1. PS Clause EMS02 requires that for project works and term works, all works inside ceiling void with energized electrical installations (Specific Ceiling Void Works) shall be subject to a permit-to-work system. EMS02 applies to “project works contracts” (i.e. contracts for project works involving equipment installation) and term works contracts (e.g. term BS fitting-out contracts) and does not apply to E&M maintenance contracts.

   (a) For project works or term works involving new installations in a dedicated construction site (i.e. a newly-built building or a building undergoing complete renovation), the Contractor shall liaise with the electrical contractor of the site to ascertain the time of energization of the permanent electricity supply in full or partially, and the permit-to-work system for Specific Ceiling Void Works shall be applied from that time onwards. (Note: If the Contract awarded by EMSD is for installing certain E&M systems in a dedicated construction site of ArchSD, for example installing CCTV system in a boundary control facility, then the Contractor shall liaise with the ArchSD electrical contractor of the site. If the Contract awarded by EMSD covers also the electrical installation of the site, then the Contractor is also the “electrical contractor of the site”.)

   (b) For project works or term works involving new/replacement installations in an existing venue, the permit-to-work system for Specific Ceiling Void Works shall be applied from the time of commencement of site work onward.

2. The Contractor shall establish the permit-to-work system to the satisfaction of the Engineer’s Representative before implementation. The Contractor shall design the permit certificates, permit request procedure, permit issue and cancellation procedure, and checklists. The Contractor shall be responsible for the overall control of the permit-to-work system. The Contractor shall employ Registered Electrical Worker(s) (REW(s)) of the appropriate grade under the Electricity Ordinance for the implementation of this permit-to-work system. The Contractor shall inform and update the Engineer's Representative of the name(s) of REW(s) so appointed.

3. Permit-to-work for Specific Ceiling Works differs somewhat from usual permit-to-work for electrical work. Permit-to-work for Specific Ceiling Works covers both non-electrical works and electrical works. When applied to non-electrical works, it deals with the potential electrical hazards of the surroundings of work. When applied to electrical works, the permit deals with the work on end-use electrical equipment (e.g. lighting fitting, fan), while usual permit-to-work for electrical work seldom deals with work on end-use electrical equipment.
4. The purposes of permit-to-work system for Specific Ceiling Void Works include, but not limited to the following

(a) For non-electrical works in ceiling void - to eliminate potential electrical hazards within the working area inside the ceiling void, such as: casing of electrical equipment being energized due to internal fault, electrical hazard arising from improper installation of electrical equipment, exposed conductive ends of uncovered cables.

(b) For electrical works without live work elements - to ensure that proper electrical isolation procedures (switching off, displaying warning sign, and locking off where appropriate) are followed.

(c) For electrical works with live work elements (e.g. measuring currents of fan-coil unit using clamp on meter during fault finding) - to ensure that the work safety precautions requirements given in Chapter 4 and Appendix 15 of the Code of Practice for the Electricity (Wiring) Regulations are followed.

5. A sample permit certificate for Specific Ceiling Void Works is given in Annex 1. The Contractor should adopt the sample permit certificate, unless further enhancements are considered necessary by the Contractor.

(a) The Contractor shall appoint a Person-in-charge for the Specific Ceiling Void Works. The Person-in-charge shall have minimum 3 years experience in site supervision.

(b) The Person-in-charge shall complete Part 1 of the permit certificate, and make a request to the Safety Officer to issue the permit.

(c) The Person-in-charge shall then arrange REW to conduct the electrical safety checks. The REW shall complete Part 2 after completing the electrical safety checks. The Safety Officer shall then check the other conditions (such as work-at-height, work location illumination), complete Part 3 to issue the permit.

(d) The Person-in-charge shall acknowledge receipt of the permit in Part 4, and shall notify the inspectorate officer appointed by the Engineer’s Representative on the same day. The issued permit shall be kept at the site for inspection during the course of the works.

