

Guidance Notes for Household-Scale Solar Water Heating Systems at Village Houses

在村屋安裝的家庭式 太陽能熱水系統 指南



免責聲明

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Scope 範圍

- 1.1 This set of Guidance Notes (hereinafter referred to as "the Notes") provides general guidelines for intending purchasers, owners and installers of household-scale solar water heating systems installed at village houses to understand the installation requirements and application procedures associated with the installation, operation and maintenance of such solar water heating systems. The Notes also provide an example of the pipework installation arrangement for a household-scale solar water heating system.
 - 1.2 The Notes are for general guidance and information. The Government assumes no legal or other obligation in respect of the rights or interests of any intending purchaser, owner and installer. The issue of the Notes does not create any legal obligation or liability whatsoever on the part of the Government.
 - 1.3 The Notes should not be regarded as exhaustive. It is the responsibility of the intending purchasers, owners and installers to comply with relevant legal requirements.
 - 1.4 The intending purchasers, owners and installers may also make reference to the leaflet "Know more about Solar Water Heating System" which explains the principles of a solar water heating system and provides an overview
- 1.1 本指南為安裝在村屋的家庭式太陽能熱水系統的準買主、擁有人及安裝者提供一般指引，讓他們了解與安裝、操作和保養這類太陽能熱水系統有關的安裝規定及申請程序。本指南亦載有家庭式太陽能熱水系統的喉管安裝布置圖例子。
 - 1.2 本指南只作一般指引和參考之用，政府絕不因此為任何準買主、擁有人及安裝者的權利和利益，負上法律或其他義務。政府不會為發出本指南或本指南內容而承擔任何法律義務或責任。
 - 1.3 本指南並非巨細無遺。準買主、擁有人及安裝者有責任遵從有關的法例規定。



of the basic components, types of systems and issues to be considered for installation. The leaflet can be downloaded from the website of the Electrical and Mechanical Services Department at http://www.emsd.gov.hk/en/energy_efficiency/new_renewable_energy/index.html.

1.5 Regarding the installation of solar water heating systems at low-rise houses other than village houses, intending purchasers, owners and installers shall consult an Authorized Person registered under the Buildings Ordinance (Cap. 123).

1.4 準買主、擁有人及安裝者亦可參閱《齊來認識太陽能熱水系統》小冊子的內容。該小冊子介紹太陽能熱水系統的運作原理，並簡述基本配件、系統類型及安裝系統需要考慮的事宜。該小冊子可於機電工程署網站下載，網址為 http://www.emsd.gov.hk/tc/energy_efficiency/new_renewable_energy/index.html。

1.5 如擬在村屋以外的層數較少的樓宇安裝太陽能熱水系統，準買主、擁有人及安裝者須向根據《建築物條例》（第 123 章）註冊的認可人士徵詢意見。



Terminology 術語

Terms 辭彙	Definition 定義
Approved loading 允許負載量	The maximum current demand approved by an electricity supplier in respect of a fixed electrical installation. 供電商就任何固定電力裝置允許的最局電流需求量。
Authorized Person 認可人士	An architect, surveyor or engineer registered under section 3(2) of the Buildings Ordinance (Cap. 123). 根據《建築物條例》（第 123 章）第 3（2）條註冊的建築師、測量師或工程師。
CoP 工作守則	Code of Practice for the Electricity (Wiring) Regulations 《電力（線路）規例工作守則》



