討論文件
二〇〇六年九月二十二日

【中譯本】

# 西九龍文娛藝術區
# 核心文化藝術設施諮詢委員會

## 博物館小組

## 藝展中心

### 目的

本文件載列藝展中心的背景資料，並請成員就藝展中心的需要及主要規格提出意見。

### 徵詢意見

2. 請成員：

(a) 備悉藝展中心的背景資料；

(b) 就在西九龍文娛藝術區（西九）設立藝展中心的需要提出意見；以及

(c) 如有需要設立藝展中心，建議它的主要規格。

## 背景

職權範圍

3. 根據博物館小組的職權範圍，成員委員須就藝展中心的需要及主要規格，向西九龍文娛藝術區核心文化藝術設施諮詢委員會(諮詢委員會)提供意見。有關職權範圍載於**附件 A**。

2003 年發展建議邀請書所載的藝展中心設施

4. 2006 年 4 月，我們隨文件 MAG/04/2006，向成員提供西九核心文化藝術設施的背景資料，當中包括藝展中心。

5. 簡單來說，鑑於公眾需要更多設備完善、位處市中心的出租場地，以供舉辦大型展覽和藝墟，當局於 2003 年 9 月發出的發展建議邀請書中，把藝展中心列爲強制要求。

6. 建議藝展中心的淨作業樓面面積至少爲 10 000 平方米。這座設施一應俱全的獨立大樓，具有設計靈活及設備完善的展覽館，適合展出各類本地和海外的藝術品及展覽。有關發展建議邀請書所列藝展中心的詳細規格載於**附件 B**，以供成員參考。

## 藝展中心的需要

*公眾諮詢*

7. 諮詢會、特別會議及聚焦小組會議所蒐集得來的回應，均支持設立供藝術教育用途的藝術空間，以及供本地藝術家展示他們未符合在博物館展覽要求的實驗藝術及藝術作品，讓他們可以持續發展。藝展中心設於西九是合適的，因爲藝展中心可配合西九的綜合文化設施。

*業界意見*

8. 藝術品拍賣界普遍認爲現有的藝術品展覽空間有不足的地方，例如展覽空間和設施不足、租借場地手續繁複等。他們熱切歡迎新的高質素藝術展覽空間，並認爲建於西九是合適的，因爲西九可爲藝展中心提供廣闊和靈活空間。藝展中心落成後，西九可定期舉辦大型藝術活動如藝術節、藝術品拍賣、藝文表演等。

**規格**

9. 如有需要在西九設立藝展中心，該中心的位置、設備規格表及特殊需求（包括環境、照明、消防、能源、訪客設施和支援設施）須予考慮。

**未來路向**

10. 請成員就是否需要在西九設立藝展中心和它的規格提供意見。有關建議將納入博物館小組報告，以提交諮詢委員會考慮。

**博物館小組秘書處**

二ＯＯ六年九月

**附件 A**

# 西九龍文娛藝術區
# 核心文化藝術設施諮詢委員會

## 博物館小組

## 職權範圍

根據現行的文化藝術政策，以及考慮到香港目前現有的設施，就下述事宜向西九龍文娛藝術區（「西九」）核心文化藝術設施諮詢委員會提供意見：

- 擬議的「西九」四個博物館的需要及有關博物館的主題[註]；
- 加入其他主題的博物館的需要；
- 主題確定後，在可能範圍內建議每個博物館的規模和主要規格；以及
- 藝展中心的需要及主要規格。

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[註] 建議書只須載列一個博物館群，由四間不同主題的博物館組成，淨作業樓面面積合共最少 75 000 平方米。該四個「擬議博物館主題」分別爲：

- 現代藝術博物館
- 水墨博物館
- 設計博物館
- 電影博物館

上述主題在「發展建議邀請書」內並非強制性要求。

(附件 B 只備英文本)

# (E) Art Exhibition Centre

(E) Art Exhibition Centre and Museum Cluster
(a) Art Exhibition Centre (AEC)

**Schedule of Accommodation and Preliminary Technical Specifications**

**CORE FUNCTIONS**

The Core functions of the Art Exhibition Centre are:-
i) To provide galleries for art exhibitions for hiring purposes, and
ii) To provide related facilities for hiring purposes.

**SCHEDULE OF ACCOMMODATION**

2. The schedule of accommodation is at Appendix 1. The facilities are required in order that the Centre can perform the core functions. The facilities are classified under 4 different security zones with regard to their relationship with valuable art objects for display. Technical specifications for the 4 security zones are at Appendix 2.

