

World Exposition Shanghai China *2010*

# **Participation Guide**

(for Official Participants)

Bureau of Shanghai World Expo Coordination

## C. Theme Presentation

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## C. Theme Presentation

In accordance with the *General Regulations* and *Special Regulation N°. 1 concerning the Definition of the Theme of the Exposition and the Guidelines for the Development of the Theme by the Organizer and the Participants*, this document is intended to give participants a basic understanding of the theme of Expo 2010, and explain the communication mechanism for the Organizer and official participants concerning theme development.

### 1. Theme Summary

#### 1.1 Theme and Sub-themes

The theme of Expo 2010 Shanghai China is “Better City, Better Life”, and its five sub-themes are “blending of diverse cultures in the city”, “economic prosperity in the city”, “innovation of science and technology in the city”, “remodelling of communities in the city”, and “rural-urban interaction”.

##### 1.1.1 Core Message

With the theme “Better City, Better Life”, the Organizer seeks answer to three major questions as follows through exhibitions, events and forums:

*What kind of city makes life better?*

*What kind of life concept and practice makes the city better?*

*What kind of urban development makes the Earth a better home for human kind and all its inhabitants?*

In order to provide preliminary direction for participants to answer the three pending questions, the Organizer has interpreted the theme in five sub-themes and developed a conceptual structure which takes the city as a living organic system, and illustrates the theme from two perspectives: space and time. Therefore, the core message of the structure is:

*The city is a human creation, and has evolved into an organic system of which man plays a most active, dynamic and creative part. There is a close relationship between human activities and the form and development of the city. Meanwhile, as the process of urbanization accelerates, the organic system of the city interacts with the ecosphere and the resource system of the earth in a greater depth and*

*width. The three organic systems of man, the city and the earth are involved in a chain relationship that has accompanied the city through development, and will fuse and blend into an integral unity.*

Such a core message will be the basis of further theme development and elaboration, and a guiding philosophy for a whole range of preparatory projects of Expo 2010.

### **1.1.2 Main Goals of Theme Development**

As Expo 2010 Shanghai China is the first registered world exposition dedicated to the “City”, the Organizer hopes that the theme and its illustrations may:

- a. Sharpen the public awareness of challenges in the Age of the City, and identify potential solutions;
- b. Enhance the conservation of the heritage of our cities, and arouse public concern for healthy urban development;
- c. Disseminate concepts of sustainable urban development, successful practices and innovations in urban development, and give inspiration for a model of sustainable urban development in developing countries; and
- d. Facilitate communication and understanding within the human race.

## **1.2 Theme Structure**

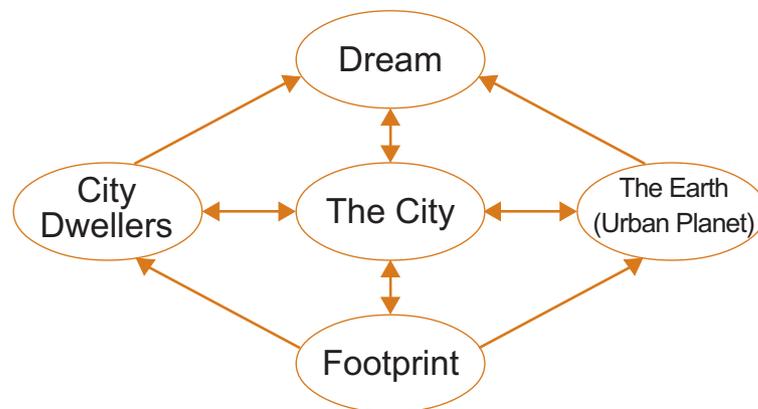
### **1.2.1 Chart of Theme Structure**

The content structure is concisely explicated by the following graph, which revolves around two axis or clusters.