Terms 詞彙	Definition 定義
Distribution board 配電箱	<p>An installed group of fuses, switches, circuit breakers or other outlet points arranged inside a board enclosure for the distribution of electricity.</p> <p>一組為配電而在箱形外殼內安排的經安裝的熔斷器、開關掣、斷路器或其他供電點。</p>
Electrical equipment 電力器具	<p>Machines, transformers, apparatus, appliances, measuring instruments, protective devices, wiring materials, accessories, fittings and similar things, used for generation, conversion, transmission, distribution, control, measurement or utilisation of electrical energy.</p> <p>用以發電、將電能轉為其他能量、輸送電力、分配電力、調控電力、量度電力或利用電能的任何機械、變壓器、儀器、用具、量度工具、保護器件、線路裝設器材、附件、配件及類似物品。</p>
Electrical installation 電力裝置	<p>An assembly of associated electrical equipment.</p> <p>由互有關連的電力器具組合而成的設備。</p>
Electrical work 電力工程 / 電力工作	<p>Work in relation to the installation, commissioning, inspection, testing, maintenance, modification or repair of a low voltage or high voltage fixed electrical installation and includes the supervision and certification of that work and the certification of design of that installation.</p> <p>與低壓或高壓固定電力裝置的安裝、校驗、檢查、測試、維修、改裝或修理有關的工程或工作，包括監督工程、簽發工程證明書、簽發電力裝置設計證明書。</p>
Fixed electrical installation 固定電力裝置	<p>A low or high voltage electrical installation that is fixed to premises but does not include any electrical equipment that is supplied with electricity after passing through a socket of the installation at which the supply can be disconnected without the use of a tool.</p> <p>固定裝設在處所內的低壓或高壓電力裝置，但不包括從該裝置中的插座獲供電，而且無須使用工具即可在插座處截斷電力供應的任何電力器具。</p>
Household-scale solar water heating system 家庭式太陽能熱水系統	<p>A solar water heating system with a nominal size of one or more solar collector(s) integrated with a water tank of an overall size not exceeding 2.5m (in length) X 3.5m (in width) and a total gross weight not exceeding 700 kg for a family dwelling. (Note: The household-scale solar water heating system is an assembly of equipment and shall not constitute an integral part of the village house. It should be easily dismantled and removed without causing undue damage to the village house.)</p> <p>額定尺寸的太陽能熱水系統，由一個或以上的集熱器和一個儲水箱組成，而其整體尺寸不超過 2.5 米（長度）x 3.5 米（闊度），總重量不超過 700 公斤，適合家庭住宅使用。（註：家庭式太陽能熱水系統是由多個設備組合而成，並非村屋不可或缺的組成部分。該系統應易於拆開和拆除，並且不會對村屋造成不應有的損毀。）</p>

Terms 詞彙	Definition 定義
Licensed plumber 持牌水喉匠	A person licensed under the Waterworks Regulations (Cap. 102A) to carry out various types of authorised plumbing work connected with the supply of water to domestic, commercial and industrial buildings. 根據《水務設施規例》(第 102A 章) 領有牌照者，可進行各種與住宅、商業及工業樓宇的食水供應有關的核准水管工程。
Owner (Note: The interpretation on the right is only applicable to electrical installation) 擁有人 (註：右面的釋義只適用於電力裝置)	(a) A person who is in possession or control of an electrical installation; and (b) A person who holds premises in which an electrical installation is located, whether the premises are held under lease, license or otherwise and includes an agent of that person and a tenant or occupier of premises. (a) 管有或控制電力裝置的人；及 (b) 以租約、准用約或以其他方式持有電力裝置所在處所的使用權的人，包括該人的代理人及處所的租客或佔用人。
Registered Electrical Contractor 註冊電業承辦商	An electrical contractor registered under section 33 of the Electricity Ordinance (Cap. 406). 根據《電力條例》(第 406 章) 第 33 條註冊的電業承辦商。
Registered Electrical Worker 註冊電業工程人員	An electrical worker registered under section 30 of the Electricity Ordinance (Cap. 406). 根據《電力條例》(第 406 章) 第 30 條註冊的電業工程人員。
Solar water heating system 太陽能熱水系統	A hot water system incorporating equipment for absorbing heat in solar radiation to produce hot water. 一種裝有可吸收太陽輻射熱能的設備以產生熱水的熱水系統。
Stairhood 樓梯蓋	A structure on the roof of a village house, which has a roof area of not more than 7.44m ² , a height of not more than 2.14m and is erected and used solely to provide protection from rain and sun for a stairway used to gain access to the roof of the building. 在村屋屋頂的結構物，其頂部面積不超過 7.44 平方米，高度不超過 2.14 米，並且純粹是為保護通往建築物屋頂的樓梯免受日曬雨淋而建立和使用的。
Village house 村屋	A New Territories exempted house with a roofed-over area not exceeding 65.03m ² , and a height not exceeding 8.23m and not more than three storeys, which is exempted / permitted under the Buildings Ordinance (Application to the New Territories) Ordinance (Cap. 121). 根據《建築物條例(新界適用)條例》(第 121 章) 獲豁免/准許的新界豁免管制屋宇，其有蓋面積不超過 65.03 平方米，高度不超過 8.23 米，以及樓高不超過三層。

3 Introduction 引言

Solar water heating systems use the heat in solar radiation to produce hot water. A household-scale solar water heating system comprises one or more solar collector(s), a water tank and interconnecting pipework. The solar collectors are usually mounted on the roof of a building to capture solar radiation. The solar collectors absorb the heat in solar radiation and transfer the heat energy to the water either directly or indirectly. The hot water so produced is stored in a well-insulated storage tank to hold the solar-heated water for subsequent use. Usually a solar water heating system is designed to fulfil a major part of the energy for water heating requirements of the premises, with the rest being made up by other heating sources such as an electric heater.

