## Checklist of Documents of Healthcare Engineering Systems in Private Hospital

## 私家醫院醫療工程系統的文件清單

| **Information of Healthcare Engineering Systems required**  **所須提交與醫療工程系統有關的資料** | | **Suggested Format**  **建議格式** | **Please tick 🗹 where applicable**  **請在下列適用空格內加上 🗹** |
| --- | --- | --- | --- |
| **(I)** | Application does not involve any **electrical installation for critical care area**#, please proceed to item (II)  申請不涉及任何供應予**關鍵醫護區#的電力裝置**，請移至項目(II)  Application involves **electrical installations for critical care areas**, please enclose the following submission documents:  申請涉及供應予**關鍵醫護區的電力裝置**，請提交以下文件: | |  |
| 1. Summary of the healthcare electrical standard(s) / code(s)∆ by critical care areas, where the key design parameters are to be complied for intended use.   按不同的關鍵醫護區所參照的醫療電力供應標準／守則∆ 摘要並列舉相關的主要設計參數以滿足使用需要。 | | Tabular form showing the critical care areas, standards / codes complied, source(s) of power supplies, etc. [See **Table 1** as example]  以表格形式列舉出關鍵醫護區、所符合的標準／守則、供電來源種類等。[見**表1**作為例子] |  |
| 1. Schematic diagram(s) of the electrical installations   電力裝置示意圖 | | Line and block diagram showing the sources of power supplies, circuitry, changeover mode, rating of cables, switchgears and circuit board, and the locations served, and including designation codes / numbers of major installations; legends and abbreviations, drawing title and number.  以線條和方塊形式顯示電力供應源、線路、電源供應切換模式、電線等級、配電裝置和配電箱的規格、及供電區域，並在圖則內包含各主要裝置的指定編號、圖例和縮寫解釋、圖則名稱及圖則編號。 |  |
| 1. Layout plan(s) of the electrical installations   電力裝置平面圖 | | Drawing in plan view with background building plan showing the power points (e.g. socket outlet), circuit boards associated with their types, ratings, designation numbers and locations (corresponded to the schematic diagram), and including drawing legends and abbreviations, title, number and appropriate scale clearly showing the above items (e.g. drawing scale is not larger than 1:100).  以平面佈置形式並包含建築平面底圖以顯示電源接點（例如插座）、配電箱及相關款式、等級、裝置編號和位置（須與示意圖一致），並在圖則內包含圖例和縮寫解釋、圖則名稱、圖則編號和合適的比例以清晰顯示上述事項（例如圖則比例不超於1:100）。 |  |
| **(II)** | Application does not involve any **specialized ventilation system⸹**, please proceed to item (III)  申請不涉及任何**特殊通風系統⸹**，請移至項目(III)  Application involves **specialized ventilation systems**, please enclose the following submission documents:  申請涉及**特殊通風系統**，請提交以下文件: | |  |
| 1. Summary of the healthcare ventilation and air-conditioning standard(s) / code(s)∆ by specialized ventilation systems, where the key design parameters are to be complied for intended use   按不同的特殊通風系統所參照的醫療空調通風標準／守則∆ 摘要並列舉相關的主要設計參數以滿足使用需要。 | | Tabular form showing the areas served with specialized ventilation systems, standards / codes complied and key parameters (e.g. air changes per hour, pressure gradient). [See **Table 2** as example]  以表格形式列舉出提供特殊通風系統的區域、所符合的標準／守則及主要參數（例如每小時換氣次數、壓力梯度）。[見**表2**作為例子] |  |
| 1. Air-side schematic diagram(s) of the specialized ventilation systems   特殊通風系統空氣側示意圖 | | Line and block diagram showing the major air-conditioning & ventilation equipment with their capacity and designation number, filter, control device (e.g. room type thermostat), pressure gradient, air flow directions, air ducts, their type and level of supply / exhaust, locations of outdoor air intake and air exhaust to outdoor, and the served rooms with specialized ventilation systems, and including engineering calculations (e.g. calculation of required supply air flow), drawing legends and abbreviations, title and number.  以線條和方塊形式顯示主要空調通風設備及其送風量和設備編號、過濾器、控制元件(例如室內感溫器)、壓力梯度、送／排風流向、風管及其類別和送／排風高低示意位置、室外空氣引入的示意位置和排風至室外的示意位置，及提供特殊通風系統的房間，並在圖則內包含工程計算書(例如：計算所需送風量)、圖例和縮寫解釋、圖則名稱及圖則編號。 |  |
