電力。
- (iv) 整個車廠及通往最終安全地點的所有出口路線均須安裝應急照明系統。此外，亦須安裝應急照明系統，以確保車廠外部光線充足，方便逃生者安全撤往廠址範圍以外的地方。
- (v) 須按照車廠的逃生路線設計，設置足夠的方向指示牌及出口指示牌，以確保清楚指示車廠內各個樓層／處所的所有出口路線。
- (vi) 車廠內每個消防喉轆裝置處均須安裝啟動按鈕及聲響警報裝置各一個。如有需要，須遵照現行《設計手冊：暢通無阻的通道》的規定提供視像火警信號。啟動按鈕必須可以啟動消防泵及聲響／視像警報裝置。



- (vii) Minimum of one, additional to be provided according to the complexity of the depot. It shall normally be located at ground floor level on the main face of the building, preferably adjacent to the main entrance, and be continuously manned by trained personnel/promptly attended by trained personnel in case of emergency.
- (viii) The entire depot area shall be covered by a fire detection system, except above ground lavatory where automatic fixed installation is provided.
- (ix) There shall be sufficient fire hydrants (with twin-hydrant outlets or two single-hydrant outlets) and hose reels to ensure that every part of the depot can be reached by a length of not more than 30 m of Fire Services hose and hose reel tubing.
- (x) To be provided to enable three separate talk groups of FSD personnel to communicate effectively and efficiently by using their FSD radio equipment for trunk radio communication within the depot simultaneously. In addition, the radio coverage shall also be extended to the area within a radius of 50 m from each emergency entrance of the depot at grade level. Direct line telephone housed in a dedicated FSD telephone panel at the entrances of DEE, SEE and trackside EAP shall be provided for communication with the Depot Control Centre.
- (xi) As required by the FS Code.
- (xii) As required by the FS Code.

- (vii) 須至少設立一個消防控制中心，並視乎車廠的複雜程度增設。消防控制中心一般須設於建築物正面的地面層水平，最好鄰近主要入口，並由受過訓練的人員持續駐守／由受過訓練的人員在緊急時迅速前往該中心。
- (viii) 火警偵測系統須覆蓋整個車廠範圍，但設有自動固定裝置的地面洗手間除外。
- (ix) 須設有足夠消防栓（具備雙出水口或兩個單出水口）及消防喉轆，以確保長度不超過30米的滅火喉及喉轆膠喉可達至車廠的任何部分。
- (x) 所設通訊系統須能供3個獨立通話組別的消防人員於同一時間在車廠內以所攜的消防處無線電設備進行有效而具效率的集束無線電通訊。此外，該車廠的無線電覆蓋範圍亦須達車廠地面各個緊急入口50米半徑範圍。位於指定緊急入口、輔助緊急入口及軌旁的緊急救援入口的消防處專用電話控制面板須設置直線電話，以便與車廠控制中心聯絡。
- (xi) 須遵照《消防安全守則》的規定。
- (xii) 須遵照《消防安全守則》的規定。

- (xiii) As required by the occupancy.
- (xiv) (a) Required where:-
  - (1) natural venting of staircase or open air access route for firemen is not provided;
  - (2) the cubical extent of the above ground level exceeds 28 000 cubic metres or basement of three or more levels exceeds 7 000 cubic metres; and
  - (3) the aggregate area of openable windows of rooms/units of the above ground depot does not exceed 6.25% of the floor area of those rooms/units, calculated on a floor by floor basis or such windows are not so situated that effective cross ventilation can be provided.
- (b) The number of pressurized staircases to be provided shall be determined by the table stipulated under the definition of “Pressurization of staircase” in Part II of the FSI Code and the number of pressurized staircases required shall not exceed the total number of staircases as required by the FS Code.
- (xv) To be provided to cover those areas of the building not adequately served by the public water mains.
- (xvi) Required to cover all parts of the building within the depot except above ground plant rooms and areas covered by (ii) above.

- (xiii) 視乎車廠使用的性質而定。
- (xiv) (a) 如屬以下情況，須為樓梯增壓：
  - (1) 沒有自然通風的樓梯，或沒有露天通道供消防員使用；
  - (2) 地面層的立體空間超過 28 000 立方米，或層數達 3 層或以上的地庫的立體空間超過 7 000 立方米；及
  - (3) 地面車廠的房間／單位內的可開啟窗口總面積按層計不超過該等房間／單位樓面面積的 6.25%，或該等窗口因所在位置不能達至有效的對流通風效果。
- (b) 須予增壓的樓梯數目按《消防裝置守則》內《最低限度之消防裝置及設備守則》第二部「樓梯增壓」一詞的釋義項下的列表所釐定，惟所需增壓的樓梯數目不得超逾《消防安全守則》規定的樓梯總數。
- (xv) 為建築物內公共水源不足的地方供水。
- (xvi) 花灑系統須覆蓋車廠內建築物的各個部分，但上述第(ii)項的裝置所覆蓋的地面機房及地方則屬除外。

(xvii) (a) Required for:

(1) any fire compartment of above ground level exceeding 7 000 cubic metres in the building where:

- the aggregate area of openable windows of the compartment does not exceed 6.25% of the floor area of that compartment; or
- such windows are not so situated that effective cross ventilation can be provided; or

(2) any fire compartment exceeding 7 000 cubic metres in the basement with a total floor area exceeding 230 m<sup>2</sup>.

(b) Hot smoke test will be required for the following compartments if considered necessary by FSD:

(1) with a headroom of 12 m or more; or

(2) with irregular geometrical dimensions or extraordinary large size or long length.

(xviii) Spacing between fire hydrants should be 100 m staggered on alternate sides of the roadway wherever applicable. Wherever possible, there should be at least two street fire hydrants within the site of the depot concerned and they should be strategically fixed within 30 m as far as possible but not less than 6 m from the designated emergency entrance of the depot they are intended to protect.

(xvii) (a) 在以下地方須予裝設：

(1) 在建築物內的地面層任何體積超過 7 000 立方米的隔室，如：

- 該隔室內的可開啟窗口總面積不超過該隔室樓面面積的 6.25%；或
- 該等窗口因所在位置不能達至有效對流通風效果；或

(2) 地庫內任何體積超過 7 000 立方米的隔火室，而地庫的總樓面面積超過 230 平方米。

(b) 消防處如認為有需要，會要求為下列隔室進行熱煙測試：

(1) 淨空高度達 12 米或以上的隔室；或

(2) 形狀不規則或面積特大或特長的隔室。

(xviii) 如情況合適，應於街道兩旁每隔 100 米交錯地安裝街道消防栓。如情況許可，有關車廠的範圍內應設置最少兩個街道消防栓，兩者距離應策略性地定於 30 米範圍內，但應距離所保障車廠的指定或輔助緊急入口不少於 6 米。

- (xix) As required by FSD.
- (xx) When a ventilation/air conditioning control system to the building is provided, it shall stop the mechanically induced air movement within a designated fire compartment.

**Additional Requirements**

- (i) All linings for acoustic and thermal insulation purposes in ductings and concealed locations shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (ii) All linings for acoustic, thermal insulation and decorative purposes within the protected means of escape shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (iii) Any intended storage or use of dangerous goods as defined in Chapter 295 of the Laws of Hong Kong shall make separate application to FSD for approval.

- (xix) 須遵照消防處的規定。
- (xx) 如建築物內裝設有通風／空氣調節控制系統，則該系統須能阻止指定隔火室內由機械引發的氣流。

### 額外規定

- (i) 管道及隱蔽位置內所有作隔音及隔熱用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等標準，或利用認可的抗火產品提高水平至同等標準。
- (ii) 防護逃生途徑內所有作隔音、隔熱及裝飾用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等標準，或利用認可的抗火產品提高水平至同等標準。
- (iii) 如擬貯存或使用香港法例第 295 章界定為危險品的物品，須另行向消防處申請批准。



### **2.2.2 Means of Escape (MoE)**

- (i) The maximum travel distance in unoccupied areas to the Point of Safety shall not more than 50 m (25 m for dead end situation).
- (ii) The maximum travel distance in occupied areas shall comply with the prescriptive requirements of the FS Code.

### **2.2.3 Means of Access (MoA)**

- (i) At least one designated emergency entrance (DEE) and one supplementary emergency entrance (SEE) shall be provided from street level. Additional DEE/SEE may be required due to unique layout or topographic nature.
- (ii) Parking spaces for 7 numbers of 12 m long fire appliances shall be provided near the DEE/SEE of the depot.
- (iii) At least two EAPs shall be provided at the perimeter of the depot. These two points shall lead to a designated EVA within the depot which will enable firemen to reach various areas of the depot.
- (iv) A fireman's access route leading from the entrance of DEE at street level to the Depot Control Centre shall be provided.
- (v) Every part of the depot shall be within the distance of 60 m from the door of the lobby to the FRS or fireman access point measured along actual passage.

### 2.2.2 逃生途徑

- (i) 從未佔用區域前往安全地點的最長行走距離不得超過 50 米（在盡頭路的情況下，則為 25 米）。
- (ii) 從佔用區域前往安全地點的最長行走距離，須遵照《消防安全守則》的訂明規定。

### 2.2.3 進出途徑

- (i) 須於路面至少設置一個指定緊急入口及一個輔助緊急入口，因應車廠的獨特佈局或地形性質，或須設置額外的指定緊急入口／輔助緊急入口。
- (ii) 在車廠的指定緊急入口或輔助緊急入口附近，須設置 7 個可供 12 米長消防車輛停泊的停車位。
- (iii) 車廠外圍須至少設置兩個緊急救援入口，通往車廠內的一個指定緊急車輛通道，讓消防員可以到達車廠的各個區域。
- (iv) 指定緊急入口須設置從路面入口通往車廠控制中心的消防員通道。
- (v) 沿實際通道量度，車廠各部分與通往消防和救援樓梯間門廊的門或消防員入口處的距離須在 60 米範圍內。

- (vi) The configuration of the fireman's lift and fireman's staircase shall adhere to the FS Code for FRS. Fireman's lift shall be provided when any above ground floor exceeds 15 m or when any basement floor exceeds 9 m from the mean level of the lowest street.
- (vii) Crossing facilities shall be provided along the fireman's access route from EVA to track areas.
- (viii) All crossing facilities shall be hard paved.
- (ix) Fire protection facilities such as Fire Services inlets, sprinkler inlets, Fire Services control panels, automatic fire alarm panels, FSD telephone panel and remote unlocking devices will be located in the vicinity of DEE/SEE.

#### **2.2.4 Fire Resisting Construction (FRC)**

- (i) Every element of construction, compartment wall, compartment floor in the basement and the separation between the depot and the adjoining storey shall have an FRR of not less than 4 hours.
- (ii) All offices and plant rooms shall be separated by an element of construction having an FRR of not less than 2 hours from the rest of the depot areas and each plant room shall form a separate compartment.
- (iii) Doors in openings of compartment wall shall have an FRR of not less than that of the wall.

- (vi) 消防員升降機及消防員專用樓梯的設計須遵照《消防安全守則》有關消防和救援樓梯間的規定。如由最低街道的平均水平起計，任何地面層的高度超逾 15 米，或任何地庫層的深度超逾 9 米，則須設置消防員升降機。
- (vii) 緊急車輛通道至軌道區域的消防員通道沿途須設置橫跨設施。
- (viii) 所有橫跨設施須用堅固物料鋪設。
- (ix) 防火設施如消防入水掣、花灑入水掣、消防控制板、自動火警警報控制板、消防處電話控制板及遙控解鎖裝置會位於指定緊急入口／輔助緊急入口附近。

#### 2.2.4 耐火結構

- (i) 地庫的每個建築構件、分隔牆及分隔地板，以及車廠與毗連樓層之間的隔火設施須有不少於 4 小時的耐火時效。
- (ii) 所有辦公室及機房均須以耐火時效不少於 2 小時的建築構件與車廠其他地方分隔，而每個機房須構成獨立隔室。
- (iii) 在分隔牆開口所裝設的門，耐火時效不可低於分隔牆。

- (iv) All removal panels or dampers provided in the compartment wall or on the floor shall have the same FRR as that of the wall or floor.
- (v) Transformer and the associated switchboards of different supply sources shall be separated from each other in different fire compartments.
- (vi) All transformers and high hazard utilities associated with high fire or electrical hazard should be located in the periphery of the building at ground floor level.

**2.2.5** A checklist of FS Requirements for Depot/Ancillary Building is enclosed at Appendix III for reference.

- (iv) 在分隔牆或地板開設的所有檢修門或調節風門，耐火時效須與分隔牆或地板相同。
- (v) 各個供電電源的變壓器及相關的電掣板須互相分隔，設置於不同的隔火室。
- (vi) 所有變壓器和具高度火警或電力危險的高危公用設施應設於建築物外圍的地面樓層。

**2.2.5** 附錄（三）載有車廠／附屬建築物消防安全規定核對表，以供參考。

## 2.3 Ancillary Building

### 2.3.1 Fire Service Installations (FSI)

#### **Requirements – Systems/Installations/Equipment for:**

- (i) Automatic actuating devices
- (ii) Automatic fixed installation other than water
- (iii) Emergency power supply
- (iv) Emergency lighting
- (v) Exit sign
- (vi) Fire alarm system
- (vii) Fire control centre
- (viii) Fire detection system
- (ix) Fire hydrant/hose reel system
- (x) Fire Services communication system
- (xi) Fireman's lift
- (xii) Firefighting and rescue stairway
- (xiii) Portable hand-operated approved appliance
- (xiv) Pressurization of staircase
- (xv) Sprinkler system
- (xvi) Static or dynamic smoke extraction system
- (xvii) Street fire hydrant system
- (xviii) Special equipment/requirement
- (xix) Ventilation/air conditioning control system

## 2.3 附屬建築物

### 2.3.1 消防裝置

#### 須裝設的系統／裝置／設備：

- (i) 自動啟動裝置
- (ii) 不含水的滅火劑自動固定裝置
- (iii) 應急供電設備
- (iv) 應急照明系統
- (v) 出口指示牌
- (vi) 火警警報系統
- (vii) 消防控制中心
- (viii) 火警偵測系統
- (ix) 消防栓／喉轆系統
- (x) 消防通訊系統
- (xi) 消防員升降機
- (xii) 消防和救援樓梯間
- (xiii) 認可的人手操作手提器具
- (xiv) 樓梯增壓
- (xv) 花灑系統
- (xvi) 靜態式或機械式排煙系統
- (xvii) 街道消防栓系統
- (xviii) 特別設備／規定
- (xix) 通風／空氣調節控制系統



**Extent**

- (i) As required by that equipment which requires to be automatically actuated.
- (ii) To be provided to areas where the use of water is undesirable for the risk.
- (iii) An independently powered generator or dual power supply from two independent primary substations (zone substations) of sufficient electrical capacity to meet the essential services it is required to provide.
- (iv) Emergency lighting shall be provided throughout the entire building and all exit routes leading to the Ultimate Place of Safety.
- (v) Sufficient directional and exit signs shall be provided to ensure that all exit routes from any floor/premises within the building are clearly indicated as required by the configuration of escape routes serving the building.
- (vi) One actuating point and one audio warning device are to be located at each hose reel point. Visual alarm signals shall be provided where necessary in accordance with the current Design Manual - Barrier Free Access. This actuating point should include facilities for starting fire pump and initiating audio/visual warning device.
- (vii) Minimum of one, additional to be provided according to the complexity of the building.
- (viii) The entire building area shall be covered by a fire detection system.

## 應用範圍

- (i) 配合該設備的規定並須自動啟動。
- (ii) 設置在不宜用水救火的地方。
- (iii) 須設置發電量充足的獨立發電機或由兩個獨立主配電站（分區配電站）雙重供電，為各項必要設備及系統提供所需的電力。
- (iv) 整座建築物及通往最終安全地點的所有出口路線均須安裝應急照明系統。
- (v) 須按照建築物的逃生路線設計，設置足夠的方向指示牌及出口指示牌，以確保清楚指示建築物內各個樓層／處所的所有出口路線。
- (vi) 附屬建築物內每個消防喉轆裝置處均須安裝啟動按鈕及聲響警報裝置各一個。如有需要，須遵照現行《設計手冊：暢通無阻的通道》的規定提供視像火警信號。啟動按鈕必須可以啟動消防泵及聲響／視像警報裝置。
- (vii) 須至少設立一個消防控制中心，並視乎建築物的複雜程度增設。
- (viii) 火警偵測系統須覆蓋整座建築物範圍。

- (ix) (a) There shall be sufficient fire hydrants (with twin-hydrant outlets or two single-hydrant outlets) and hose reels to ensure that every part of the building can be reached by a length of not more than 30 m of Fire Services hose and hose reel tubing.
- (b) When the building is used as the Emergency Access Point (EAP) of underground trackways, the fire hydrant/hose reel system shall also serve the tunnel fire hydrant system.
- (x) To be provided to enable three separate talk groups of FSD personnel to communicate effectively and efficiently by using their FSD radio equipment for trunk radio communication within the building simultaneously. In addition, the radio coverage shall also be extended to the area within a radius of 50 m from each emergency entrance of the building at grade level. Direct line telephone housed in a dedicated FSD telephone panel at the entrances of DEE, SEE and trackside EAP shall be provided for communication with the Operations Control Centre and Station Control Room.
- (xi) As required by the FS Code. In addition, the car of a fireman's lift should have a minimum internal floor area of 1 400 mm × 2 400 mm.
- (xii) As required by the FS Code.
- (xiii) As required by the occupancy.

- (ix) (a) 須有足夠消防栓（具備雙出水口或兩個單出水口）及消防喉轆，以確保長度不超過 30 米的滅火喉及喉轆膠喉可達至建築物的任何部分。
- (b) 當建築物用作地下軌道的緊急救援入口，其消防栓／喉轆系統亦須供有關隧道的消防栓系統使用。
- (x) 所設通訊系統須能供 3 個獨立通話組別的消防人員於同一時間在建築物內以所攜的消防處無線電設備進行有效而具效率的集束無線電通訊。此外，該建築物的無線電覆蓋範圍亦須達建築物地面各個緊急入口 50 米半徑範圍。位於指定緊急入口、輔助緊急入口及軌旁的緊急救援入口的消防處專用電話控制面板須設置直線電話，以便與車務控制中心和車站控制室聯絡。
- (xi) 須遵照《消防安全守則》的規定。此外，消防員升降機的機廂內部面積最少應為 1 400 毫米 × 2 400 毫米。
- (xii) 須遵照《消防安全守則》的規定。
- (xiii) 視乎建築物使用的性質而定。

- (xiv) (a) Required where:
- (1) natural venting of staircase or open air access route for firemen is not provided;
  - (2) the cubical extent of the above ground level exceeds 28 000 cubic metres or basement of three or more levels exceeds 7 000 cubic metres; and
  - (3) the aggregate area of openable windows of rooms/units of the above ground depot does not exceed 6.25% of the floor area of those rooms/units, calculated on a floor by floor basis or such windows are not so situated that effective cross ventilation can be provided.
- (b) The number of pressurized staircases to be provided shall be determined by the table stipulated under the definition of “Pressurization of staircase” in the Code of Practice for Minimum Fire Service Installations and Equipment Part II of the FSI Code and the number of pressurized staircases required shall not exceed the total number of staircases required by the FS Code.
- (xv) To be provided to the entire building except above ground plant rooms and areas covered by (ii) above.

(xiv) (a) 如屬以下情況，須為樓梯增壓：

- (1) 沒有自然通風的樓梯，或沒有露天通道供消防員使用；
- (2) 地面層的立體空間超過 28 000 立方米，或層數達 3 層或以上的地庫的立體空間超過 7 000 立方米；及
- (3) 地面車廠的房間／單位內的可開啟窗口總面積按層計不超過該等房間／單位樓面面積的 6.25%，或該等窗口因在位置不能達至有效的對流通風效果。

(b) 須予增壓的樓梯數目按《消防裝置守則》內《最低限度之消防裝置及設備守則》第二部「樓梯增壓」一詞的釋義項下的列表所釐定，惟所需增壓的樓梯數目不得超逾《消防安全守則》規定的樓梯總數。

(xv) 須覆蓋整座建築物的範圍，但上述第(ii)項的裝置所覆蓋的地面機房及地方則屬除外。

(xvi) (a) Required for:

(1) any fire compartment of above ground level exceeding 7 000 cubic metres in that building where:-

- the aggregate area of openable windows of the compartment does not exceed 6.25% of the floor area of that compartment; or
- such windows are not so situated that effective cross ventilation can be provided; or

(2) any fire compartment exceeding 7 000 cubic metres in the basement with a total floor area exceeding 230 m<sup>2</sup>.

(b) Hot smoke test will be required for the following compartments if considered necessary by FSD:

(1) with a headroom of 12 m or more; or

(2) with irregular geometrical dimensions or extraordinary large size or long length.

(xvii) Spacing between fire hydrants should be 100 m staggered on alternate sides of the roadway wherever applicable. Wherever possible, there should be at least two street fire hydrants within the site of the ancillary building concerned and they should be strategically fixed within 30 m as far as possible but not less than 6 m from the designated emergency entrance of the ancillary building they are intended to protect.

(xvi) (a) 在以下地方須予裝置：

(1) 在建築物內的地面層任何體積超過 7 000 立方米的隔火室，如：

- 該隔室內可開啟窗口的總面積不超過該隔室樓面面積的 6.25%；或
- 該等窗口因所在位置不能達至有效對流通風效果；或

(2) 地庫內任何體積超過 7 000 立方米的隔火室，而地庫的總樓面面積超過 230 平方米。

(b) 消防處如認為有需要，會要求為下列隔室進行熱煙測試：

(1) 淨空高度達 12 米或以上的隔室；或

(2) 形狀不規則或面積特大或特長的隔室。

(xvii) 如情況合適，應於街道兩旁每隔 100 米交錯地安裝街道消防栓。如情況許可，有關附屬建築物範圍內應設置最少兩個街道消防栓，兩者距離應策略性地定於 30 米範圍內，但應距離所保障附屬建築物的指定或輔助緊急入口不少於 6 米。



- (xviii) As required by FSD.
- (xix) When a ventilation/air conditioning control system to the building is provided, it shall stop the mechanically induced air movement within a designated fire compartment.

**Additional Requirements**

- (i) All linings for acoustic and thermal insulation purposes in ductings and concealed locations shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (ii) All linings for acoustic, thermal insulation and decorative purposes within the protected means of escape shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (iii) In general, dangerous goods shall not be used or stored in ancillary buildings. Any intended use or storage of dangerous goods as defined in Chapter 295 of the Laws of Hong Kong shall make separate application to FSD for approval.

- (xviii) 須遵照消防處的規定。
- (xix) 如建築物內裝設有通風／空氣調節控制系統，則該系統須能阻止指定隔火室內由機械引發的氣流。

### 額外規定

- (i) 管道及隱蔽位置內所有作隔音及隔熱用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等標準，或利用認可的抗火產品提高水平至同等標準。
- (ii) 防護逃生途徑內所有作隔音、隔熱及裝飾用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等標準，或利用認可的抗火產品提高水平至同等標準。
- (iii) 一般而言，附屬建築物不得使用或貯存危險品。如擬使用或貯存香港法例第 295 章界定為危險品的物品，須另行向消防處申請批准。

### **2.3.2 Means of Escape (MoE)**

- (i) The maximum travel distance in unoccupied areas to the Point of Safety shall not be more than 50 m (25 m for dead end situation).
- (ii) The maximum travel distance in occupied areas shall comply with the prescriptive requirements of the FS Code.

### **2.3.3 Means of Access (MoA)**

- (i) Parking spaces for 7 numbers of 12 m long fire appliances shall be provided near the DEE of the building.
- (ii) A fireman's access route leading from the entrance at street level to the fire control room shall be provided at the DEE.
- (iii) Every part of the building shall be within the distance of 60 m from the door of the lobby to the FRS or a fireman access point measured along actual passage.
- (iv) The configuration of the fireman's lift and fireman's staircase shall adhere to the FS Code for FRS. Fireman's lift shall be provided when any above ground floor exceeds 15 m or when any basement floor exceeds 9 m from the mean level of the lowest street.
- (v) Fire protection facilities such as Fire Services inlets, sprinkler inlets, Fire Services control panels, automatic fire alarm panels, FSD telephone panel and remote unlocking devices will be located in the vicinity of DEE.

### 2.3.2 逃生途徑

- (i) 從未佔用區域前往安全地點的最長行走距離不得超過 50 米（在盡頭路的情況下，則為 25 米）。
- (ii) 從佔用區域前往安全地點的最長行走距離，須遵照《消防安全守則》的訂明規定。

### 2.3.3 進出途徑

- (i) 在建築物的指定緊急入口附近，須設置 7 個可供 12 米長消防車輛停泊的停車位。
- (ii) 指定緊急入口須設置從路面入口通往消防控制室的消防員通道。
- (iii) 沿實際通道量度，建築物各部分與通往消防和救援樓梯間門廊的門或消防員入口處的距離須在 60 米範圍內。
- (iv) 消防員升降機及消防員專用樓梯的設計須遵照《消防安全守則》有關消防和救援樓梯間的規定。當任何地面層與最低街道的平均水平高度超逾 15 米，或任何地庫層與該水平的深度超逾 9 米，則須設置消防員升降機。
- (v) 防火設施如消防入水掣、花灑入水掣、消防控制板、自動火警警報控制板、消防處電話控制板及遙控解鎖裝置會位於指定緊急入口附近。

#### **2.3.4 Fire Resisting Construction (FRC)**

- (i) Every element of construction, compartment wall, compartment floor in the basement and the separation between the basement and the adjoining storey shall have an FRR of not less than 4 hours.
- (ii) Ventilation ducts, ventilation shafts and plenums extending from tunnels or underground areas to discharge outlets shall have an FRR of not less than 4 hours.
- (iii) Doors in openings of compartment walls shall have an FRR of not less than that of the walls.
- (iv) All removal panels or dampers provided in the compartment wall or on the floor shall have the same FRR as that of the wall or floor.