太陽能熱水系統利用太陽輻射的熱能來產生熱水。家庭式太陽能熱水系統由一個或多個太陽能集熱器、一個儲水箱和互連喉管組成。集熱器通常安裝在屋頂上以獲取太陽輻射。太陽能集熱器能夠吸收太陽輻射的熱能，直接或間接把食水加熱，而所產生的熱水則儲存於隔熱性能優良的儲水箱，供隨後使用。太陽能熱水系統在設計時通常已預計可供應安裝處所加熱食水所需的大部分能源，不足的部分則由電熱水器等其他熱源補足。

4 General Requirements 一般規定

- (a) Household-scale solar water heating systems should be designed to relevant national/international standards or specifications, and so certified by the recognised national/international organisations or relevant testing and certification authorities.
- (a) 家庭式太陽能熱水系統應按照有關國家／國際標準或規格來設計，並獲得認可國家／國際機構或有關測試及認證當局簽發證明書。
- (b) Relevant technical standards for solar water heating systems are listed in Appendix 1 for reference.
- (b) 與太陽能熱水系統有關的技術標準載於附錄 1，以供參考。

5

Installation Requirements 安裝規定

A summary of the installation requirements for a household-scale solar water heating system is listed below:

- (a) General requirements: A solar water heating system should be installed on the rooftop of a village house which should be a structurally sound area and unshaded from adjacent structures, buildings and trees. The solar collector panel(s) should be tilted at a suitable angle and properly oriented in accordance with the manufacturer's recommendations so as to maximise the year-round efficiency. An example of installation arrangement of a household-scale solar water heating system on the rooftop of a village house is shown in Appendix 2 for reference.
- (b) Solar water heating system with electrical components: For a solar water heating system incorporating electrical components (e.g. electric heater and pump), it must be issued with a certificate of safety compliance. A sample of CB Test Certificate is attached in Appendix 3 for reference. The owner should employ a Registered Electrical Contractor/Registered Electrical Worker (REC/REW) to carry out the installation work.

家庭式太陽能熱水系統的安裝規定簡述如下：

- (a) 一般要求：太陽能熱水系統應安裝於村屋的天台位置，該位置應結構穩固，並且不被附近的建築物、大廈和樹木所遮擋。太陽能集熱器應按照製造商的建議，以適當的角度傾斜及面向合適的方向，以取得全年計的最佳效能。附錄 2 載列設於村屋天台的家庭式太陽能熱水系統的安裝布置圖例子，以供參考。
- (b) 配有電氣組件的太陽能熱水系統：配有電氣組件（例如電熱水器及泵）的太陽能熱水系統必須獲發符合安全規格證明書。有關的 CB 測試證明書樣本載於附錄 3，以供參考。裝置擁有人應僱用註冊電業承辦商／註冊電業工程人員進行安裝工作。



- (c) Plumbing requirements: The owner should employ a licensed plumber to carry out installation or modification of water supply system for the solar water heating system. The work of the licensed plumber should include piping design and installation for the system. For ease of reference, an example of the pipework installation arrangement for a household-scale solar water heating system is shown in Appendix 4.
- (d) Structural requirements: A general household-scale solar water heating system would have a range of dimensions and weight from around 2m (L) x 1m (W) and 300kg to 2.5m (L) x 3.5m (W) and 700kg respectively. In general, the rooftop area of a typical village house is able to support the solar water heating system up to the above largest dimensions and weight, as set out in Appendix 2. The system mounted on the supporting frame supplied with the system shall be installed on the rooftop area (except the area on the top of the canopy) of a village house. If the equipment is installed on the main roof, the average loading imposed should not exceed 150kg/m². If the equipment is installed on the roof of the stairhood, the average loading imposed should not exceed 75kg/m². However, the owner and the installer of the system are advised to consult building professionals on the structural loading capacity of their village houses.
- (c) 水管規定：擁有人應僱用持牌水喉匠安裝或改裝太陽能熱水系統的供水系統。持牌水喉匠的工作應包括為該系統設計和安裝喉管。附錄 4 載列家庭式太陽能熱水系統的喉管安裝布置圖例子，以便參考。
- (d) 結構規定：一般家庭式太陽能熱水系統的尺寸及重量，分別介乎大約 2 米長 × 1 米闊及 300 公斤與 2.5 米長 × 3.5 米闊及 700 公斤之間。一般而言，典型村屋的天台範圍能夠支承以上最大尺寸及重量的家庭式太陽能熱水系統，有關資料載於附錄 2。系統必須安裝在村屋的天台範圍（簷篷頂部的範圍除外），並須裝設在隨系統供應的支架上。若有關設備安裝在主天台上，該設備所造成的平均荷載不得超過每平方米 150 公斤。若有關設備安裝在樓梯蓋頂上，該設備所造成的平均荷載不得超過每平方米 75 公斤。不過，家庭式太陽能熱水系統的擁有人及安裝者應就其村屋的結構承載能力徵詢建築專業人士的意見。



(e) Minor Works Control System: The supporting structure of a solar water heating system is classified as minor works under the Buildings Department's minor works control system. Any person, whether the owner or his/her agent (e.g. a design company), is required to appoint Prescribed Building Professionals (PBPs)/Prescribed Registered Contractors (PRCs) to carry out the minor works. For requirements for carrying out the minor works, please see the Building (Minor Works) Regulation (Cap. 123N) and relevant Guidelines of Building Department.