| 1. Air-side layout plan(s) of the specialized ventilation systems   特殊通風系統空氣側平面圖 | | Drawing in plan view with background building plan showing the major air-conditioning & ventilation equipment with their designation number (e.g. AHU-1), filters, supply / exhaust air locations (e.g. air diffuser), air ducts associated with their types, dimensions, routing (corresponded to the schematic diagram), and including drawing legends and abbreviations, title, number and appropriate scale clearly showing the above items (e.g. drawing scale is not larger than 1:100).  以平面佈置形式並包含建築平面底圖以顯示主要空調通風設備及設備編號(例如AHU-1)、過濾器、送／排風位置(例如散流器)、風管及其類別、尺寸和路徑(須與示意圖一致)，並在圖則內包含圖例和縮寫解釋、圖則名稱、圖則編號和合適的比例以清晰顯示上述事項（例如圖則比例不超於1:100）。 |  |
| **(III)** | Application does not involve any **medical gas pipeline system⯎**, please proceed to table 1  申請不涉及任何**醫療氣體管道系統⯎**，請移至表1  Application involves **medical gas pipeline systems**, please enclose the following submission documents:  申請涉及**醫療氣體管道系統**，請提交以下文件: | |  |
| 1. Summary of the medical gas pipeline system standard(s) / code(s)∆ by service areas, where the key design parameters are to be complied for intended use   按不同的服務區域所參照的醫療氣體管道系統標準／守則∆ 摘要並列舉相關的主要設計參數以滿足使用需要。 | | Tabular form showing the service areas, standards / codes complied, nominal pressure and diversified flow. [See **Table 3** as example]  以表格形式列舉出服務區域、所符合的標準／守則、額定壓力和分散流量。[見**表3**作為例子] |  |
| 1. (A) Schematic diagram(s) of the medical gas pipeline systems   醫療氣體管道系統示意圖 | | 1. Line and block diagram showing the major medical gas manifolds and cylinders / containers / equipment with their capacity, quantity and back-up power supply, highlight of the multiple sources of gas supplies, valve sets and alarm units, gas flow directions, pipelines and their types and routings, gas terminal units, service areas, and including drawing legends and abbreviations, title and number.   以線條和方塊形式顯示主要醫療氣體滙流排和醫療氣體瓶／容器／設備及其容積、數量和後備電源、標示氣體的多方供應來源、閥門組件和警報元件、氣體供應流向、管道及其類別和路徑、終端裝置、服務區域，並在圖則內包含圖例和縮寫解釋、圖則名稱及圖則編號。 |  |
| (B) Schematic diagram(s) of the dental compressed air and vacuum systems  牙科壓縮空氣及真空系統示意圖 | | 1. Line and block diagram showing the dental compressor and vacuum pump with their capacity, quantity and back-up power supply, dryer system, air receiver, bacteria filters with their efficiency, valve sets, pipelines and their types and routings, air flow and pressure for the dental chair, separator, drainage, locations of air intake and exhaust, service areas, and including drawing legends and abbreviations, title and number.   以線條和方塊形式顯示牙科壓縮機及真空[泵](javascript:void(0);)及其容量、數量和後備電源、乾燥系統、[空氣貯存器](javascript:void(0);)、細菌過濾器及其過濾效能、閥門組件、管道及其類別和路徑、供給牙科手術椅的空氣流量和壓力、分離器、排水系統、空氣引入和排氣的示意位置、服務區域，並在圖則內包含圖例和縮寫解釋、圖則名稱及圖則編號。 |  |
| 1. (A) Layout plan(s) of the medical gas pipeline systems   醫療氣體管道系統平面圖 | | 1. Drawing in plan view with background building plan showing the major medical gas manifolds and cylinders / containers / equipment with their locations and quantity, pipelines and their types, pipe dimension and routings, gas terminal units (corresponded to the schematic diagram), and including drawing legends and abbreviations, title, number and appropriate scale clearly showing the above items (e.g. drawing scale is not larger than 1:100).   以平面佈置形式並包含建築平面底圖以顯示主要醫療氣體滙流排和醫療氣體瓶／容器／設備及其位置和數量、管道及其類別、管徑和路徑、終端裝置(須與示意圖一致)，並在圖則內包含圖例和縮寫解釋、圖則名稱、圖則編號和合適的比例以清晰顯示上述事項（例如圖則比例不超於1:100）。 |  |
| (B) Layout plan(s) of the dental compressed air and vacuum systems  牙科壓縮空氣及真空系統平面圖 | | 1. Drawing in plan view with background building plan showing the dental compressor and vacuum pump with their locations and quantity, pipelines and their types, pipe dimension and routings, supply / exhaust air locations (corresponded to the schematic diagram), and including drawing legends and abbreviations, title, number and appropriate scale clearly showing the above items (e.g. drawing scale is not larger than 1:100).   以平面佈置形式並包含建築平面底圖以顯示牙科壓縮機及真空[泵](javascript:void(0);)及其位置和數量、管道及其類別、管徑和路徑、送／排氣位置(須與示意圖一致)，並在圖則內包含圖例和縮寫解釋、圖則名稱、圖則編號和合適的比例以清晰顯示上述事項（例如圖則比例不超於1:100）。 |  |