**2.3.5** A checklist of FS Requirements for Depot/Ancillary building is enclosed at Appendix III for reference.

#### 2.3.4 耐火結構

- (i) 地庫的每個建築構件、分隔牆及分隔地板，以及地庫與毗連樓層之間的隔火設施須有不少於 4 小時的耐火時效。
- (ii) 從隧道或地底範圍通往排煙出口的通風槽、通風井和吸音槽須有不少於 4 小時的耐火時效。
- (iii) 在分隔牆開口所裝設的門，耐火時效不可低於分隔牆。
- (iv) 在分隔牆或地板開設的所有檢修門或調節風門，耐火時效須與分隔牆或地板相同。

2.3.5 附錄（三）載有車廠／附屬建築物消防安全規定核對表，以供參考。

## 2.4 Trackside Area

### 2.4.1 Fire Service Installations (FSI)

#### **Requirements – Systems/Installations/Equipment for:**

- (i) Closed circuit television system
- (ii) Emergency power supply
- (iii) Emergency lighting
- (iv) Exit sign
- (v) Fire Services communication system
- (vi) Trackside fire hydrant system
- (vii) Special equipment/requirement
- (viii) Tunnel ventilation system

#### **Extent**

- (i) To be provided at the track level at each Emergency Access Point (EAP) of a long or deep underground tunnel such that firemen can have a visual observation of the tunnel situation before getting into the tunnel.
- (ii) An independently powered generator or dual power supply from two independent primary substations (zone substations) of sufficient electrical capacity to meet the essential services it is required to provide.
- (iii) (a) Emergency lighting shall be provided throughout the entire trackway and all exit routes leading to the Ultimate Place of Safety.

## 2.4 軌旁區域

### 2.4.1 消防裝置

#### 須裝設的系統／裝置／設備：

- (i) 閉路電視系統
- (ii) 應急供電設備
- (iii) 應急照明系統
- (iv) 出口指示牌
- (v) 消防通訊系統
- (vi) 軌旁的消防栓系統
- (vii) 特別設備／規定
- (viii) 隧道通風系統

#### 應用範圍

- (i) 設於每條長或深入的地下隧道軌道層的緊急救援入口，以便消防員在進入隧道之前先目測觀察隧道內的情況。
- (ii) 須設置發電量充足的獨立發電機或由兩個獨立主配電站（分區配電站）雙重供電，為各項必要服務提供所需的電力。
- (iii) (a) 軌道全線範圍及通往最終安全地點的所有出口路線均須安裝應急照明系統。



- (b) Illumination levels of trackside emergency lighting which shall be provided at strategic locations are as follows:
  - (1) Evacuation walkway : 5 lux (minimum)
  - (2) Hydrant location : 10 lux (minimum)
  - (3) Signage location : 20 lux (minimum)
  - (4) Ramp and cross-passage : 10 lux (minimum)
  - (5) Power socket : 1.6 lux (minimum)
  
- (iv) (a) Sufficient directional (reflective type) and exit signs (hidden type) shall be provided along the evacuation walkway and all exit routes leading to the Ultimate Place of Safety.
  
- (b) Directional signs (reflective type) indicating the direction of the station or portal shall be provided throughout the entire trackway at 25 m intervals.
  
- (v) (a) To be provided to enable three separate talk groups of FSD personnel to communicate effectively and efficiently by using their FSD radio equipment for trunk radio communication within each station and its associated trackside area simultaneously. In addition, the radio coverage shall also be extended to the area within a radius of 50 m from any emergency entrance at grade level.
  
- (b) Emergency telephones connected directly to the Operations Control Centre (OCC) shall be provided in suitable locations including any cross-passages and trackway access points.

(b) 須設於重點位置的軌旁應急照明系統的照明度如下：

- (1) 疏散通道                   ： 5 勒克斯（最低光度）
- (2) 消防栓位置               ： 10 勒克斯（最低光度）
- (3) 指示牌位置               ： 20 勒克斯（最低光度）
- (4) 斜路及橫向通道         ： 10 勒克斯（最低光度）
- (5) 電源插座                 ： 1.6 勒克斯（最低光度）

(iv) (a) 疏散旁道及前往最終安全地點的所有出口路線，沿途均須設有足夠數量的方向指示牌（反光式）及出口指示牌（隱藏式）。

(b) 軌道全線範圍均須每隔 25 米設置一個方向指示牌（反光式），顯示車站或隧道入口方向。

(v) (a) 所設通訊系統須能供 3 個獨立通話組別的消防人員於同一時間在每個車站及其相關軌道旁邊範圍以所攜的消防處無線電設備進行有效而具效率的集束無線電通訊。此外，有關的無線電覆蓋範圍亦須達地面各個緊急入口 50 米半徑範圍。

(b) 應在合適地點，包括任何橫向通道及軌旁入口處設置緊急電話，直接接駁至車務控制中心。

- (vi) To be provided throughout the tunnel or viaduct with twin-hydrant outlets or two single-hydrant outlets at 60 m intervals and located on the same side of the elevated evacuation/fireman's walkway.
- (vii) As required by FSD.
- (viii) (a) To be provided inside tunnel or enclosed trackway, to maintain a smoke free path for emergency evacuation and fireman's access in case of fire. For longitudinal type tunnel ventilation system, sufficient critical velocity shall be maintained to prevent the back-layering of smoke and control the direction of smoke movement inside the tunnel. Dynamic smoke extraction systems shall be provided for underground trackway next to the platform to prevent smoke from spreading to platforms and other tunnel sections. Besides, a separate smoke zone with the smallest possible size should be assigned to the crossover and its adjoining tunnel sections to prevent smoke from spreading to other unaffected areas unless it can be demonstrated that smoke will not spread to adjacent tunnel(s) through the crossover.
- (b) The tunnel ventilation system should be so designed that a positive airflow from a non-incident tunnel to an incident tunnel through cross-passage doors located at the down-stream of the fire should be maintained to avoid smoke spread when those doors are opened for evacuation.

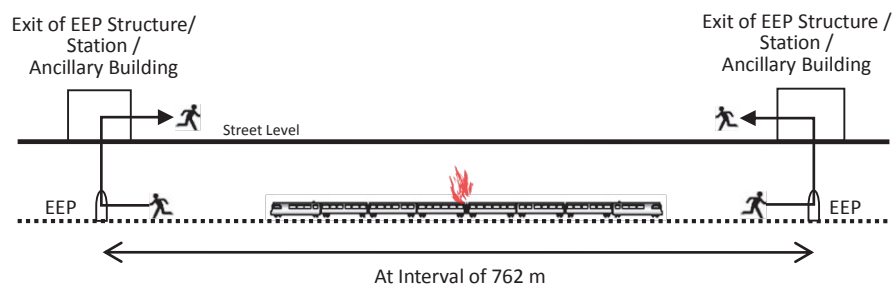
- (vi) 須在隧道或高架鐵路全線每隔 60 米設置一個雙出水口消防栓或兩個單出水口消防栓。消防栓須設於高架疏散旁道／消防員旁道的同一邊。
- (vii) 須遵照消防處的規定。
- (viii) (a) 須設於隧道或密封軌道內，以便在火警發生時，保持一條無煙通道，供緊急疏散及消防員進入。就縱向型隧道通風系統，須保持足夠的臨界風速，以防止煙霧層積及方便控制隧道內煙霧移動的方向。至於月台側的地下軌道，須設有機械式排煙系統，防止煙霧蔓延至月台及其他隧道部分。此外，應在渡線及其毗連隧道部分劃設一個體積極少的獨立煙霧區，防止煙霧蔓延至其他未受影響範圍。但若能展示煙霧不會通過渡線蔓延至相連隧道，則無此需要。
- (b) 隧道通風系統的設計，應可營造一道正壓氣壓到事故隧道，以免當該橫向通道門開啟供疏散之時，煙霧由此蔓延。

### Additional Requirements

- (i) All linings for acoustic and thermal insulation purposes in ductings and concealed locations shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (ii) All cable installations inside tunnel shall be of low smoke zero halogen type and fire retardant. Cable for fire service installations shall be fire resistant and comply with section 5.15 and Appendix 6 of the FSI Code.

#### 2.4.2 Means of Escape (MoE)

- (i) Within underground or enclosed trackways, the maximum distance between exits (i.e. Emergency Egress Point (EEP)) shall not exceed 762 m. Otherwise, cross-passages shall be provided. Please see Figure 1 for illustration.



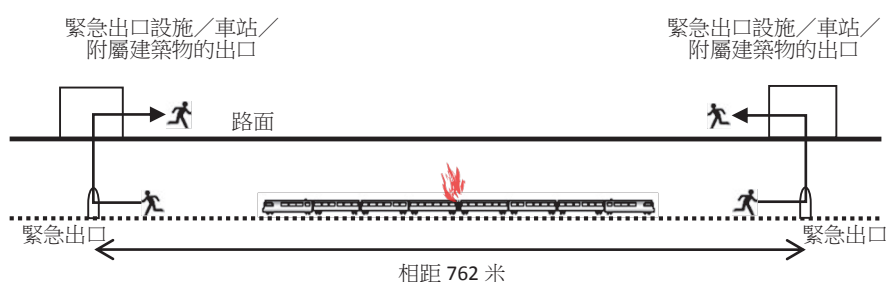
*Figure 1: Sketch showing EEP at interval with maximum distance of 762 m*

## 額外規定

- (i) 管道及隱蔽位置內所有作隔音及隔熱用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等標準，或利用認可的抗火產品提高水平至同等標準。
- (ii) 隧道內所有電纜裝置，須為低煙無鹵類別及具防火功能。消防裝置的電纜必須耐火並符合《消防裝置守則》第 5.15 段及附錄 6 的規定。

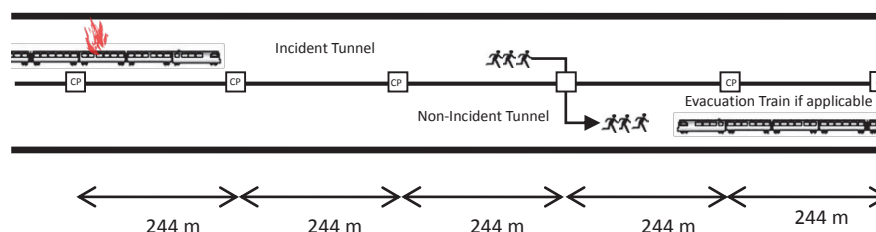
### 2.4.2 逃生途徑

- (i) 在地下或密封軌道，出口（即緊急出口）之間的最大距離不得超過 762 米。否則，應該設置橫向通道。有關圖解請參閱圖一。



圖一：顯示緊急出口之間的最大距離為 762 米的簡圖

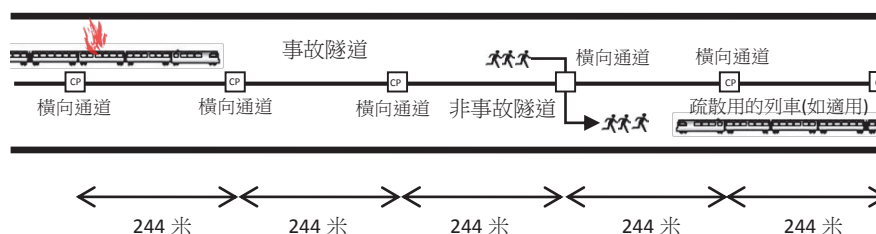
- (ii) Cross-passages (CP) shall be permitted to be used in lieu of emergency exit stairways to the surface where trackways in tunnels are divided by walls having an FRR of not less than 4 hours or where trackways are in twin bores.
- (iii) Cross-passages shall not normally be farther than 244 m apart from each other and from the station or tunnel portal. Please see Figure 2 for illustration.



*Figure 2: Sketch showing CP at interval with maximum distance of 244 m within underground and enclosed trackways*

- (iv) Cross-passages shall have a minimum of 1 800 mm in clear width and 2 200 mm in clear height.
- (v) If any locking device is installed at the cross-passage door, a manual override device for unlocking the door shall be provided at the entrance of each cross-passage and the locking device shall be of fail-safe design.
- (vi) Provisions shall be made for evacuating passengers via the non-incident trackway to a nearby station or other emergency exits.

- (ii) 如隧道內的軌道以耐火時效不少於 4 小時的牆所分隔，或軌道位於雙鑽孔隧道內，則可准許使用橫向通道，以代替通往地面的緊急出口樓梯。
- (iii) 橫向通道之間及與車站或隧道入口之間，一般不得相距超過 244 米。有關圖解請參閱圖二。



圖二：顯示地下及密封軌道內的橫向通道之間的最大距離為 244 米的簡圖

- (iv) 橫向通道的最少淨闊度及淨高度應分別為 1 800 毫米及 2 200 毫米。
- (v) 如隧道分隔門裝有任何鎖定裝置，則每道分隔門的入口須設有開啟門鎖的手動超越控裝置，而該鎖定裝置須屬故障安全裝置。
- (vi) 容許逃生乘客由非事故軌道前往就近車站或其他緊急出口。



- (vii) Evacuation side walkway which is also used as fireman's walkway shall be provided throughout the entire trackway leading to the place of safety and shall have a minimum clear width of 850 mm and a clear height of 2 200 mm. The design of the side walkway shall take into account the floor height and stepping distance from all types of train running along the tunnel. In general, the vertical step height shall be no greater than 250 mm and the horizontal step distance shall be no more than 200 mm for a typical straight section. Any change in level should be achieved by ramps with a gradient not steeper than 1 in 12. Please see Figure 4 for reference.

### 2.4.3 Means of Access (MoA)

- (i) Access to the trackway shall be from the station or EAP.
- (ii) EAP shall be at regular intervals along the trackway and the maximum distance between each EAP shall not exceed 1 km. Please see Figure 3 for illustration. In the case of tunnels going under the sea, under a mountain, or through areas where vehicular access cannot be arranged, distance between EAPs can be extended with appropriate mitigation measures in place such as Emergency Rail Bus (ERB) or Backup Access Vehicle (BAV).

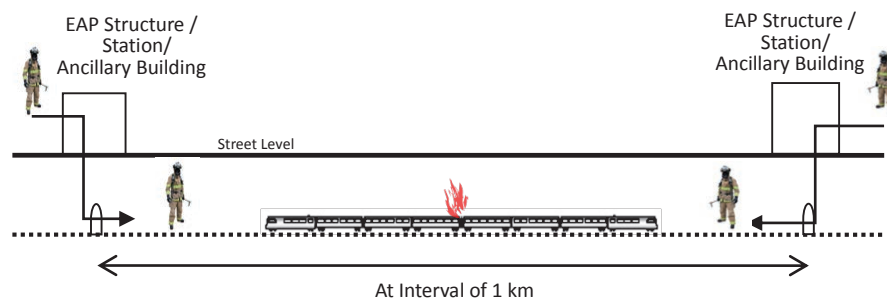


Figure 3: Sketch showing EAP at interval with maximum distance of 1 km along underground and enclosed trackways

- (vii) 軌道全線範圍須設有通往安全地點的疏散旁道，該旁道亦用作消防員通道，而其最少淨闊度須為 850 毫米，淨高度則須為 2 200 毫米。旁道的設計須顧及地面高度及從各類使用隧道的列車下車的步距。一般來說，就典型筆直路段而言，垂直踏腳高度不應大於 250 毫米，而橫向踏腳距離不應超過 200 毫米。任何高度改變，應採用斜度不超過 1 比 12 的斜路。詳情請參閱圖四。

### 2.4.3 進出途徑

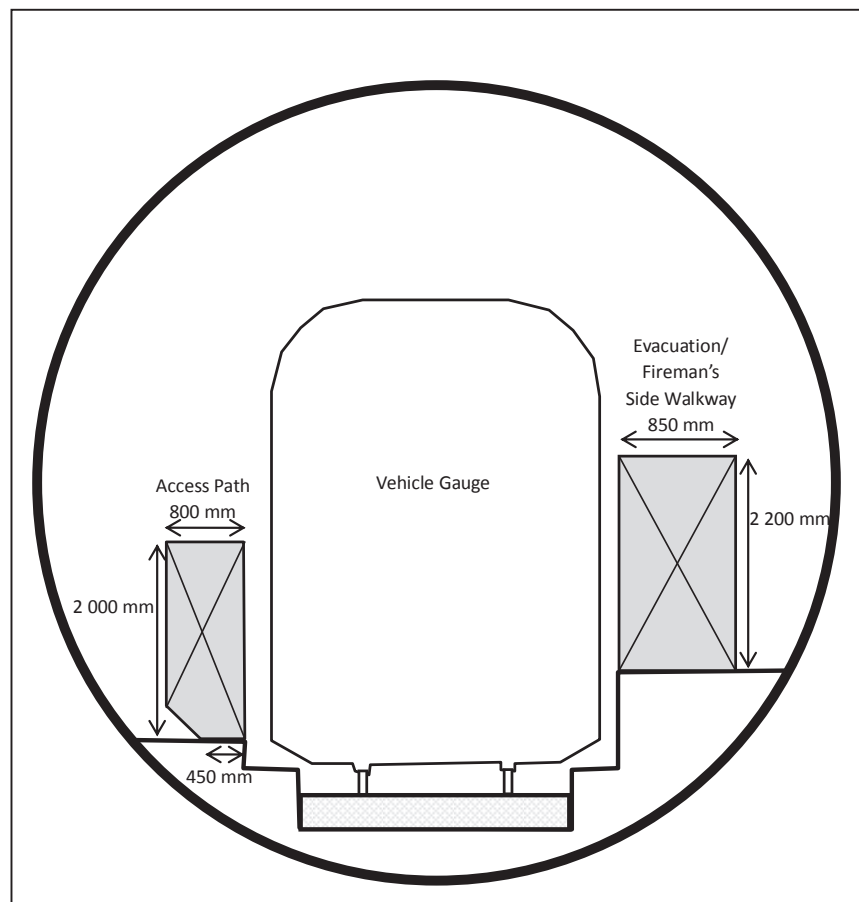
- (i) 應從車站或緊急救援入口進出軌道。
- (ii) 應沿軌道固定距離設置緊急救援入口，而每個緊急救援入口的最大距離不得超過 1 千米。有關圖解請參閱圖三。如隧道行經海底、穿越山嶺或行經無法安排車輛進出的地方，則緊急救援入口的距離可以延長，惟須提供合適的緩解措施，如緊急救援車或後備進出車輛。



圖三：顯示地下及密封軌道內的緊急救援入口之間的最大距離為 1 千米的簡圖

- (iii) The configuration of fireman's lift and fireman's staircase shall adhere to the FS Code for FRS. Fireman's lift shall be provided when any viaduct exceeds 15 m in height or when any underground tunnel exceeds 9 m in depth from the mean level of the lowest street.
  
- (iv) Fireman's side walkway which is also used as evacuation walkway shall be provided throughout the entire trackway leading to the place of safety and shall have a minimum clear width of 850 mm and a clear height of 2 200 mm. In the case of a short extension, e.g. West Island Line and Kwun Tong Line Extension, to the existing urban lines, the existing evacuation arrangements of the original line can be adopted.
  
- (v) There shall be an access path at approximately the same level as the railway and on the side opposite to the evacuation/fireman's side walkway. The path shall be free of obstruction, at least 450 mm wide at foot level, 800 mm wide at shoulder level and 2 000 mm high. This path will be used for maintenance purpose under normal situation and can be used as an access for rescue purpose in case of emergency. Please see Figure 4 for reference.

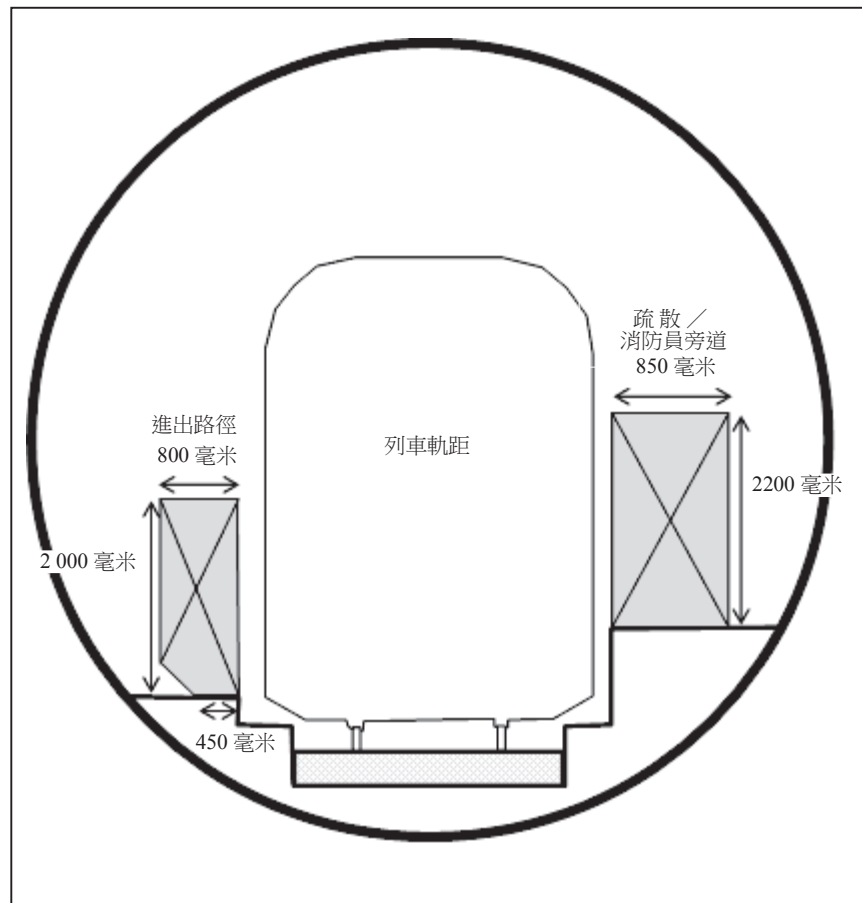
- (iii) 消防員升降機及消防員專用樓梯的設計須遵照《消防安全守則》有關消防和救援樓梯間的規定。如由最低街道的平均水平起計，任何高架道高度超逾 15 米，或任何地下隧道的深度超逾 9 米，則須設置消防員升降機。
- (iv) 整條軌道須設有通往安全地點的消防員旁道，該旁道亦用作疏散通道，而其淨闊最少為 850 毫米，淨高度則須為 2 200 毫米。如屬接駁現有鐵路之短程延綫，例如是西港島綫及觀塘綫延綫，可採用原有幹線現行的疏散安排。
- (v) 在鐵路相若水平及疏散旁道／消防員旁道的另一邊，須設有接達路徑。路徑應毫無障礙物，腳部範圍最少闊 450 毫米，肩部範圍最少闊 800 毫米，高度最少為 2 000 毫米。此路徑在一般情況下會作維修之用，遇上緊急情況，則會用作救援進出途徑。詳情請參閱圖四。



*Figure 4: Tunnel evacuation/fireman's side walkway and access space*

#### **2.4.4 Fire Resisting Construction (FRC)**

- (i) Elements of construction of underground trackway and box structure shall have an FRR of not less than 4 hours.
- (ii) Partition walls and associated doors between underground trackways shall have an FRR of not less than 4 hours.
- (iii) 4-hour fire separation shall be maintained between uptrack and downtrack tunnels. If for any reasons a 4-hour FRR partition wall could not be provided, justifications and mitigation measures shall be provided.



圖四： 隧道內的疏散 / 消防員旁道及進出空間

#### 2.4.4 耐火結構

- (i) 地下軌道及箱形結構的建築構件，須有不少於 4 小時的耐火時效。
- (ii) 地下軌道之間の間隔牆及相關門戶，須有不少於 4 小時的耐火時效。
- (iii) 上行及下行隧道之間須保持 4 小時隔火設施。如基於某些原因無法提供 4 小時耐火時效の間隔牆，須提供理據及緩解措施。

- (iv) Should proper fire separation at crossover section could not be achieved, mitigation measure(s) with sufficient justification to prevent smoke spreading at the crossover shall be in place.

**2.4.5** A checklist of FS Requirements for Trackside Area is enclosed at Appendix IV for reference.

- (iv) 如無法在渡線路段提供合適的隔火設施，須提供理據充分的緩解措施，防止煙霧在渡線路段蔓延。

**2.4.5** 附錄（四）載有軌旁區域消防安全規定核對表，以供參考。



**Cabin Concept for Concession Area in Station**

**1. Background**

- 1.1 “Cabin Concept” has been adopted for the fire safety design in a number of developments, such as Osaka Bay International Airport in Japan, Stansted International Airport in London, Hong Kong International Airport and railway stations in Hong Kong. The basic principle of “Cabin Concept” is to provide protection to high fire load areas while allowing flexibility in the use of large space without physical compartment walls.
- 1.2 Shops or concession areas are generally provided at station concourses of new railway stations for the convenience of commuters. Open type cabin concept is commonly applied to concession areas because these areas are identified as areas of higher fire load and fire risk as compared to general station circulation areas.

**2. Design Parameters**

- 2.1 Open type cabin concept relies on a combination of fire detection, sprinkler and smoke extraction systems. A sketch of the cabin concept is provided in Figure 5. For concession areas design using the cabin concept, the provisions are:

## 鐵路站專營範圍的艙房概念

### 1. 背景

- 1.1 在多個發展項目，例如日本大阪灣國際機場、倫敦 Stansted 國際機場、香港國際機場及香港鐵路站，消防安全設計均已採用「艙房概念」。「艙房概念」的基本原理是為高燃燒負荷量的區域提供保障，但又無須設置實體分隔牆，讓大面積的空間得以靈活運用。
- 1.2 店舖或專營範圍通常設於新鐵路站的大堂，以方便乘客。與車站的一般通道地方相比，專營範圍被視為燃燒負荷量及火警風險較高的區域，所以通常採用開敞式「艙房概念」。

### 2. 設計規範

- 2.1 開敞式「艙房概念」建基於火警偵測系統、花灑系統及排煙系統的配合。圖五為「艙房概念」的簡圖。至於按「艙房概念」而設計的專營範圍，艙房內的設施如下：

- (i) fire detection and alarm systems;
- (ii) sprinkler system with fast response type sprinkler heads;
- (iii) sprinkler apron between the station areas and the shop areas to protect shopfronts;
- (iv) fire rated smoke bulkhead to contain smoke above the apron of concession areas is to be fixed at 15° from shop demise (shutter) line;
- (v) dedicated smoke extraction system which is independent of the smoke extraction system for the station public areas; and
- (vi) portable hand-operated approved appliances.

2.2 A fire within a cabin shall be detected at an early stage by a smoke detector at ceiling level. This shall automatically switch on the smoke extraction system. The cabin shall be fitted with smoke barriers at its boundaries to create a reservoir to prevent the smoke from spreading outside the cabin. Under the protection of the sprinkler system, the fire occurred inside the cabin shall be limited to a design fire size of not exceeding 2 MW.

2.3 In general, the maximum area of a single cabin shall not exceed 100 m<sup>2</sup>. A dedicated smoke extraction system, which is independent of the smoke extraction system for the station public areas, shall be provided for the open cabin. The protected area may be a single concession area or a group of concession areas served by a common smoke reservoir. One smoke reservoir will serve a maximum area of 100 m<sup>2</sup> cabin zone. However, one smoke extraction system may serve several cabin zones without exceeding a total smoke zone area of 2 000 m<sup>2</sup>.