**SPECIAL FEATURES:**

3. Special features for the Centre are described at Appendix 3.

**LOADING BAY AND PARKING FACILITIES**

4. The loading bay should be a secured compound with adequate lighting for night operation and at least a portion of it should be under cover to protect delivery of exhibits in wet seasons by two 16m container trucks. The minimum height for the shelter should be 5.5m high to permit the operation of hoists on delivery trucks.

5. It is understood that there will be extensive parking facilities for the public in close proximity to the Centre. Being such, a total of 25 parking spaces are required for this Centre, 15 for staff and 10 for VIP guests. They may be incorporated within the secured Loading Bay. Besides, the Loading Bay must be able to accommodate a maximum of 2 container trucks. Vehicles for catering delivery will also use the Loading Bay for temporary parking and loading. In addition, 1 parking space designated for persons with disabilities is also required and it must be located on the ground level to facilitate user access into the Centre. Drop-off and visitor waiting spaces at the front entrance should allow for three 12m coaches or 7 private cars.

**INDEPENDENT STATUS**

6. For security control and operational efficiency, the building should be self-contained and free-standing. A Master Key System is required for all doors in the Centre classified under different security levels for access control and efficiency of operation and emergency control.

**ALARM SYSTEM**

7. Galleries and artifact storages should have an alarm system monitored individually. It should contain a 24-hour key switch contact alarm for doors and an infra-red detector system or equivalent stable alarm system for the interior space. All perimeter doors of the building should be alarm guarded. A closed-circuit television surveillance system should be provided to cover strategic locations in galleries, artifact storages and perimeter exits.

**ROUTES SEGREGATION**

8. Routes for the public, staff, exhibition organizer, clean exhibit delivery, refuse disposal and catering provision delivery should be segregated to enable independent operation at different times under different security conditions.

**SPECIALIST EQUIPMENT**

9. This document describes some of the specialist equipment required for the operation of an art exhibition centre. The air-conditioning system should allow for zoning control to achieve economy in case of partial closure of galleries and facilities.

**LIMITATIONS**

10. An art exhibition centre involves complex operations. This document only describes minimum technical requirements for the hard ware. It will take an experienced management team to interpret it and make the centre work to attain world standard performance. The planning of an art exhibition centre should be a continuous working process among various professionals for a period of time.

**AEC Appendix 1**

## SCHEDULE OF ACCOMMODATION FOR ART EXHIBITION CENTRE (AEC)

| Category of Facilities | NOFA# $m^2$ | Sub-total | Remarks | Security Zoning* |
|---|---|---|---|---|
| **1. Exhibition Galleries** | | | See Appendix 3 | |
| 1.1 Exhibition Gallery 1 | 2,000 | | Could be partitioned into two galleries of 1,000 $m^2$ | 1 |
| 1.2 Exhibition Gallery 2 | 1,000 | | Could be partitioned into two galleries of 500 $m^2$ | 1 |
| 1.3 Exhibition Gallery 3 | 1,000 | | | 1 |
| 1.4 Exhibition Gallery 4 | 500 | | One gallery | 1 |
| | Sub-total: | 4,500 $m^2$ | | |
| **2. Visitor Services** | | | See Appendix 3 | |
| 2.1 Entrance Hall | 1,000 | | To receive visitors | 3 |
| 2.2 VIP Rooms (2) | 100 | | For hire @50 $m^2$ | 3 |
| 2.3 Information Counter | 200 | | With a p.a. system | 3 |
| 2.4 Cloak Room | 200 | | With lockers and racks | 3 |
| 2.5 Ticket Offices (2) | 50 | | @25 $m^2$ See Appendix 3 | 3 |
| 2.6 Toilets | 600 | | Conveniently distributed | 3 |
| 2.7 Souvenir Shop | 100 | | With independent exit | 3 |
| 2.8 Catering Facility | 300 | | With independent exit See Appendix 3 | 3 |
| 2.9 Meeting Rooms (2) | 200 | | for hire @100 $m^2$ | 3 |
| 2.10 Multi-purpose Lecture Theatre | 400 | | 300 seats, for hire See Appendix 3 | 3 |
| | Sub-total: | 3,150 $m^2$ | | |
| **3. Supporting Facilities** | | | | |
| 3.1 Management Office | 100 | | Depends on staffing level | 4 |
| 3.2 Security Control Room | 50 | | See Appendix 3 | 4 |
| 3.3 Display Equipment Storage | 500 | | Air-conditioned | 4 |
| 3.4 Exhibit Temporary Storages (2) | 400 | | @ 200 $m^2$ See Appendix 3 | 2 |
| 3.5 Crate Storages (2) | 200 | | Air-conditioned @ 100 $m^2$ | 4 |
| 3.6 Cleaners' Storage/Duty Room | 50 | | Air-conditioned | 4 |
| 3.7 Uniformed Staff Changing Room | 50 | | With lockers | 4 |
| 3.8 Loading Bay | 1,000 | | Secured space | 4 |
| | Sub-total: | 2,350 $m^2$ | | |
| | Grand total: | 10,000 $m^2$ | | |