(e) 小型工程監管制度：用於支承太陽能熱水系統的構築物屬於屋宇署小型工程監管制度下的小型工程，任何人士，不論是業主本人或其代理（例如設計公司），必須委任訂明建築專業人士／訂明註冊承建商進行小型工程。有關進行小型工程的規定，請參閱《建築物（小型工程）規例》（第123N章）及屋宇署的相關指引。

6

Application Procedures 申請程序

A summary of the application procedures for installation of a household-scale solar water heating system is listed below for reference:

- (a) Solar water heating system with electrical components: No prior approval for the equipment or installation work is required.
- (b) Plumbing installation: The owner of a solar water heating system should consult a licensed plumber upon submission of an application to the Water Supplies Department (WSD). Like other storage type water heaters, the licensed plumber will represent the owner to submit the associated plumbing proposals together with the completed application form to the WSD.

現把安裝家庭式太陽能熱水系統的申請程序簡述如下，以供參考：

- (a) 配有電氣組件的太陽能熱水系統：設備或安裝工作無須事先得到批准。
- (b) 水管裝置：太陽能熱水系統的擁有人在向水務署提交申請時，應徵詢持牌水喉匠的意見。持牌水喉匠會代表擁有人把相關的水管工程計劃連同已填妥的申請表格送交水務署，做法如其他儲水式熱水器。



(c) Land Lease Conditions: The installation of a household-scale solar water heating system on the rooftop of a village house may constitute a breach of the lease conditions. However, as long as the proposed installation is in accordance with the prescribed dimensions and weight and the requirements provided herewith, such installation can be tolerated and no application for toleration is required.

(c) 土地批約條款：在村屋的天台安裝家庭式太陽能熱水系統可能違反批約條款。不過，只要擬議裝置符合本指南所訂明的尺寸、重量及所載的規定，則有關裝置可予暫准安裝，而且無須為此項暫准安排提交申請。

7

Operation and Maintenance 操作及維修

- (a) The owner of a household-scale solar water heating system should follow the operation and maintenance instructions as specified in the installation guidelines and technical manuals provided by the manufacturer/supplier. The owner should properly store and keep all the technical documents for future reference.
- (b) The owner should arrange regular inspections and routine maintenance including functional check of the solar water heating system in accordance with the technical documents provided by the manufacturer/supplier.
- (c) The owner shall avoid idling the solar water heating system for a long period of time for prevention of stagnant water and loss of chlorine in the water.

- (a) 家庭式太陽能熱水系統的擁有人應遵從製造商／供應商提供的安裝指引及技術手冊所載的操作及維修指示。擁有人應妥善儲存及保管所有技術文件，以供日後參考之用。
- (b) 擁有人應按照製造商／供應商提供的技術文件，安排對太陽能熱水系統進行定期檢驗及例行維修（包括檢查系統各項功能）。
- (c) 擁有人必須避免長期閒置太陽能熱水系統，以免系統內的食水變成死水及流失氯氣。





Enquiries 查詢

(a) General Information.

Electrical and Mechanical Services
Department
3 Kai Shing Street, Kowloon, Hong Kong
Tel. : 2808 3465
Fax : 2890 6081
E-mail : eepublic@emsd.gov.hk
Website : <http://www.emsd.gov.hk>

(b) Plumbing Consideration:

Water Supplies Department
43/F Immigration Tower
7 Gloucester Road, Wanchai, Hong Kong
Tel. : 2824 5000
Fax : 2824 0578
E-mail : wsdinfo@wsd.gov.hk
Website : <http://www.wsd.gov.hk>

(c) Building Consideration:

- (i) Lands Department (for village houses)
20/F North Point Government Offices
333 Java Road, North Point, Hong Kong
Tel. : 2231 3294
Fax : 2868 4707
E-mail : landsd@landsd.gov.hk
Website : <http://www.landsd.gov.hk>
- (ii) Buildings Department (for low rise buildings other than village houses)
12/F Pioneer Centre, 750 Nathan Road,
Kowloon, Hong Kong
Tel. : 2626 1616
Fax : 2537 4992
E-mail : enquiry@bd.gov.hk
Website : <http://www.bd.gov.hk>