(e) After completion of the works, the Person-in-charge shall inform the Safety Officer

- For electrical works, the Person-in-charge shall arrange the REW to conduct restoration of electricity supply. The REW shall check that no electrical hazards remain from the electrical works carried out and that the metallic
casings of electrical equipment worked upon have been earthed, shall perform restoration of supply and confirm in Part 5. The Safety Officer shall complete Part 6 for cancellation of the permit, and the Person-in-charge shall keep the cancelled permit in file until the end of the Contract. The Safety Officer shall keep a copy of the cancelled permit (e.g. by taking a photograph) and file in his own record.

- For non-electrical works, the Safety Officer shall directly complete Part 6 for cancellation of the permit, and the Person-in-charge shall keep the cancelled permit in file until the end of the Contract. The Safety Officer shall keep a copy of the cancelled permit (e.g. by taking a photograph) and file in his own record.

(f) If in the course of work there are changes in the circumstances of the site causing uncertainty in the electrical safety of the ceiling void, the Person-in-charge shall request the Safety Officer to cancel the existing permit and issue a new permit.

6. For a contract not requiring Safety Officer, the Safety Supervisor (with at least three years’ experience on construction work and having completed an appropriate training course provided for safety supervisors) shall issue and cancel the permit.

7. If the REW considers it necessary to implement temporary safety measures (e.g. temporary bonding connection), such measures shall be implemented and the REW shall make a report to the Person-in-charge.

8. If there are other works being carried out in the works area, for example the permit of concern is for CCTV installation while another contractor is carrying out communication system installation, the Person-in-charge shall liaise with the other relevant persons, to ensure that the works of one party will not cause hazard to the other party.

9. In the Defects Liability Period, the Contractor shall either adopt the above permit-to-work system, or adopt the following alternative approach so as to meet the fault attendance time requirements.

   (a) The Contractor shall appoint a Person-in-charge for the ceiling void works.

   - Before commencing works inside the ceiling void, the Person-in-charge on site shall arrange a person trained in the use of non-contact voltage tester to wear electrician's gloves and use non-contact voltage tester to check all false ceiling frame and all metallic objects that are within arm's reach throughout the works area. The checking person should remove all metallic ornaments (e.g. bracelet) that may get in touch with other metallic objects in the work.
surroundings.

- In case of non-safety-side indication of the tester or in case of any doubt (e.g. uncovered cable with exposed conductive end is found inside the ceiling void) during such checking, a REW shall be summoned. If the REW considers it necessary to implement temporary safety measures (e.g. temporary bonding connection), such measures shall be implemented and the REW shall make a report to the Person-in-charge.

- Proper work-at-height provisions, work location illumination, and electric tools shall also be checked.

- The Contractor shall produce the specification of the non-contact voltage tester and the usage guidelines to the satisfaction of the Engineer’s Representative. Sample usage guidelines and recommended specification are given in Annex 2.

(b) Electrical works on equipment connected to power supply and inside ceiling void shall be undertaken by a REW.

- Proper electrical isolation procedures (switching off, displaying warning sign, and locking off where appropriate) shall be followed.

- If live electrical work is unavoidable as assessed by the REW (e.g. measuring currents of fan-coil unit using clamp on meter during fault finding), the work safety precautions requirements given in Chapter 4 and Appendix 15 of the Code of Practice for the Electricity (Wiring) Regulations shall be followed.

(c) The Person-in-charge on site shall confirm that the above are fulfilled, record such confirmation before allowing works to commence inside the ceiling void.

- The Person-in-charge shall immediately send confirmation notice to his/her supervisor and the Safety Officer of the Contractor using mobile device with copy to the inspectorate officer appointed by the Engineer’s Representative, unless the signal strength at the site is insufficient and under such case the confirmation notice shall be sent once the Person-in-charge moves to a location where signal strength becomes sufficient.

- His/her supervisor and Safety Officer shall review the confirmation notice and follow up if necessary.

- Upon completion of the works, the Person-in-charge shall notify his/her supervisor and Safety Officer of the Contractor using mobile device.
The Contractor shall adopt proper recording format and procedure of sending confirmation notice and completion notice by mobile device \(^1\) to the satisfaction of the Engineer's Representative.