# Size is given in NOFA, excluding plant rooms, lift shafts, stair cases and circulation areas.

| * Security Zoning Summary (Details see Appendix 2): | NOFA $m^2$ |
|---|---|
| Zone 1: Collection Area – Accessible to the Public | 4,500 |
| Zone 2: Collection Area – Not Accessible to the Public | 400 |
| Zone 3: Public Area – Not Used for Collections | 3,150 |
| Zone 4: Non-Public Area – Not Used for Collections | 1,950 |
| | 10,000 $m^2$ |

**AEC Appendix 2**

**SECURITY ZONING TECHNICAL SPECIFICATIONS**

## A. Security Zoning 1 (Collection Area – Accessible to the Public)

### 1. Environmental Standards:

| | | |
|---|---|---|
| a. Relative humidity | i) | 55% +/- 3% all year-round |
| b. Temperature | i) | 22°C +/- 1°C |
| c. Light levels | i) | flexible lighting system that could achieve the following variations |
| | ii) | 50 lux for high-sensitivity artifacts* |
| | iii) | 100-200 lux for medium-sensitivity artifacts* |
| | iv) | 300 lux for low-sensitivity artifacts* |
| | v) | maximum of 10 microwatt/lumen of UV light at the lux levels proposed above |
| | vi) | Colour Rendering Index (CRI) of min. 85 |
| d. Air cleanliness | i) | air-conditioning system provided with chemical filters such as activated charcoal to remove air pollutants |
| | ii) | the filtration system should be able to reduce the concentrations of sulphur dioxide to less than 0.4 ppb, nitrogen oxides to less than 5.0 ppb, and ozone to less than 1.0 ppb |
| | iii) | 90-95 % efficiency particulate filtration of particles 1 micron in diameter and 50% of particles 0.5 micron in diameter |

* Note: Highly sensitive artefacts include: Costumes, tapestries, textiles, water colours, furniture, prints, drawings, stamps, manuscripts, miniatures, wallpaper, dyed leather, natural history exhibits, feathers, fur, etc.
Medium-sensitive artefacts include: Oil and tempera paintings, undyed leather, lacquer, wood, horn, bone, ivory. Low-sensitive include: Metals, stone, ceramics, glass, jewellery.

### 2. Lighting:

Visitors require a gradual decrease in lighting (i.e. a buffer zone) before entering into the gallery in order to adjust to contrasting light levels.

Track lighting is required for easy adjustment of the light intensity and direction of the light beam according to the requirement of the exhibits.

#### 2.1 Choices of Lighting

*a.* Natural Light

All natural light should be eliminated from exhibition spaces, and UV filters must be placed on windows and glazing if natural light is used. For glazed ceiling over foyer/exhibition areas, an electronic shutter system is required for the control of the direction and amount of natural light.

*b.* Incandescent Light

Incandescent light is easy to control and contains little UV. The following measures are advised to reduce the associated heat emission when incandescent lights are selected :

i) providing good ventilation to avoid heat build up
ii) using reflected light

iii) positioning the light source far away from the artefact
iv) using cool beam bulbs and associated light fittings which are specifically designed to produce less heat

*c.* Halogen Light
Halogen bulbs are generally used as spot lighting but they produce too much heat to be used in large quantities in an enclosed exhibition space. Halogen bulbs also emit high levels of UV, and should not be used on light sensitive materials.

*d.* Fluorescent Light
Fluorescent light produces little heat but can emit too much UV. This problem can be solved by:
i) using fluorescent tubes that do not emit UV or emit only a small amount of UV.
ii) placing UV filters made of acrylics over UV emitting tubes.