(a) 一般資訊

機電工程署
香港九龍啟成街 3 號
電話號碼 : 2808 3465
傳真號碼 : 2890 6081
電郵地址 : eepublic@emsd.gov.hk
網址 : <http://www.emsd.gov.hk>

(b) 水務事宜

水務署
香港灣仔告士打道 7 號
入境事務大樓 43 樓
電話號碼 : 2824 5000
傳真號碼 : 2824 0578
電郵地址 : wsdinfo@wsd.gov.hk
網址 : <http://www.wsd.gov.hk>

(c) 樓宇事宜

- (i) 地政總署 (關於村屋)
香港北角渣華道 333 號
北角政府合署 20 樓
電話號碼 : 2231 3294
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Appendix 1

附錄 1

Reference may be made to the following technical standards for better applying and understanding of the requirements for solar water heating systems:

如欲對太陽能熱水系統的規定有更適當的應用和更深入的了解，可參考下列技術標準：

Item 項目	Standard No. 標準編號	Description 名稱
1.	ISO 9806 : 2013	Solar energy - Solar thermal collector - Test methods 太陽能－太陽能集熱器－測試方法
2.	ISO 9459-1 : 1993	Solar heating - Domestic water heating systems - Part 1: Performance rating procedure using indoor test methods 太陽能加熱－家用熱水系統－第 1 部分：使用室內測試方法的性能表現評級程序
3.	ISO 9459-2 : 1995	Solar heating - Domestic water heating systems - Part 2: Outdoor test methods for system performance characterization and yearly performance prediction of solar-only systems 太陽能加熱－家用熱水系統－第 2 部分：僅用太陽能系統的性能特性及年度性能預測的室外測試方法
4.	BS 5918 : 2015	Solar heating systems for domestic hot water - Code of practice for design and installation 家用太陽能熱水系統－設計及安裝實務守則
5.	EN 12975-1+A1 : 2010	Thermal solar systems and components - Solar collectors - Part 1: General requirements 太陽熱能系統和組件－太陽能集熱器－第 1 部分：一般要求
6.	EN 12976-1 : 2006	Thermal solar systems and components - Factory made systems - Part 1: General requirements 太陽熱能系統和組件－工廠預製系統－第 1 部分：一般要求
7.	EN 12976-2 : 2006	Thermal solar systems and components - Factory made systems - Part 2: Test methods 太陽熱能系統和組件－工廠預製系統－第 2 部分：測試方法
8.	EN 12977-1 : 2012	Thermal solar systems and components - Custom built systems - Part 1: General requirements for solar water heaters and combisystems 太陽熱能系統和組件－特別訂造系統－第 1 部分：太陽能熱水器和組合系統的一般要求
9.	EN 12977-2 : 2012	Thermal solar systems and components - Custom built systems - Part 2: Test methods for solar water heaters and combisystems 太陽熱能系統和組件－特別訂造系統－第 2 部分：太陽能熱水器和組合系統的測試方法
10.	GB/T 6424-2007	Flat plate solar collectors 平板型太陽能集熱器
11.	GB/T 17049-2005	All-glass evacuated solar collector tubes 全玻璃真空太陽能集熱管
12.	GB/T 4271-2007	Test methods for the thermal performance of flat plate solar collectors 平板型太陽能集熱器熱性能測試方法
13.	GB/T 17581-2007	Evacuated tube solar collectors 真空管太陽能集熱器

If a solar water heating system is incorporated with independent electrical heating device(s), it should also be designed to relevant international safety standards (such as IEC 60335-1 in conjunction with IEC 60335-2-21 or equivalent) and so certified by an accredited testing laboratory.