For a contract not requiring Safety Officer, or where agreed by the Engineer’s Representative (for example where all construction works have indeed been completed and defects follow-up works involve only a few people not requiring Safety Officer), the Safety Supervisor (with at least three years' experience on construction work and having completed an appropriate training course provided for safety supervisors) shall assume the role of the Safety Officer in the above process during the Defects Liability Period.

10. If only visual inspection is to be carried out inside a ceiling void, a permit is not required but the person conducting the visual inspection shall wear electrician's gloves and use non-contact voltage tester to check the false ceiling frame within the work area before commencing inspection. If he/she may come into contact with nearby metallic objects inside the ceiling void in the course of inspection, those objects shall also be checked using non-contact voltage tester. The checking person should remove metallic ornaments (e.g. bracelet) that may get in touch with other metallic objects in the work surroundings. In case of non-safety-side indication of the tester or in case of any doubt (e.g. uncovered cable with exposed conductive end is found inside the ceiling void) during such checking, a REW shall be summoned.

11. Temporary lighting and electric tools to be used inside ceiling void shall be 110V center-tapped-to-earth or battery-powered.

12. All electrical workers working on lighting fittings shall pay attention to the electrical hazard depicted in Annex 3. For electrical works on a lighting fitting of a permanent lighting circuit, the circuit should be switched off at MCB and not at lighting switch. If loss of illumination for a wide area is not allowable for the venue and the circuit has to be switched off at lighting switch, then the worker shall wear electrician’s gloves and use insulated tools when working on the lighting fitting.

13. When choosing electrician’s gloves for ceiling void works, 500V-grade gloves are recommended. Compared to 1000V-grade gloves, it is more dexterous wearing 500V-grade gloves.

14. Other than the permit-to-work system for Specific Ceiling Void Works, the Contractor shall also implement permit-to-work system for Specific Other Works.

\(^1\)EMSD plan to make available to contractors a mobile app and related usage guidelines in first half of 2015. The Person-in-charge can make use of that mobile app to send out confirmation notice and completion notice.
(a) At the commencement of the Contract, the Contractor shall conduct a
comprehensive risk assessment to identify other types of works for which the
permit-to-work system shall be applied after the energization of the permanent
electricity supply in full or partially (Specific Other Works), including but not limited
to

i) Wet trade works (e.g. painting or plastering of walls) near energized electrical
installations (such as lighting fitting or socket outlet) within 1.5 meters horizontal
distance from, or 1.5 meters vertical distance below, the works area.

ii) Arc welding under rainy environment

(b) The Contractor shall design the permit-to-work system for the Specific Other Works
to the satisfaction of the Engineer's Representative. The recommended safety
measures of the risk assessment shall be included as appropriate in the permit
certificates for the Specific Other Works.
PERMIT-TO-WORK (SPECIFIC CEILING VOID WORKS)

Note: (1) Items marked # only apply to electrical works.
(2) In Part 3 and Part 5, Safety Supervisor can issue and cancel the permit only for a contract not requiring Safety Officer.
(3) This permit-to-work shall be kept at site for inspection during the course of the works.
(4) This permit-to-work is for complying with EMSD-specific clause EMS02 in the contract.

### PART 1: Details of the works (to be completed and signed by Person-in-charge)

<table>
<thead>
<tr>
<th>Contract Number</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and area of the works</td>
<td>#Electrical equipment to be worked upon</td>
</tr>
<tr>
<td>Details of the works to be done</td>
<td>#Location of electrical equipment</td>
</tr>
<tr>
<td>Date of the works</td>
<td>Time of the works</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#Name of REW(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of workers(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Person-in-charge</th>
<th>Post</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Signed</th>
<th>Date</th>
</tr>
</thead>
</table>

### PART 2: Electrical checks (to be completed and signed byREW)

I have identified those electrical equipment items within and in the vicinity (within 1.5m) of the works area, that may pose electrical hazard to the workers. I have checked and confirm that there is no electrical hazard.