**3. Fire Fighting System**
The Centre should meet fire safety standards for the protection of the visitors and the artefacts. A wet pipe sprinkler system would be preferred to dry pipe or pre-action types.

A sophisticated fire detection system should be installed so as to provide early warning of a possible fire. All fire detectors should be of the smoke type, not the heat type, because of the average earlier detection of possible fire by the smoke type. Heat detectors should only be used in areas where smoke detectors may be subject to false alarms.

The fire alarm detection system and the fire suppression system should be monitored 24 hours a day, 365 days a year by the Centre itself and the local fire department.

**4. Public Address System**
A public address system is required for public announcements and background music. Separate public address systems should be installed for each gallery unit for use in opening ceremonies.

**5. Carpeting**
Carpets can be used in the entry hall to reduce the quantity of dirt and large particulates that get into the gallery. Carpets or rugs should be made of looped, rather than cut fibres and should be fire-rated and of good quality

**6. Interior Wall Finishes**
The choices for gallery wall finishes are usually fabrics or fire-proof acrylic latex paints on wallboards for the hanging of exhibits. Avoid oil-based or alkyd-based paints and varnishes because these products give off large quantities of harmful volatile products. All wall surfaces are to be covered with wallboards to maximize display area.

To limit the amount of internally generated dust, all concrete building surfaces should be sealed, even those that are above false ceilings or behind false walls. Other construction materials such as plaster and plasterboard should be painted.

**7. Water and Drainage**
No water lines should pass above or through the gallery space except for the sprinkler system. If water lines must be allowed, they should be enclosed within a larger diameter pipe which is sloped to drain outside the gallery space.

**8. Fire Compartmentation**
At least, a 2-hour fire rating for the walls, floors and ceilings should be provided to give the necessary protection to the public and exhibits.

**9. Power**

Sufficient power points should be available from floors (electricity grid) and on wall skirts for exhibition galleries to accommodate different display layout designs.

**10. Floor Loading**

5 – 10 kPa

**11. Building Construction**

Care has to be taken with the design and construction of the exterior walls and roofs in order to provide adequate insulation levels, a vapour retarder to limit water vapour access into the insulation, and an airtight air barrier to prevent air leakage into the building fabric from the exterior. In order to maintain a stable RH level, it is especially important that the Centre is designed as an airtight building.

**12. Access**

Exhibit door and public access of 3.5m x 3.5m minimum for exhibition galleries and 2m x 3.5m for others.

If the Centre is constructed with more than one floor, the galleries should also be serviced by a freight elevator to allow vertical movement of exhibits and equipment from one floor to another. The elevator should be of the "hospital" type, with a tall ceiling height – min. 2600 mm; a smooth floor; indirect fluorescent general lighting of 200-300 lux measured 1 m above the floor; and the ability to 'key off' the lift controls for exclusive use when moving artefacts.

**B. <u>Security Zoning 2 (Collection Area – Not Accessible to the Public)</u>**

**1. Environmental Standards:**

| | | |
|---|---|---|
| a. Relative humidity | i) | 55% +/- 3% all year-round |
| b. Temperature | i) | 22°C +/- 1°C |
| c. Light levels | i) | A minimum of 500 lux for comfortable work lighting intensity |
| | ii) | maximum of 10 microwatt/lumen of UV light at the lux levels proposed above |
| | iii) | Colour Rendering Index (CRI) of min. 85 |
| d. Air cleanliness | i) | air-conditioning system provided with chemical filters such as activated charcoal to remove air pollutants |
| | ii) | the filtration system should be able to reduce the concentrations of sulphur dioxide to less than 0.4 ppb, nitrogen oxides to less than 5.0 ppb, and ozone to less than 1.0 ppb |
| | iii) | 90-95 % efficiency particulate filtration of particles 1 micron in diameter and 50% of particles 0.5 micron in diameter |

**2. Lighting:**

**2.1 Choices of Lighting**

*a.* Natural Light

All natural light should be eliminated and UV filters must be placed on windows and glazing if natural light is used.

*b.* Incandescent Light

Incandescent light is easy to control and contains little UV. The following measures are advised to reduce the associated heat emission when incandescent lights are selected :

i) providing good ventilation to avoid heat build up
ii) using reflected light
iii) positioning the light source far away from the artefact
iv) using cool beam bulbs and associated light fittings which are specifically designed to produce less heat

*c.* Fluorescent Light

Fluorescent light produces little heat but can emit too much UV. This problem can be solved by:

i) using fluorescent tubes that do not emit UV or emit only a small amount of UV.
ii) placing UV filters made of acrylics over UV emitting tubes.