- (i) 火警偵測及警報系統；
- (ii) 配備快速感應型消防花灑頭的花灑系統；
- (iii) 車站與店舖區域之間用以保護舖面的花灑隔擋；
- (iv) 用以阻擋專營範圍花灑隔擋上方煙霧、具抗火效能的防煙隔牆，安裝位置須與店舖批租的界限（捲閘）成 15 度角；
- (v) 獨立於車站公眾地方排煙系統的專用排煙系統；及
- (vi) 認可的人手操作手提器具。

2.2 艙房內的火警須於起火初期被設於天花板層的煙霧偵測器偵測到，繼而自動啟動排煙系統。艙房須於其界線設置隔煙屏障以構成集煙間，防止煙霧蔓延至艙房外面。在花灑系統的保護下，艙房內發生的火警，其設定規模不得超逾 2 兆瓦。

2.3 一般而言，一個艙房的最大面積不可超過 100 平方米。開敞式艙房須配置專用排煙系統，而該排煙系統須獨立於車站公眾地方。受保護區域可以是一個或多個專營範圍，並設有一個共用的集煙間。一個集煙間須在面積最大為 100 平方米的艙房區域發揮效用。不過，一個排煙系統可供幾個艙房區域使用，但不得超出煙霧控制區總面積 2 000 平方米的範圍。

- 2.4 The separation walls between different cabin zones and other back-of-house areas will be in full height with an FRR of not less than 1 hour and 2 hours respectively. Non-full height separation wall of not lower than the designed smoke clear height with an FRR of not less than 1 hour is allowed for separating different concession areas within the same cabin zone while sharing the same smoke reservoir. The enclosure wall, if any, separating the concession area and station public area, will have an FRR of not less than 2 hours. The shopfront will not have any fire rated separation provision under open cabin design. However, a passage having a minimum width of 6 m in the front of the concession area measuring from the shop demise line should be maintained.
- 2.5 Apart from the above provisions, only trades approved by SSCC shall be permitted in the concession areas. All trading activities shall be contained within the protected concession area (cabin) and no combustibles are allowed to be placed or protruded out of the designated shopfront area.
- 2.6 Practical smoke tests shall be carried out in the cabin to the satisfaction of FSD.
- 2.7 The previously agreed trade list is enclosed in Appendix V for reference. Future trade list should be agreed on a case-by-case basis.

- 2.4 各個艙房區域之間及其他後勤區域之間的分隔牆須是全高度的，而耐火時效分別不可少於 1 及 2 小時。同一艙房區域內的各個專營範圍，可採用不低於設定無煙淨空高度及不少於 1 小時耐火時效的非全高度分隔牆來互相分隔，並共用一個集煙間。若有分隔專營範圍及車站公眾地方的圍牆，其耐火時效須不少於 2 小時。根據開敞式艙房設計，舖面沒有任何具抗火效能的分隔設施。不過，專營範圍區域前（由店舖批租界限起計）應保持一條最少闊 6 米的通道。
- 2.5 除以上規定外，只有安全及保安統籌委員會核准的行業才可在專營範圍經營。所有交易活動須局限於受保護的專營範圍（艙房）內進行，任何可燃物品均不得放置於或伸出指定的舖面區域以外。
- 2.6 在艙房內進行的實地煙霧測試，須達至消防處滿意的程度。
- 2.7 附錄（五）載有早前協定的行業一覽表，以供參考。日後會按個別情況制訂行業一覽表。

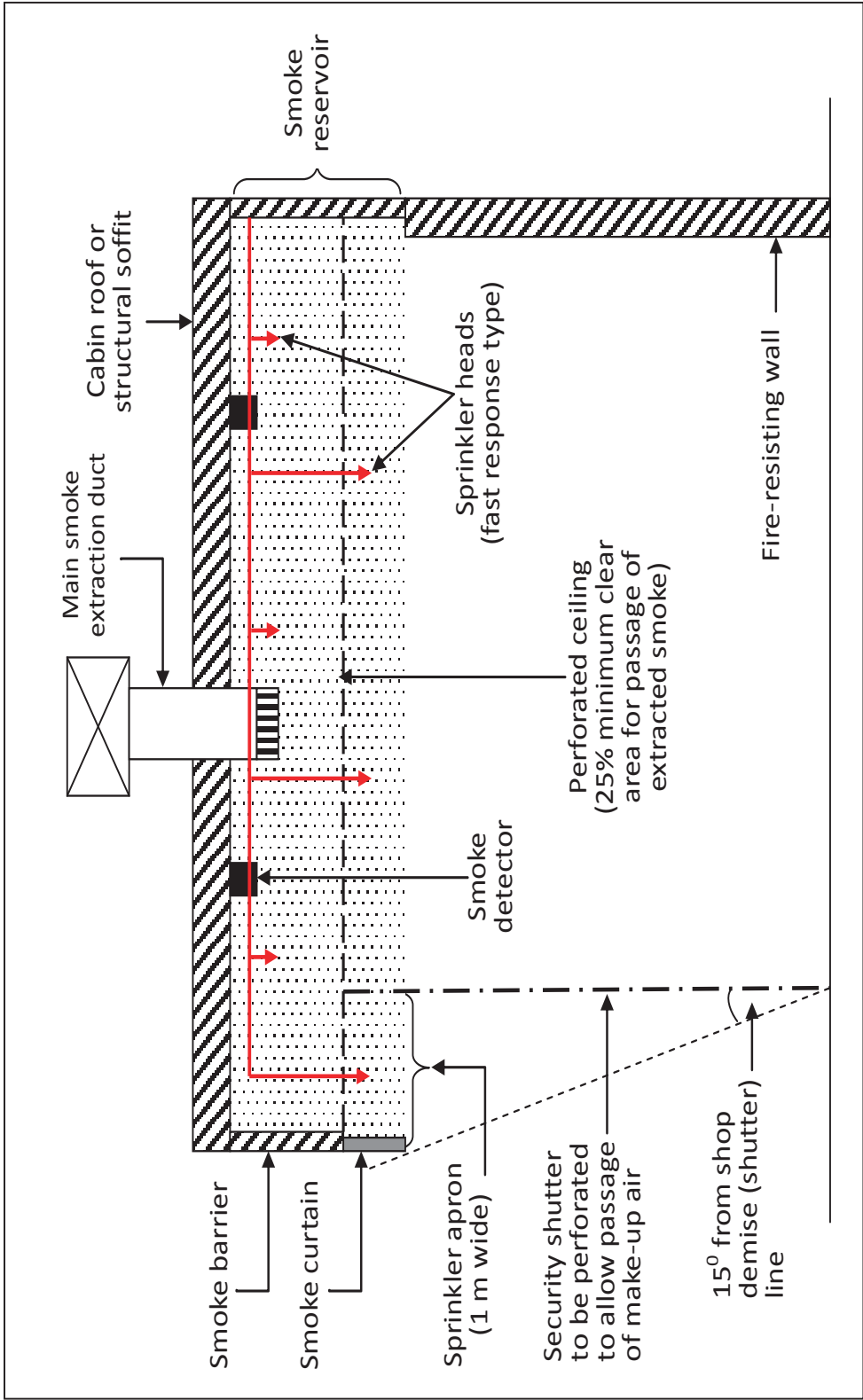
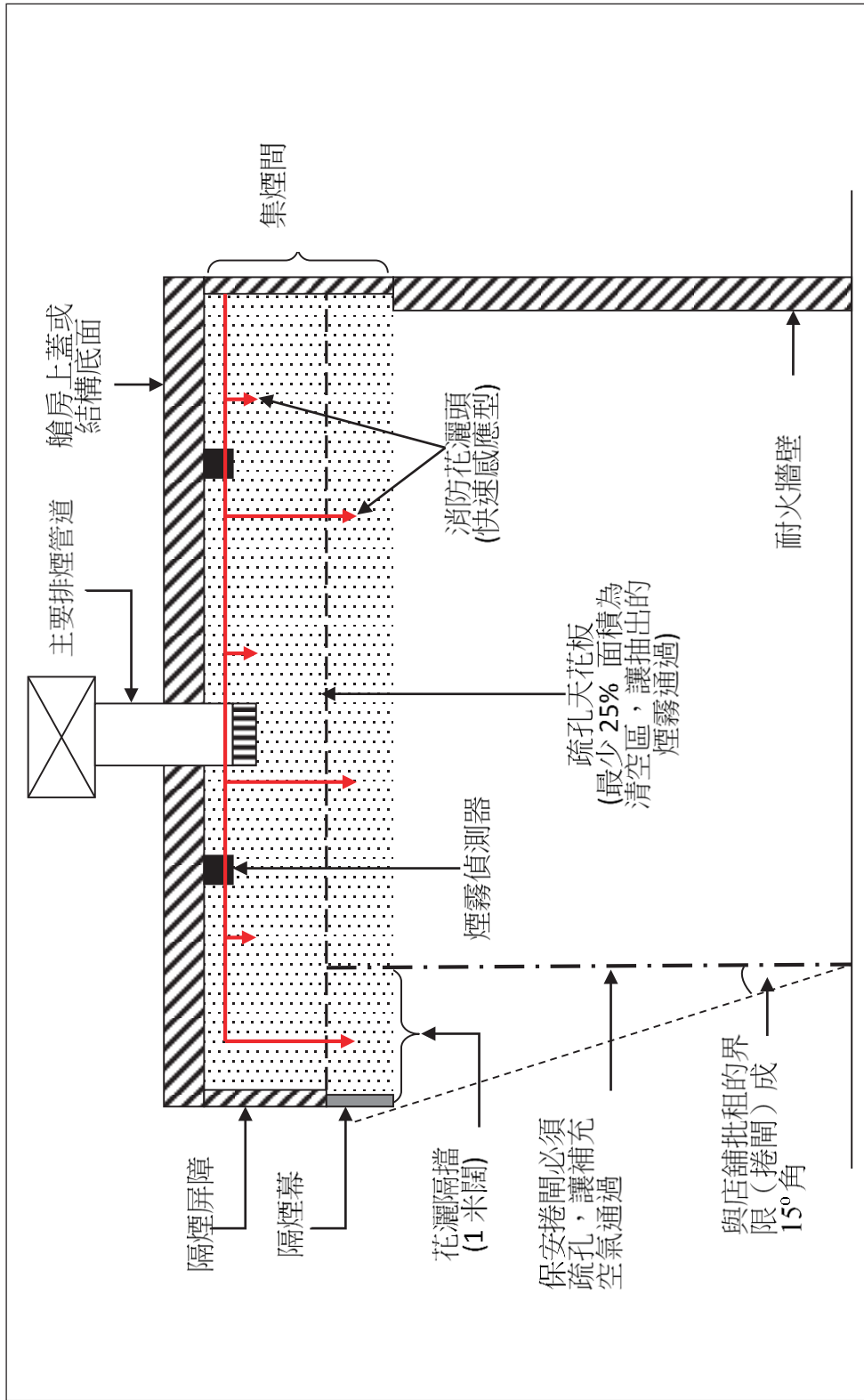


Figure 5: Sketch of the Cabin Concept



圖五：「艙房概念」的簡圖



**Examples of Special MoE Arrangements in Station**  
**(Lift-assisted Evacuation & Long Adit)**

**1. Introduction**

- 1.1 For very deep-sited stations (e.g. Sai Ying Pui Station (SYP) and Hong Kong University (HKU) Station of WIL as well as Lei Tung Station (LET) of SIL(E)), lift-assisted evacuation is considered as a supplementary MoE provision for public safety.
- 1.2 Evacuation lifts are designed for pedestrians in the long adit only, while the evacuation population for other areas of the station is handled by other station entrance/exits in case of a fire.
- 1.3 Long adits may be utilized to connect station concourse to various entrances and all long adits shall be designed as Place of Safe Passage.
- 1.4 The above special provision may be adopted on a case-by-case basis taking into consideration of special circumstances including site constraints.

**2. Lift-assisted Evacuation**

- 2.1 Lift-assisted evacuation will typically only be adopted to evacuate those pedestrians at the Long Adits leading to the lift-only entrance, however may also be appropriate for other small evacuation populations. A protected staircase adjoining to the lift should always be provided for the lift-assisted evacuation.
- 2.2 Passengers at the adits near the concourse lift lobby will evacuate into the protected staircase at the adit end. The staircase connects to the refuge lift lobby typically located one level above and passenger will use the high capacity lifts for evacuation to the final exit level (i.e. ground level). Figure 6 and Figure 7 show the example layout of lift lobby on concourse level and refuge lift lobby at one level above for reference.

鐵路車站逃生途徑特別措施的例子  
(以升降機輔助疏散及長通道)

**1. 簡介**

- 1.1 就深入地底的鐵路車站（例如西港島綫的西營盤站和香港大學站及南港島綫（東段）的利東站）而言，以升降機輔助疏散視為有關逃生途徑的補充規定，目的是保障公眾安全。
- 1.2 疏散用升降機僅為長通道的行人而設。在發生火警時，在車站其他範圍的人群，會由車站其他入口／出口疏散。
- 1.3 長通道可用以連接車站大堂至各個出入口，而所有長通道均須設計為安全通道。
- 1.4 可因應個別情況的特殊環境，包括場地限制，採取上述特別措施。

**2. 以升降機輔助疏散**

- 2.1 以升降機輔助疏散的方式，通常僅用於疏散身處只有升降機連接出入口的長通道之內的行人，但亦可用以疏散其他少量人群。在毗鄰升降機的地方，應經常設有防護樓梯，以供進行以升降機輔助疏散之用。
- 2.2 在長通道內升降機大堂附近的乘客，會疏散至長通道末端的防護樓梯。該樓梯通往通常設於上一層的避火升降機大堂，而乘客會使用載客量大的升降機疏散至最終出口層（即地面層）。圖六及圖七顯示車站大堂層的升降機大堂及設於上一層的避火升降機大堂的典型設計圖，以供參考。

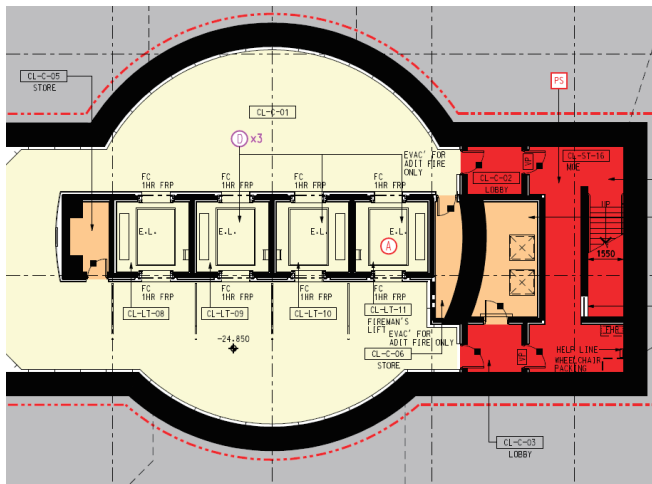


Figure 6: Example Layout of Lift Lobby at Concourse Level

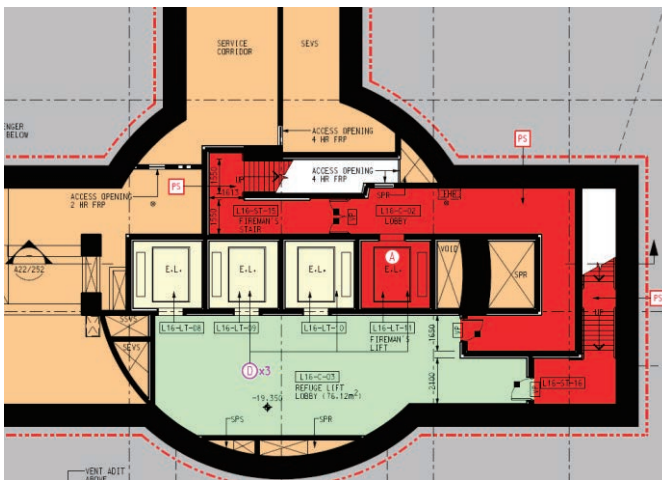
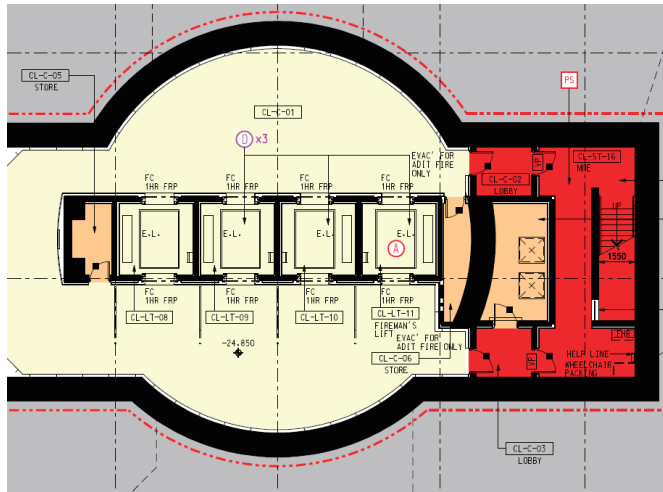
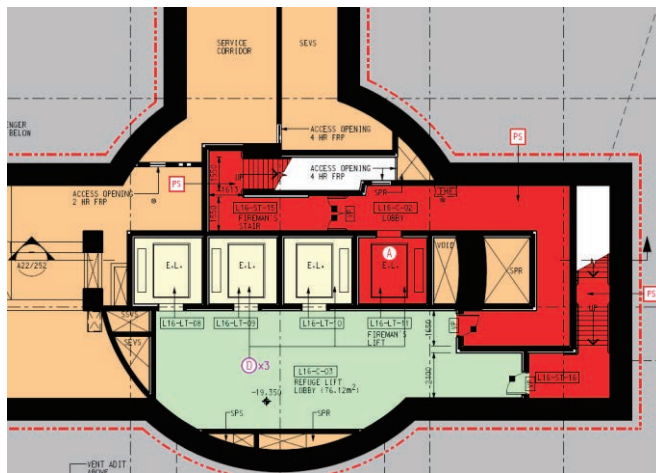


Figure 7: Example Layout of Refuge Lift Lobby

- 2.3 The protected staircase is in two sections, the lower section of the staircase between the lift lobby at concourse level and the refuge lift lobby above; and the upper section of the staircase connecting the refuge lift lobby and the final exit level for discharge. The two sections of the staircase are disconnected at the refuge lift lobby.
- 2.4 Suitable warning signs, PA messages and flashing exit signage shall be incorporated into the design of station public areas (including the adits and lift lobbies) to adequately advise passengers on the use of the lift for evacuation when required.



圖六：車站大堂層的升降機大堂的典型設計圖



圖七：避火升降機大堂的典型設計圖

- 2.3 防護樓梯分為兩段，下段為車站大堂層的升降機大堂與上一層的避火升降機大堂之間的樓梯間，而上段則連接避火升降機大堂及供乘客離開鐵路車站的最終出口層。這兩段樓梯以避火升降機大堂分隔。
- 2.4 車站的公眾地方（包括長通道及升降機大堂）的設計，須包含適當的警示牌、公眾廣播信息及閃動的出口指示牌，以便在有需要時，適當地提醒乘客使用升降機疏散。

2.5 While this system has been designed as self-help in nature without relying on staff to operate, station management of railway corporation will assign dedicated staff to assist passengers wherever necessary.

### **3. Operation of High Capacity Lifts Associated with Lift-assisted Evacuation**

#### 3.1 Normal Mode Operation

Under normal situation, the high capacity lifts are used as normal passenger lift travelling between the concourse level (i.e. adit ends) and the exit level (i.e. ground level). Daily operation of high capacity lifts is categorized as “Normal Mode Operation”.

#### 3.2 Evacuation Mode Operation

3.2.1 Activation of “Evacuation Mode Operation” where lift-assisted evacuation enables all evacuation lift cars travelling towards the final exit level (i.e. G/F) shall continue the journey to the final exit level for discharge, then moving to the refuge lift lobby level (i.e. a level above the concourse level) to start the evacuation cycle (only between refuge lift lobby level and final exit level).

3.2.2 The evacuation lift cars travelling toward the concourse level shall stop at the nearest landing without door open and then return to the final exit level for discharge. The lift will then move to the refuge lift lobby to start the evacuation cycle.

### **4. Operation of High Capacity Lifts Associated with Lift-assisted Evacuation**

4.1 The refuge lift lobby provides a safe place for evacuees to wait for lifts during evacuation. Clear signage and public announcement will advise passengers to use lifts instead of using the stair provided.

4.2 The protected stair and refuge lift lobby are positively pressurized so as to prevent ingress of smoke to these protected areas. The pressurization system should be designed in accordance with the design principles of BS5588: Part 4.

- 2.5 車站的公眾地方（包括長通道及升降機大堂）的設計，須包含適當的警示牌、公眾廣播信息及閃動的出口指示牌，以便在有需要時，適當地提醒乘客使用升降機疏散。

### 3. 升降機輔助疏散的運作

#### 3.1 一般模式運作

在正常情況下，載客量大的升降機用作一般的乘客升降機，來往車站大堂層（即通道末端）及出口層（即地面層）。載客量大的升降機的日常運作歸類為「一般模式運作」。

#### 3.2 疏散模式運作

- 3.2.1 在啟動須以升降機輔助疏散的「疏散模式運作」時，所有正前往最終出口層（即地面）的疏散用升降機機廂必須繼續運行，並前往最終出口層，讓乘客離開，其後升降機會前往避火升降機大堂層（即車站大堂層的上一層），並開始來回進行疏散行動（只會來回避火升降機大堂層及最終出口層）。

- 3.2.2 正前往車站大堂層的疏散用升降機機廂，須於最近一層停下，但門不會打開，然後返回最終出口層，讓乘客離開。其後，升降機會前往避火升降機大堂，並開始來回進行疏散行動。

### 4. 對輔助疏散的升降機系統的防護

- 4.1 避火升降機大堂為疏散者提供安全的地方，讓他們在疏散期間等候接載。清晰的指示牌及公眾廣播會建議乘客使用所提供的升降機而非樓梯。

- 4.2 防護樓梯及避火升降機大堂已加入正壓，防止煙霧進入這些防護範圍。增壓系統應按照英國標準 5588 第 4 部分所述的設計原則予以設計。

4.3 In addition to pressurization provision, the refuge areas are all protected with automatic sprinkler system, smoke detection, fire hydrants and hose reels which are in-line with other public areas of the same station.

4.4 In summary, FSIs in addition to smoke control systems for the areas associated with Lift-assisted Evacuation System are tabulated as below. The FSI provision shall be accepted on a case-by-case basis in view of the actual condition and the fire safety level of the proposal which shall not be inferior to that provided by prescriptive requirements.

<b>Area</b>	<b>Fire Hydrants and Hose Reel Coverage</b>	<b>Automatic Fire Suppression</b>	<b>Fire Detection (optical type smoke detector)</b>	<b>Portable Extinguishers</b>
Adit	✓	✓	✓	✓
Lift Lobby	✓	✓	✓	✓
Lift Machine Room (Aboveground)	-	-	✓	✓
Protected Staircase	✓ (FH only)	✓	✓	-
Refuge Lift Lobby	✓	✓	✓	-
Refuge Landing	✓ (FH only)	✓	✓	-

4.5 The high capacity lift cars are also provided with specific safety measures as follows:

4.5.1 Each lift car will run within its lift shaft with 2-hour fire resistance separation from other lift shafts and adjacent occupancies.

4.3 除增壓設施外，各避火範圍均受自動花灑系統、煙霧偵測系統、消防栓及消防喉轆所防護，並與同一車站其他公眾地方相配合。

4.4 除了煙霧控制系統外，相關範圍亦須裝設的消防裝置撮述於下表。消防處會按實際情況，並因應個案情況決定是否接納所提供的消防裝置，而建議中的消防安全水平不得遜於訂明規定所達至的消防安全水平。

範圍	受消防栓及消防喉轆覆蓋	自動滅火系統	火警偵測 (感光式煙霧偵測器)	手提滅火筒
通道	✓	✓	✓	✓
升降機大堂	✓	✓	✓	✓
升降機機房 (地面)	-	-	✓	✓
防護樓梯	✓ (只有消防栓)	✓	✓	-
避火升降機 大堂	✓	✓	✓	-
避火樓梯平台	✓ (只有消防栓)	✓	✓	-

4.5 車站亦會提供載客量大的升降機機廂，並採取下列的特別安全措施：

4.5.1 每個升降機機廂均會在各自的升降機槽內運行，而升降機槽亦具 2 小時耐火時效，與其他升降機槽和毗鄰的佔用部分分隔。



- 4.5.2 The lift doors should have an FRR of not less than 2-hour, with additional fire curtains with not less than 1-hour FRR at concourse level to fully separate the lift shafts and the concourse public area.
- 4.5.3 The machine rooms of high capacity lifts are also another important component of the entire system. The machine rooms of high capacity lifts will be located aboveground and will not be affected by any fire within the underground station box. Lift machine room typically is divided into 2 parts to minimize operational impact in the event of a lift machine room fire, so as to limit only half of the lifts affected.
- 4.5.4 The machine room will be protected with smoke detection. In case a fire is detected in the motor room, the corresponding lifts of the same entrance will home to the concourse level with door open, and not used for evacuation.
- 4.5.5 Power supply reliability is also a key design parameter for the lift system. Railway stations are typically provided with dual feed power supply in order to maintain uninterrupted lift services for emergency.
- 4.5.6 While designing the power arrangement of the Lift-assisted Evacuation System, reference is made to general provisions for fireman's lifts which are also intended to operate during fire.
- 4.5.7 All power cables shall follow the relevant requirements stated in Appendix 8 of FSI Code for fireman's lifts. Besides, all cables shall be protected from physical damage.