- a. Structural – The structural analysis of the theme focuses on the three different “dimensions” of the structure related to City and Life.
  - The “human-scale” dimension, concentrated on the “elemental” component of the cities: the citizens. Each person is a cell and a microcosm of the City. With the accelerated urbanization underway, the influence of the city is so strong over the rest of the population that, we could say, Homo Sapiens, our specie, is becoming Homo Urbanus. The citizens of the world are becoming Urbanians. This is how we are going to name this area.
  - The “urban” dimension, devoted to analysing the city as a system, indeed as a very complex, integrated and interlinked system: a system as complex as a living organism. It shall be named CITY BEING.
  - The “global” dimension. Cities are not isolated units but part of the planet. Cities interact constantly with their macro-ecosphere as well as with each

other. Based on the fact that from this year on, the Earth will have a predominant urban population, this dimension will be named URBAN PLANET.

b. Temporal – This axis develops a temporal view and shows human’s persistent quest for “better life” in cities throughout human history. It develops a dynamic reading of city evolution, from the past lessons and wisdoms towards a better future, thus completing the intention of the Theme, “Better City, Better Life”. It will unfold in two perspectives: that of the past and of the future. The historical dimension will be named FOOTPRINT and the dimension of immediate future DREAM.



The five concept areas can be stated as follows.

### 1.2.2 Concept Areas

#### a. City Dwellers

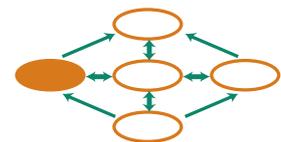
Key message:

Man is the cell of a city, and its soul as well. It is man who gives city its culture, character and innovative power.

With the human race increasingly turning into an “urban species”, the urban population is getting larger and diversified. Meanwhile, people living outside the city are inevitably influenced by the urbanization process. The city should take the lead in creating a better life for mankind, and become an incubator of human innovation and creation as well.

Relevant topics:

- Rich and colourful culture in the city and “social capital” of the city (tradition/pop culture, local/imported cultures, consumerism, creative industry, communication in the digital age);



- Urban communities (“Social Map” in the city, low-income and ethnic groups, needy groups, change of family structure, women and children);
- City dwellers’ demand for services and utilities;
- Evolution of occupational structure and types;
- Urban society and the age structure of urban population;
- Migrants (cross-border migration, urban-rural migration, multi-cultural society, employment opportunities and social mobility), non-permanent population in the city (migrant workers, people whose life and work are separated geographically across city borders).

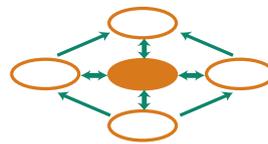
#### Challenges:

- Basic needs and rights of the people;
- Respect for diversity;
- Equal opportunities;
- Incentives for innovation and creations of the people.

#### b. The City

##### Key message:

The city, which dates back to the habitat of primitive tribes, has evolved into a complex organic system.



Individual cities share some common features, and possess their respective unique characteristics as well. Whether a city is habitable and sustainable depends on the people’s respect of the “rule of life” of the organic systems and their rational behaviour in day-to-day life and in practices of urban development and administration.

##### Relevant topics:

- Relationships between the city and its hinterland (resources consumption, waste disposal, environment control, rural-urban linkages, and leisure activities)
- Spatial texture of a city and its evolution;
- Urban infrastructure (pipelines, channels, transport, cultural facilities)
- Public space in the city (people-friendliness, facilitating interpersonal communication) ;
- City administration (relationships between the city and the country, urban planning, taxation and financial system, land ownership, treatment of “Urban Ills”, clean and efficient government, city security) ;

- Economic structure and growth potential (commodity flow, capital flow, information flow, human resources and innovation potential).

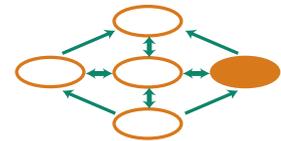
#### Challenges:

- Ideal urban patterns and habitat models;
- Resource recycling;
- Public participation in urban administration;
- Innovation and potential of sustainable growth.

#### c. Urban Planet

##### Key message:

So far, the eco-footprint of the city has reached every corner of the world, and the city has massive impact on the eco-system of the Earth and its resources. In the future, the earth and the city will be interdependent. There needs a healthy relationship between the human habitat and the natural environment of the earth so that a pleasant and habitable homeland could be preserved for our posterity.



##### Relevant topics:

- Prospect of world population growth;
- Impact of the city on the global eco-system (model/cases of urban development with minimal impact on environment);
- The city's role in globalization (city networks, cities as important nodes and major players in globalization, competition and cooperation among cities).

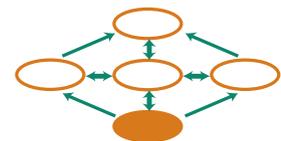
#### Challenges:

- Reducing the city's ecological footprint;
- Communication and cooperation among cities for the purpose of sustainable development;
- Role of civil society and international organizations.