**3. Fire Fighting System**

The Centre should meet fire safety standards for the protection of the artefacts. In exhibit temporary storage at 3.4 where valuable or water sensitive collections are held, gas suppression systems should be used. The gas has to be an effective fire-fighting agent as well as people safe in extinguishing quantities, such as "FM-200" (heptafluoropropane), or "INERGEN" (a mixture of nitrogen, argon and carbon dioxide).

A sophisticated fire detection system should be installed so as to provide early warning of a possible fire. All fire detectors should be of the smoke type, not the heat type, because of the

average earlier detection of possible fire by the smoke type. Heat detectors should only be used in areas where smoke detectors may be subject to false alarms.

The fire alarm detection system and the fire suppression system should be monitored 24 hours a day, 365 days a year by the Centre itself and the local fire department.

4. **Carpeting**
   Carpets should be used to reduce the quantity of dirt and large particulates. Carpets or rugs should be made of looped, rather than cut fibres and should be fire-rated and of good quality.

5. **Interior Wall Finishes**
   Avoid oil-based or alkyd-based paints and varnishes because these products give off large quantities of harmful volatile products.

   To limit the amount of internally generated dust, all concrete building surfaces should be sealed, even those that are above false ceilings or behind false walls. Other construction materials such as plaster and plasterboard should be painted.

6. **Fire Compartmentation**
   At least, a 2-hour fire rating for the walls, floors and ceilings should be provided to give the necessary protection to the staff and exhibits.

7. **Power**
   Sufficient power points should be available on wall skirts.

8. **Floor Loading**
   5 – 10 kPa

9. **Building Construction**
   Care has to be taken with the design and construction of the exterior walls and roofs in order to provide adequate insulation levels, a vapour retarder to limit water vapour access into the insulation, and an airtight air barrier to prevent air leakage into the building fabric from the exterior. In order to maintain a stable RH level, it is especially important that the Centre is designed as an airtight building.

10. **Access**
    Doors access of 2m x 3.5m minimum.

## C. Security Zoning 3 (Public Area – Not Used for the Collections)

**1. Environmental Standards:**

| | | |
|---|---|---|
| a. Relative humidity | i) | 60% +/- 3% all year-round |
| b. Temperature | i) | 22°C +/- 1°C |
| c. Light levels | i) | a minimum of 500 lux , a comfortable work lighting intensity for those areas that work will be carried out |
| | ii) | Other areas: a lighting level addressing to the human comfort and basic need for clarity of vision |
| d. Air cleanliness | i) | 90-95 % efficiency particulate filtration of particles 1 micron in diameter and 50% of particles 0.5 micron in diameter |

**2. Lighting**
Normal lighting system

**3. Fire Fighting System**
The Centre should meet fire safety standards. A wet pipe sprinkler system would be preferred to dry pipe or pre-action types.

A sophisticated fire detection system should be installed so as to provide early warning of a possible fire. All fire detectors should be of the smoke type, not the heat type, because of the average earlier detection of possible fire by the smoke type. Heat detectors should only be used in areas where smoke detectors may be subject to false alarms.

The fire alarm detection system and the fire suppression system should be monitored 24 hours a day, 365 days a year by the Centre itself and the local fire department.

**4. Public Address System**
A public address system is required for public announcements and background music.

**5. Carpeting**
Carpets can be used to reduce the quantity of dirt and large particulates. Carpets or rugs should be made of looped, rather than cut fibres and should be fire-rated and of good quality

**6. Interior Wall Finishes**
Avoid oil-based or alkyd-based paints and varnishes because these products give off large quantities of harmful volatile products.

To limit the amount of internally generated dust, all concrete building surfaces should be sealed, even those that are above false ceilings or behind false walls. Other construction materials such as plaster and plasterboard should be painted.

**7. Fire Compartmentation**
At least, a 2-hour fire rating for the walls, floors and ceilings should be provided to give the necessary protection to the public and exhibits.

**8. Power**
Sufficient power points should be available on wall skirts.

**9. Floor Loading**
5 – 10 kPa

**10. Building Construction**

Care has to be taken with the design and construction of the exterior walls and roofs in order to provide adequate insulation levels, a vapour retarder to limit water vapour access into the insulation, and an airtight air barrier to prevent air leakage into the building fabric from the exterior. In order to maintain a stable RH level, it is especially important that the Centre is designed as an airtight building.