## **5. Long Adits**

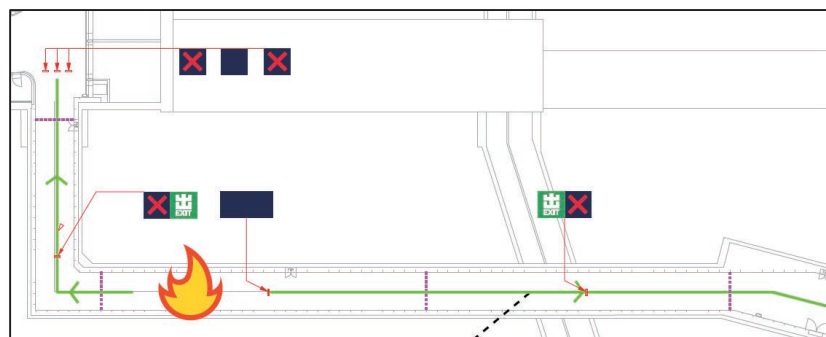
- 5.1 The essential features of the long adits connecting station concourses and station entrances are as follows:
- (i) The long adits will serve only as pedestrian circulation routes between the station concourse and the related entrance;
  - (ii) Long adits may be utilized to connect station concourse to various entrances and all long adits shall be designed as Place of Safe Passage;

- 4.5.2 各升降機門的耐火時效須不少於 2 小時，車站大堂層另設具 1 小時耐火時效的防火幕，以便完全分隔升降機槽及車站大堂的公眾地方。
- 4.5.3 載客量大的升降機的機房是整個系統另一個重要組成部分。載客量大的升降機的機房位於地面，不受地底車站發生的任何火警影響。升降機的機房通常分為兩部分，以便在機房發生火警時，盡量減低對升降機運作的影響，藉以將受影響的升降機數目限制在只有一半。
- 4.5.4 機房受煙霧偵測系統所保護。如偵測到機房發生火警，則同一出口的相關升降機會返回車站大堂層並打開門，不作疏散之用。
- 4.5.5 供電的穩定性亦是升降機系統的主要設計規範。鐵路站通常會有雙重供電，令升降機在緊急情況下不會中斷服務。
- 4.5.6 為輔助疏散的升降機系統設計電力安排時，應參考有關消防員升降機的一般規定，該等升降機在火警發生時亦會繼續運作。
- 4.5.7 所有電纜均須符合《消防裝置守則》附錄 8 所述有關消防員升降機的相關要求。此外，所有電纜須免受任何實質破壞。

## 5. 長通道

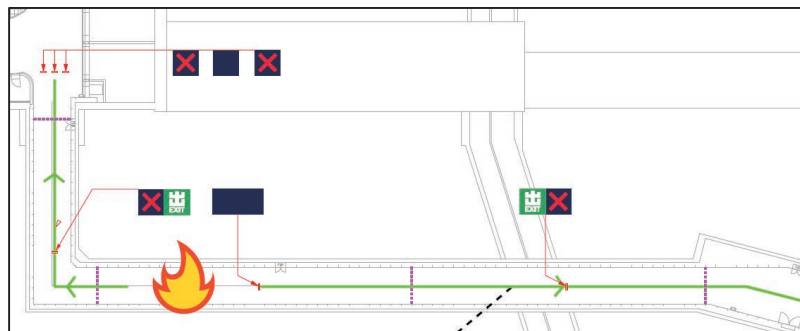
- 5.1 用以連接車站大堂及車站入口的長通道的主要特點如下：
- (i) 長通道只用作車站大堂與相關出入口之間的行人公眾通路；
  - (ii) 長通道可用以連接車站大堂至各個出入口，而所有長通道均須設計為安全通道；

- (iii) All long adits will be designed as station public areas which shall be constructed with a minimum of combustibile materials;
- (iv) Concession areas, vending machines or other high fire risk activities shall not be contained along the long adit;
- (v) The smoke extraction system complete with smoke barriers shall be designed to maintain a smoke clear height for evacuation and prevent smoke from spreading along the entire adit. Actuation of system shall be by a smoke detector installation serving the area. Where considered appropriate and to reduce false alarms it is preferable that cross zoned smoke detector systems be utilized. Where a sprinkler system is provided and as appropriate, a flow switch for the smoke zone shall also activate the system. The long adits are divided into multiple smoke zones for effective smoke control and each smoke zone shall not be longer than 60 m. Nevertheless, the maximum travel distances as specified in Part II item 2.1.2 should be complied with;
- (vi) Another key element of safety design for these long adits is the provision of the audio/visual advisory system, the function of which shall be integrated with that incorporated in the station design;
- (vii) Similarly, the station safety management system shall address the emergency evacuation processes for the long adits.



*Figure 8: Variable Exit Signage at Long Adit*

- (iii) 所有長通道均須設計為車站的公眾地方，並須盡量減少以易燃物料建造；
- (iv) 不得在長通道設置專營範圍、售賣機或進行其他高火警風險的活動；
- (v) 須以附連隔煙屏障的排煙系統維持無煙淨空高度，以供疏散，並防止煙霧沿整條通道擴散。該系統會由有關範圍的煙霧偵測裝置啟動。如認為情況適合，並為了減少誤鳴，最好使用交叉區域的煙霧偵測系統。如設有花灑系統且情況適合，煙霧區的花灑流量掣亦須能啟動該系統。長通道會分為多個煙霧區，以便有效控制煙霧，而每個煙霧區的長度不得超過 60 米，但仍須遵從第二部第 2.1.2 項所訂有關最長行走距離的規定；
- (vi) 這些長通道的另一個安全設計要點，就是設置聲響／視像警報系統，並在功能上作為車站設計所含系統的一部分；
- (vii) 同樣地，車站的安全管理系統須向長通道廣播有關緊急疏散的程序。



圖八：長通道的可變換出口指示牌

### Examples of Special MoA Arrangements in Station

#### 6. Fire Separated Corridor

6.1 Where a corridor not used by the public is required to provide access to the SCR or FCR or forms part of the fireman's access to Station box and Non-public Areas from the DEE, such a corridor shall be designed as a Fire Separated Corridor. A Fire Separated Corridor shall include the following provisions:

- (i) Sprinkler and smoke detection systems;
- (ii) The Fire Separated Corridor shall have an FRR enclosure of not less than 2 hours (not less than 4 hours if located underground); and
- (iii) Cabling located within the corridor shall be of the low smoke, zero halogen (LS0H) type or enclosed in metal conduit or cable trunking. All non-armoured building services electrical cables located within the corridor shall be enclosed in metal conduit/trunking or with similar measures.

6.2 No building services other than those required for fire service installations and lighting shall be installed in the Fire Separated Corridor unless they are encased in a fire rated enclosure of a rating not less than that required for the perimeter enclosing walls.

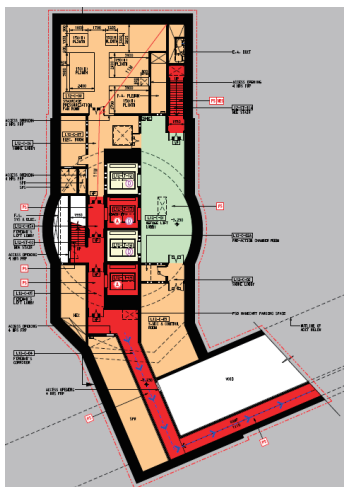


Figure 9: Example Layout of Fireman's Lift Lobby Leading to Fire Separated Corridor

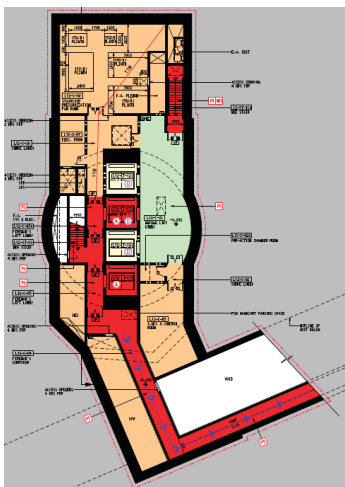
鐵路車站進出途徑特別措施的例子

6. 隔火走廊

6.1 如須設置不對公眾開放的走廊，以便通往車站控制室或消防控制室，或成為消防員通道的一部分，以便由指定緊急入口前往車站外殼及非公眾地方，則該走廊須設計為隔火走廊。隔火走廊須包括以下各種設備：

- (i) 花灑及煙霧偵測系統；
- (ii) 隔火走廊須設有耐火時效不少於 2 小時（如在地底則不少於 4 小時）的隔火牆；及
- (iii) 位於走廊內的電纜須為低煙無鹵類別，或由金屬導管或線槽圍封。所有走廊內的無裝甲屋宇裝備電纜，須以金屬導管／線槽或類似的方法圍封。

6.2 除了所需的消防裝置及照明設備外，隔火走廊不得安裝其他屋宇裝備，除非該等設備以隔火牆包封，而且其耐火時效不低於外圍牆所須達至的標準。



圖九： 通往隔火走廊的消防員升降機大堂的設計圖例子

**Checklist of FS Requirements for Station**  
(for reference only)

*(Please refer to FSI Code, relevant Standards and Circular Letters for details)*

1 Audio/Visual Advisory System			
<b>A</b>	Flashing exit signs / directional signs	Shall be provided in station public areas as part of audio/visual advisory system to direct passengers towards the designated exits	<input type="checkbox"/>
2 Automatic Actuating Devices			
<b>A</b>	Fire Shutter	(i) Having a sufficient fire resisting rating	<input type="checkbox"/>
		(ii) Provided with smoke detector(s) and manual control device(s) on both sides of the openings for automatic and manual operation respectively	<input type="checkbox"/>
		(iii) The detectors shall be installed in accordance with LPC Rules for Automatic Fire Detection and Alarm Installations for the Protection of Property and BS 5839: Part 1: 2002+A2:2008 and FSD Circular Letter No. 1/2009 and No. 3/2010	<input type="checkbox"/>
3 Automatic Fire Detection			
<b>A</b>	All fire alarm signals including fire detectors, flow switches and manual fire alarm	(i) Shall be linked to CFATS by a direct telephone line	<input type="checkbox"/>
		(ii) Repeated to SCR/FCR of station	<input type="checkbox"/>
<b>B</b>	An 'Acknowledgement' and 'Confirm' button	Shall be provided on the local Integrated Backup Control Panel	<input type="checkbox"/>
<b>C</b>	Automatic fire alarm panel	(i) Provided in SCR/FCR to receive all fire alarm signals of the entire station including smoke detectors, heat detectors, break-glass units and flow switches	<input type="checkbox"/>
		(ii) All fire alarm signals shall be repeated to AFA panels at DEE, SEE and OCC	<input type="checkbox"/>
<b>D</b>	Automatic fire detection	Shall be addressable (BS 5839: Part 1: 2002+A2: 2008 and FSD Circular Letter No. 1/2009 and No. 3/2010)	<input type="checkbox"/>

**鐵路車站消防安全規定核對表**  
(僅供參考)

(詳情請參閱《消防裝置守則》、相關的標準及消防處通函)

<b>1 聲響／視像警報系統</b>		
<b>A</b>	閃動的出口指示牌／ 方向指示牌	須設置於車站的公眾地方，作為聲響／視像 警報系統的一部分，以便引領乘客前往指定 出口 <input type="checkbox"/>
<b>2 自動啟動裝置</b>		
<b>A</b>	防火捲閘	(i) 具備充分的耐火時效 <input type="checkbox"/> (ii) 須在牆壁開口內外兩邊設置煙霧偵測器 及手動控制器，分別供自動及人手操作 之用 <input type="checkbox"/> (iii) 須按照《英國防損委員會準則》內有關安 裝自動火警偵測與警報裝置以保障財產 的規則、《英國標準 5839：第 1 部分： 2002+A2：2008》，以及消防處通函第 1/2009 及 3/2010 號安裝偵測器 <input type="checkbox"/>
<b>3 自動火警偵測</b>		
<b>A</b>	所有火警警報信號， 包括來自火警偵測 器、花灑流量掣及手 動火警鐘的信號	(i) 須以直線電話線連接火警警報電腦傳送 系統 <input type="checkbox"/> (ii) 重複傳送至車站的車站控制室／消防控 制室 <input type="checkbox"/>
<b>B</b>	「知悉」掣及「確 認」掣	須設置於車站的綜合後援控制台 <input type="checkbox"/>
<b>C</b>	自動火警警報控制板	(i) 設置於車站控制室／消防控制室內，用 以接收整個車站的所有火警警報信號， 包括來自煙霧偵測器、熱力偵測器、警 報玻璃箱及花灑流量掣的信號 <input type="checkbox"/> (ii) 所有火警警報信號須重複傳送至指定緊 急入口、輔助緊急入口及車務控制中心 的自動火警警報控制板 <input type="checkbox"/>
<b>D</b>	自動火警偵測	須可顯示位置(《英國標準 5839：第 1 部分： 2002+A2：2008》及消防處通函第 1/2009 及 3/2010 號) <input type="checkbox"/>



**Checklist of FS Requirements for Station**  
*(for reference only)*

4 Automatic Sprinkler System			
<b>A</b>	Automatic fixed installations other than water	Provided for areas where the use of water is undesirable for the occupancy (section 4.4(ii) of FSI Code)	<input type="checkbox"/>
<b>B</b>	Automatic sprinkler system (OH III)	Provided for all areas of the station except above ground plant rooms (section 5.24 of the FSI Code, LPC Rules for Automatic Sprinkler Installations incorporating BS EN 12845: 2003 and FSD Circular Letter No. 3/2006 and No. 3/2012)	<input type="checkbox"/>
<b>C</b>	Fast response type sprinkler heads	Provided for all underground sprinkler protected areas	<input type="checkbox"/>
<b>D</b>	Re-cycling pre-action sprinkler system	Comply with LPC Rules for Automatic Sprinkler Installations incorporating BS EN 12845: 2003 and FSD Circular Letter No. 3/2006 and No. 3/2012	<input type="checkbox"/>
<b>E</b>	Sprinkler alarm	(i) Linked to CFATS by a direct telephone line	<input type="checkbox"/>
		(ii) All sprinkler alarm signals shall also be transmitted to the fire control panel in SCR & FCR and repeated to AFA panels at DEE, SEE and OCC	<input type="checkbox"/>
<b>F</b>	Sprinkler inlets	Provided at DEE/SEE and be interconnected	<input type="checkbox"/>
<b>G</b>	Sprinkler pumps (one duty & one standby) and one jockey pump	Provided in Sprinkler Pump Room	<input type="checkbox"/>
<b>H</b>	Water tank	(i) Sufficient Capacity (e.g. 124 m <sup>3</sup> )	<input type="checkbox"/>
		(ii) Single end feed water supply	<input type="checkbox"/>
5 Emergency Lighting			
<b>A</b>	All batteries in UPS room	comply with BS 6290: Part 4	<input type="checkbox"/>
<b>B</b>	Emergency lighting	(i) Backed up by UPS and capable of maintaining function for a period of not less than 2 hours in case of power failure	<input type="checkbox"/>
		(ii) Provided throughout the station and all exit routes leading to place of ultimate safety (BS 5266: Part 1, BS EN 1838 and section 5.9 of FSI Code)	<input type="checkbox"/>
<b>C</b>	Independent mechanical ventilation system	Shall be provided as stipulated in section 8, Part XI of FSD Circular Letter No. 4/1996	<input type="checkbox"/>

**鐵路車站消防安全規定核對表**  
(僅供參考)

<b>4 自動花灑系統</b>			
<b>A</b>	不含水的滅火劑自動固定裝置	安裝在佔用部分內不宜用水救火的地方 (《消防裝置守則》第 4.4(ii)段)	<input type="checkbox"/>
<b>B</b>	自動花灑系統(普通危險程度第三組)	設置於車站各個部分,但地面機房除外(《消防裝置守則》第 5.24 段、《英國防損委員會準則》內包含《英國標準 EN 12845: 2003》的自動花灑裝置規定,以及消防處通函第 3/2006 及 3/2012 號)	<input type="checkbox"/>
<b>C</b>	快速感應型消防花灑頭	設置於所有受消防花灑保障的地底範圍	<input type="checkbox"/>
<b>D</b>	重複啟閉預作用花灑系統	符合《英國防損委員會準則》內包含《英國標準 EN 12845: 2003》的自動花灑裝置規定,以及消防處通函第 3/2006 及 3/2012 號	<input type="checkbox"/>
<b>E</b>	花灑警報	(i) 以直線電話線連接火警警報電腦傳送系統 (ii) 所有花灑警報信號亦須傳送至車站控制室及消防控制室的消防控制板,並重複傳送至指定緊急入口、輔助緊急入口及車務控制中心的自動火警警報控制板	<input type="checkbox"/> <input type="checkbox"/>
<b>F</b>	花灑入水掣	設置於指定緊急入口/輔助緊急入口,並互相連接	<input type="checkbox"/>
<b>G</b>	花灑泵(一個主泵及一個備用泵)及一個操控水泵	設置於花灑泵房	<input type="checkbox"/>
<b>H</b>	水缸	(i) 足夠容量(例如 124 立方米) (ii) 單端供水	<input type="checkbox"/> <input type="checkbox"/>
<b>5 應急照明系統</b>			
<b>A</b>	不間斷電源供應器室的所有電池	符合《英國標準 6290: 第 4 部分》	<input type="checkbox"/>
<b>B</b>	應急照明系統	(i) 以不間斷電源供應器作後備電源,於電力故障時可維持功能不少於 2 小時  (ii) 設置於整個車站及通往最終安全地點的所有出口通道(《英國標準 5266: 第 1 部分》、《英國標準 EN 1838》及《消防裝置守則》第 5.9 段)	<input type="checkbox"/> <input type="checkbox"/>
<b>C</b>	獨立機械通風系統	須按照消防處通函第 4/1996 號第 XI 部第 8 段裝設	<input type="checkbox"/>

**Checklist of FS Requirements for Station**  
*(for reference only)*

<b>6 Emergency Power Supply</b>										
<b>A</b>	Dual feed power supply from two independent primary substations (zone substation) <table style="margin-left: 20px; border: none;"> <tr> <td style="vertical-align: top; padding-right: 10px;">(i)</td> <td>Capable of supporting all essential services running simultaneously</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">(ii)</td> <td>Single point of failure shall be avoided by means of separate routing for distance separation, or by means of FRR and mechanical separation</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> </table>	(i)	Capable of supporting all essential services running simultaneously	<input type="checkbox"/>	(ii)	Single point of failure shall be avoided by means of separate routing for distance separation, or by means of FRR and mechanical separation	<input type="checkbox"/>			
(i)	Capable of supporting all essential services running simultaneously	<input type="checkbox"/>								
(ii)	Single point of failure shall be avoided by means of separate routing for distance separation, or by means of FRR and mechanical separation	<input type="checkbox"/>								
<b>B</b>	Transformer and the associated switchboards of different supply sources <table style="margin-left: 20px; border: none;"> <tr> <td style="vertical-align: top; padding-right: 10px;"></td> <td>Separated from each other in different fire compartments</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> </table>		Separated from each other in different fire compartments	<input type="checkbox"/>						
	Separated from each other in different fire compartments	<input type="checkbox"/>								
<b>7 Exit Signs / Directional Exit Signs</b>										
<b>A</b>	All exit signs in non-public areas <table style="margin-left: 20px; border: none;"> <tr> <td style="vertical-align: top; padding-right: 10px;"></td> <td>Internally illuminated with English and Chinese character of not less than 125 mm high with 15 mm wide strokes (section 5.10 of FSI Code and FSD Circular Letter No. 5/2008)</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> </table>		Internally illuminated with English and Chinese character of not less than 125 mm high with 15 mm wide strokes (section 5.10 of FSI Code and FSD Circular Letter No. 5/2008)	<input type="checkbox"/>						
	Internally illuminated with English and Chinese character of not less than 125 mm high with 15 mm wide strokes (section 5.10 of FSI Code and FSD Circular Letter No. 5/2008)	<input type="checkbox"/>								
<b>B</b>	All exit signs / directional exit signs in public areas <table style="margin-left: 20px; border: none;"> <tr> <td style="vertical-align: top; padding-right: 10px;">(i)</td> <td>Shall be of flashing type and internally illuminated</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">(ii)</td> <td>Shall be switched on and flashing to indicate the appropriate exit route to the place of ultimate safety during emergency evacuation</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">(iii)</td> <td>Hidden-type flashing exit signs shall be provided for the escalators which normally run counter to the direction of escape</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> </table>	(i)	Shall be of flashing type and internally illuminated	<input type="checkbox"/>	(ii)	Shall be switched on and flashing to indicate the appropriate exit route to the place of ultimate safety during emergency evacuation	<input type="checkbox"/>	(iii)	Hidden-type flashing exit signs shall be provided for the escalators which normally run counter to the direction of escape	<input type="checkbox"/>
(i)	Shall be of flashing type and internally illuminated	<input type="checkbox"/>								
(ii)	Shall be switched on and flashing to indicate the appropriate exit route to the place of ultimate safety during emergency evacuation	<input type="checkbox"/>								
(iii)	Hidden-type flashing exit signs shall be provided for the escalators which normally run counter to the direction of escape	<input type="checkbox"/>								
<b>C</b>	Exit signs / directional exit signs <table style="margin-left: 20px; border: none;"> <tr> <td style="vertical-align: top; padding-right: 10px;">(i)</td> <td>Backed up by UPS and capable of maintaining function for a period of not less than 2 hours in case of power failure</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">(ii)</td> <td>Provided throughout the station</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">(iii)</td> <td>Provided to ensure all exit routes from any area within the station are clearly indicated as required by the configuration of escape routes serving the station</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> </table>	(i)	Backed up by UPS and capable of maintaining function for a period of not less than 2 hours in case of power failure	<input type="checkbox"/>	(ii)	Provided throughout the station	<input type="checkbox"/>	(iii)	Provided to ensure all exit routes from any area within the station are clearly indicated as required by the configuration of escape routes serving the station	<input type="checkbox"/>
(i)	Backed up by UPS and capable of maintaining function for a period of not less than 2 hours in case of power failure	<input type="checkbox"/>								
(ii)	Provided throughout the station	<input type="checkbox"/>								
(iii)	Provided to ensure all exit routes from any area within the station are clearly indicated as required by the configuration of escape routes serving the station	<input type="checkbox"/>								
<b>8 Fire Alarm System</b>										
<b>A</b>	Fire alarm bells <table style="margin-left: 20px; border: none;"> <tr> <td style="vertical-align: top; padding-right: 10px;">(i)</td> <td>Provided at back-of-house areas except SCR, FCR and fire separated corridor</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> <tr> <td style="vertical-align: top; padding-right: 10px;">(ii)</td> <td>For station public areas, all fire alarm signals shall be connected to the PA system for fire evacuation announcement</td> <td style="text-align: right; vertical-align: top;"><input type="checkbox"/></td> </tr> </table>	(i)	Provided at back-of-house areas except SCR, FCR and fire separated corridor	<input type="checkbox"/>	(ii)	For station public areas, all fire alarm signals shall be connected to the PA system for fire evacuation announcement	<input type="checkbox"/>			
(i)	Provided at back-of-house areas except SCR, FCR and fire separated corridor	<input type="checkbox"/>								
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**鐵路車站消防安全規定核對表**  
(僅供參考)

<b>6 應急供電設備</b>			
<b>A</b>	由兩個獨立主配電站（分區配電站） 雙重供電	(i) 能夠支援所有必要服務同時運作	<input type="checkbox"/>
		(ii) 須憑藉獨立線路達至距離分隔，或憑藉耐火時效及機械分隔，避免出現單一故障點	<input type="checkbox"/>
<b>B</b>	各個供電電源的變壓器及相關的電掣板	互相分隔，設置於不同的隔火間	<input type="checkbox"/>
<b>7 出口指示牌／方向指示牌</b>			
<b>A</b>	非公眾地方的所有出口指示牌	設有內部照明裝置，中英文字體高度不少於125毫米及闊15毫米（《消防裝置守則》第5.10段及消防處通函第5/2008號）	<input type="checkbox"/>
<b>B</b>	公眾地方的所有出口指示牌／方向指示牌	(i) 須設有內部照明裝置，並能夠閃動	<input type="checkbox"/>
		(ii) 當緊急疏散時，須亮着並閃動，以指示前往最終安全地點的適當出口通道	<input type="checkbox"/>
		(iii) 在行走方向通常與逃生路線相反的自動梯，須設置「隱藏式閃動出口指示牌」	<input type="checkbox"/>
<b>C</b>	出口指示牌／方向指示牌	(i) 以不間斷電源供應器作後備電源，並於電力故障時可維持功能不少於2小時	<input type="checkbox"/>
		(ii) 設置於整個車站	<input type="checkbox"/>
		(iii) 須按照車站的逃生路線設計來設置，以確保清楚指示車站內任何地方的所有出口通道	<input type="checkbox"/>
<b>8 火警警報系統</b>			
<b>A</b>	火警鐘	(i) 設置於後勤區域，但車站控制室、消防控制室及隔火通道除外	<input type="checkbox"/>
		(ii) 在車站的公眾地方，所有火警警報信號須傳送至廣播系統，用以宣布疏散	<input type="checkbox"/>

**Checklist of FS Requirements for Station**  
*(for reference only)*

<b>B</b>	Manual fire alarm system	(i) As an integral part of the fire detection system and linked with CFATS via direct telephone line	<input type="checkbox"/>
		(ii) Provided throughout the station and incorporated into each hose reel point of the FH/HR system	<input type="checkbox"/>
		(iii) The actuation point shall start the fire pump and initiate alarm bells in non-public area	<input type="checkbox"/>
<b>9 Fire Hydrant/Hose Reel System</b>			
<b>A</b>	Fixed fire pumps (one duty & one standby) and one jockey pump located at FS Pump Room	Maintain a system running pressure between 350 kPa and 850 kPa with an aggregate flow of not less than 1 350 litres/minute from any three fire hydrant outlets i.e. each with a flow of not less than 450 litres/minute at a running pressure of not less than 350 kPa operating simultaneously	<input type="checkbox"/>
<b>B</b>	Fire hydrant/hose reel system	All areas in the station can be reached by a length of not more than 30 m of Fire Services hose and hose reel tubing (section 5.14 of FSI Code)	<input type="checkbox"/>
<b>C</b>	Fire hydrant outlets	(i) Each rising main shall be connected to an independent Fire Service inlet	<input type="checkbox"/>
		(ii) Provided in fireman's staircases	<input type="checkbox"/>
		(iii) Where there are several rising mains in the system, such inlets shall be interconnected	<input type="checkbox"/>
<b>D</b>	Fire main	Fitted with twin hydrant outlets or two single outlets and individually controlled by a wheel-operated screw valve	<input type="checkbox"/>
<b>E</b>	Fire pumps	Started by actuation of break-glass unit at any hose reel point or a fall in water pressure of any fire hydrant outlet	<input type="checkbox"/>
<b>F</b>	Fire Service inlets	(i) Provided at DEE and SEE	<input type="checkbox"/>
		(ii) All Fire Service inlets shall be interconnected	<input type="checkbox"/>
<b>G</b>	Intermediate booster pump	Capable of maintaining sufficient pressure and flow (section 5.14 of FSI Code)	<input type="checkbox"/>
<b>H</b>	Motorized isolation valve	(i) Normally opened and located at the headwall and tailwall units of the station	<input type="checkbox"/>
		(ii) Remote open/closed status indication of MIV shall be provided at SCR / FCR	<input type="checkbox"/>