#### d. Footprint

##### Key message:

The city's development is full of passionate and complex episodes. As a crystallization of the human civilization, the city is an evolving organism that has left numerous footprints in the human history. Those footprints, either bearing successes or failures, shall map out the direction of city development in the future.



Relevant topics:

- Exchanges between and blending of civilizations in the world;
- Relationships between the human habitat and the natural environment through history;
- Birth and death of the city (cities that last and those that have disappeared for various reasons);
- Urban heritage in spatial forms (urban layout, buildings, monuments);
- Non-material cultural heritage in urban and rural areas.

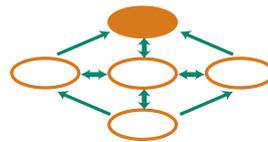
Challenges:

- Conflicts between heritage conservation and socio-economic development;
- Past experience and wisdom for sustainable development;
- Our legacy for the future city.

e. Dream

Key message:

Throughout human history, man has never stopped the quest for an “ideal city”. As the Age of the City is drawing near, it is very urgent to try and seek sustainable urban forms and ideal development models. That’s the mission of the theme of Expo 2010 Shanghai China: Better City, Better Life.



Relevant topics:

- Schemes and experiments of “ideal city” from both historical and contemporary perspectives;
- Creation of the “City of Harmony”;
- Innovations and new technologies born out of dreams and their impact on urban development;
- Concepts, practices and successful models of sustainable development (Agenda 21, ecological city, compact city, 3R).

Challenges:

- Conflict between the ideal model and reality;
- Correct attitude: a precondition of sustainable development;
- Technology: a double-edge sword.

## **1.3 Theme Presentations**

### **1.3.1 Theme Pavilions**

There will be five theme pavilions in Expo 2010. Three of them, adjacent to each other and therefore forming a cluster in the central part of the Pudong section, are dedicated to three concept areas, namely “City Dwellers”, “The City” and “The Earth: Urban Planet” respectively.

The other two theme pavilions are located in the Puxi section of the Expo Park, and present the concepts of “Footprint” and “Dream”. The Footprint pavilion, also known as the Urban Civilization & Art Museum, will showcase the process of urban development in the world by means of architectures, sculptures and paintings in either real or virtual forms. Closely related to the Urban Civilization & Art Museum and also dedicated to the “Footprint” concept, the World Exposition Museum offers a tour through the history of world expositions with its rich collection of documents and exhibits of previous world expositions as well as multi-media presentations of world exposition stories since 1851.

The Dream pavilion, to be housed in an industrial heritage building, will try to trigger public thinking about the city’s future.

### **1.3.2 Theme Areas**

The above theme pavilions (clusters) are surrounded by three theme areas.

The main thematic area is the outdoor space of the theme pavilion cluster in Pudong, which features thematic landmarks, sculptures and images reflecting the concepts of “City Dwellers”, “The City” and “The Earth: Urban Planet”.

The theme area around the Dream pavilion is the Best City Practice Area. Participants are encouraged to showcase their best practices in urban construction and development through exhibitions of “pleasant habitat”, “sustainable urbanization”, “conservation and utilization of historical heritage” and “technological innovations in environment construction”. Visitors will see an analogy city block incorporating all the best practices, as well as several exhibition halls, converted from old industrial buildings, filled up with exhibits of successful experience and practices of cities of various countries.

Another theme area links the World Exposition Museum and the Urban Civilization & Arts Museum. It will present the concept of “Footprint” by means of outdoor installations and images.

### **1.3.3 Theme Squares**

A 45,000-square-metre theme square will be found amidst the cluster of theme

pavilions in Pudong. As a major public space in the Expo Park, the theme square, with installations such as screens and stages, will be a place of relaxation, interaction as well as intense thematic experience.

Along the Elevated Expo Boulevard, there will be a string of continental cultural squares, namely the Asian Square, the African Square, the American Square, the European Square and the Oceanian Square. Every square will be adjacent to the pavilion cluster of respective continents, and will present rich and colourful thematic elements through theme architectures, sculptures and relevant cultural activities.

#### **1.3.4 Theme Facilities**

Expo 2010 Shanghai China will install various facilities in the Expo Park that reflect the theme and its core message, such as an eco-friendly water purification system, a rainwater collection and reuse system, solar energy powered facilities, a wind farm, a thermal water heating system, a sewage treatment facility and clean energy vehicles. Such theme facilities will guarantee efficient running of the Exposition and at the same time make an important part of its theme presentation.