# (if live electrical work is involved) I confirm that work safety precautions requirements given in Chapter 4 and Appendix 15 of the CoP on Electricity (Wiring) Regulations have been followed. Actual precautionary measures implemented are as follows:

# I confirm that I have switched off, tagged off, and locked off where appropriate, those electrical sources that need to be isolated. Locations of switching off (and tagging off / locking off) are:

<table>
<thead>
<tr>
<th>Name and Registration Number of REW</th>
<th>Signed</th>
<th>Date and time</th>
</tr>
</thead>
</table>
### PART 3: Other checks and issue of permit (to be completed by issuer – Safety Officer/Safety Supervisor)

<table>
<thead>
<tr>
<th>Facilities for working-at-height checked to be appropriate</th>
<th>□ Yes □ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illumination checked; temporary lighting and electric tools checked to be 110 CTE or battery operated</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>Confirm Part 2 above has been signed by REW</td>
<td>□ Yes □ No</td>
</tr>
</tbody>
</table>

In accordance with the above assessment by the undersigned, this permit is / is not issued*. This permit is valid over the date and time of the works given in Part 1 above.

Issuer – Safety Officer/Safety Supervisor | Signed | Date and time

* delete as appropriate

### PART 4: Receipt (to be signed by Person-in-charge)

I confirm receipt of this permit. The works that will be undertaken by me and the persons under my control will not exceed the scope described in Part 1 above. During the time of the works given in Part 1 above, I will keep this permit at site. I will return this permit to the issuer upon completion/termination of the works.

Person-in-charge | Signed | Date and time of receipt

### PART 5: Electrical restoration (to be signed by REW)

I have checked and confirm that no electrical hazards remain from the electrical works carried out according to Part 1 above, and that the metallic casings of electrical equipment worked upon have been earthed.

I have removed the tags and locks at the locations of tagging off/locking off described in Part 2 above.

Name and Registration Number of REW | Signed | Date and time

### PART 6: Cancellation (to be signed by Safety Officer/Safety Supervisor)

I confirm that the Person-in-charge has returned this permit. The works described in Part 1 above has been completed or terminated. (For electrical works only) I confirm that Part 5 above has been signed by REW. This permit is hereby cancelled, and returned to the Person-in-charge for filing. I will also keep a copy.

Issuer – Safety Officer/Safety Supervisor | Signed | Date and time

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Version date: January 2015 (Dashed underlines indicate the changes upon the May 2014 version.)
Annex 2 - Use of non-contact voltage tester

- In order to prevent nuisance alarm of the detector due to poor quality, and to prevent design problems such as lack of on-off switch, the detector shall fulfill the recommended specification given in the appendix.

- The operating principle of the detector is usually by sensing the electric field of an energized conductor. If there is earthed metallic object between the detector and the conductor, the electric field of the energized conductor may be weakened to the extent not detectable by the detector. Therefore, multi-point detection as described below shall be conducted on an object, to reduce the probability of non-detection of an energized conductor.

- Multi-point detection shall be conducted on an object, by putting the detection head of the detector at three or more locations of the object, with different angles of orientation. If the detection is conducted on a multi-core cable, the detection locations shall be separated by 10cm or more.

- Use of the detector is only a part of the safety procedures, and not a professional test. (Testing of fixed electrical installations is prescribed by the Code of Practice on the Electricity (Wiring) Regulations.)

- The detector shall be regularly checked by a REW.

- A person using the detector shall have received instructions from a REW on how to use the detector.
Appendix to Annex 2: Recommended specification for non-contact voltage detector

- The detector shall be held-hand and battery-operated, with a sensing tip. It shall be able to detect the presence of voltage between 100V ac to 600V ac 50Hz inside a low voltage power cord, by touching the sensing tip on the insulation sheath of the power cord.

- If the presence of such voltage is detected, the detector should give a visual indication in red color, and an audible signal. It should be able to disable the audible signal.

- When the sensing tip of the detector is 2cm away from the centerline of a low voltage power cord energized at 220V ac, the detector should not indicate the presence of voltage.

- There should be an on/off switch on the detector. When the detector is turned on, a distinct indication should be given so that the user can know that the detector is in the operating state and is healthy.

- There should be a battery-low indication when the battery voltage drops to a threshold value.

- The detector should be automatically turned off after several minutes of non-use.