**鐵路車站消防安全規定核對表**  
(僅供參考)

<b>B</b>	手動火警警報系統	<p>(i) 作為火警偵測系統不可缺少的組成部分，以直線電話線連接火警警報電腦傳送系統 <input type="checkbox"/></p> <p>(ii) 遍布整個車站，安裝在消防栓／喉轆系統的各個消防喉轆裝置處之內 <input type="checkbox"/></p> <p>(iii) 在非公眾地方，啟動按鈕必須可以啟動消防泵及火警鐘 <input type="checkbox"/></p>
<b>9</b>	<b>消防栓／喉轆系統</b>	
<b>A</b>	設置於消防泵房的固定消防泵（一個主泵及一個備用泵）及一個操控水泵	維持系統的運行壓力於 <b>350至850千帕斯卡（kPa）</b> 之間，任何三個消防栓出水口同時運作時，總水量不能少於每分鐘 <b>1 350</b> 升，即每個出水口的水量為不少於每分鐘 <b>450</b> 升，而運行壓力不少於 <b>350</b> 千帕斯卡 <input type="checkbox"/>
<b>B</b>	消防栓／喉轆系統	長度不超過 <b>30</b> 米的滅火喉及喉轆膠喉可伸展至車站的任何部分（《消防裝置守則》第 <b>5.14</b> 段） <input type="checkbox"/>
<b>C</b>	消防栓出水口	<p>(i) 每條上水喉管均須連接一個獨立的消防入水掣 <input type="checkbox"/></p> <p>(ii) 設置於消防員專用樓梯 <input type="checkbox"/></p> <p>(iii) 如系統設有多條上水喉管，有關的消防入水掣須互相連接 <input type="checkbox"/></p>
<b>D</b>	消防喉管	配備消防栓雙出水口或兩個單出水口，每個出水口須各自由輪式操作螺旋開關閥控制 <input type="checkbox"/>
<b>E</b>	消防泵	任何消防喉轆裝置處的警報玻璃箱被按動或任何消防栓出水口水壓下降，均可啟動消防泵 <input type="checkbox"/>
<b>F</b>	消防入水掣	<p>(i) 設置於指定緊急入口及輔助緊急入口 <input type="checkbox"/></p> <p>(ii) 所有消防入水掣須互相連接 <input type="checkbox"/></p>
<b>G</b>	中途泵	能夠維持足夠壓力和水量（《消防裝置守則》第 <b>5.14</b> 段） <input type="checkbox"/>
<b>H</b>	機動開關閥	<p>(i) 通常開啟並設置於車站的頭端牆和尾端牆 <input type="checkbox"/></p> <p>(ii) 車站控制室／消防控制室須設置機動開關閥的遙控開關狀態顯示 <input type="checkbox"/></p>

**Checklist of FS Requirements for Station**  
*(for reference only)*

<b>I</b>	Self-contained pressure reducing type fire hydrant(s) or pressure reducing valve	Provided whenever the system pressure at any fire hydrant outlet exceeds 850 kPa	<input type="checkbox"/>
<b>J</b>	Water supply	<ul style="list-style-type: none"> <li>(i) Provided from 2 separate sources <input type="checkbox"/></li> <li>(ii) Provided as indicated on plans to serve the tunnel fire hydrants of long turnback and refuge siding tunnel <input type="checkbox"/></li> <li>(iii) All tunnel and station Fire Service inlets shall be interconnected <input type="checkbox"/></li> </ul>	
<b>K</b>	Water tank	Sufficient Capacity (e.g. 36 m <sup>3</sup> )	<input type="checkbox"/>
<b>10 Fire Resisting Cable for Fire Service Installations</b>			
		Comply with section 5.15 and Appendix 6 of the FSI Code	<input type="checkbox"/>
<b>11 Fire Services Communication System</b>			
<b>A</b>	Digital Trunked Radio System (DTRS)	<ul style="list-style-type: none"> <li>(i) Equipped with at least one base station with one carrier (i.e. one control channel and three voice channels) to enable 3 separate talkgroups of FSD personnel to communicate effectively and efficiently by using their FSD radio equipment for trunk mode radio communication at the enclosed area of the station <input type="checkbox"/></li> <li>(ii) Radio coverage shall also be extended to a range within the radius of 50m from DEE/SEE of the station at grade level <input type="checkbox"/></li> </ul>	
<b>B</b>	Telephone panels	<ul style="list-style-type: none"> <li>(i) For dedicated use by FSD personnel to communicate with SCR or FCR of stations and OCC <input type="checkbox"/></li> <li>(ii) shall be provided at DEE/SEE of the station at grade level <input type="checkbox"/></li> <li>(iii) Telephone is available in the headwall &amp; tailwall units for railway operation which can be used for communication between SCR/FCR/OCC <input type="checkbox"/></li> </ul>	
<b>12 Fireman's Lift</b>			
		Shall be provided and marked as 'A' on plan	<input type="checkbox"/>

**鐵路車站消防安全規定核對表**  
(僅供參考)

<b>I</b>	獨立的減壓式消防栓或減壓閥	當任何消防栓出水口的系統壓力超逾 850 千帕斯卡就須設置	<input type="checkbox"/>
<b>J</b>	供水	(i) 由兩個獨立水源提供 (ii) 按照圖則部署，為設置於長程掉頭及列車避險隧道內的消防栓供水  (iii) 所有隧道及車站的消防入水掣均須互相連接	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>K</b>	水缸	須具足夠貯水量（例如 36 立方米）	<input type="checkbox"/>
<b>10 消防裝置防火電纜</b>			
		符合《消防裝置守則》第 5.15 段及附錄 6 的規定	<input type="checkbox"/>
<b>11 消防通訊系統</b>			
<b>A</b>	數碼集束無線電系統	(i) 配備最少一個提供一個載波（即一個控制頻道和三個話音頻道）的發射站，供三個獨立通話組別的消防處人員在車站的密封區域以所攜的消防處無線電設備進行有效而具效率的集束無線電通訊  (ii) 無線電覆蓋範圍亦須達車站地面各個指定緊急入口／輔助緊急入口 50 米半徑範圍	<input type="checkbox"/> <input type="checkbox"/>
<b>B</b>	電話儀表板	(i) 消防處人員專用，以便與車站的車站控制室／消防控制室或車務控制中心聯絡 (ii) 須設置於車站地面各個指定緊急入口／輔助緊急入口 (iii) 頭端牆和尾端牆設置供鐵路營運之用的電話，可接通車站控制室、消防控制室及車務控制中心	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>12 消防員升降機</b>			
		須設置並於圖則上以「A」標示	<input type="checkbox"/>



**Checklist of FS Requirements for Station**  
*(for reference only)*

13 FM200 Gas Flooding Fire Extinguishing System			
<b>A</b>	FM200 gas flooding fire extinguishing system	(i)	Installed in accordance with NFPA 2001 <input type="checkbox"/>
		(ii)	Provided with smoke detectors of cross-zoned arrangement for the protected area for automatic operation <input type="checkbox"/>
		(iii)	Provided with a manual release unit at the entrance of the protected area for emergency manual operation <input type="checkbox"/>
14 Portable Hand-operated Approved Appliance			
			Provided for all plant rooms and the locations as indicated on plans <input type="checkbox"/>
15 Pressurization of Staircase			
<b>A</b>	Mechanical ventilation (Pressurization)		Provided for the fireman's staircases and corresponding staircase lobbies and fireman's lift lobbies (FS Code) <input type="checkbox"/>
		<b>B</b>	Staircase pressurization system <input type="checkbox"/>
			Provided as indicated on plans in accordance with the latest edition of BS 5588: Part 4, section 5.21 of FSI Code and FSD Circular Letter No. 2/2006
16 Smoke Extraction System			
<b>A</b>	Mechanical smoke extraction system	(i)	Provided for station public areas and concession areas (sections 2.2 and 5.23 of the FSI Code) <input type="checkbox"/>
		(ii)	The smoke extraction system shall be activated by any two smoke detectors or sprinkler of the incident smoke zone <input type="checkbox"/>
17 Ventilation / Air Conditioning Control System			
<b>A</b>	Ventilation / air conditioning control panel		Provided in SCR and FCR of the station <input type="checkbox"/>
<b>B</b>	Ventilation / air conditioning control system		Comply with section 5.27 of the FSI Code and FSD Circular Letter No. 2/2005 <input type="checkbox"/>

**鐵路車站消防安全規定核對表**  
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<b>13 FM200 氣體湧滅系統</b>			
<b>A</b>	FM200 氣體湧滅系統	(i) 按照美國防火協會 (NFPA 2001) 的規定安裝	<input type="checkbox"/>
		(ii) 在受保護區域設置交叉區域編排的煙霧偵測器，以便系統自動運作	<input type="checkbox"/>
		(iii) 在受保護區域的入口設置手動放氣裝置，於緊急情況時以人手操作系統	<input type="checkbox"/>
<b>14 認可的人手操作手提器具</b>			
		放置於所有機房及圖則指示的位置	<input type="checkbox"/>
<b>15 樓梯增壓</b>			
<b>A</b>	機械通風 (增壓)	須為消防員專用樓梯及相關樓梯門廊，以及消防員升降機大堂設置 (《消防安全守則》)	<input type="checkbox"/>
<b>B</b>	樓梯增壓系統	根據最新版本的《英國標準 5588：第 4 部分》、《消防裝置守則》第 5.21 段，以及消防處通函第 2/2006 號，按照圖則指示設置	<input type="checkbox"/>
<b>16 排煙系統</b>			
<b>A</b>	機械排煙系統	(i) 設置於車站公眾地方及專營範圍 (《消防裝置守則》第 2.2 及 5.23 段)	<input type="checkbox"/>
		(ii) 排煙系統須由事故現場煙霧控制區的任何兩個煙霧偵測器或花灑啟動	<input type="checkbox"/>
<b>17 通風／空氣調節控制系統</b>			
<b>A</b>	通風／空氣調節控制板	設置於車站的車站控制室／消防控制室	<input type="checkbox"/>
<b>B</b>	通風／空氣調節控制系統	符合《消防裝置守則》第 5.27 段及消防處通函第 2/2005 號的規定	<input type="checkbox"/>

**Checklist of FS Requirements for Station**  
*(for reference only)*

18 Requirements (Additional)			
<b>A</b>	All linings for acoustic and thermal insulation purposes in ducting and concealed locations	Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or its international equivalent, or be brought up to that standard by use of an approved fire retardant product	<input type="checkbox"/>
<b>B</b>	All linings for acoustic, thermal insulation and decorative purposes within protected means of escape	Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or its international equivalent, or be brought up to that standard by use of an approved fire retardant product	<input type="checkbox"/>
<b>C</b>	No dangerous goods shall be used or stored	Any intended storage or use of dangerous goods as defined in Chapter 295 of the Laws of Hong Kong shall be separately notified to the Director of FSD	<input type="checkbox"/>
<b>D</b>	Glazing (solar control tempered glass panel)	(i) Shall not be of type which melts and forms burning droplets under fire situation (ii) When it is shattered, it does not form sharp and harmful pieces	<input type="checkbox"/> <input type="checkbox"/>

**鐵路車站消防安全規定核對表**  
(僅供參考)

18 額外規定			
<b>A</b>	管道及隱蔽位置內所有作隔音及隔熱用途的襯層	須達《英國標準 476：第 7 部分》指定表面火焰蔓延率第 1 級或第 2 級或同等國際標準，或利用認可的抗火產品提高水平至同等標準	<input type="checkbox"/>
<b>B</b>	防護逃生途徑內所有作隔音、隔熱及裝飾用途的襯層	須達《英國標準 476：第 7 部分》指定表面火焰蔓延率第 1 級或第 2 級或同等國際標準，或利用認可的抗火產品提高水平至同等標準	<input type="checkbox"/>
<b>C</b>	不得使用或貯存危險品	如擬貯存或使用香港法例第 295 章界定為危險品的物品，須另行通知消防處處長	<input type="checkbox"/>
<b>D</b>	玻璃門窗（隔熱強化玻璃嵌板）	(i) 不得為遇火時會熔化成灼熱液滴的類別	<input type="checkbox"/>
		(ii) 碎裂時不會構成鋒利及有害的碎片	<input type="checkbox"/>

**Checklist of FS Requirements for Depot/Ancillary Building**  
(for reference only)

*(Please refer to FSI Code, relevant Standards and Circular Letters for details)*

1 Automatic Actuating Devices			
<b>A</b>	Fire Shutter	(i) Having a sufficient fire resisting rating	<input type="checkbox"/>
		(ii) Provided with smoke detector(s) and manual control device(s) on both sides of the openings for automatic and manual operation respectively	<input type="checkbox"/>
		(iii) The detectors shall be installed in accordance with LPC Rules for Automatic Fire Detection and Alarm Installations for the Protection of Property and BS 5839: Part 1: 2002+A2: 2008 and FSD Circular Letter No. 1/2009 and No. 3/2010	<input type="checkbox"/>
2 Automatic Fire Detection			
<b>A</b>	All fire alarm signals including fire detectors, flow switches and manual fire alarm	(i) Shall be linked to CFATS by a direct telephone line	<input type="checkbox"/>
		(ii) Repeated to SCR/FCR of station(s) and FCR of depot/ancillary building and OCC	<input type="checkbox"/>
<b>B</b>	Automatic fire alarm panel	Provided in FCR to receive all fire alarm signals of the entire depot/ancillary building including smoke detectors, heat detectors, break-glass units and flow switches	<input type="checkbox"/>
<b>C</b>	Automatic fire detection	Shall be addressable (BS 5839: Part 1: 2002+A2: 2008 and FSD Circular Letter No. 1/2009 and No. 3/2010)	<input type="checkbox"/>
3 Automatic Sprinkler System			
<b>A</b>	Automatic fixed installations other than water	Provided for areas where the use of water is undesirable for the occupancy (section 4.4(ii) of FSI Code)	<input type="checkbox"/>
<b>B</b>	Automatic sprinkler system (OH III)	Provided for all areas of the depot/ancillary building except above ground plant rooms (section 5.24 of the FSI Code, LPC Rules for Automatic Sprinkler Installations incorporating BS EN 12845: 2003 and FSD Circular Letter No. 3/2006 and No. 3/2012)	<input type="checkbox"/>
<b>C</b>	Fast response type sprinkler heads	Provided for all underground sprinkler protected areas	<input type="checkbox"/>

**車廠／附屬建築物消防安全規定核對表**  
(僅供參考)

(詳情請參閱《消防裝置守則》、相關的標準及消防處通函)

<b>1 自動啟動裝置</b>		
<b>A</b>	防火捲閘	(i) 具備充分的耐火時效 <input type="checkbox"/> (ii) 須在牆壁開口內外兩邊設置煙霧偵測器及手動控制器，分別供自動及人手操作之用 <input type="checkbox"/> (iii) 須按照《英國防損委員會準則》內有關安裝自動火警偵測與警報裝置以保障財產的規則、《英國標準 5839：第 1 部分：2002+A2:2008》，以及消防處通函第 1/2009 及 3/2010 號安裝偵測器 <input type="checkbox"/>
<b>2 自動火警偵測</b>		
<b>A</b>	所有火警警報信號，包括來自火警偵測器、花灑流量掣及手動火警鐘的信號	(i) 須以直線電話線連接火警警報電腦傳送系統 <input type="checkbox"/> (ii) 重複傳送至車站的車站控制室／消防控制室、車廠／附屬建築物的消防控制室，以及車務控制中心 <input type="checkbox"/>
<b>B</b>	自動火警警報控制板	設置於消防控制室，接收整個車廠／附屬建築物的所有火警警報信號，包括來自煙霧偵測器、熱力偵測器、警報玻璃箱及花灑流量掣的信號 <input type="checkbox"/>
<b>C</b>	自動火警偵測	須可顯示位置(《英國標準 5839：第 1 部分：2002+A2:2008》及消防處通函第 1/2009 及 3/2010 號) <input type="checkbox"/>
<b>3 自動花灑系統</b>		
<b>A</b>	不含水滅火劑的自動固定裝置	安裝在佔用部分內不宜用水救火的地方(《消防裝置守則》第 4.4(ii)段) <input type="checkbox"/>
<b>B</b>	自動花灑系統(普通危險程度第三組)	設置於車廠／附屬建築物的各個部分，但地面機房除外(《消防裝置守則》第 5.24 段、《英國防損委員會準則》內包含《英國標準 EN 12845:2003》的自動花灑裝置規定，以及消防處通函第 3/2006 及 3/2012 號) <input type="checkbox"/>
<b>C</b>	快速感應型消防花灑頭	設置於所有受消防花灑保障的地底範圍 <input type="checkbox"/>

**Checklist of FS Requirements for Depot/Ancillary Building**  
*(for reference only)*

<b>D</b>	Re-cycling pre-action sprinkler system	Comply with LPC Rules for Automatic Sprinkler Installations incorporating BS EN 12845: 2003 and FSD Circular Letter No. 3/2006 and No. 3/2012	<input type="checkbox"/>
<b>E</b>	Sprinkler alarm	(i) Linked to CFATS by a direct telephone line	<input type="checkbox"/>
		(ii) All sprinkler alarm signals shall also be transmitted to the fire control panel in SCR/FCR of station(s) and FCR of depot/ancillary building and repeated to OCC	<input type="checkbox"/>
<b>F</b>	Sprinkler inlets	Shall be interconnected	<input type="checkbox"/>
<b>G</b>	Sprinkler pumps (one duty & one standby) and one jockey pump	Provided in Sprinkler Pump Room	<input type="checkbox"/>
<b>H</b>	Water tank	(i) Sufficient Capacity (e.g. 124 m <sup>3</sup> )	<input type="checkbox"/>
		(ii) Single end feed water supply	<input type="checkbox"/>
<b>4 Emergency Lighting</b>			
<b>A</b>	All batteries in UPS room	Comply with BS 6290 Part 4	<input type="checkbox"/>
<b>B</b>	Emergency lighting	(i) Backed up by UPS and capable of maintaining function for a period of not less than 2 hours in case of power failure	<input type="checkbox"/>
		(ii) Provided throughout the depot/ancillary building and all exit routes leading to place of ultimate safety (BS 5266: Part 1, BS EN 1838 and section 5.9 of FSI Code)	<input type="checkbox"/>
<b>C</b>	Independent mechanical ventilation system	Shall be provided as stipulated in section 8, Part XI of FSD Circular Letter No. 4/1996	<input type="checkbox"/>
<b>5 Emergency Power Supply</b>			
<b>A</b>	Dual feed power supply from two independent primary substations (zone substation)	(i) Capable of supporting all essential services running simultaneously	<input type="checkbox"/>
		(ii) Single point of failure shall be avoided by means of separate routing for distance separation, or by means of FRR and mechanical separation	<input type="checkbox"/>
<b>B</b>	Transformer and the associated switchboards of different supply sources	Separated from each other in different fire compartments	<input type="checkbox"/>

**車廠／附屬建築物消防安全規定核對表**  
(僅供參考)

<b>D</b>	重複啟閉預作用花灑系統	符合《英國防損委員會準則》內包含《英國標準 EN 12845: 2003》的自動花灑裝置規定，以及消防處通函第 3/2006 及 3/2012 號	<input type="checkbox"/>
<b>E</b>	花灑警報	(i) 以直線電話線連接火警警報電腦傳送系統 (ii) 所有花灑警報信號亦須傳送至車站的車站控制室／消防控制室及車廠／附屬建築物消防控制室的消防控制板，並重複傳送至車務控制中心	<input type="checkbox"/> <input type="checkbox"/>
<b>F</b>	花灑入水掣	須互相連接	<input type="checkbox"/>
<b>G</b>	花灑泵（一個主泵及一個備用泵）及一個操控水泵	設置於花灑泵房	<input type="checkbox"/>
<b>H</b>	水缸	(i) 足夠容量（例如 124 立方米） (ii) 單端供水	<input type="checkbox"/> <input type="checkbox"/>
<b>4 應急照明系統</b>			
<b>A</b>	不間斷電源供應器室的所有電池	符合《英國標準 6290：第 4 部分》	<input type="checkbox"/>
<b>B</b>	應急照明系統	(i) 以不間斷電源供應器作後備電源，於電力故障時可維持功能不少於 2 小時 (ii) 設置於整個車廠／附屬建築物及通往最終安全地點的所有出口通道（《英國標準 5266：第 1 部分》、《英國標準 EN1838》及《消防裝置守則》第 5.9 段）	<input type="checkbox"/> <input type="checkbox"/>
<b>C</b>	獨立機械通風系統	須按照消防處通函第 4/1996 號第 XI 部第 8 段裝設	<input type="checkbox"/>
<b>5 應急供電設備</b>			
<b>A</b>	由兩個獨立主配電站（分區配電站）雙重供電	(i) 能夠支援所有必要服務同時運作 (ii) 須憑藉獨立線路達至距離分隔，或憑藉耐火時效及機械分隔，避免出現單一故障點	<input type="checkbox"/> <input type="checkbox"/>
<b>B</b>	各個供電電源的變壓器及相關的電掣板	互相分隔，設置於不同的隔火間	<input type="checkbox"/>



**Checklist of FS Requirements for Depot/Ancillary Building**  
*(for reference only)*

6 Exit Signs / Directional Exit Signs			
<b>A</b>	Exit signs / directional exit signs	(i)	Backed up by UPS and capable of maintaining function for a period of not less than 2 hours in case of power failure <input type="checkbox"/>
		(ii)	Provided throughout the depot/ancillary building (section 5.10 of FSI Code and FSD Circular Letter No. 5/2008) <input type="checkbox"/>
		(iii)	Provided to ensure all exit routes from any area within the depot/ancillary building are clearly indicated as required by the configuration of escape routes serving the depot/ancillary building <input type="checkbox"/>
7. Fire Alarm System			
<b>A</b>	Manual fire alarm system	(i)	As an integral part of the fire detection system and linked with CFATS via direct telephone line <input type="checkbox"/>
		(ii)	Provided throughout the depot/ancillary building and incorporated into each hose reel point of the FH/HR system <input type="checkbox"/>
		(iii)	The actuation point shall start the fire pump and initiate audio warning device <input type="checkbox"/>
8 Fire Hydrant/Hose Reel System			
<b>A</b>	Fire hydrant/hose reel system		All areas in the depot/ancillary building can be reached by a length of not more than 30 m of Fire Services hose and hose reel tubing (section 5.14 of FSI Code) <input type="checkbox"/>
<b>B</b>	Fire hydrant outlets	(i)	Each rising main shall be connected to an independent Fire Service inlet <input type="checkbox"/>
		(ii)	Provided in fireman's staircases <input type="checkbox"/>
		(iii)	Where there are several rising mains in the system, such inlets shall be interconnected <input type="checkbox"/>
<b>C</b>	Fire pumps		Started by actuation of break-glass unit at any hose reel point or a fall in water pressure of any fire hydrant outlet <input type="checkbox"/>

**車廠／附屬建築物消防安全規定核對表**  
(僅供參考)

6 出口指示牌／方向指示牌					
<b>A</b>	出口指示牌／方向指示牌	(i) 以不間斷電源供應器作後備電源，並於電力故障時可維持功能不少於 2 小時	<input type="checkbox"/>		
		(ii) 設置於整個車廠／附屬建築物(《消防裝置守則》第 5.10 段及消防處通函第 5/2008 號)	<input type="checkbox"/>		
		(iii) 須按照車廠／附屬建築物的逃生路線設計來設置，以確保清楚指示車廠／附屬建築物內任何地方的所有出口通道	<input type="checkbox"/>		
7 火警警報系統					
<b>A</b>	手動火警警報系統	(i) 作為火警偵測系統不可缺少的組成部分，以直線電話線連接火警警報電腦傳送系統	<input type="checkbox"/>		
		(ii) 遍布整個車廠／附屬建築物，安裝在消防栓／喉轆系統的各個消防喉轆裝置處之內	<input type="checkbox"/>		
		(iii) 啟動按鈕必須可以啟動消防泵及聲響警報裝置	<input type="checkbox"/>		
8 消防栓／喉轆系統					
<b>A</b>	消防栓／喉轆系統	長度不超過 30 米的滅火喉及喉轆軟喉可伸展至車廠／附屬建築物的任何部分(《消防裝置守則》第 5.14 段)	<input type="checkbox"/>		
		<b>B</b>	消防栓出水口	(i) 每條上水喉管均須連接一個獨立的消防入水掣	<input type="checkbox"/>
				(ii) 設置於消防員專用樓梯	<input type="checkbox"/>
<b>C</b>	消防泵	(iii) 如系統設有多條上水喉管，有關的消防入水掣須互相連接	<input type="checkbox"/>		
		任何消防喉轆裝置處的警報玻璃箱被按動或任何消防栓出水口水壓下降，均可啟動消防泵	<input type="checkbox"/>		

**Checklist of FS Requirements for Depot/Ancillary Building**  
*(for reference only)*

<b>D</b>	Fixed fire pumps (one duty & one standby) and one jockey pump located at FS Pump Room	Maintain a system running pressure between 350 kPa and 850 kPa with an aggregate flow of not less than 1 350 litres/minute from any three fire hydrant outlets i.e. each with a flow of not less than 450 litres/minute at a running pressure of not less than 350 kPa operating simultaneously	<input type="checkbox"/>
<b>E</b>	Fire Service inlets	Provided at the locations on plans	<input type="checkbox"/>
<b>F</b>	Fire main	Fitted with twin hydrant outlets or two single outlets and individually controlled by a wheel-operated screw valve	<input type="checkbox"/>
<b>G</b>	Intermediate booster pump	Capable of maintaining sufficient pressure and flow (section 5.14 of FSI Code)	<input type="checkbox"/>
<b>H</b>	Motorized isolation valve (MIV)	(i) Normally opened and located at the MIV cabinet (ii) Remote open/closed status indication of MIV shall be provided at the SCR/FCR of station(s) and the FCR of depot/ancillary building.	<input type="checkbox"/> <input type="checkbox"/>
<b>I</b>	Self-contained pressure reducing type fire hydrant(s) or pressure reducing valve	Provided whenever the system pressure at any fire hydrant outlet exceeds 850 kPa	<input type="checkbox"/>
<b>J</b>	Water tank	Sufficient Capacity	<input type="checkbox"/>
<b>9 Fireman's Lift</b>			
<b>A</b>	Fireman's lift	Shall be provided and marked as 'A' on plan	<input type="checkbox"/>
<b>10 Fire Resisting Cable for Fire Service Installations</b>			
		Comply with section 5.15 and Appendix 6 of the FSI Code	<input type="checkbox"/>