#### **1.3.5 Theme Tour**

The theme tour will run through all theme pavilions, the Elevated Expo Boulevard and the pedestrian route, and link up all theme areas, theme squares, and theme facilities into a network.

While enjoying themselves, visitors will receive thematic messages by taking the theme tour delivered by specially designed visual signs, landmarks, streetscapes, artistic works, devices, and interactive facilities. In a sense, the theme tour will be an integral part of the theme presentation system.

#### **1.3.6 Theme Forums**

Forums will be the most direct and immediate way to explore the theme and to develop the spiritual legacy of the Exposition. A series of Expo 2010 forums will examine and explore representative efforts, successful practices and innovations for sustainable urban development, exchange and compare practices and experience of developing countries concerning urbanization, education and hygiene in the rural area, and make predictions of challenges for further urban development and seek possible remedies.

Expo 2010 forums will consist of high-end forums, thematic forums and public forums. The high-end forums will explore development philosophies and the relationship between habitat, globalization and sustainable development from a

macro point of view; theme forums will concentrate on discussing how the city system and management models work; while the public forums offer a broad platform of expression and sharing of day-to-day concerns and wisdom. It will involve a large number of speakers and audience in it and Expo 2010 will encourage the broadest public participation.

### **1.3.7 Theme Events**

Events during Expo 2010, including theme events and general recreational events, will perform three functions, namely theme presentation, atmosphere vibrating, and visitors flow modulation.

Theme events will include the Opening and Closing Ceremonies sponsored by the Organizer, the China National Day, and other major events. General recreational events include eight types, namely gala shows, interactive moments, exhibitions, media shows, ethnic shows, culture parades, contests, and gourmet events.

## **2. Ensuring the Observance of the Theme**

All materials to be used for the construction and decoration of pavilions, various facilities and methods of operation shall be helpful to promoting the core concept of Expo 2010: Better City, Better Life.

The Organizer encourages all participants to follow the theme of the Exposition in determining the content and design of their exhibition, and on this basis, meanwhile, to develop original and innovative expressions and presentations in light of their actual conditions and from their own perspectives.

This section is intended to ensure the consistence of exhibition concepts and the general quality of exhibitions, and will describe the desired interaction and coordination mechanism between the Organizer and participants for the said purpose.

### **2.1 Submission of “Theme Statement”**

As part of the application for the exhibition space, participants will submit to the Organizer a “Theme Statement”. This document defines the overall theme and the general contents of their exhibitions.

In principle, the allocation of exhibition spaces will not be finalized until the “Theme Statement” is approved by the Organizer.

The “Theme Statement” covers the following areas:

AREAS	CONTANT
Exhibition goals	<i>A description of the goals of the exhibitions, for example public diplomacy, cultural presentation, tourism promotion, and scientific and technological demonstration, along with the major messages targeted on the visitors of Expo 2010.</i>
Exhibition theme	<i>A description of the relationship between the pavilion theme(s) and the theme of Expo 2010.</i>
Framework of exhibition modules	<i>A description of the general plan for the major exhibition modules and the exhibits or exhibited items in each module, as well as the display supports.</i>

The Organizer will ensure and confirm that the “Theme Statement” is consistent with:

- a. The theme of Expo 2010;
- b. The general expectations of Expo visitors;
- c. The applicable provisions in the *Convention Relating to International Exhibitions*.

Once the participants have submitted, through the Commissioners General of the Expo, their “Theme Statement” the Organizer will forward a copy to the BIE.

## **2.2 Submission of “Exhibition Proposal”**

As an integral part of the “Application for Preliminary Approval” participants will submit a document entitled “Exhibition Proposal” with a detailed description of their presentation.

The “Exhibition Proposal” shall cover the following areas:

- a. A detailed exhibition plan, including information about the exhibits or exhibited items, the means and supports used for display, the layout of the exhibition space (including the locations of walkways of all types, estimated capacity, and contingency plans), and a rendering of the exhibition.
- b. A working plan for the exhibition project, including a table of the work flow for manufacturing of exhibits, construction, and exhibition set-up.
- c. The actual exhibition operator and a summary of investment.
- d. Special requirements for supporting functions (if applicable).