## D. Security Zoning 4 (Non-Public Area – Not Used for the Collections)

**1. Environmental Standards:**

| | | |
|---|---|---|
| a. Relative humidity | i) | 60% +/- 3% all year-round |
| b. Temperature | i) | 22°C +/- 1°C |
| c. Light levels | i) | A minimum of 500 lux for comfortable work lighting intensity |
| d. Air cleanliness | i) | 90-95 % efficiency particulate filtration of particles 1 micron in diameter and 50% of particles 0.5 micron in diameter |

**2. Lighting**
Normal office lighting system

**3. Fire Fighting System**
The Centre should meet fire safety standards. A wet pipe sprinkler system would be preferred to dry pipe or pre-action types.

A sophisticated fire detection system should be installed so as to provide early warning of a possible fire. All fire detectors should be of the smoke type, not the heat type, because of the average earlier detection of possible fire by the smoke type. Heat detectors should only be used in areas where smoke detectors may be subject to false alarms.

The fire alarm detection system and the fire suppression system should be monitored 24 hours a day, 365 days a year by the Centre itself and the local fire department.

**4. Public Address System**
The public address system announcements should be heard in all Supporting Facilities listed under 3.1 to 3.7 of the Schedule of Accommodation at Appendix 1.

**5. Carpeting**
Carpets can be used to reduce the quantity of dirt and large particulates. Carpets or rugs should be made of looped, rather than cut fibres and should be fire-rated and of good quality

**6. Interior Wall Finishes**
Avoid oil-based or alkyd-based paints and varnishes because these products give off large quantities of harmful volatile products.

To limit the amount of internally generated dust, all concrete building surfaces should be sealed, even those that are above false ceilings or behind false walls. Other construction materials such as plaster and plasterboard should be painted.

**7. Fire Compartmentation**
At least, a 2-hour fire rating for the walls, floors and ceilings should be provided to give the necessary protection to the collections.

**8. Power**
Sufficient power points should be available on wall skirts.

**9. Floor Loading**
5 – 10 kPa

**10. Building Construction**

Care has to be taken with the design and construction of the exterior walls and roofs in order to provide adequate insulation levels, a vapour retarder to limit water vapour access into the insulation, and an airtight air barrier to prevent air leakage into the building fabric from the exterior. In order to maintain a stable RH level, it is especially important that the Centre is designed as an airtight building.

**AEC Appendix 3**

## SPECIAL FEATURES OF THE ART EXHIBITION CENTRE

### 1. Exhibition Galleries (1.1 to 1.4)

**Hanging Panel System**

Feasible partitioning into smaller rooms in each gallery by a movable ceiling grid hanging panel system and matching lighting system. The hanging panels have to be secured on the floor after partitioning and strong enough to be used for hanging paintings and flat exhibits with heavy frames.

**Gallery Lighting**

The ceiling is to be installed with a light track system matching the movable panel system to highlight exhibits. In addition to those specified in the Security Zoning Technical Specifications (Zone 1), it is worth noting that:

a. daylight should be avoided to fall directly on exhibits. UV filters must be placed on windows and glazing if daylight is used;
b. visitors require a gradual decrease in lighting (i.e. a buffer zone) before entering into the gallery in order to adjust to contrasting light levels;
c. light track and grid system is required for easy adjustment of the light intensity and direction of the light beam according to the illumination requirement of the exhibits.

**Showcases for 3D Exhibits**

Airtight showcases with internal lighting system should be provided for displaying 3-D objects. Please refer to Appendix 4 for the technical specifications of showcases. The provision of the two types of 70 showcases must be able to accommodate an exhibition of a minimum of 300 small size exhibits.

**Floor Sockets for Electricity Supply**

A grid system for floor sockets of electricity supply is necessary for supplying power to the showcases. Such floor grid should also reflect the ceiling grid.

**Floor Finishes**

The floor of Gallery 1 should be covered with light-coloured synthetic tiles that are hard and easy to maintain. Gallery 2 and 3 should be covered with carpet tiles made of looped and fire-rated fibres. The floor of Gallery 4 should be covered with hardwood such as beech, maple, oak, cherry, padauk, padauk (gold) or teak which has a moisture content of less than 13% and is a suitable flooring material. All floor surfaces should be load-bearing and can withstand wear and tear.