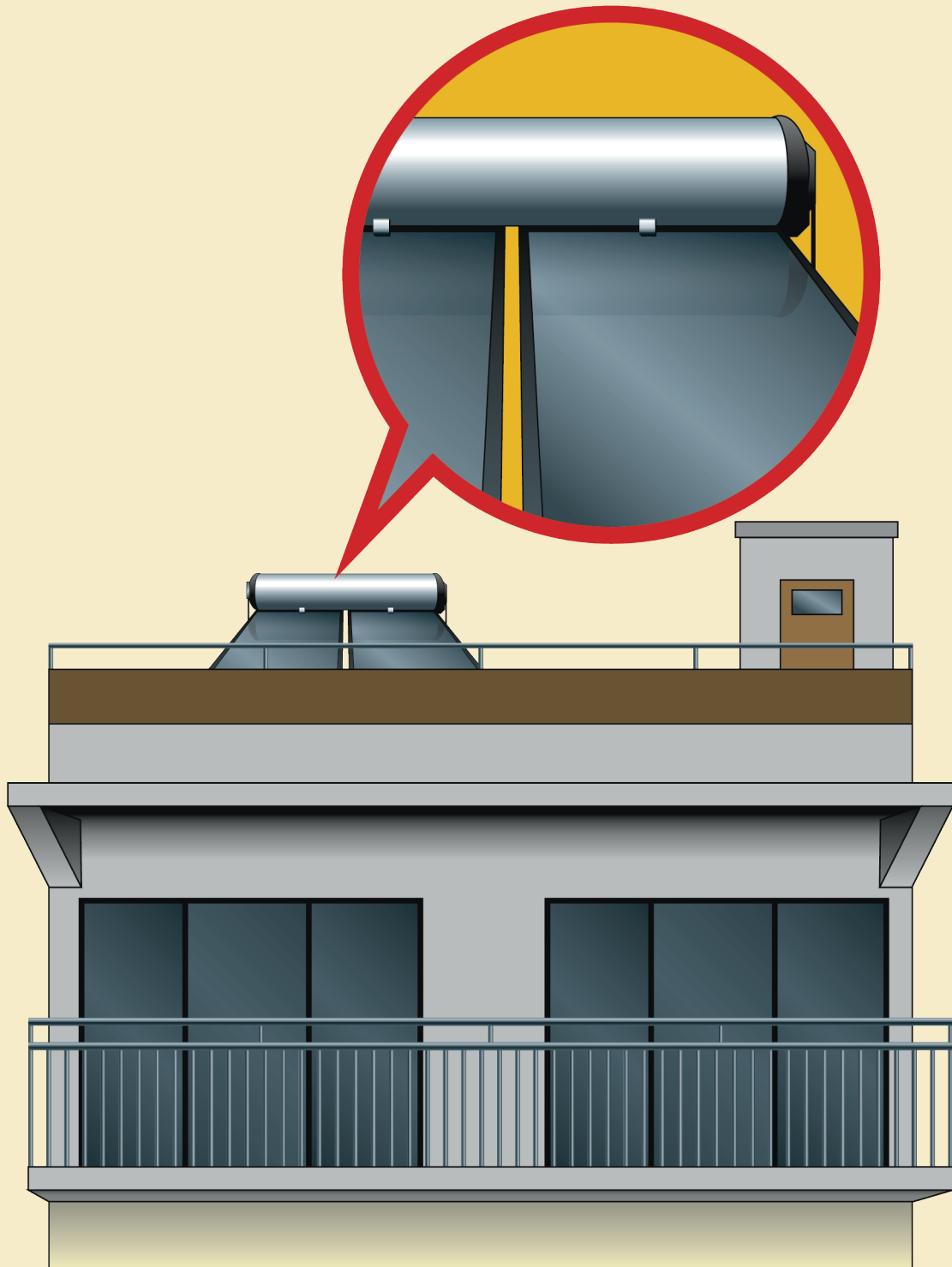
如太陽能熱水系統配有獨立的電力加熱裝置，亦應按照有關國際安全標準（例如 IEC 60335-1 連同 IEC 60335-2-21 或同等標準）來設計，並獲得認可測試實驗所簽發證明書。