Participants should indicate in the “Exhibition Proposal” whether or not special

requirements are applicable in the following three areas:

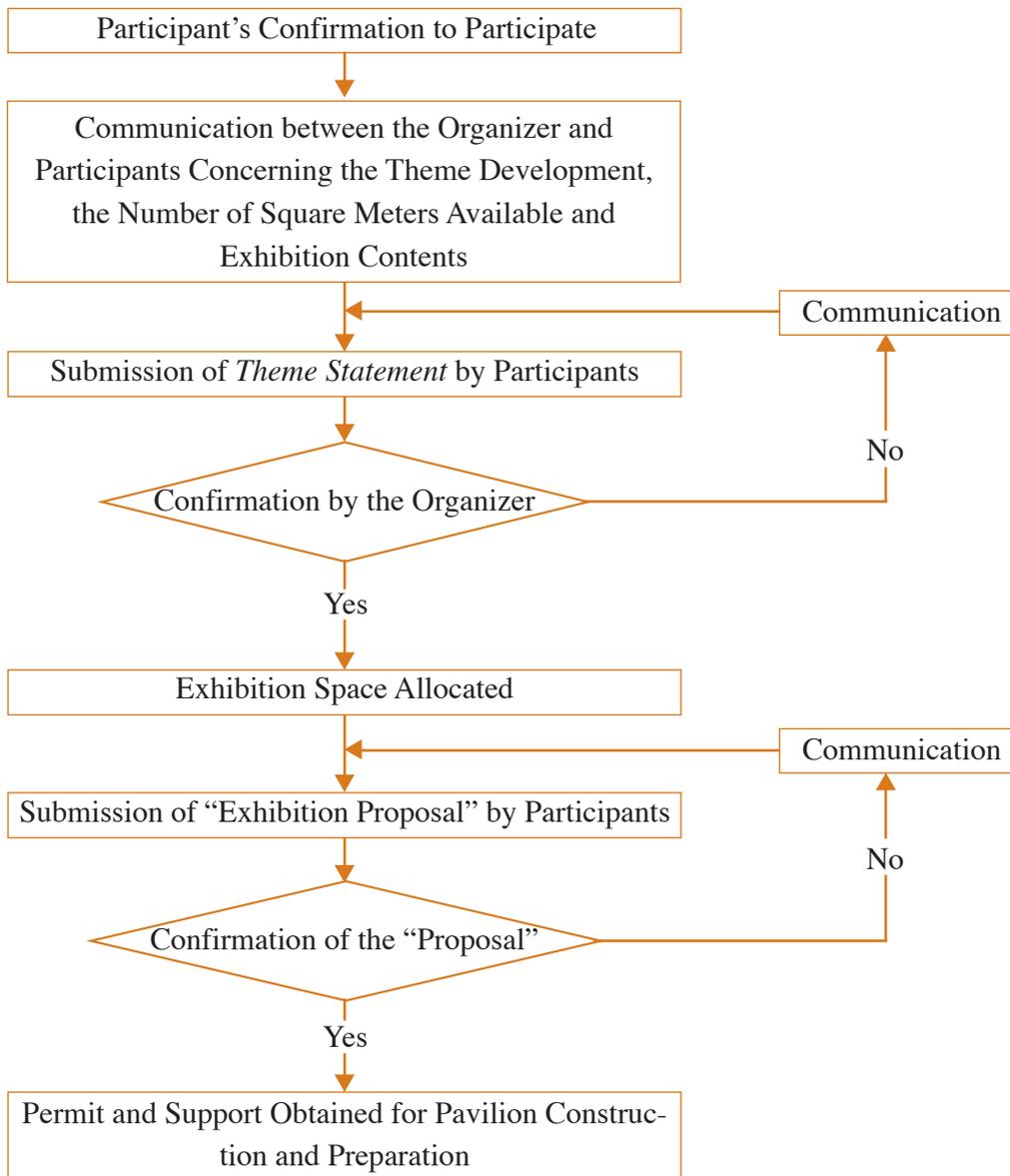
- a. Architecture (ex. floor height, pillar distance, interlayer space, open space, and ground load bearing);
- b. Public utility services (ex. the supplies of water, electricity, gas and heat);
- c. Operations (ex. security system, tour guiding system, and booking system).

The Organizer will ensure and confirm that the “Exhibition Proposal” is consistent with:

- a. The essence of and major points in the “Theme Statement”;
- b. The Organizer’s capacity to satisfy the special requirements for supporting functions.