**車廠／附屬建築物消防安全規定核對表**  
(僅供參考)

<b>D</b>	設置於消防泵房的固定消防泵（一個主泵及一個備用泵）及一個操控水泵	維持系統的運行壓力於 350 至 850 千帕斯卡（kPa）之間，任何三個消防栓出水口同時運作時，總水量不能少於每分鐘 1 350 升，即每個出水口的水量為不少於每分鐘 450 升，而運行壓力不少於 350 千帕斯卡	<input type="checkbox"/>
<b>E</b>	消防入水掣	設置於圖則指示的位置	<input type="checkbox"/>
<b>F</b>	消防喉管	配備消防栓雙出水口或兩個單出水口，每個出水口須各自由輪式操作螺旋開關閥控制	<input type="checkbox"/>
<b>G</b>	中途泵	能夠維持足夠壓力和水量（《消防裝置守則》第 5.14 段）	<input type="checkbox"/>
<b>H</b>	機動開關閥	(i) 通常開啟並設置於機動開關閥櫃 (ii) 車站的車站控制室／消防控制室及車廠／附屬建築物的消防控制室須設置機動開關閥的遙控開關狀態顯示	<input type="checkbox"/> <input type="checkbox"/>
<b>I</b>	獨立的減壓式消防栓或減壓閥	當任何消防栓出水口的系統壓力超逾 850 千帕斯卡就須設置	<input type="checkbox"/>
<b>J</b>	水缸	須具足夠貯水量	<input type="checkbox"/>
<b>9 消防員升降機</b>			
<b>A</b>	消防員升降機	須設置並於圖則上以「A」標示	<input type="checkbox"/>
<b>10 消防裝置防火電纜</b>			
		符合《消防裝置守則》第 5.15 段及附錄 6 的規定	<input type="checkbox"/>

**Checklist of FS Requirements for Depot/Ancillary Building**  
*(for reference only)*

11 Fire Services Communication System			
<b>A</b>	Digital Trunked Radio System (DTRS)	(i)	Equipped with at least one base station with one carrier (i.e. one control channel and three voice channels) to enable 3 separate talkgroups of FSD personnel to communicate effectively and efficiently by using their FSD radio equipment for trunk mode radio communication at the enclosed area of the depot/ancillary building <input type="checkbox"/>
		(ii)	Radio coverage shall also be extended to a range within the radius of 50 m from DEE/EAP of the depot/ancillary building at grade level <input type="checkbox"/>
<b>B</b>	Telephone panels	(i)	For dedicated use by FSD personnel to communicate with FCR of depot/ancillary building and OCC <input type="checkbox"/>
		(ii)	shall be provided at DEE/EAP of the depot/ancillary building at grade level <input type="checkbox"/>
12 FM200 Gas Flooding Fire Extinguishing System			
<b>A</b>	FM200 gas flooding fire extinguishing system	(i)	Installed in accordance with NFPA 2001 <input type="checkbox"/>
		(ii)	Provided with smoke detectors of cross-zoned arrangement for the protected area for automatic operation <input type="checkbox"/>
		(iii)	Provided with a manual release unit at the entrance of the protected area for emergency manual operation <input type="checkbox"/>
13 Portable Hand-operated Approved Appliance			
			Provided for all plant rooms and the locations as indicated on plans <input type="checkbox"/>
14 Pressurization of Staircase			
<b>A</b>	Mechanical ventilation (Pressurization)	Provided for the fireman's staircases and corresponding staircase lobbies and fireman's lift lobbies (FS Code) <input type="checkbox"/>	
		<b>B</b>	Staircase pressurization system

**車廠／附屬建築物消防安全規定核對表**  
(僅供參考)

<b>11 消防通訊系統</b>		
<b>A</b>	數碼集束無線電系統	<p>(i) 配備最少一個提供一個載波（即一個控制頻道和三個話音頻道）的發射站，供三個獨立通話組別的消防處人員在車廠／附屬建築物的密封區域以所攜的消防處無線電設備進行有效而具效率的集束無線電通訊 <input type="checkbox"/></p> <p>(ii) 無線電覆蓋範圍亦須達車廠／附屬建築物地面各個指定緊急入口／緊急救援入口 50 米半徑範圍 <input type="checkbox"/></p>
<b>B</b>	電話儀表板	<p>(i) 消防處人員專用，以便與車廠／附屬建築物的消防控制室及車務控制中心聯絡 <input type="checkbox"/></p> <p>(ii) 須設置於車廠／附屬建築物地面各個指定緊急入口／緊急救援入口 <input type="checkbox"/></p>
<b>12 FM200 氣體湧滅系統</b>		
<b>A</b>	FM200 氣體湧滅系統	<p>(i) 按照美國防火協會（NFPA 2001）的規定安裝 <input type="checkbox"/></p> <p>(ii) 在受保護區域設置交叉區域編排的煙霧偵測器，以便系統自動運作 <input type="checkbox"/></p> <p>(iii) 在受保護區域的入口設置手動放氣裝置，於緊急情況時以人手操作系統 <input type="checkbox"/></p>
<b>13 認可的人手操作手提器具</b>		
		放置於所有機房及圖則指示的位置 <input type="checkbox"/>
<b>14 樓梯增壓</b>		
<b>A</b>	機械通風（增壓）	須為消防員專用樓梯及相關樓梯門廊，以及消防員升降機大堂設置（《消防安全守則》） <input type="checkbox"/>
<b>B</b>	樓梯增壓系統	根據最新版本的《英國標準 5588：第 4 部分》、《消防裝置守則》第 5.21 段，以及消防處通函第 2/2006 號，按照圖則指示設置 <input type="checkbox"/>

**Checklist of FS Requirements for Depot/Ancillary Building**  
*(for reference only)*

15 Ventilation / Air Conditioning Control System			
<b>A</b>	Ventilation / air conditioning control system	Comply with section 5.27 of the FSI Code and FSD Circular Letter No. 2/2005	<input type="checkbox"/>
<b>B</b>	Ventilation / air conditioning control panel	Provided in FCR of the depot/ancillary building	<input type="checkbox"/>
16 Requirements (Additional)			
<b>A</b>	All linings for acoustic and thermal insulation purposes in ducting and concealed locations	Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or its international equivalent, or be brought up to that standard by use of an approved fire retardant product	<input type="checkbox"/>
<b>B</b>	All linings for acoustic, thermal insulation and decorative purposes within protected means of escape	Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or its international equivalent, or be brought up to that standard by use of an approved fire retardant product	<input type="checkbox"/>
<b>C</b>	No dangerous goods shall be used or stored	Any intended storage or use of dangerous goods as defined in Chapter 295 of the Laws of Hong Kong shall be separately notified to the Director of FSD	<input type="checkbox"/>

**車廠／附屬建築物消防安全規定核對表**  
(僅供參考)

15 通風／空氣調節控制系統			
<b>A</b>	通風／空氣調節控制系統	符合《消防裝置守則》第 5.27 段及消防處通函第 2/2005 號的規定	<input type="checkbox"/>
<b>B</b>	通風／空氣調節控制板	設置於車廠／附屬建築物的消防控制室	<input type="checkbox"/>
16 額外規定			
<b>A</b>	管道及隱蔽位置內所有作隔音及隔熱用途的襯層	須達《英國標準 476：第 7 部分》指定表面火焰蔓延率第 1 級或第 2 級或同等國際標準，或利用認可的抗火產品提高水平至同等標準	<input type="checkbox"/>
<b>B</b>	防護逃生途徑內所有作隔音、隔熱及裝飾用途的襯層	須達《英國標準 476：第 7 部分》指定表面火焰蔓延率第 1 級或第 2 級或同等國際標準，或利用認可的抗火產品提高水平至同等標準	<input type="checkbox"/>
<b>C</b>	不得使用或貯存危險品	如擬貯存或使用香港法例第 295 章界定為危險品的物品，須另行通知消防處處長	<input type="checkbox"/>



**Checklist of FS Requirements for Trackside Area**  
*(for reference only)*

*(Please refer to FSI Code, relevant Standards and Circular Letters for details)*

<b>1 Electrical Power Points</b>			
<b>A</b>	Water-proof type power socket outlets	(i) 13A/240V or 220VAC	<input type="checkbox"/>
		(ii) Permanent type and no additional adapter would be required for F.S. equipment	<input type="checkbox"/>
		(iii) Provided at a maximum interval of 120 m along the running track, at headwall and tailwall units of each platform end and the fireman's trackside access points to tunnels.	<input type="checkbox"/>
<b>2 Emergency Lighting</b>			
<b>A</b>	Emergency lighting	(i) Provided throughout the entire trackside areas (BS 5266: Part 1, BS EN 1838 and section 5.9 of FSI Code)	<input type="checkbox"/>
		(ii) Dual feed power supply	<input type="checkbox"/>
		(iii) Automatically switched on when there is tripping of power supply of the overhead line and could also be switched on by OCC in case of emergency for the entire trackside	<input type="checkbox"/>
<b>B</b>	Emergency lighting for tunnel / viaducts with noise enclosure	Backed up by UPS and capable of maintaining function for a period of not less than 2 hours in case of power failure	<input type="checkbox"/>
<b>C</b>	Emergency lighting for at grade / elevated sections	Fed from essential power supply of adjacent stations	<input type="checkbox"/>
<b>D</b>	Manual local control switches	Provided at the headwall and tailwall units of station(s) and at the trackside access point of ancillary buildings / overrun tunnel	<input type="checkbox"/>
<b>E</b>	Remote control switches	Provided for each tunnel section inside SCR/FCR of station(s)	<input type="checkbox"/>
<b>F</b>	The standard of luminance level	Evacuation and access walkway	- 5 lux (min) <input type="checkbox"/>
		Hydrant location	- 10 lux (min) <input type="checkbox"/>
		Signage location	- 20 lux (min) <input type="checkbox"/>
		Ramp, steps and cross-passage	- 10 lux (min) <input type="checkbox"/>
		Power socket	- 1.6 lux (min) <input type="checkbox"/>

**軌旁區域消防安全規定核對表**  
(僅供參考)

(詳情請參閱《消防裝置守則》、相關的標準及消防處通函)

1 電插座			
A	防水型電源插座	(i) 13 安培 / 240 伏特或 220 伏特交流電	<input type="checkbox"/>
		(ii) 永久型及消防設備無需另加適配接頭	<input type="checkbox"/>
		(iii) 沿行車軌道每隔不超過 120 米，以及於月台兩端的頭端牆和尾端牆及軌旁區域的消防員專用軌旁入口處設置	<input type="checkbox"/>
2 應急照明系統			
A	應急照明系統	(i) 設置於整個軌旁區域(《英國標準 5266: 第 1 部分》、《英國標準 EN1838》及《消防裝置守則》第 5.9 段)	<input type="checkbox"/>
		(ii) 雙重供電	<input type="checkbox"/>
		(iii) 當架空電纜的電源跳掣時自動啟動，亦可於緊急情況時由車務控制中心啟動整個軌旁區域的應急照明系統	<input type="checkbox"/>
B	設有隔音罩的隧道 / 高架鐵路的應急照明系統	以不間斷電源供應器作後備電源，於電力故障時可維持功能不少於 2 小時	<input type="checkbox"/>
C	地面 / 高架路段的應急照明系統	由毗連車站的必要電源供電	<input type="checkbox"/>
D	手動現場控制開關掣	設置於車站的頭端牆和尾端牆，以及位於軌旁區域的附屬建築物 / 掉車隧道入口處	<input type="checkbox"/>
E	遙控開關掣	在車站的車站控制室 / 消防控制室為各隧道部分設置	<input type="checkbox"/>
F	亮度標準	疏散及進出通道	- 5 勒克斯 (最低光度) <input type="checkbox"/>
		消防栓位置	- 10 勒克斯 (最低光度) <input type="checkbox"/>
		指示牌位置	- 20 勒克斯 (最低光度) <input type="checkbox"/>
		斜路、梯級及橫向通道	- 10 勒克斯 (最低光度) <input type="checkbox"/>
		電源插座	- 1.6 勒克斯 (最低光度) <input type="checkbox"/>

**Checklist of FS Requirements for Trackside Area**  
*(for reference only)*

<b>3 Exit Signs / Directional Exit Signs</b>			
<b>A</b>	Exit signs	Provided throughout the trackside areas (section 5.10 of FSI Code and FSD Circular Letter No. 5/2008)	<input type="checkbox"/>
<b>B</b>	Hidden-type exit signs	(i) Provided above or beside the unlocked cross-wall/cross passage doors (ii) Provided for all egress points at station platform ends and at any other emergency egress points along the track-way (iii) shall be switched on by local switch or remotely by OCC when the non-incident tunnel has been cleared and it is safe for evacuees to enter the cross-wall/cross-passage doors	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>C</b>	Reflective directional exit signs	Provided at 25 m intervals along the entire tunnel	<input type="checkbox"/>
<b>4 Fire Hydrant System</b>			
<b>A</b>	Double end feed tunnel fire hydrant system	(i) Installed for entire tunnel including running tracks, turn back tunnel and refuge siding (ii) Water supply of trackside fire hydrant system shall be fed from the FH/HR system of stations/ancillary buildings at both end of each tunnel section	<input type="checkbox"/> <input type="checkbox"/>
<b>B</b>	Fire pumps	Started by a fall in water pressure of the tunnel fire hydrant system	<input type="checkbox"/>
<b>C</b>	Motorized isolation valve	(i) Normally opened and located at the headwall and tailwall units of the station(s) or inside MIV cabinet of ancillary building(s) (ii) Remote open/closed status indication of MIV shall be provided at the SCR / FCR of station(s) and FCR of ancillary building(s) on both sides of such tunnel section	<input type="checkbox"/> <input type="checkbox"/>
<b>D</b>	Self-contained pressure reducing type fire hydrant(s) or pressure reducing valve	Provided whenever the system pressure at any fire hydrant outlet exceeds 850 kPa	<input type="checkbox"/>

**軌旁區域消防安全規定核對表**  
(僅供參考)

3 出口指示牌／方向指示牌			
<b>A</b>	出口指示牌	設置於整個軌旁區域（《消防裝置守則》第 5.10 段及消防處通函第 5/2008 號）	<input type="checkbox"/>
<b>B</b>	隱藏式出口指示牌	(i) 設置於沒有上鎖的橫牆／橫向通道的門上方或旁邊 (ii) 設置於車站月台兩端的所有出口及軌道沿途的任何其他緊急出口 (iii) 當非事故隧道已暢通無阻，疏散人士可安全通過橫牆／橫向通道的門，就須以現場開關掣或由車務控制中心遙控開啟	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>C</b>	反光式方向指示牌	隧道全線範圍均須每隔 25 米設置	<input type="checkbox"/>
4 消防栓系統			
<b>A</b>	雙端供水的隧道消防栓系統	(i) 設置於隧道全線範圍，包括行車軌道、掉頭隧道及列車避險隧道 (ii) 軌旁的消防栓系統須由各隧道部分兩端的車站／附屬建築物的消防栓／喉轆系統供水	<input type="checkbox"/> <input type="checkbox"/>
<b>B</b>	消防泵	隧道消防栓系統水壓下降即可啟動	<input type="checkbox"/>
<b>C</b>	機動開關閥	(i) 通常開啟並設置於車站的頭端牆和尾端牆或附屬建築物的機動開關閥櫃內 (ii) 車站的車站控制室／消防控制室及有關隧道部分兩旁附屬建築物的消防控制室須設置機動開關閥的遙控開關狀態顯示	<input type="checkbox"/> <input type="checkbox"/>
<b>D</b>	獨立的減壓式消防栓或減壓閥	當任何消防栓出水口的系統壓力超逾 850 千帕斯卡就須設置	<input type="checkbox"/>

**Checklist of FS Requirements for Trackside Area**  
*(for reference only)*

<b>E</b>	Trackside fire hydrant system	(i) comply with section 5.14 of FSI Code and Trackside Fire Safety Strategy (ii) Sufficient fire hydrants shall be provided to ensure that every part of tunnels (except trackway along station platform) can be reached by a length of not more than 30 m of Fire Services hose	<input type="checkbox"/>  <input type="checkbox"/>
<b>F</b>	Tunnel fire main with fire hydrant outlets	(i) Provided at 60 m intervals at low level and on the same side of the fireman's access walkway along all tunnels including running tracks, overrun tunnel, turn back tunnel and refuge siding (ii) The hydrant outlets shall be not less than 800 mm and not more than 1 200 mm above the finished floor level of fireman's access walkway (iii) The fire main at each fire point shall be fitted with twin hydrant outlets or two single outlets and be individually controlled by a wheel-operated screw valve	<input type="checkbox"/>  <input type="checkbox"/>  <input type="checkbox"/>
<b>G</b>	Tunnel fire hydrant system	Capable of delivering an aggregate flow of not less than 1 350 litres/minute from any three fire hydrant outlets i.e. each with a flow of not less than 450 litres/minute at a running pressure of not less than 350 kPa operating simultaneously. The pressure at any fire hydrant outlet shall not exceed 850 kPa	<input type="checkbox"/>
<b>5 Fire Services Communication System</b>			
<b>A</b>	Digital Trunked Radio System (DTRS)	(i) Equipped with at least one base station with one carrier (i.e. one control channel and three voice channels) to enable 3 separate talkgroups of FSD personnel to communicate effectively and efficiently by using their FSD radio equipment for trunk mode radio communication at the enclosed area of the trackside (ii) Radio coverage shall also be extended to a range within the radius of 50 m from EAP at grade level	<input type="checkbox"/>  <input type="checkbox"/>

**軌旁區域消防安全規定核對表**  
(僅供參考)

<b>E</b>	軌旁的消防栓系統	(i) 符合《消防裝置守則》第 5.14 段及軌旁消防安全策略的規定 <input type="checkbox"/> (ii) 須設置足夠消防栓，以確保長度不超過 30 米的滅火喉可伸展至隧道的任何部分（沿車站月台的軌道除外） <input type="checkbox"/>
<b>F</b>	配備消防栓出水口的隧道消防喉管	(i) 沿着所有隧道，包括行車軌道、掉車隧道、掉頭隧道及列車避險隧道，在消防員進出通道的同一邊於低位置每隔 60 米設置 <input type="checkbox"/> (ii) 消防栓出水口的位置須高於消防員進出通道的完工地面不少於 800 毫米，但不超過 1 200 毫米 <input type="checkbox"/> (iii) 每個火警鐘掣位置的消防喉管須配備消防栓雙出水口或兩個單出水口，每個出水口須各自由輪式操作螺旋開關閥控制 <input type="checkbox"/>
<b>G</b>	隧道消防栓系統	任何三個消防栓出水口同時運作時，能夠提供總水量不少於每分鐘 1 350 升，即每個出水口的水量為不少於每分鐘 450 升，而運行壓力不少於 350 千帕斯卡。任何一個出水口的壓力不得超過 850 千帕斯卡 <input type="checkbox"/>
<b>5 消防通訊系統</b>		
<b>A</b>	數碼集束無線電系統	(i) 配備最少一個提供一個載波（即一個控制頻道和三個話音頻道）的發射站，供三個獨立通話組別的消防處人員在軌旁的密封區域以所攜的消防處無線電設備進行有效而具效率的集束無線電通訊 <input type="checkbox"/>  (ii) 無線電覆蓋範圍亦須達地面緊急救援入口 50 米半徑範圍 <input type="checkbox"/>

**Checklist of FS Requirements for Trackside Area**  
*(for reference only)*

<b>B</b>	Telephone panels	<ul style="list-style-type: none"> <li>(i) For dedicated use by FSD personnel to communicate with SCR or FCR of stations and OCC <input type="checkbox"/></li> <li>(ii) shall be provided at the entrance of EAP at grade level and at the track access points <input type="checkbox"/></li> <li>(iii) Telephone is available in the headwall &amp; tailwall units for railway operation which can be used for communication between SCR/FCR/OCC <input type="checkbox"/></li> </ul>
<b>6 Requirements (Additional)</b>		
<b>A</b>	All cable installation inside tunnel	Low smoke zero halogen type <input type="checkbox"/>
<b>B</b>	All linings for acoustic and thermal insulation purposes in ducting and concealed locations	Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or its international equivalent, or be brought up to that standard by use of an approved fire retardant product <input type="checkbox"/>
<b>C</b>	Fire resisting cable for FSI	Comply with section 5.15 and Appendix 6 of FSI code <input type="checkbox"/>
<b>7 Tunnel Ventilation Systems</b>		
		Shall be provided as per details stipulated in TSSC Stage 3 submission <input type="checkbox"/>

**軌旁區域消防安全規定核對表**  
(僅供參考)

<b>B</b> 電話儀表板	(i) 消防處人員專用，以便與車站的車站控制室／消防控制室或車務控制中心聯絡 (ii) 須設置於地面緊急救援入口及軌旁入口處 (iii) 頭端牆和尾端牆設置供鐵路營運之用的電話，可接通車站控制室、消防控制室及車務控制中心	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>6 額外規定</b>		
<b>A</b> 隧道內的所有電纜裝置	須為低煙無鹵類別	<input type="checkbox"/>
<b>B</b> 管道及隱蔽位置內所有作隔音及隔熱用途的襯層	須達《英國標準 476：第 7 部分》指定表面火焰蔓延率第 1 級或第 2 級或同等國際標準，或利用認可的抗火產品提高水平至同等標準	<input type="checkbox"/>
<b>C</b> 消防裝置防火電纜	符合《消防裝置守則》第 5.15 段及附錄 6 的規定	<input type="checkbox"/>
<b>7 隧道通風系統</b>		
	須按軌道安全及保安委員會第 3 期建議書規定的細則設置	<input type="checkbox"/>



**Previously Agreed Trade List**

<b>Trade</b>	<b>Restriction</b>
<b><u>Fashions and Apparels</u></b>	
Travel goods and accessories	Propose new trade for agreement with SSCC, with proposed restriction for selling of travel cases, bags and other travel related accessories
Apparels and Accessories (e.g. ties, belts, socks, fur, hat, scarves, gloves, umbrella, lingerie, earring and bracelets)	For East Tsim Sha Tsui Station with no restriction imposed
Boutique (male and female)/casual wear/children's wear/sport wear	For West Rail Stations with no restriction imposed
Tailors	For West Rail Stations with no restriction imposed
Shoes & Handbags	For West Rail Stations with no restriction imposed
Jewellery & Accessories	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• A licensed security company (Type III) must be employed to design, install, maintain or repair security system</li> <li>• Functional security specifications and layout plans must be submitted to Crime Prevention Bureau for endorsement. These should including items in relation to physical security, access control, intruder alarm systems, CCTV systems and lighting system, etc.</li> </ul>
Watches and Timepieces	For West Rail Stations with no restriction imposed
<b><u>Foods and Beverages</u></b>	
Cakes, bakeries, Cookies	Trade agrees with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• On-site baking shall not be allowed</li> </ul>
Cigarettes and Tobacco	For West Rail Stations with no restriction imposed

早前協定的行業一覽表

行業	限制
<b>時裝及成衣</b>	
旅行用品及配件	向安全及保安統籌委員會提出並協定新設此行業，並建議就銷售行李箱、旅行袋及其他旅行相關配件設定限制
成衣及配件（例如領帶、腰帶、襪、毛皮製品、帽、圍巾、手套、傘、女用內衣、耳環及手鐲）	對港鐵尖東站不設限制
時裝精品（男裝及女裝）／休閒服／童裝／運動服	對西鐵站不設限制
裁縫	對西鐵站不設限制
鞋及手袋	對西鐵站不設限制
首飾及配飾	<p>業界與安全及保安統籌委員會就西鐵站協定以下限制：</p> <ul style="list-style-type: none"> <li>• 必須僱用持牌保安公司（第三類別）設計、安裝、保養及維修保安系統</li> <li>• 須向防止罪案科呈交系統的功能安全規格資料及布置圖，其中包括與實質保安、進出監控、防盜警報系統、閉路電視系統及照明系統等相關的資料，以供批署</li> </ul>
鐘錶	對西鐵站不設限制
<b>飲食</b>	
蛋糕、麵包及曲奇餅	<p>業界與安全及保安統籌委員會就西鐵站協定以下限制：</p> <ul style="list-style-type: none"> <li>• 不得在場內烘烤</li> </ul>
香煙及煙草	對西鐵站不設限制

Confectioneries (e.g. sweets and candies)	For West Rail Stations with no restriction imposed
Delicatessens	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• Only pre-packed food would be sold and no on-site food preparation would be permitted</li> <li>• The upper limit of storage and display of wines and spirits should not exceed 75 litres</li> </ul>
Light Refreshment Foods	Location as shown in the endorsed SSCC drawings with the following proposed restriction: <ul style="list-style-type: none"> <li>• No kitchen and no naked fire in the food preparation area</li> <li>• No seating shall be provides</li> </ul>
Pre-packed Food and Drinks	For West Rail Stations with no restriction imposed
Preserved Products	For East Tsim Sha Tsui Station with no restriction imposed
Wines and Spirits	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• Storage of wine &amp; spirits shall not exceed 75 litres</li> </ul>
<b>Health and Personal Care</b>	
Baby Care Products	For East Tsim Sha Tsui Station with no restriction imposed
Bath and Body Shop	For West Rail Stations with no restriction imposed
Beauty Products/Cosmetics	For West Rail Stations with no restriction imposed
Beauty Salons	For West Rail Stations with no restriction imposed
Hair Salons	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• Flammable aerosol shall not be used</li> </ul>

甜食（例如糖類製品及糖果）	對西鐵站不設限制
熟食	業界與安全及保安統籌委員會就西鐵站協定以下限制： <ul style="list-style-type: none"> <li>• 只可售賣預先包裝食品及不得在場內製備食品</li> <li>• 不得貯存及展示超過 75 公升葡萄酒及烈酒</li> </ul>
小食	店舖位置按安全及保安統籌委員會批署的圖則所示，並建議設定以下限制： <ul style="list-style-type: none"> <li>• 在製備食品場地不設廚房及不得使用明火</li> <li>• 不設座位</li> </ul>
預先包裝食品及飲品	對西鐵站不設限制
經防腐加工產品	對港鐵尖東站不設限制
葡萄酒及烈酒	業界與安全及保安統籌委員會就西鐵站協定以下限制： <ul style="list-style-type: none"> <li>• 不得貯存超過 75 公升葡萄酒及烈酒</li> </ul>
<b>健康及個人護理</b>	
嬰兒護理產品	對港鐵尖東站不設限制
沐浴及身體護理產品	對西鐵站不設限制
美容產品／化妝品	對西鐵站不設限制
美容院	對西鐵站不設限制
髮廊	業界與安全及保安統籌委員會就西鐵站協定以下限制： <ul style="list-style-type: none"> <li>• 不得使用易燃噴霧劑</li> </ul>