- Safety standard: IEC 61010-1:2001 or equivalent

- EMC standard: IEC 61326:1-2006 or equivalent

- Operating temperature range: 0 to 40 degrees Celsius

- Operating humidity range: 0 to 95%
Annex 3: Potential electrical hazard of electrical works on lighting fitting when disconnecting daisy-chained neutral wire.
Implementation Guidelines for PS Clause EMS02

PS 條款 EMS02 的實施指引

1. PS 條款 EMS02 要求在機電工程項目中，所有在帶有已通電電力裝置的假天花內的工程項目及定期工務（「特定假天花內工程」），須實施工作許可證制度。EMS02 適用於工程項目合約（即為了某個牽涉設備安裝的工程項目的合約）及定期工務合約（例如定期屋宇裝備安裝合約），而不適用於機電保養合約。

(a) 如果是專有工地 (例如新建樓宇或進行全面更新的樓宇) 內的工程項目或定期工務項目，「特定假天花內工程」的工作許可證制度應在永久電力裝置通電之後實施。無論永久電力裝置是部份通電或全部通電。承辦商應與工地電力承辦商聯絡，以確定永久電力裝置甚麼時候部份通電或全部通電。（備注：如果機電工程師所批出的合約，是為了在建築署的專有工地安裝某些機電系統，例如在環境控制設施安裝閉路電視系統，合約承辦商應與建築署的工地電力承辦商聯絡。如果機電工程師所批出的合約，涵蓋了工地的電力系統工程，那麼合約承辦商自己同時也是 “工地電力承辦商” 。）

(b) 如果是有現場地內的工程項目或定期工務項目，在工程開始時永久電力裝置已經存在，因此須在工程開始時實施「特定假天花內工程」的工作許可證制度。

2. 承辦商須設立工作許可證制度，達致工程師代表滿意，並加以實施。承辦商須設計及制定工作許可證的樣式，要求許可證的程序、發證及撤銷程序、及檢查項目。承辦商須負責工作許可證制度的整體運作。承辦商須聘請合資格的電業工程人員，以實施工作許可證制度，並通知及更新工程師代表電業工程人員的名字。

3. 「特定假天花內工程」工作許可證和一般電力工程的工作許可證稍有不同。「特定假天花內工程」工作許可證涵蓋了非電力工程和電力工程。當應用在非電力工程的時候，「特定假天花內工程」工作許可證所處理的是工作環境的 潛在電力危害。當應用在電力工程的時候，「特定假天花內工程」工作許可證所處理的大部份情況是終端用電器具 (例如燈具、風機) 的工作，而一般電力工程的工作許可證比較少針對終端用電器具的工作。

4. 「特定假天花內工程」實施工作許可證制度的目的，包括但不限於：

(a) 如果假天花內進行非電力工程 - 以期確定已消除潜在電力危害，例如：假天花內電力器具由於內部故障導致外殼帶電，電力器具安裝不當引致有電力危害、散放的電線露出電線頭。

(b) 如果假天花內進行一般非電力工作的電力工程 - 以期確定已經為電力器具進行電氣隔離，即是關電及掛牌並按情況上鎖。
(c) 如果假天花內必須進行帶電工作(例如尋找故障原因時．以鉗錶為風機量度電流) - 以
期確定已遵守《電力(線路)規例工作守則》第4章及附錄15的工作安全措施要求。

5. 「特定假天花內工程」工作許可證的樣本載於附錄1。承辦商應採用該工作許可證樣本．
除非承辦商認為該樣本應再改善，為了發出工程許可證：

(a) 承辦商須為「特定假天花內工程」委任一位工程主管，工程主管須有三年相關的工地
督導經驗。

(b) 工程主管填妥第一部份，向安全主任要求發出工程許可證。

(c) 工程主管安排註冊電工到現場進行電力安全檢查，註冊電工進行所需的電力安全檢查
並在第二部份確認，安全主任進行其他的檢查(例如高處工作、工作位置的照明、電
動工具)並在第三部份確認及發證。