**Wall Finishes**

Please pay attention to the Building Construction requirement in the Security Zoning Technical Specifications to ensure that no water will condense on the wall panels of the galleries. An insulation layer should be installed between the perimeter walls and the gallery panels. The walls should be lined with load-bearing gallery panels mounted with heavy fabrics for displaying paintings and flat exhibits. The fabrics can be removed and replaced. Materials like hessian or other equally open weave fabric is preferable. Provision of a picture rail hanging system on these panels is necessary.

**Other Equipments**

The essential equipments necessary for mounting exhibitions are listed in Appendix 5.

**Ceiling Height**

Minimum clear ceiling height of 4 m is necessary.

**2. Visitor Services**

**2.5 Ticket Offices (2)**
**50m$^2$**
Zone 3

For security reasons, the ticket offices should have double doors. Provision for a strong room is required.

**2.8 Catering Facility**
**300m$^2$**
Zone 3

The design of the Catering Facility should comply with the government regulations so as to facilitate the future operator applying for the restaurant license. The Catering Facility should be adjacent to the entrance hall to provide convenient access. An outside entrance/exit should be provided so that it could operate independently even if the Centre is closed.

**2.10 Multi-purpose Lecture Theatre**
**400m$^2$**
**Zone 3**

Suggested special equipment :
1. Screen
2. Microphone system
3. Slide projector
4. Overhead projector
5. 16mm film projector
6. Digital Betacam projector and player
7. DVD, VCD and LD player
8. VHS player
9. Simultaneous interpretation equipment for 3 languages
10. With computer networking terminals

**3. Supporting Facilities**
**3.2 Security Control Room**
**50m$^2$**
**Zone 4**

This is the control room for the CCTVs, infra-red detectors and door contacts installed inside the Centre

**3.4 Exhibit Temporary Storage (2)**
**400m$^2$**
**Zone 2**

Suitable storage devices should be installed for different media of artifacts, with key-switch 24-hour alarm protection.

**3.5 Crate Storages (2)**
**200m$^2$**
**Zone 4**

The crate storages should be situated adjacent to the loading bay.

**AEC Appendix 4**

**Technical Specifications for Free-standing Showcases for Exhibition Gallery 1 (2000m$^2$)**

1. Overall Size (mm) and numbers
   1,250 (W) x 1,250 (D) x 2,100 (H) ----- 35 pieces
   2,000 (W) x 1,250 (D) x 2,100 (H) ----- 35 pieces

2. Lighting compartment
   a) height of the lighting compartment not less than 150 mm
   b) independently operated, diffused, internal fluorescent lighting with dimming device to achieve 50 – 400 lux levels at plinth surface; complete with UV filter and light disperser above the display compartment
   c) UV radiation to be kept below 10 $\mu$W/lumen and Colour Rendering Index(CRI) of the lighting greater than 85
   d) compartment lid furnished with ventilation openings and light trap construction to provide the necessary air circulation but without light leakage
   e) easy service access for the light source without passing through the display compartment

3. Glass glazing
   a) non reflective glass glazing(over 94 % light transmittance)
   b) non-tinted and water clear without any iron content
   c) laminated safety glass of architectural quality conforming to BS 6206,6262,5544 and absorbing up to 99% of UV radiation of wavelength 320-380nm
   d) not less than 10 mm thickness
   e) adjacent joints properly fitted and sealed with ethoxysilicone sealant

4. Display compartment
   a) removable suspended shelving of not less than 10mm float glass, height adjustable (an optional feature for 2,000(W) display case)

5. Base compartment
   a) lockable base compartment made with aluminum panels, powder-coated finish or acrylic lacquer coating to give a finish of good adhesion, good corrosion protection and high chemical resistance
   b) provisioned with adjustable height levellers which can be concealed by skirting
   c) skirting to be fitted in place with magnet system
   d) provision of footings designed to facilitate display case movement by pallet truck or custom-made cart to be provided by the showcase manufacturer.
   e) provision of buffering compartment for accommodating buffering materials, fibre optics system as well as air cleaning and humidity control system as necessary
   f) lockable door to be opened from front
   g) steel or aluminum alloy baseboards(i.e. display compartment floor ) of powder coated finish(choice of colours to be available), not less than 5mm in thickness

6. Sealant
   a) all interior joints sealed with alcohol curing silicon sealant such as Silastic 744(white),Silastic 3145(clear) or Silastic 7091 (black or grey)