Medical Equipment & Supplies	For West Rail Stations with no restriction imposed
Optical	For West Rail Stations with no restriction imposed
Personal & Health Care (e.g. diet & weight control)	For West Rail Stations with no restriction imposed
Pharmacies	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• A licensed security company (Type III) must be employed to design, install, maintain or repair security systems.</li> <li>• Functional security specifications and layout plans must be submitted to Crime Prevention Bureau for endorsement. These should include items in relation to physical security, access control, intruder alarm system, CCTV systems and lighting systems, etc.</li> </ul>
<b>Sporting Goods, Hobbies, Collectibles, Books, Music and Paints</b>	
Arts and Crafts Items	For West Rail Stations with no restriction imposed
Cards and Novelties	For West Rail Stations with no restriction imposed
Collectibles (e.g. coins & currencies, stamps, crystals, silver & glass products and antique)	For West Rail Stations with no restriction imposed
Hobbies and Games	For West Rail Stations with no restriction imposed
Musical Instruments & Supplier	For West Rail Stations with no restriction imposed
Newspapers and Magazines	For West Rail Stations with no restriction imposed
Posters and Paintings	For West Rail Stations with no restriction imposed

醫療器材及用品	對西鐵站不設限制
眼鏡	對西鐵站不設限制
個人及健康護理（例如食療及體重控制）	對西鐵站不設限制
藥房	<p>業界與安全及保安統籌委員會就西鐵站協定以下限制：</p> <ul style="list-style-type: none"> <li>• 必須僱用持牌保安公司(第三類別)設計、安裝、保養及維修保安系統</li> <li>• 須向防止罪案科呈交系統的功能安全規格資料及布置圖，其中包括與實質保安、進出監控、防盜警報系統、閉路電視系統及照明系統等相關的資料，以供批署</li> </ul>
<b>體育用品、消閒品、收藏品、書籍、音樂產品及畫</b>	
工藝品	對西鐵站不設限制
賀卡及小飾物	對西鐵站不設限制
收藏品（例如錢幣、鈔票、郵票、水晶、銀及玻璃製品、古董）	對西鐵站不設限制
消閒品及遊戲產品	對西鐵站不設限制
樂器及音樂用品	對西鐵站不設限制
報刊及雜誌	對西鐵站不設限制
海報及畫	對西鐵站不設限制

Sale and rental of pre-recorded tapes, compact discs & records (e.g. video tapes, tapes, CDs, LDs, MDs, VCDs, DVDs, etc.)	For West Rail Stations with no restriction imposed
Sewing & Needlework	For East Tsim Sha Tsui Station with no restriction imposed
Souvenirs, Gifts and Soft Toys	For West Rail Stations with no restriction imposed
Sporting Goods	For West Rail Stations with no restriction imposed
Stationeries and Books	For West Rail Stations with no restriction imposed
Interest Class	Trade agreed with SSCC for West Rail Stations with restriction for registration only
<b><u>Household Goods</u></b>	
Electrical Home Applications	For West Rail Stations with no restriction imposed
Household Goods & Sundries	For West Rail Stations with no restriction imposed
Interior Design & Decoration (with interior Furniture setup)	For West Rail Stations with no restriction imposed
Kitchenware & Tableware	For West Rail Stations with no restriction imposed
<b><u>Electronics and Appliances</u></b>	
Computers	For West Rail Stations with no restriction imposed
Electrical Appliances	For West Rail Stations with no restriction imposed
Telecommunication Products and Services	For West Rail Stations with no restriction imposed
<b><u>Others</u></b>	
Automobile Accessories (e.g. car radio, alarm, automobile products)	For West Rail Stations with no restriction imposed

銷售及租賃預錄磁帶、光碟及唱片 (例如錄影帶、錄音帶、CD、 LD、MD、VCD 及 DVD 等)	對西鐵站不設限制
縫紉製品	對港鐵尖東站不設限制
紀念品、禮品及毛公仔	對西鐵站不設限制
體育用品	對西鐵站不設限制
文具及書籍	對西鐵站不設限制
興趣班	業界與安全及保安統籌委員會就西 鐵站協定只限註冊者
<b>家居用品</b>	
家庭電器用品	對西鐵站不設限制
家居及雜項用品	對西鐵站不設限制
室內設計及裝飾(連室內家具安裝)	對西鐵站不設限制
廚具及餐具	對西鐵站不設限制
<b>電子產品及電器</b>	
電腦	對西鐵站不設限制
電器	對西鐵站不設限制
電訊產品及服務	對西鐵站不設限制
<b>其他</b>	
汽車配件(例如汽車收音機、警報器 及汽車用品)	對西鐵站不設限制



Convenience Stores	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• Food preparation or heating of food not permitted</li> </ul>
Florists	For West Rail Stations with no restriction imposed
Groceries	For West Rail Stations with no restriction imposed
Photo-finishing and related products	Trade agreed with SSCC for East Tsim Sha Tsui Station with the following restriction: <ul style="list-style-type: none"> <li>• For digital photo processing and collection services only</li> <li>• For conventional photo finishing, approval shall be sought from SSCC on a case by case basis</li> </ul>
<b>Travel/Visitor Services</b>	
Money Exchange Services	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• A licensed security company (Type III) must be employed to design, install, maintain or repair security systems.</li> <li>• Functional security specifications and layout plans must be submitted to Crime Prevention Bureau for endorsement. These should include items in relation to physical security, access control, intruder alarm systems, CCTV systems and lighting systems, etc.</li> </ul>
Motor Vehicle Rental Services	For West Rail Stations with no restriction imposed
Ticketing/Booking Services	For West Rail Stations with no restriction imposed

便利店	<p>業界與安全及保安統籌委員會就西鐵站協定以下限制：</p> <ul style="list-style-type: none"> <li>• 不准製備或加熱食品</li> </ul>
花店	對西鐵站不設限制
雜貨店	對西鐵站不設限制
相片沖晒及相關產品	<p>業界與安全及保安統籌委員會就港鐵尖東站協定以下限制：</p> <ul style="list-style-type: none"> <li>• 只提供數碼相片處理及交收服務</li> <li>• 就傳統的相片沖晒而言，須按個別情況向安全及保安統籌委員會申請審批</li> </ul>
<b>旅遊／旅客服務</b>	
貨幣兌換服務	<p>業界與安全及保安統籌委員會就西鐵站協定以下限制：</p> <ul style="list-style-type: none"> <li>• 必須僱用持牌保安公司(第三類別)設計、安裝、保養及維修保安系統，並按照保安設計</li> <li>• 須向防止罪案科呈交系統的功能安全規格資料及布置圖，其中包括與實質保安、進出監控、防盜警報系統、閉路電視系統及照明系統等相關的資料，以供批署</li> </ul>
汽車租賃服務	對西鐵站不設限制
票務／預訂服務	對西鐵站不設限制

Tourist Information Services	For West Rail Stations with no restriction imposed
Travel Agency/Services	For West Rail Stations with no restriction imposed
<b><u>Business Services</u></b>	
Banking Services	For West Rail Stations with no restriction imposed
Business Service Centre (e.g. private mail centre, scanning, photocopying and faxing services)	For East Tsim Sha Tsui Station with no restriction imposed
Certified Public Accounting Services	For East Tsim Sha Tsui Station with no restriction imposed
Courier Services	For West Rail Stations with no restriction imposed
Financial Services	For East Tsim Sha Tsui Station with no restriction imposed
Insurance Services	For East Tsim Sha Tsui Station with no restriction imposed
Legal Assistance and Services	For East Tsim Sha Tsui Station with no restriction imposed
Packaging & Labeling Services	For East Tsim Sha Tsui Station with no restriction imposed
Post Office	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• Restricted to normal postal service only</li> </ul>
Estate Agency	Trade agreed with SSCC for West Rail Stations with the following restriction: <ul style="list-style-type: none"> <li>• Promotional activities in public area shall be not be allowed</li> </ul>
<b><u>Consumer/Personal Services</u></b>	
Catalogue/Mail Order Services	For West Rail Stations with no restriction imposed
Delivery/Collection Point for Laundry and Dry Cleaning Services	For West Rail Stations with no restriction imposed
Employment Services	For West Rail Stations with no restriction imposed

遊客資訊服務	對西鐵站不設限制
旅行社	對西鐵站不設限制
<b>商用服務</b>	
銀行服務	對西鐵站不設限制
商務中心（例如私營遞件中心、掃描、影印及傳真服務）	對港鐵尖東站不設限制
執業會計師服務	對港鐵尖東站不設限制
速遞服務	對西鐵站不設限制
金融服務	對港鐵尖東站不設限制
保險服務	對港鐵尖東站不設限制
法律協助及服務	對港鐵尖東站不設限制
包裝及標貼服務	對港鐵尖東站不設限制
郵局	業界與安全及保安統籌委員會就西鐵站協定以下限制： <ul style="list-style-type: none"> <li>只提供一般郵政服務</li> </ul>
地產代理	業界與安全及保安統籌委員會就西鐵站協定以下限制： <ul style="list-style-type: none"> <li>不准許在公眾地方進行推廣活動</li> </ul>
<b>消費者／個人服務</b>	
目錄／郵購服務	對西鐵站不設限制
洗髮及乾洗服務交收點	對西鐵站不設限制
就業服務	對西鐵站不設限制

Key Cutting/Locksmiths Services	For West Rail Stations with no restriction imposed
Marriage Aid Services	For West Rail Stations with no restriction imposed
Shoes Repairing and Polishing Services	For West Rail Stations with no restriction imposed
Therapeutic Services	For East Tsim Sha Tsui Station with no restriction imposed
Counseling/Consultancy Services	For West Rail Stations with no restriction imposed
Medical Service Center (e.g. general out-patient services & special out-patient)	Subject to SSCC's endorsement on case-by-case basis
Self-operated machines, including automatic photo machines, payment express terminal, vending machine and cash dispensing machine, etc.	For West Rail Stations with no restriction imposed
Public Pay Phone	For West Rail Stations with no restriction imposed
Advertising Panel	For West Rail Stations with no restriction imposed

配匙／鎖匠服務	對西鐵站不設限制
婚姻輔助服務	對西鐵站不設限制
補鞋及擦鞋服務	對西鐵站不設限制
治療服務	對港鐵尖東站不設限制
輔導／顧問服務	對西鐵站不設限制
醫務中心（例如普通科及專科門診服務）	由安全及保安統籌委員會按個別情況批署
自助操作機器，包括自動照相機、付款終端機、售賣機及提款機等	對西鐵站不設限制
公眾收費電話	對西鐵站不設限制
廣告板	對西鐵站不設限制

**Minimum Fire Service Installations and Equipment for  
Construction Site Office (CSO)/Engineering Site Office (ESO)**

**Requirements – Systems/Installations/Equipment for:**

- (i) Audio/visual advisory system
- (ii) Automatic actuation devices
- (iii) Automatic fixed installation other than water
- (iv) Emergency generator
- (v) Emergency lighting
- (vi) Exit sign
- (vii) Fire alarm system
- (viii) Fire detection system
- (ix) Fire hydrant/hose reel system
- (x) Portable hand-operated approved appliance
- (xi) Sprinkler system
- (xii) Ventilation/air conditioning control system

**Extent**

- (i) Required for any part or parts of building where the area occupied by any one single occupancy on any one floor exceeds 2 000 square metres AND where the occupants, due to their transient presence either as shoppers, audience or guests, are exposed to risks to require additional advice through such systems.
- (ii) As required by that equipment which needs to be automatically actuated.
- (iii) To be provided to areas where the use of water is undesirable for the occupancy or trade.
- (iv) An independently powered generator of sufficient electrical capacity to meet the fire service installations and fireman's lifts it is required to provide.

建築地盤辦公室及工程工地辦公室的  
最低限度消防裝置及設備

須裝設的系統／裝置／設備：

- (i) 聲響／視像警報系統
- (ii) 自動啟動裝置
- (iii) 不含水的滅火劑自動固定裝置
- (iv) 應急發電機
- (v) 應急照明系統
- (vi) 出口指示牌
- (vii) 火警警報系統
- (viii) 火警偵測系統
- (ix) 消防栓／喉轆系統
- (x) 認可的人手操作手提器具
- (xi) 花灑系統
- (xii) 通風／空氣調節控制系統

應用範圍

- (i) 如樓宇內任何一個樓層有面積超過 2 000 平方米的部分只作一種用途，而使用人士由於作短暫停留（例如作為購物者、觀眾或客人）以致會面對風險，則須借助這種系統，額外發出警報。
- (ii) 配合須自動啟動的設備。
- (iii) 安裝在佔用部分或所經營的店舖內不宜用水救火的地方。
- (iv) 須設置發電量足夠的獨立發電機，為各消防裝置及消防員升降機提供所需的電力。



- (v) Emergency lighting shall be provided throughout the entire building and all exit routes leading to ground level.
- (vi) Sufficient directional and exit signs to ensure that all exit routes from any floor within the building are clearly indicated as required by the configuration of staircases serving the building.
- (vii) One actuating point and one audio warning device to be located at each hose reel point. Visual alarm signals shall be provided where necessary in accordance with current Design Manual: Barrier Free Access. This actuating point shall include facilities for fire pump start and audio/visual warning device initiation.
- (viii) To be provided in areas not covered by automatic fixed installations.
- (ix) There shall be sufficient hydrants and hose reels on each floor to ensure that every part of the building can be reached by a length of not more than 30 m of Fire Services hose and hose reel tubing.
- (x) As required by occupancy.
- (xi) Required for buildings with total floor areas exceeding 230 square metres and to cover all parts of the buildings including staircases, common corridors and toilets.
- (xii) When a ventilation/air conditioning control system to a building is provided, it shall stop mechanically induced air movement within a designated fire compartment.

### **Additional Requirement**

- (i) All linings for acoustic and thermal insulation purposes in ductings and concealed locations shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or its international equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (ii) All linings for acoustic, thermal insulation and decorative purposes within protected means of escape shall be of Class 1 or 2 Rate of Surface Spread of Flame as per British Standard 476: Part 7 or its international equivalent, or be brought up to that standard by use of an approved fire retardant product.
- (iii) Any intended storage or use of dangerous goods as defined in Chapter 295 of the Laws of Hong Kong should be notified to the Director of Fire Services.

- (v) 整幢樓宇及通往地面層的所有出口路線均須安裝應急照明系統。
- (vi) 須按照樓宇的樓梯設計安排，提供設置足夠的方向指示牌及出口指示牌，確保樓宇內各層的所有出口路線均指示清楚。
- (vii) 每個喉轆放置地點均須安裝啟動按鈕及聲響警報裝置各一個。如有需要，須遵照現行《設計手冊：暢通無阻的通道》的規定提供視像火警信號。啟動按鈕必須可以啟動消防泵及聲響／視像警報裝置。
- (viii) 設置在自動固定裝置不能發揮功效的範圍。
- (ix) 每層須設有足夠的消防栓及喉轆，確保長度不超過 30 米的滅火喉及喉轆膠喉可到達樓宇的任何部分。
- (x) 視乎建築物使用的性質而定。
- (xi) 樓宇的總樓面面積如超過 230 平方米便須安裝這個系統，發揮效用的範圍須包括樓宇所有部分（樓梯、公共走廊及廁所亦計算在內）。
- (xii) 樓宇內裝設有通風／空氣調節控制系統須能阻止指定隔火間內由機械引發的氣流。

### 額外規定

- (i) 管道及隱蔽位置內所有作隔音及隔熱用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等的國際標準，或利用認可的抗火產品提高水平至同等標準。
- (ii) 防護逃生途徑內所有作隔音、隔熱及裝飾用途的物料均須達英國標準 476：第 7 部分指定表面火焰蔓延率第 1 級或第 2 級，或同等的國際標準，或利用認可的抗火產品提高水平至同等標準。
- (iii) 如擬貯存或使用香港法例第 295 章界定為危險品的物品，必須通知消防處處長。

### **General Design Requirements for Smoke Control Systems**

1. The build-up of smoke and heat as a result of a fire can seriously impede the evacuation of the public as well as the operational efficiency of fire-fighters in carrying out rescue and fire-fighting operations. The purposes of a smoke control system are to ensure safe evacuation of commuters and facilitate fire-fighting operation by maintaining a tenable condition at scene.
2. In order to minimize the impact by smoke on egress routes for commuters and access routes for fire-fighters in railway infrastructures, smoke control is an effective means through different systems, i.e. smoke extraction system, pressurization of staircase and tunnel ventilation system. For ease of reference to the Railway Corporations and their consultants/designers, the design guidelines of these systems are provided at Annex (a), (b) and (c) of this Appendix:

Annex (a): Smoke Extraction System

Annex (b): Pressurization of Staircase

Annex (c): Tunnel Ventilation System

煙霧控制系統的一般設計規定

1. 於火警中，煙和熱的產生會嚴重妨礙乘客的疏散及消防人員有效地進行滅火救援工作。煙霧控制系統目的是維持現場在可容受環境下，確保乘客能安全疏散及便利滅火救援工作。
2. 為減低煙霧對乘客在逃生路徑及消防人員在進出途徑的影響，鐵路基礎設施通常會透過排煙系統、樓梯增壓及隧道通風系統控煙。為方便鐵路公司及其顧問／設計人參考，相關設計指引已詳述於本附錄的附件（甲）、（乙）及（丙）內：

附件（甲）：排煙系統

附件（乙）：樓梯增壓

附件（丙）：隧道通風系統

**Smoke Extraction System**

1. The designer of dynamic smoke extraction system shall be a registered professional engineer under Cap. 409 in the discipline of building services, fire or mechanical engineering. The designer shall be responsible for all submissions. Each drawing and all calculations shall be verified and certified by the designer.
2. All fans of the system forming part of a fire rated duct shall be enclosed in the same fire rated enclosure if no dedicated fan room is allocated for a single smoke extraction system.
3. Equipment handling smoke/make-up air and associated ductwork serving basement/underground level shall be protected by an enclosure having a FRR of not less than 4 hours.
4. Shafts used for smoke extraction purposes shall contain no other services.
5. Smoke exhaust ventilation shaft shall be solely used for smoke extraction system. Motorized fire and smoke damper shall be provided at branch-off section to maintain proper fire compartment in case of fire. This branch-off section from the shaft shall not be deemed as ventilation shaft.
6. Mechanical make-up air for the smoke extraction system shall be taken from supply ventilation shaft. Motorized fire and smoke damper shall be provided at the branch-off section from supply ventilation shaft to maintain proper fire compartment in case of fire. This branch-off section from the shaft shall not be deemed as ventilation shaft.
7. The ventilation shaft shall only be used for either fresh air intake for the mechanical make-up air of the smoke extraction system, or exhaust air discharge.

### 排煙系統

1. 機械式排煙系統的設計人須為香港法例第 409 章所指的註冊專業工程師，並屬於屋宇裝備、消防或機械工程的專業。設計人負責提交所有文件，並須在每張圖表及所有計算文件簽署，證明設計人已核實上述文件均為正確無誤。
2. 如單一排煙系統沒有配置專用風機房，則該系統中的所有風機也屬於具抗火效能管道的一部分，須設於同一具抗火效能的圍封結構內。
3. 在地庫／地面下層，用作處理煙霧／補充空氣的設備及其相連管道，須設於具耐火時效不少於 4 小時的圍封結構內。
4. 用作排煙的通風井不可充當其他用途。
5. 排煙井只可用於排煙系統。井槽分支須設置由馬達驅動的防火防煙閘，使發生火警時能保持適當的隔火間。該井槽的分支亦不應被視為通風井的一部分。
6. 排煙系統的機械式補充空氣須取自通風井。連接通風井的分支須設置由馬達驅動的防火防煙閘，使發生火警時能保持適當的隔火間。該井槽的分支亦不應被視為通風井的一部分。
7. 通風井只可用於抽取鮮風，為排煙系統作機械式補充空氣，或用於排氣用途。

8. To prevent recirculation of smoke into the system via ventilation shafts, the smoke discharge outlets and fresh air intake louvers shall be separated by not less than 5m in any direction from all air inlets or other openings into any building. The outlets shall not discharge into any means of escape or fireman's staircase. No discharges shall be at a height above the surrounding horizontal surface of less than 3m to the bottom of the outlet and where below 6m shall not discharge downwards. No discharges shall be under any canopy or overhang. Discharge to openings in adjacent structure and property shall also be considered.
9. Sufficient smoke extraction grilles shall be evenly distributed at a high level to ensure that there is no stagnant smoke within the area during operation.
10. The fan room housing smoke extraction system shall contain no other services. Service/Ductwork other than that of smoke extraction system shall not pass through the fan room of smoke extraction system.
11. When fan room accommodated more than one smoke extraction system, a separate fire rated enclosure shall be provided to each smoke extraction system in order to maintain proper fire compartment of different service spaces.
12. The fan room of smoke extraction system shall be provided with sprinkler system.
13. For parallel arrangement of smoke extraction fans and make-up air fans, motorized fire and smoke dampers shall be provided for both the suction side and the discharge side to avoid system short circuit and recirculation of smoke.
14. For smoke extraction system in concession area, the smoke extraction rate shall be calculated based on a sprinkler controlled fire scenario and impact on sheltering effect shall be taken into account.

8. 為免煙霧經通風井回流至排煙系統，排煙出口和鮮風進氣百葉口距離任何鮮風入口或樓宇入口均不得少於 5 米。不可讓煙霧排進走火通道或消防員專用樓梯。排煙出口的高度，須以其底部距離周圍地面不少於 3 米為準。如高度在 6 米以下，則不可向下方排煙。排煙出口不可設置在簷篷或屋簷下，並須同時顧及鄰近構築物和物業的開口。
9. 須有充足的排煙口及平均分佈於高位，以確保該範圍在運作時沒有煙霧停滯的情況。
10. 放置排煙系統的風機房不可設置其他設施。除排煙系統外，其他設備／管道均不可通過排煙系統的風機房。
11. 如風機房放置多於一套排煙系統，每套排煙系統須設於具有抗火效能的獨立圍封結構內，為各個系統區域保持適當的隔火間。
12. 排煙系統的風機房須設有花灑系統。
13. 若排煙風機和補充風機是以並聯方式安裝，抽氣口和排氣口均須設置由馬達驅動的防火防煙閘，以防止系統出現短路及煙霧回流的情況。
14. 對於專營範圍內的排煙系統，須採用花灑控制火勢來計算排煙率，並須同時考慮掩蔽效應的影響。



15. The length of smoke zone shall not be longer than 60m.
16. The length of smoke zone for long adit shall not be longer than 30m.
17. In case that smoke extraction rate is designed by using a fire engineering approach, the maximum area of the smoke reservoir should not be larger than 2 000 square metres.
18. If smoke extraction ductwork passes through another fire compartment with higher FRR, the entire ductwork shall be constructed conforming to higher FRR standard.
19. Ductwork, other than that of smoke extraction system, passing through smoke barrier/wall and within smoke reservoir shall be installed with fire and smoke damper.
20. Fire and smoke damper should be provided to any ductwork opening within smoke reservoir to avoid smoke spillage into a non-incident area. Damper shall be actuated by fire signal through the fire detection or fire alarm system of the incident zone.
21. When make-up air is taken through inlet air ventilators or doors, devices shall be installed to operate such inlet air ventilators or doors automatically upon activation of the smoke extraction system. Fail safe protection is required for the devices.

15. 煙霧區的長度不可超過 60 米。
16. 長通道的煙霧區長度不可超過 30 米。
17. 如果運用消防工程學來釐定排煙率，集煙間的最大面積不應超過 2 000 平方米。
18. 若排煙管道需通過其他耐火時效較高的隔火間，整個管道系統的耐火時效須與較高者相同。
19. 除排煙系統的管道外，其他管道若通過隔煙屏障／牆壁及集煙間，須安裝防火防煙閘。
20. 集煙間內所有管道開口均須設置防火防煙閘，以避免煙霧蔓延到非事故區域。閘門必須由事故區域的火警偵測系統或火警警報系統所發出的信號啟動。
21. 若補充空氣是從進氣窗或門進入，這些進氣窗或門須設有裝置，能在排煙系統啟動後自動開啟。該裝置須配備有「失效保險」。

22. The smoke extraction system and associated ductwork/equipment shall be able to operate at 250°C for not less than one hour. The actual duration shall be justified by technical evaluation to suit the operating environment and conditions. In case the smoke temperature is higher than 250°C, additional smoke extraction rate shall be provided to allow sufficient make-up air inside the smoke zone to be entrained and ensure the airstream temperature inside the system is less than 250°C. Otherwise, fire rated protection with higher FRR shall be applied to the smoke extraction system and associated ductwork/equipment to withstand the smoke temperature and maintain normal operation of the smoke extraction system. The designer shall substantiate the smoke extraction rate and smoke temperature based on the design fire size and smoke clear height.
23. The smoke barrier shall be constructed of substantial non-combustible materials that will resist the passage of smoke and have a FRR of not less than 1 hour when tested to British Standard 476: Parts 20 to 23 inclusive.
24. Smoke extraction system shall be actuated by a smoke detection system. At the same time, the operation of a sprinkler flow switch and manual override facility shall be provided as backup measures when the smoke detection system fails.
25. For boundary fire case in adit, both smoke curtain at the boundary and associated smoke extraction system shall be activated by cross zoned detectors when being triggered.
26. Once started, smoke extraction fans and make-up air fans shall run continuously until stopped manually.