(d) 工程主管在第四部份進行簽收，並在當天知會工程師代表所指定的督察職系人員，許
可證於簽發後的工程期間，須要保留在工作現場，以供查閱。

(e) 工程完成後，工程主管通知安全主任

➢ 如果是電力工程，工程主管安排註冊電工到現場進行電力復原，註冊電工須檢查
並確定已進行的電力工程沒有遺留電力危害，並且所牽涉的電力器具的金屬外殼
都已接地，然後進行電力復原並在第五部份確認，安全主任在第六部份進行撤
銷，並由工程主管進行存檔(至合約完結)，安全主任也應保留副本(例如拍照)並
自己存檔。

➢ 如果是非電力工程，安全主任直接在第六部份進行撤銷，並由工程主管進行存檔
(至合約完結)，安全主任也應保留副本(例如拍照)並自己存檔。

(f) 如果在工作過程當中環境發生改變，引致對假天花內的電力安全有疑問的話，工程主
管應該要求安全主任撤銷現有的許可證及發出新的許可證。

6. 對於沒有要求安全主任的合約，工作許可證中安全主任的發證和撤銷步驟可由安全督導員
取代，該安全督導員須有最少三年建造工作經驗並完成合適的安全督導員訓練課程。

7. 如果在檢查的過程，註冊電工發現有電力危害，而須要採取臨時保障措施(例如附加臨時
水線)，則應實施該等措施，之後且應該向工程主管作出報告。

8. 如果工程範圍內有其他工程同時進行，例如本工作許可證是關於閉路電視的安裝，工程範
圍內另一位承辦商同時進行通訊系統的安裝，則本工作許可證的工程主管須與其他人士進
9. 在維修責任期(DLP)內，承辦商可以採用工程許可證，也可採用以下的替代方法以符合障修理時間的要求。

(a) 承辦商須為「特定假天花內工程」委任一位工程主管。

- 開始工程之前，工程主管須安排已接受使用「非接觸式電壓測試器」訓練的工作人员、戴上電工手套及使用「非接觸式電壓測試器」檢查工作位置的天花骨、假天花內工程範圍附近工作過程可能接觸到的金屬物件；檢查人員須脫除可能接觸到工程範圍附近金屬物件的金屬裝飾物(比如手鍊)。

- 如果在檢查的過程中，電壓測試器沒有發出預定的安全顯示，或有任何疑問(比如發現假天花內有散放電線露出電線槽)，則不可繼續檢查或工作，必須召喚電工。如果電工在複查過程，發覺須要採取臨時保障措施(例如附加臨時水線)，則應實施該等措施，之後且應該向工程主管作出報告。

- 檢查人員還須檢查高處工作設備、工作位置的照明、電動工具。

- 承辦商須制定「非接觸式電壓測試器」的使用指引及規格，達致工程師代表滿意。電壓測試器的使用指引樣本及推薦規格載於附錄 2。

(b) 假天花內對已接駁電源的器具的電力工程，須由註冊電工進行。

- 須按正確程序為電力器具進行電氣隔離，即是開關及掛牌並按情況上鎖。

- 如果註冊電工認為必須進行帶電工作(例如尋找故障原因時，以鉗錶為機械測度電流)，須遵守《電力(線路)規例工作守則》第 4 章及附錄 15 的工作安全預防措施要求。

(c) 在現場的工程主管須確定以上的要求都已完成並加以記錄及確認，才能允許進行假天花內的工程。

- 工程主管須即時使用流動裝置向其督導人員及安全主任發出確認通知，並以副本形式發送給工程師代表所指定的督察職系人員。除非在通訊訊號不足的地點，則工程主管在移動至訊號充足的位置時就應發出。

- 其督導人員及安全主任在收到確認通知後，應進行審閱，及按需要進行跟進。

- 工程完成後，工程主管須使用流動裝置向其督導人員及安全主任發出完工通知。
承辦商須採納妥當的記錄及通知格式，及使用流動裝置發出記錄及通知的具體方法，達致工程師代表滿意。

對於沒有要求安全主任的合約，又或者經工程師代表的同意（例如建造工程已經確實全部完成，而缺陷跟進工程只需少數人員並不牽涉安全主任），可由安全指導員取代以上安全主任在維修責任期內的角色，該安全指導員須有最少三年建造工作經驗並完成合適的安全指導員訓練課程。