7. Door
   a) 3 way duro-rail sliding door which can span the full length of the showcase when opened, extends and achieves at least 60% opening in either direction of the front glazing
   b) glass edges between panels fitted with unobtrusive gaskets to ensure air-tightness as much as possible

8. Climatic control and air tightness
   a) the display compartment should be able to maintain a stable microclimate to temperature ± 1 ℃ and relative humidity ±3% if buffered to a desired level
   b) no more than 0.1 air exchange per day inside the display compartment

9. Buffering compartment
   a) constructed with the base compartment and accessible by opening a lockable cover panel of the base compartment
   b) duly opened to the display compartment through specifically designed vents or slots complete with covers or stoppers when not in use

10. Framework and finish
   a) aluminum or stainless steel framework
   b) powder coated finish or acrylic lacquer coating to give a finish of good adhesion, good corrosion protection and high chemical resistance
   c) choice of colour to be available

11. Security lock
   a) individual locks for display, light and base compartments
   b) the concealed cam locks shall be robust and durable
   c) front glass door closed with two locks(top and bottom)

12. Electrical requirement
   a) provision of a single cord with plug, distant wiring may be required
   b) individual switch for each electrical accessory installed within the showcases
   c) power supply : 220-240,50Hz,A/C,single phase
   d) all the electric wiring in the showcases shall be sheathed in compliance with BS6469 or other international standards as well as properly enclosed in metal conduits
   e) compliance with Regulations and Standards : All materials supplied shall be in compliance with the following current regulations, ordinances and standards of Hong Kong or equivalent :
      i) Code of Practice for the Electrical(Wiring) Regulation issued by the Electrical and Mechanical Services Department (EMSD), Hong Kong Government
      ii) Relevant statutory obligation, ordinances and regulations with the latest revisions having the authority of law in Hong Kong Special Administrative Region, including but not limited to the Electrical Ordinance (Chapter 406)

13. Lifting system
   a) custom-made lifting system or cart for easy relocation of the showcases as a whole

**AEC Appendix 5**

**Essential Display Equipments**

| Item no | Item | Description | Quantity |
|---|---|---|---|
| 1 | Electrically driven fork-lift trucks | a) capacity: 3,000 kg<br>b) 3 Phase AC driven<br>c) energy reclamation during lowering and braking<br>d) elevated operator cabin<br>e) swiveling forks, with no supporting legs below them, for load pick-up direct from the floor<br>f) fork length: ~1,000mm<br>g) total lift height up to 3,000mm<br>h) lifting motor power: 10 kW 3 phase A/C motor<br>i) steering motor: 0.75 kW<br>j) travelling motor: 10 kW<br>k) Battery voltage: 80 Volt 720, 930 Ah<br>l) type of steering: by hand<br>m) track (front/rear): 1030/980 mm<br>n) travelling speed: ~14 mm/s<br>o) outside turning radius: 2,300 mm<br>p) inclination of mast: 4/9 Deg<br>q) maximum lift speed laden: 240 mm/s<br>r) dimensions: 2,500 x 1,200 x 2,200 mm<br>s) material of tyre: rubber/ vulkokkan/ polyurethane/ nylon<br>t) strong support legs, robust, torsion resistant forks | 1 |
| 2 | Hand pallet truck | a) capacity: 2,000 kg<br>b) working dimensions: 1,510 mm (l) x 540 mm (w) x 1,260 mm (h)<br>c) width forks: 160 mm<br>d) minimum height: 85 mm<br>e) maximum height: 205 mm<br>f) weight: 83 kg<br>g) hydraulic jack: fitted with an automatic end stroke device<br>h) steering angle at 1800<br>i) hydraulic pump with idle<br>j) carrying structure in sheet steel, blended and welded<br>k) driving wheels solid tyre: diameter 180 mm<br>l) tandem rollers in nylon: diameter 80 mm | 2 |
| 3 | Platform truck | a) capacity 150 kg<br>b) folding type | 1 |
| 4 | Platform truck | a) capacity 300 kg<br>b) folding type | 1 |
| 5 | Tools trolley | a) dimension 640x325x830 mm<br>b) with folding bar<br>c) large wheel type | 2 |
| 6. | Scaffold tower | a) span type staging<br>b) spigot connection system<br>c) full trail castors and hooks<br>d) platform size 2 x 1.37 m<br>e) platform height 3.96 m<br>f) effective working height 5.8 m<br>g) safety working load not less than 950 kg<br>h) fitted with mid-rail and toeboard | 1 |