Appendix 2

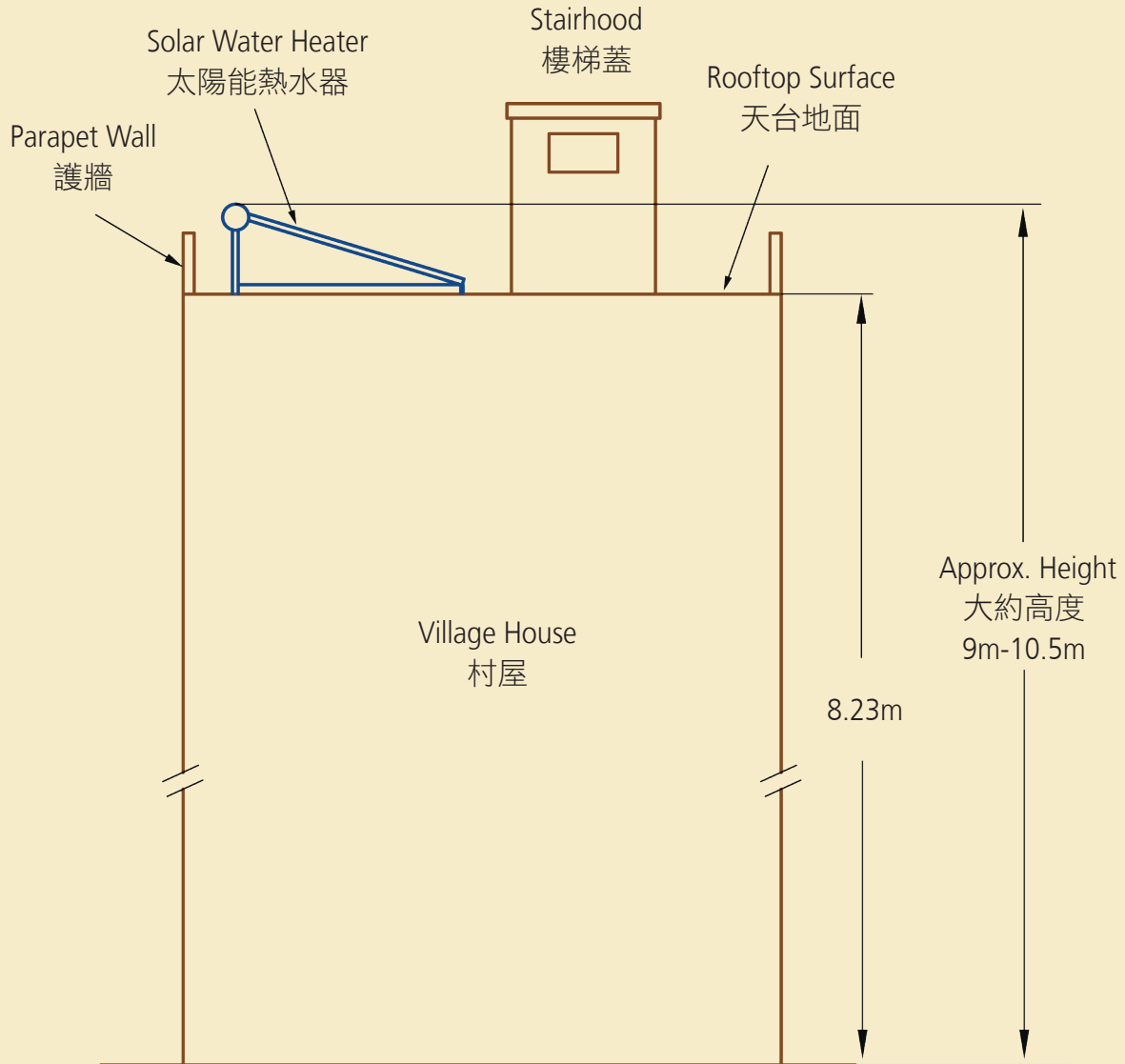
附錄 2

Household-Scale Solar Water Heating System on Rooftop of Village House
設於村屋天台的家庭式太陽能熱水系統



Appendix 2 (Continued)

附錄 2 (續)



	Size 尺寸	Weight 重量
Largest size 最大尺寸	Approx. 2.5m (L 長) X 3.5m (W 闊) 大約	Approx. 700kg 大約
Typical size for a 4- member family 四人家庭的典型尺寸	Approx. 2.5m (L 長) X 2.5m (W 闊) 大約	Approx. 400kg 大約