10. 如果只是單純視察的工作，則不需工作許可證，但在進行視察之前，須由已接受使用「非接觸式電壓偵測器」訓練的工作人員，戴上電工手套及使用「非接觸式電壓偵測器」檢查工作位置的天花骨。如果在視察的過程身體部份有機會接觸到金屬物件，則須先使用「非接觸式電壓偵測器」作出檢查。檢查人員須脫除可能接觸到工程範圍附近金屬物件的金屬裝飾物（例如手錶）。如果在檢查的過程，電壓偵測器沒有發出預定的安全顯示，或有任何疑問（例如發現假天花內有散放電線露出電線頭），則不可繼續進行工作，必須召喚電工。

11. 臨時照明和電動工具，須為110V 中心抽頭接地或電池操作。

12. 所有對燈具進行工作的電力人員，須特別注意附錄3 所示的電力危害。如果為永久照明線路上的燈具進行電力工程，該線路應在微型斷路器（MCB）進行閉電，而不是在照明開關處進行開關。如果該場地不允許大面積沒有照明，而必須在照明開關處進行閉電，則該電力人員在進行燈具電力工程時須戴上電工手套及使用絕緣工具。

13. 從事假天花工作的電工手套，建議選用500V 級手套，因為相對於1000V 級手套，使用500V 級手套時手部活動比較靈活。

14. 除了以上的「特定假天花內工程」工作許可證制度，承辦商也須為「其他特定工程」設立工作許可證制度。

(a) 工程開始的時候，承辦商須為該工程進行風險評估，找出需要在永久電力裝置通電之後(無論是部份通電或全部通電)實施工作許可證制度的「其他特定工程」，包括但不限於：

   i) 淚作業工程，例如纖維塗漆、批塗，而在工程範圍水平週邊及以下1.5 米內有電力裝置(例如電燈、插座)存在；

   ii) 在下雨環境下進行電焊。

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Version date: January 2015 (Dashed underlines indicate the changes upon the May 2014 version.)
(b) 承辦商須為「其他特定工程」設計工作許可證。達致工程師代表滿意。風險評估的建議安全措施，應納入工作許可證之中。
工作許可證 (特定假天花板內工程)

注：
(1) #標示的項目只適用於電力工程。
(2) 第三及第六部份由安全督導員發證及撤銷只適用於沒有要求安全主任的合約。
(3) 許可證於簽發後的工程期間，須要保留在工作現場，以供查閱。
(4) 本許可證為符合機電工程署合約條款 EMS02 而制定。

<table>
<thead>
<tr>
<th>第一部份: 工程細節 (由工程主管填寫和簽署)</th>
</tr>
</thead>
<tbody>
<tr>
<td>合約編號</td>
</tr>
<tr>
<td>營業位置及範圍</td>
</tr>
<tr>
<td>營業詳情</td>
</tr>
<tr>
<td>營業日期</td>
</tr>
<tr>
<td>#進入帶電工作的註冊電工姓名</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>其他工人姓名</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>工程主管姓名</td>
</tr>
<tr>
<td>簽署</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>第二部份: 電力檢查 (由註冊電工填寫和簽署)</th>
</tr>
</thead>
<tbody>
<tr>
<td>本人已辨識工作範圍之內以及附近 (1.5 米) 有機會對工作人員構成電力危害的電力器件，並已檢查確定該等電力器件沒有電力危害</td>
</tr>
<tr>
<td># (如有帶電工作的工序) 本人確定以上工程符合《電力(線路)規例工作守則》第 4 條及附錄 15 的工作安全措施要求：具體安全措施如下：</td>
</tr>
<tr>
<td># 本人確定已於以上工程所須進行截斷電源的部分，進行截斷電源及在電源處掛牌及按情況上鎖，截斷電源及掛牌上鎖位置如下：</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>註冊電工姓名及註冊編號</th>
<th>簽署</th>
<th>日期和時間</th>
</tr>
</thead>
</table>