**Remarks:**

**註釋 :**

# According to the Interpretation of Terms under the *Code of Practice for Private Hospitals*, “**critical care area**” means an area in a hospital that provide life support or complex surgery, or where failure of electrical power supply is likely to jeopardize the immediate safety or even cause major injury or death of patients or caregivers. Examples are operating theatre / room, recovery area, cardiac catheterisation service, interventional angiography room, intensive care unit, high dependency unit, special care unit, cardiac care unit, labour room, and accident & emergency resuscitation bay / room, etc.

　根據《私家醫院實務守則》列出的詞語釋義，「**關鍵醫護區**」指醫院內為病人提供生命支援或進行複雜的手術，或任何因電源中斷而可能危及病人或照顧者的即時安全或甚至導致他們嚴重受傷或死亡的區域。例如手術間／房、復甦區、心導管插入術服務、介入性血管造影室、深切治療部、加護病室、特別護理病房、心臟科護理病房、分娩室、以及急症室進行 急救的病室／病房等。

∆ Examples of reference healthcare engineering standards / codes for the following systems are:-

* *Electrical Installation: HTM 06-01;*
* *Specialized Ventilation System: HTM 03-01 or ASHRAE Standard 170, and the guidance on ventilation in the “ICB Infection Control Guidelines” promulgated by the Centre for Health Protection of the Department of Health;*
* *Medical Gas Pipeline System: HTM 02-01;*
* *Dental Compressed Air and Vacuum System: HTM 2022 – Supplement 1.*

　有關醫療工程標準／守則的例子可參考如下:-

* *電力裝置: HTM 06-01;*
* *特殊通風系統: HTM 03-01 或 ASHRAE Standard 170，及由衞生署衞生防護中心制定的《感染控制處感染控制指引》的通風指引;*
* *醫療氣體管道系統: HTM 02-01;*
* *牙科壓縮空氣及真空系統: HTM 2022 – Supplement 1。*

⸹ According to the Interpretation of Terms under the *Code of Practice for Private Hospitals*, “**specialized ventilation system**” means an area in a hospital with special ventilation design for infection control and / or occupational safety. Examples are operating theatre / room, isolation room, bronchoscopy room, laboratory with biosafety risk, burns unit, labour room, aseptic preparation facilities, etc.

　根據《私家醫院實務守則》列出的詞語釋義，「**特殊通風系統**」指醫院內為感染控制及／或職業安全具有特殊通風設計的區域。例如手術間／手術室、隔離病房、支氣管內窺鏡室、具生物安全風險的實驗室、燒傷護理部、分娩室、無菌配製設施等。

⯎ According to the Interpretation of Terms under the *Code of Practice for Private Hospitals,* “**medical gas pipeline system**” means a system comprising sources of supply, a pipeline distribution system, terminal units (to which the user connects and disconnects medical equipment) and a warning and alarm system. It applies to medical gases, medical vacuum and anaesthetic gas scavenging disposal systems.

　根據《私家醫院實務守則》列出的詞語釋義，「**醫療氣體管道系統**」指包括供應來源、管道分配系統、終端裝置（供使用者連接和中斷連接醫療設備）和警告及警報系統的一套系統。本詞適用於醫療氣體、醫用真空和麻醉氣體清除處理系統。