Appendix 3

附錄 3

Sample of CB Test Certificate

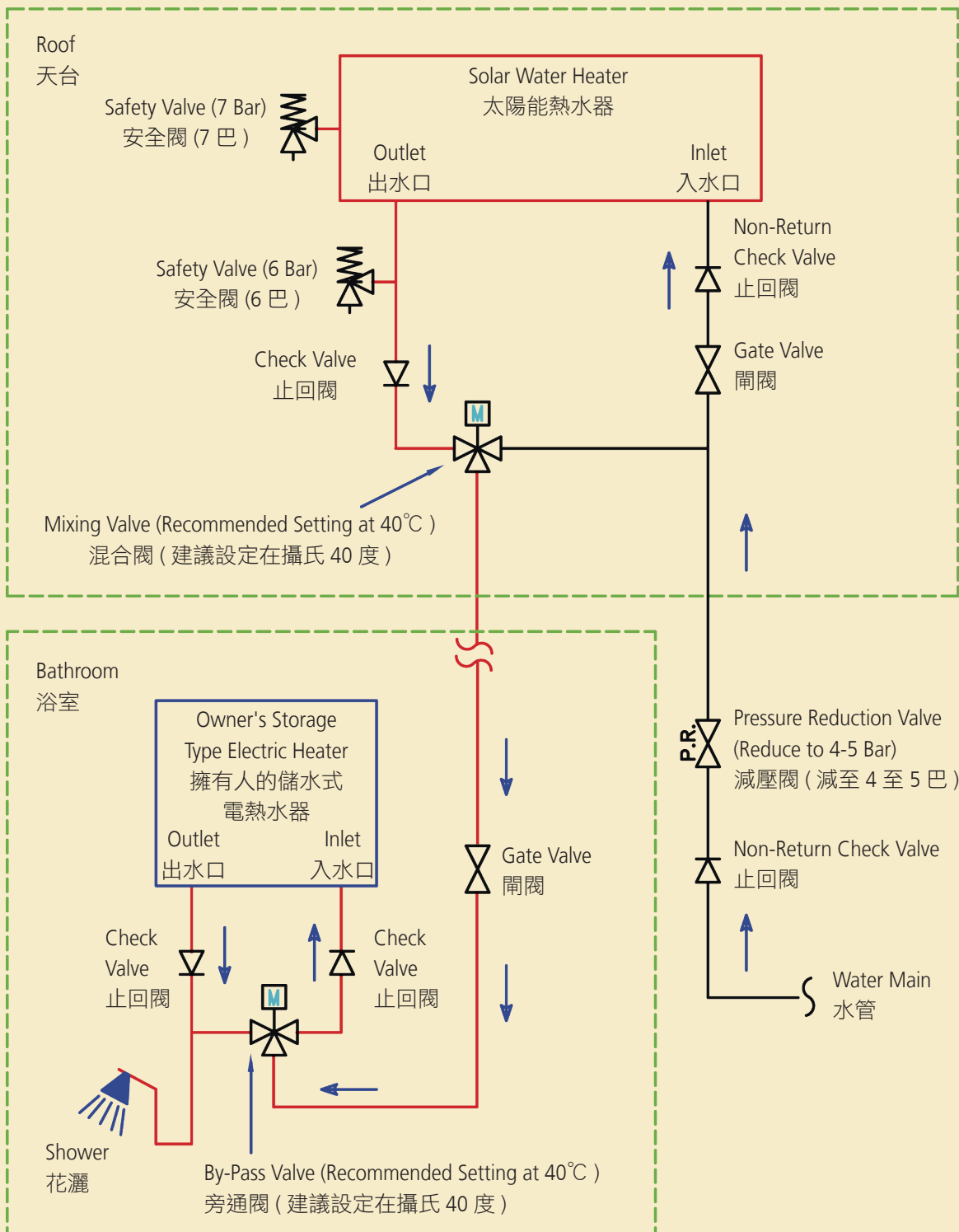
CB 測試證明書樣本

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)		Ref. Certif. No. <input type="text"/>
IEC SYSTEM FOR CONFORMITY TESTING TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT (IECEE) CB SCHEME		SYSTEME CEI D'ESSAIS DE CONFORMITE AUX NORMES DE SECURITE DE L'EQUIPEMENT ELECTRIQUE (IECEE) METHODE OC
CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC		
Product <i>Produit</i>	PUBLICATION EDITION	
Name and address of the applicant <i>Nom et adresse du demandeur</i>		
Name and address of the manufacturer <i>Nom et adresse du fabricant</i>		
Name and address of the factory <i>Nom et adresse de l'usine</i>		
Rating and principal characteristics <i>Valeurs nominales et caractéristiques principales</i>		
Trade mark (if any) <i>Marque de fabrique (si elle existe)</i>		
Model/type Ref. <i>Ref. de type</i>		
Additional information (if necessary) <i>Information complémentaire (si nécessaire)</i>		
A sample of the product was tested and found to be in conformity with <i>Un échantillon de ce produit a été essayé et a été considéré conforme à la</i>		
as shown in the Test Report Ref. No. which form part of this certificate <i>comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce certificat</i>		
This CB Test Certificate is issued by the National Certification Body <i>Ce Certificat d'essai OC est établi par l'Organisme National de Certification</i>		
Date	Signature	

Appendix 4

附錄 4

Example of Pipework Installation Arrangement for Household-Scale Solar Water Heating System
家庭式太陽能熱水系統的喉管安裝布置圖例子



Notes 備註

1. Type of piping materials to be used at the water supply system should be specified and shall comply with the Hong Kong Waterworks Ordinance (Cap. 102) and the Hong Kong Waterworks Regulations (Cap. 102A).
 2. Size of piping should be specified and should be adequately designed.
 3. It is advisable that lagged copper pipes are used for hot water system where recirculation system is designed.
 4. In order to obviate the risk of scalding, the hot water draw-off point should be mixed with cold water supply.
 5. An isolation valve and a non-return valve must be installed on the cold water pipe to the water heater.
1. 應指明供水系統喉管所採用的物料種類，而有關物料必須符合《水務設施條例》（第102章）及《水務設施規例》（第102A章）的規定。
 2. 應指明喉管尺寸及妥善設計喉管。
 3. 在設計再循環系統時，應為熱水系統採用絕熱銅管。
 4. 為免有燙傷風險，熱水應在熱水出水點與冷水混合。
 5. 冷水喉管至熱水器之間應裝上隔離閥及止回閥。





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