22. 排煙系統及其相關的管道／設備須能在溫度攝氏 250 度下持續操作不少於一小時。該設計須按照操作環境和條件作出技術評估，確定實際的操作時間要求。如煙霧溫度高於攝氏 250 度，須增加排煙率，使足夠的補充空氣進入煙霧區，並確保系統內氣流的溫度是低於攝氏 250 度。否則，須使用較高耐火時效的物料保護排煙系統及其相關的管道／設備，以抵抗高溫煙霧和保持排煙系統的正常操作。設計人須根據預算的火災規模和無煙淨空高度，確定排煙率和煙霧溫度。
23. 隔煙屏障須使用煙霧不能穿過的不燃性物料製造，並能通過英國標準 476 第 20 至 23 部分規定的測試，具有不少於一小時的耐火時效。
24. 排煙系統必須由煙霧偵測裝置啟動。同時，須使用花灑的流水掣和手動關止設備作為在煙霧偵測裝置失靈時的後備啟動措施。
25. 對於通道內分區邊界上發生的火警，當交叉區域煙霧偵測裝置觸發後，邊界上的隔煙幕及相關的排煙系統均須啟動。
26. 排煙風機和補充空氣風機一旦啟動，須持續運行，直到手動關上為止。

27. Smoke extraction fans and make-up air fans shall be electrically interlocked such that the failure of the smoke extraction fan shall automatically shut down the corresponding make-up air fan. However, the failure of make-up air fans shall not affect the operation of the smoke extraction fans.
28. A control panel shall be provided for each smoke extraction system. The panel shall be installed adjacent to main fire control panel in station control room (SCR)/fire control room (FCR). When in “fire” mode, no system connected therewith shall be controlled or under the influence of any building management or automation system. Manual override facility shall be of manually reset type. Audio and visual indicators shall be provided to monitor the status of the manual override device. After actuating the manual override device, all smoke extraction systems shall be individually operated via the control panel of smoke extraction system.
29. All equipment serving the smoke extraction and mechanical make-up air systems shall be provided with an electrical supply from essential source.
30. Switchboard for smoke extraction system (e.g. local motor control panel (LMCP), motor control centre (MCC), etc.) shall not be grouped with other services or installations.
31. The switchboard serving the fan/motor/drive sets of smoke extraction system shall be located in the plant room next to the fan room of smoke extraction system. The plant room shall not contain other equipment. Two dedicated electrical supplies shall be routed separately into the plant room and then connected into the switchboard of smoke extraction system.
32. Appropriate motor starting method shall be considered in the design stage to cope with the large starting current and power rating of the motor.

27. 排煙風機和補充空氣風機須配備電動聯鎖裝置，如排煙風機發生故障，對應的補充空氣風機須能自動關閉，但若補充空氣風機發生故障，排煙風機的操作則不可受影響。
28. 所有排煙系統須配備控制板，並設於車站控制室／消防控制室內火警指示儀表板旁。處於「火警」操作模式時，排煙系統不可受到樓宇管理系統或樓宇自動系統的控制或影響。手動關止設備須屬手動重置型。控制板上亦須裝上聲響及視像顯示裝置，以監察手動關止掣的狀態。啟動手動關止掣後，所有排煙系統須能透過排煙系統的控制板作出操控。
29. 排煙及機械式補充空氣系統內的所有設備須由緊急電源提供電力。
30. 排煙系統的專用電掣板（如局部電動機控制櫃及電動機控制中心等）不可與其他裝置或設備在一起。
31. 排煙系統的風機／電動機／傳動裝置的專用電掣板須置於排煙系統風機房旁邊的機房內。該機房不得放置其他設備。兩個獨立電源的線路須分別駁入機房，然後再接上控制排煙系統的專用電掣板。
32. 設計電動機時，須考慮適當的起動方法，以處理電動機強大的起動電流及額定功率。

33. For a single smoke extraction system, smoke extraction fan shall be installed in duplicate with automatic changeover facility.
34. For premises designed with two smoke zones, two dedicated smoke extraction systems shall be provided. In view of single fire scenario and system reliability, one standby extraction fan with automatic changeover facility shall be treated as a common standby provision for these two smoke extraction systems.
35. Hot smoke test shall be conducted for smoke extraction system in accordance with the requirements as stated in FSD Circular Letter No. 2/2002.

33. 若為單一排煙系統，須安裝雙重的排煙風機，並備有自動變換設施。
34. 如處所設計涉及兩個煙霧區，須提供兩個專用的排煙系統。基於單一火警的假設及系統可靠性的考慮，一部備有自動變換設施的備用排煙風機可用作該兩個排煙系統的共同後備設備。
35. 須根據消防處通函第 2/2002 號所載的規定，為排煙系統進行熱煙測試。



**Pressurization of Staircase**

1. The designer of pressurization of staircase shall be a registered professional engineer under Cap. 409 in the discipline of building services, fire or mechanical engineering. The designer shall be responsible for all submissions. Each drawing and all calculations shall be verified and certified by the designer.
2. Dedicated plant room and ventilation shaft shall be allocated for pressurization of staircase. Service/Ductwork not serving pressurization of staircase shall not pass through the dedicated plant room.
3. All fans of the pressurization of staircase for serving different fire compartments shall be installed in separate plant rooms with appropriate FRR.
4. All fans of the system forming part of a fire rated duct shall be enclosed in the same fire rated enclosure if no dedicated plant room is allocated for a pressurization of staircase.
5. For parallel arrangement of staircase pressurization fans, motorized fire and smoke dampers shall be provided for both the suction side and the discharge side to avoid system short circuit.
6. To maintain proper fire compartment, dedicated pressurization fans shall be designed for the staircase and protected lobbies. The supply air duct serving the pressurized staircase has to penetrate the staircase enclosure, the portion of the duct where it traverses outside the staircase shall have a fire rated enclosure having the same fire rating as that of the pressurized space or fire compartment passed, whichever is greater. It shall be only fitted with fire and smoke dampers.

### 樓梯增壓

1. 樓梯增壓的設計人須為香港法例第 409 章所指的註冊專業工程師，並屬於屋宇裝備、消防或機械工程的專業。設計人負責提交所有文件，並須在每張圖表及所有計算文件簽署，證明設計人已核實上述文件均為正確無誤。
2. 須為樓梯增壓設置獨立的機房及通風井。不屬於樓梯增壓的其他設備／管道均不可通過相關機房。
3. 樓梯增壓內用於不同隔火間的風機，須分別裝設在具有適當耐火時效的獨立機房內。
4. 如樓梯增壓沒有配置專用風機房，則該系統中的所有風機也屬於具抗火效能管道的一部分，須設於同一具抗火效能的圍封結構內。
5. 若樓梯增壓風機是以並聯方式安裝，抽氣口及排氣口均須設置由馬達驅動的防火防煙閘，以防止系統短路的情況。
6. 為保持適當的隔火間，須為樓梯及防護廊設計獨立專用的增壓風機。增壓樓梯的送氣管道必然穿過樓梯圍封結構，管道穿出樓梯的部分須以防火物料圍封，該防火物料的耐火時效須相等於增壓空間或管道所通過的隔火間兩者中較高的耐火時效。只可設置防火及防煙閘。

7. To enhance system reliability, duplicate fans instead of dual motors shall be adopted.
8. To prevent “over pressure” of the staircase, barometric pressure relief vents shall be installed.
9. The provision of air release shall be installed to the accommodation and it has to comply with the requirements as stated in BS5588: Part 4 and FSD Circular Letter No. 2/2006.
10. The air release fan, ductwork and other associated equipment shall be suitable for continuous operation for an appropriate period of time and temperature as specified in the BS5588: Part 4 and FSD Circular Letter No. 2/2006.
11. The provision of air release and pressure relief shall be vented by dedicated ventilation shaft. Other services or ductworks shall not be connected or pass through the ventilation shaft for any other purpose.
12. The discharge end/louvre of air release shall not be mixed with other louvre or system. Air release discharge outlets for pressurization of staircase shall be separated by not less than 5m in any direction from all air inlets or other openings into any building. The outlets shall not discharge into any means of escape or fireman’s staircase. No discharges shall be at a height above the surrounding horizontal surface of less than 3m to the bottom of the outlet and where below 6m shall not discharge downwards. No discharges shall be under any canopy or overhang. Discharge to openings in adjacent structure and property shall also be considered.
13. Other non-essential services shall not pass through or be installed at the protected lobby/staircase.

7. 為使系統更可靠，須使用雙重風機，而非雙重馬達。
8. 為防止樓梯出現「超壓」，須在增壓樓梯間裝設具備測量氣壓功能的放壓氣閘。
9. 放氣設備須在佔用範圍內安裝，此等設備須符合英國標準 5588 第 4 部分及消防處通函第 2/2006 號所載的規定。
10. 放氣風機、管道及其他相關裝備必須適合在英國標準 5588 第 4 部分及消防處通函第 2/2006 號所指明的適當時間範圍內及氣溫下持續運作。
11. 須使用專用通風井作放氣及放壓用途。其他用途的設備或管道不可連接或穿過此通風井。
12. 不可將排氣口／百葉放氣口與其他百葉口或系統裝設在一起。樓梯增壓的放氣口距離任何鮮風入口或樓宇入口均不得少於 5 米。不可讓排氣進入走火通道或消防員專用樓梯。放氣口的高度，須以其底部距離周圍地面不少於 3 米為準。如高度在 6 米以下，則不可向下方排氣。放氣口不可設置在簷篷或屋簷下。並須同時顧及鄰近構築物和物業的開口。
13. 其他非緊急裝置不可穿過或裝設於防護廊／樓梯。

14. The power supply circuit and the motor starting method shall be properly designed to prevent malfunction of circuit breaker during motor starting.
15. Staircase pressurization supervisory panel/Integrated back-up panel (IBP) with indications and hard buttons shall be provided for all pressurization of staircases and located adjacent to main fire control panel in Station Control Room (SCR)/Fire Control Room (FCR). When in “fire” mode, no system connected therewith shall be controlled or under the influence of any building management or automation system.
16. Dedicated switchboard (e.g. local motor control panel (LMCP), motor control centre (MCC), etc.) shall be designed for the pressurization of staircase and shall not be grouped with other systems. The switchboard shall be located in the plant room next to the fan room of the pressurization of staircase. The plant room shall not contain other equipment. Otherwise, the switchboard shall be provided with proper fire rated enclosure. The plant room for the switchboard shall be provided with heat detector.
17. When fire occurs within a pressurized staircase and is detected by smoke detectors, the activation of the associated pressurization system shall be disabled. The pressurization systems of other staircases shall be activated.
18. In the event of a fire excluding the one occurring within the pressurized staircase, the fire alarm signal shall activate the pressurization system. The pressurization system shall be kept in operation even though smoke spills into the pressurized staircase and triggers the smoke detector.
19. Once started, staircase pressurization fans shall run continuously until stopped manually.

14. 須妥善設計供電線路及馬達的起動方法，以免斷路器在馬達起動時失靈。
15. 須在車站控制室／消防控制室內的主火警指示儀表板旁，設置所有樓梯增壓的監察控制板／綜合後備控制板。控制板須配有指示器及硬按鈕操作。處於「火警」操作模式時，所有與其相連的系統不可受到樓宇管理系統或樓宇自動系統的控制或影響。
16. 須為樓梯增壓設計專用的電掣板（如局部電動機控制櫃及電動機控制中心等），電掣板不可與其他系統設置在一起。電掣板須置於樓梯增壓風機房旁邊的機房內。該機房不可放置其他設備，否則，電掣板必須以抗火物料妥善圍封。置有電掣板的機房須裝設熱力偵測器。
17. 如煙霧偵測器探得某增壓樓梯內發生火警，屬於這道樓梯的增壓系統須關掉，而其他樓梯的增壓系統須自動開啟。
18. 如在增壓樓梯範圍以外發生火警，火警警報訊號須能啟動增壓系統。即使煙霧及後進入增壓樓梯並觸發煙霧偵測器，增壓系統亦須保持運作。
19. 樓梯增壓風機一旦啟動，須持續運行，直到手動關上為止。

**Tunnel Ventilation System**

1. The designer of tunnel ventilation system shall be a registered professional engineer under Cap. 409 in the discipline of building services, fire or mechanical engineering. The designer shall be responsible for all submissions. Each drawing and all calculations shall be verified and certified by the designer.
2. The tunnel ventilation system/trackway ventilation system and associated ductwork/equipment shall be able to operate at 250°C for not less than two hours. The actual duration shall be justified by technical evaluation to suit the operating environment and conditions. In case the smoke temperature is higher than 250°C, additional smoke extraction rate shall be provided to allow sufficient make-up air inside the smoke zone to be entrained and ensure the airstream temperature inside the system is less than 250°C. Otherwise, fire rated protection with higher FRR shall be applied to the tunnel ventilation system/trackway ventilation system and associated ductwork/equipment to withstand the smoke temperature and maintain normal operation of the tunnel ventilation system. The designer shall substantiate the smoke extraction rate and smoke temperature based on the design fire size and critical velocity.
3. Equipment handling smoke/air and associated ductwork serving the basement/underground level shall be protected by an enclosure having a FRR of not less than 4 hours.
4. All fans of the system forming part of a fire rated duct shall be enclosed in the same fire rated enclosure if no dedicated plant room is allocated for a single tunnel ventilation system/trackway ventilation system.

### 隧道通風系統

1. 隧道通風系統的設計人須為香港法例第 409 章所指的註冊專業工程師，並屬於屋宇裝備、消防或機械工程的專業。設計人負責提交所有文件，並在每張圖表及所有計算文件簽署，證明設計人已核實上述文件均為正確無誤。
2. 隧道通風系統／軌道通風系統及其相連的管道／設備須能在溫度攝氏 250 度下持續操作不少於兩小時。該設計須按照操作環境及條件作出技術評估，確定實際的操作時間要求。如煙霧溫度高於攝氏 250 度，須增加排煙率，使足夠的補充空氣進入煙霧區，並確保系統內氣流的溫度是低於攝氏 250 度。否則，須使用較高耐火時效的物料保護隧道通風系統／軌道通風系統及其相連的管道／設備，以抵抗高溫煙霧和保持通風系統的正常運作。設計人須根據預算的火災規模和臨界風速，確定排煙率及煙霧溫度。
3. 在地庫／地面下層，用作處理煙霧／空氣的設備及其相連管道，須設於具耐火時效不少於 4 小時的圍封結構內。
4. 如單一隧道通風系統／軌道通風系統沒有配置專用風機房，則該系統中的所有風機也屬於具抗火效能管道的一部分，須置於同一具抗火效能的圍封結構內。



5. If a tunnel ventilation system/trackway ventilation system (i.e. one duty tunnel ventilation fan/trackway exhaust fan plus one standby tunnel ventilation fan/trackway exhaust fan) installed at the dedicated plant room where protected by sprinkler system, fire rated enclosure is not required for tunnel ventilation fans/trackway exhaust fans and ductworks which are installed inside the dedicated plant room.
6. The fire rated enclosure required for the ductwork of tunnel ventilation system/trackway ventilation system shall comply with the criteria of stability, integrity and insulation as stated in FS Code to ensure proper protection against the spread of fire. Hence, mild steel plate without documentary proof regardless of thickness shall not be considered as fire rated enclosure.
7. Up-track and down-track of the tunnel shall be considered as different fire compartments.
8. No other services or equipment shall be installed or located inside the tunnel except those as listed below. Essential equipment servicing the tunnel and supporting daily train operation, such equipment shall be installed in a plant room with all necessary fire services provisions and physically separated from the tunnel. The proposal of adopting fire rated enclosure to maintain fire compartment inside the tunnel is not acceptable especially for the equipment generating heat during operation. In case of any other item not listed below, and it is considered as an essential services or equipment which shall have to be installed or located inside the tunnel, separate consent should be sought from FSD.

5. 如裝設隧道通風系統／軌道通風系統（即一個主隧道通風機／軌道通風機及一個備用隧道通風機／軌道通風機）的專用風機房有花灑系統保護，該專用風機房內的隧道通風機／軌道通風機及部分管道則毋須使用具抗火效能的物料圍封。
6. 在隧道通風系統／軌道通風系統相連管道用作具抗火效能的圍封結構的物料須符合《消防安全守則》訂明的穩定性、完整性及隔熱準則，以防止火勢蔓延。因此，如無文件證明，任何厚度的鋼板均不能用作具抗火效能的圍封結構。
7. 隧道內的上行及下行軌道須被視為不同的隔火間。
8. 除以下所列的設備外，隧道內不可安裝或放置其他設備。隧道及列車日常運作必需的設備，須裝置在配備一切所需消防設施的機房內，並須與隧道實際分隔開。只採用保持適當隔火間的方法將不被採納，尤其是用於運作時會發熱的設備。倘若是列表以外而有需要安裝或放置在隧道內的設備，必須得到消防處的同意。

**General**

1. Cable
  - Fire retardant, Low Smoke Zero Halogen (LSZH) cable for non-FSI
  - Fire resistant cable for FSI and Tunnel Environmental Control System (TECS)
2. Metallic cable termination box
3. Cable joint
4. Control panel for cross passenger door (with fire rated enclosure)/ Marshaling box
5. Metallic signage plate

**Trackside Auxiliary System**

1. Tunnel fire hydrant and pipe
2. Tunnel lighting
  - Fire retardant, LSZH cable.
3. Control panel for sump pump
  - It shall be installed inside a separate plant room or fire rated enclosure.
4. Socket outlet for tunnel service and maintenance purpose
  - Fire retardant, LSZH cable.
5. Metallic cable and pipe bracket
6. Metallic cleansing water/drainage pipe
7. Metallic handrail and barrier
8. Metallic earthing tape and terminal

**Tunnel Environmental Control System (TECS)**

1. Impulse/Jet fan for tunnel ventilation system under emergency
  - It shall be able to operate at 250°C for not less than two hours

**Overhead Lines (OHL) System**

1. Metallic overhead line
  - The insulator shall be fire retardant type
2. Metallic OHL isolator
3. Motorized OHL isolators control panel with metallic enclosure
4. Neutral section interlock panel with metallic enclosure
5. Metallic balance weight

### 一般設施

1. 電纜
  - 所有非消防裝置，電纜須為阻燃及低煙無鹵類別
  - 所有消防裝置及隧道環境控制系統的電纜須為耐火類別
2. 金屬接線盒
3. 電纜接頭
4. 橫向通路門之控制板（配有具抗火效能的圍封結構）／排線盒
5. 金屬指示牌

### 軌旁輔助設施系統

1. 隧道消防栓及管道
2. 隧道照明
  - 阻燃及低煙無鹵電纜
3. 集水坑泵控制板
  - 控制板須置於獨立機房或具抗火效能的圍封結構之內
4. 用於隧道維修及保養之電源插座
  - 阻燃及低煙無鹵電纜
5. 電纜及管道金屬托架
6. 清洗用水／排水金屬管
7. 金屬扶手及擋板
8. 金屬接地帶及終端

### 隧道環境控制系統

1. 應急隧道通風系統中之鼓風扇／噴流式風機
  - 能在攝氏 250 度下持續操作不少於兩小時

### 架空電線系統

1. 金屬架空電線
  - 絕緣器須為阻燃類別
2. 架空電線金屬隔離器
3. 配有金屬外殼的電動架空電線隔離器控制板
4. 配有金屬外殼的中性區聯鎖板
5. 金屬平衡錘

### **Signaling System**

1. Signal/Point Position indicator/Route indicator
2. Access point (power supply, network switch, modem, antenna) for signaling system with metallic enclosure except for antenna
3. Signaling apparatus box (SAB) with metallic enclosure
4. Point machine with metallic enclosure
5. Axle counter/Wheel sensor/Treadle
6. Track circuit with metallic enclosure
7. Loop Cable (near rail level)
  - Fire retardant, LSZH cable
8. Beacon/tag/balise and Docking device
9. Staff Protection Key switch with metallic enclosure
10. Impedance bond

### **Communication System**

1. Antenna
  - Fire retardant, LSZH cable
2. Closed Circuit Television (CCTV) camera with illuminator with metallic enclosure
3. Trackside telephone with metallic enclosure
4. Radio amplifier and coupler with metallic enclosure
5. In-Cab CCTV transmitter and beacon with metallic enclosure

### **Trackwork**

1. Trackside rail lubricator with metallic enclosure

### 信號系統

1. 信號／道岔位置指示器／進路指示器
2. 接駁點（電源，網絡路由器，數據機，天線）。除天線外，全部配有金屬外殼
3. 配有金屬外殼的信號設備箱
4. 配有金屬外殼的轉轍機
5. 計軸器／輪軸探測器／輪軸踏板
6. 配有金屬外殼的軌道電路
7. 環線（接近路軌面）
  - 阻燃及低煙無鹵電纜
8. 燈標／標籤／應答器和對接設備
9. 配有金屬外殼的員工保護開關
10. 阻抗聯接器

### 通訊系統

1. 天線
  - 阻燃及低煙無鹵電纜
2. 配有金屬保護殼及照明裝置的閉路電視系統攝像機
3. 配有金屬保護殼的軌旁電話
4. 配有金屬保護殼的無線電功率放大器及耦合器
5. 駕駛室閉路電視發射器及配有金屬保護殼的燈標裝置

### 軌道

1. 配有金屬保護殼的軌旁導軌潤滑器

9. When plant room houses more than one tunnel ventilation system/trackway ventilation system (one duty tunnel ventilation fan/trackway exhaust fan plus one standby tunnel ventilation fan/trackway exhaust fan) to serve “fire” mode operation, separate fire rated enclosure shall be provided to each tunnel ventilation system/trackway ventilation system in order to maintain fire compartment between different protected zones.
10. The fan room of tunnel ventilation system/trackway ventilation system shall be provided with sprinkler system.
11. Shafts used for tunnel ventilation/trackway ventilation purposes shall contain no other services.
12. Ventilation shaft shall be solely used for the tunnel ventilation system/trackway ventilation system. Motorized fire and smoke damper shall be provided at branch-off section to maintain proper fire compartment in case of fire. This branch-off section from the shaft shall not be deemed as ventilation shaft.
13. To prevent recirculation of smoke into the system via ventilation shafts, the smoke discharge outlets shall be separated by not less than 5m in any direction from all air inlets or other openings into any building. The outlets shall not discharge into any means of escape or fireman’s staircase. No discharges shall be at a height above the surrounding horizontal surface of less than 3m to the bottom of the outlet and where below 6m shall not discharge downwards. No discharges shall be under any canopy or overhang. Discharge to openings in adjacent structure and property shall also be considered.
14. For parallel arrangement of tunnel ventilation fans, motorized fire and smoke dampers shall be provided for both the suction side and the discharge side to avoid system short circuit.

9. 如機房設置多於一個在「火警」模式下操作的隧道通風系統／軌道通風系統（一個主隧道通風機／軌道通風機及一個備用隧道通風機／軌道通風機），須提供具抗火效能的獨立圍封結構給每個隧道通風系統／軌道通風系統，以保持各防護區之間的隔火間。
10. 隧道通風系統／軌道通風系統的風機房須配備花灑系統。
11. 用作隧道通風／軌道通風的井槽不可充當其他用途。
12. 通風井只可用於隧道通風系統／軌道通風系統。井槽分支須設置由馬達驅動的防火防煙閘，使發生火警時能保持適當的隔火間。該井槽的分支亦不應被視為通風井的一部分。
13. 為免煙霧經通風井回流進系統，排煙出口距離任何鮮風入口或樓宇入口均不得少於 5 米。不可讓煙霧排進走火通道或消防員專用樓梯。排煙口的高度，須以其底部距離周圍地面不少於 3 米為準。如高度在 6 米以下，則不可向下方排煙。排煙出口不可設置在簷篷或屋簷下。並須同時顧及鄰近構築物和物業的開口。
14. 若隧道通風機是以並聯方式安裝，抽氣口和排氣口均須設置由馬達驅動的防火防煙閘，以防止系統出現短路的情況。



15. The tunnel ventilation system shall generate sufficient longitudinal air velocity to prevent back-layering of smoke due to tunnel fire. For the calculation of critical velocity, total heat release rate shall be adopted instead of convective heat release rate.
16. The tunnel ventilation system shall be designed to prevent the hot smoke flowing from the incident tunnel to non-incident tunnel via the cross-over area and cross-wall/cross-passage door. Cross-wall or cross-passage doors shall be of fire rated and self-closing type.
17. When tunnel ventilation system/trackway ventilation system starts under “fire” mode, tunnel ventilation fans/trackway exhaust fans shall run continuously until stopped manually. The tunnel ventilation system/trackway ventilation system shall not be controlled or under the influence of any building management or automation system. Overall operating status of related mode of the tunnel ventilation system/trackway ventilation system should be individually monitored by the affected stations.
18. For a dedicated MoA corridor and MoA/EAP staircase near the overrun tunnel/main tunnel, provisions such as a smoke lobby shall be provided to prevent smoke spillage into the MoA corridor and MoA/EAP staircase.
19. Dedicated control panels shall be provided for tunnel ventilation systems/trackway ventilation system and located adjacent to main fire control panel at Station Control Room (SCR)/Fire Control Room (FCR).
20. Switchboard for tunnel ventilation system/trackway ventilation system (e.g. local motor control panel (LMCP), motor control central (MCC), etc.) shall not be grouped with other services or installations.

15. 當隧道發生火警時，隧道通風系統須產生足夠的縱向風速，以防止隧道內出現煙霧聚積。計算臨界風速時，須採用總熱釋放率，而非對流熱釋放率。
16. 隧道通風系統的設計須阻止熱煙由事故隧道經渡線路段及橫牆／橫向通道流進非事故隧道。橫牆或橫向通道須具耐火效能，並能自動關閉。
17. 當隧道通風系統／軌道通風系統以「火警」操作模式啟動後，隧道通風機／軌道通風機須持續運行，直到手動按鈕關上。同時，隧道通風系統／軌道通風系統不可受到樓宇管理系統或樓宇自動系統的控制或影響。隧道通風系統／軌道通風系統在相關模式下的全面運作狀況，應由受影響的車站各自監控。
18. 越位隧道／主隧道附近設有專用進出途徑的走廊及專用進出途徑／緊急救援入口的樓梯。須裝設防煙廊等設施，以防煙霧進入此等走廊及樓梯。
19. 隧道通風系統／軌道通風系統須配備專用控制板，並設於車站控制室／消防控制室的主消防控制板旁。
20. 隧道通風系統／軌道通風系統的專用電掣板（如局部電動機控制櫃及電動機控制中心等）不可與其他系統設置在一起。

21. The switchboard serving the fan/motor/drive sets of tunnel ventilation system/trackway ventilation system shall be located in the plant room next to the fan room of tunnel ventilation fan/trackway exhaust fan. The plant room shall not contain other equipment. Two dedicated electrical supplies shall be routed separately into the plant room and then connected into the switchboard.
22. The plant room housing the switchboard for tunnel ventilation system/trackway ventilation system shall be provided with heat detector and should not contain other services.
23. When tunnel ventilation system activates under “fire” mode, all respective standby tunnel ventilation fans shall be fully utilized in case of any failure of the duty tunnel ventilation fans.

21. 隧道通風系統／軌道通風系統的風機／電動機／傳動裝置的專用電掣板，須置於隧道通風系統／軌道通風系統風機房旁邊的機房內。該機房不得放置其他設備。兩個獨立電源的線路須分別駁入機房，然後再接上隧道通風系統／軌道通風系統的專用電掣板。
  
22. 設置隧道通風系統／軌道通風系統電掣板的機房須裝設熱力偵測器及不應該安置其他設施。
  
23. 當隧道通風系統以「火警」操作模式啟動時，若主隧道通風機有任何故障，所有其備用的隧道通風機都須全面運用。





**FIRE SERVICES DEPARTMENT**

**消防處**