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|  | **Summary of the healthcare electrical standard(s) / code(s) by critical care areas**  關鍵醫護區的醫療電力供應標準／守則摘要 | **Table 1**  **表1** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Critical Care Area and location***  *關鍵醫護區及位置* | ***Healthcare electrical standard(s) / code(s) to be complied***  *所符合的醫療電力供應標準／守則* | ***Source of power supply*∆ *(N/E/U/B)*⯎ *and back-up time of back-up power supply (minute)*\***  *供電來源*∆ *(N/E/U/B)*⯎*及後備電源的備用時間 (分鐘)*\* | | | | ***Isolated power supply for life critical medical device (Yes / Not applicable)***  *提供隔離電源給維生關鍵醫療儀器 (有／不適用)* |
| ***Medical equipment***  *醫療設備* | ***Critical medical equipment***  *關鍵醫療設備* | ***Operating lamp***  *手術燈* | ***General lighting***  *一般照明* |
| Example: Operating Room No.1, 6/F Block A | HTM 06-01 (2017 edition) | N / E(360) | N / E(360) / U(30) | N / E(360) / U(30) | N / E(360) | Yes |
| Example: Operating Room No.2 and 3, 6/F Block A | HTM 06-01 (2017 edition) | N / E(360) | N / E(360) / U(30) | N / E(360) / B(30) | N / E(360) | Yes |
| Example: Recovery Area, 6/F Block A | HTM 06-01 (2017 edition) | N / E(360) | N / E(360) / U(30) | - | N / E(360) | Not applicable |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
|  |  |  | |  |  |  |
| ∆ *Sources of power supply can be multiple. For example, power supply to an item equipped with normal power, emergency generator and uninterruptible power supply can be represented as* “N/E/U”*.*  *可以是多方電力供應源，例如以正常電源、應急發電機及不間斷電源供電給設備可以*「N/E/U」*表達。*  ⯎ *N : Normal power supply; E : Emergency generator; U : Uninterruptible power supply(UPS); B : Battery of operating lamp*  *N : 正常電源； E : 應急發電機； U : 不間斷電源； B : 手術燈的電池*  *\* The type, rating and back-up time of the back-up power supply are selected to meet the back-up power requirements in accordance with the emergency response policy of the hospital.*  *須按醫院緊急應變政策，選擇合適的後備電源類型、額定值及備用時間。* | | | | | | | |

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|  | **Summary of the healthcare ventilation and air-conditioning standard(s) / code(s) by specialized ventilation systems**  特殊通風系統的醫療通風及空調標準／守則摘要 | **Table 2**  **表2** |

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| --- | --- | --- | --- | --- | --- | --- |
| ***Specialized Ventilation Area and Location***  *特殊通風區及位置* | ***Healthcare ventilation & air-conditioning standard(s) / code(s) to be complied***  *所符合的醫療通風及空調標準／守則* | ***Differential pressure to adjacent areas (Pa)***  *與鄰近區域的壓力關係*  *(帕)* | ***Minimum air change per hour (outdoor air / total air)***  *每小時最少換氣次數  (室外空氣／總空氣)* | ***Minimum filter efficiency (outdoor air / recirculating air / exhaust air)***  *最少過濾效能 (室外空氣／循環空氣／*  *排氣)* | ***Design temperature (oC)***  *設計溫度 (oC)* | ***Design relative humidity (%)***  *設計相對濕度 (%)* |
| Example: Operating Room No.1, 6/F Block A | HTM 03-01 (2021 edition) | at least +25 | 22 / 22 | HEPA / NA / NA | 18-25 | 35-60 |
| Example: AII Room No.2, 7/F Block A | ASHRAE 170-2021 | at least  -2.5 | 2 / 12 | MERV-14 / HEPA / NA | 21-24 | Max 60 |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
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|  | **Summary of the medical gas pipeline system standard(s) / code(s) by service areas**  各服務區域的醫療氣體管道系統標準／守則摘要 | **Table 3**  **表3** |

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| ***Service area and Location***  *服務區域及位置* | ***Healthcare engineering standard(s) / code(s) to be complied***  *所符合的醫療工程標準／守則* | ***Piped medical gas***  *經管道提供的*  *醫療氣體* | ***Nominal pressure (kPa)***  *額定壓力 (千帕)* | ***Designed flow for each terminal unit / dental chair (L/min)***  *流量 (升每分鐘)* | ***Diversified flow (L/min)***  *分散流量 (升每分鐘)* |
| Example: Operating Room, 6/F Block A | HTM 02-01 (2006 edition) | Oxygen  Medical air  Medical vacuum | 400  400  40 | 100  40  40 | 100  40  40 |
| Example: Recovery Area, 6/F Block A | HTM 02-01 (2006 edition) | Oxygen  Medical air  Medical vacuum | 400  400  40 | 10  40  40 | 10  40  40 |
| Example: Treatment Room 1, 6/F Block A | HTM 2022-Supplement 1  (2003 edition) | Dental compressed air  Dental vacuum | 550  82 | 50  300 | 100  600 |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
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