Version date: January 2015 (Dashed underlines indicate the changes upon the May 2014 version.)
### 第三部份：其他檢查及發證 (由發證人員-安全主任/安全督導員填寫和簽署)

<table>
<thead>
<tr>
<th>檢查項目</th>
<th>是</th>
<th>否</th>
</tr>
</thead>
<tbody>
<tr>
<td>檢查高處工作的設備為合適</td>
<td></td>
<td></td>
</tr>
<tr>
<td>檢查照明足夠，如使用臨時照明燈與電動工具，均為 110V CTE 或電池操作</td>
<td></td>
<td></td>
</tr>
<tr>
<td>確認第二部份已經由註冊電工簽署</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

根據本人上述評估，現發出工作許可證 / 不發許可證* · 許可證有效期為第一部份的工作日期和時間。

發證人員 - 安全主任/安全督導員

簽署

日期和時間

* 將不適用的刪除

### 第四部份：接收 (由工程主管簽署)

本人確認已經接收此工作許可証，而本人及本人轄下人員的工程，不會超出第一部份所述。在第一部份所述的工程進行期間，本人會在工程現場保留此工作許可証，並會在工程完成或終止後，將許可証交還發證人員。

工程主管

簽署

接收日期和時間

### 第五部份：電力復原 (由註冊電工簽署)

本人已檢查並確認第一部份所述的電力工程沒有遺留電力危険，並且所涉及的電力器具的金屬外殼已接地。

本人已檢查並確認電器的接線及連接沒有問題。

註冊電工姓名及註冊編號

簽署

日期和時間

### 第六部份：撤銷 (由發證人員-安全主任/安全督導員簽署)

本人確認工程主管已回此工程許可證。此許可證第一部份所述工程已完成或終止。因是電力工程)確認第五部份已經由註冊電工簽署，此工作許可證現予以撤銷，並交回工程主管以進行存檔。本人也保存副本。

發證人員 - 安全主任/安全督導員

簽署

日期和時間

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Version date: January 2015 (Dashed underlines indicate the changes upon the May 2014 version.)
附錄 2 - 非接觸式電壓偵測器的使用

● 為了避免質量不佳的偵測器誤報、沒有開關等設計問題，偵測器必須符合附件的推薦規格（只有英文版本）。

● 一般偵測器的原理是感測帶電導體的電場，如果偵測器和帶電導體之間有已接地的金屬物件，帶電導體的電場可能會被減弱而令到不能被偵測器所感測到。因此，對同一物件須要如上所述作出多點偵測，以減少偵測不到帶電導體的機會率。

● 同一物件須要作出多點偵測，把偵測頭放在物件的至少三點不同位置，並以不同角度作出偵測。如果是偵測多芯電線，偵測點要相隔10 厘米。

● 使用偵測器只是安全工作程序的一部份，而不是一種專業測試。（固定電力裝置的定期檢查測試，《電力(線路)規例工作守則》有所規定。）

● 偵測器必須由REW定期檢查。

● 使用偵測器的人，必須曾接受REW指導如何進行偵測。
Implementation Guidelines for PS Clause EMS02

The detector shall be held-hand and battery-operated, with a sensing tip. It shall be able to detect the presence of voltage between 100 V ac to 600 V ac 50 Hz inside a low voltage power cord, by touching the sensing tip on the insulation sheath of the power cord.

If the presence of such voltage is detected, the detector should give a visual indication in red color, and an audible signal. It should be able to disable the audible signal.

When the sensing tip of the detector is 2 cm away from the centerline of a low voltage power cord energized at 220 V ac, the detector should not indicate the presence of voltage.

There should be an on/off switch on the detector. When the detector is turned on, a distinct indication should be given so that the user can know that the detector is in the operating state and is healthy.

There should be a battery-low indication when the battery voltage drops to a threshold value.

The detector should be automatically turned off after several minutes of non-use.

Safety standard: IEC 61010-1:2001 or equivalent

EMC standard: IEC 61326:1-2006 or equivalent

Operating temperature range: 0 to 40 degrees Celsius

Operating humidity range: 0 to 95%
附錄 3 – 對燈具進行電力工作過程甩開鍊接式中線時的潛在電力風險