The Organizer will provide on-going advice and assistance to participants. If an “Exhibition Proposal” were not approved, the Organizer will explain in detail the reasons for this and will suggest acceptable modifications. In case of a disagreement on the level of compliance of a presentation with the theme, both the Organizer and the participants will make every effort to reach a consensus.

The process of submission and confirmation of the “Theme Statement” and the “Exhibition Proposal” of the two documents is shown as follows:



For participating countries receiving financial support for participation, additional rules apply. These rules concern the coordination of exhibition contents based on the actual circumstances of each country and the use of the financial support and will be addressed on a case by case basis in coordination with each concerned country.

### 2.3. Deadlines for Content Submission

The participants will make available to the Organizer the final information regarding the contents of their presentation at least 120 days before the opening of the Exposition. This information shall be used in the official Expo catalogue in compliance with Article 29 of the *General Regulations*.

## D. Construction and Exhibition Arrangement

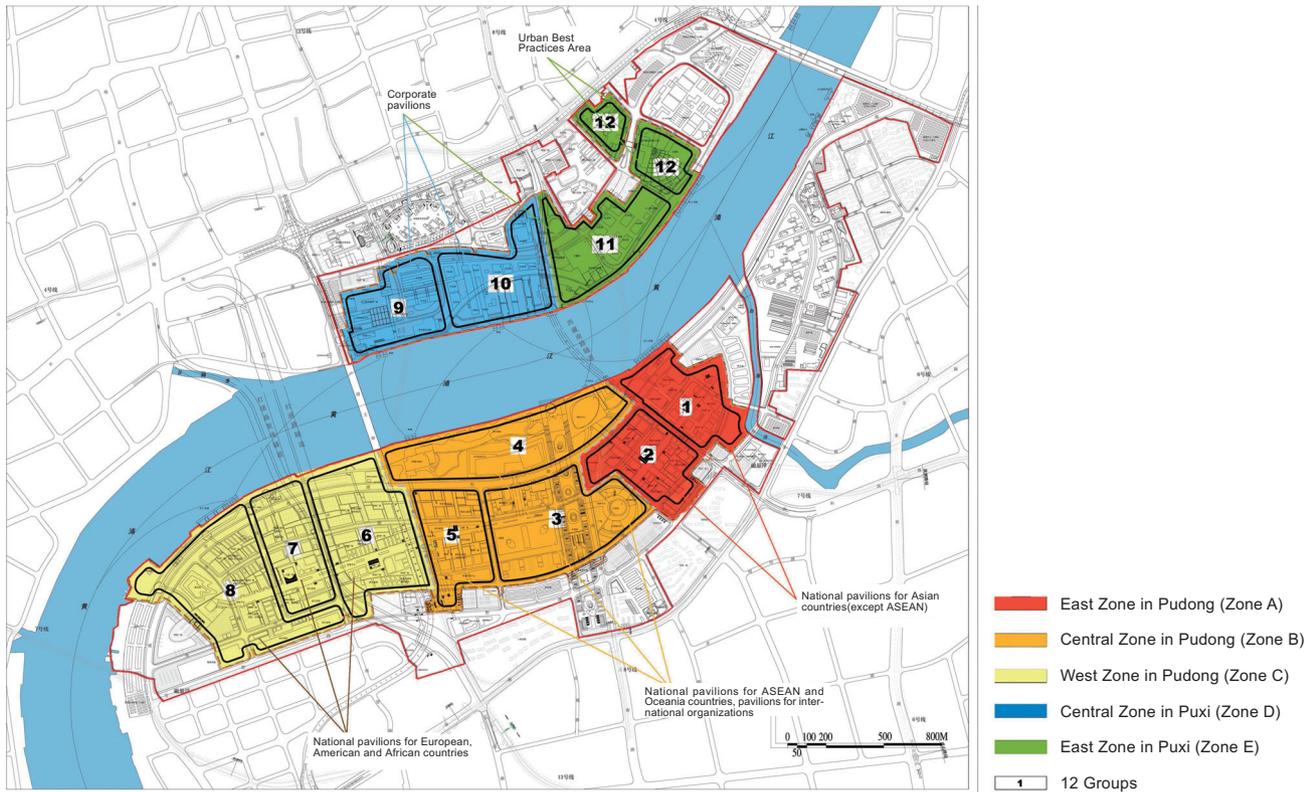
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# 1. An Overview: Participants' Exhibition Space

Three types of pavilions to be grouped by the Continent each country belongs to or by their nature are available for official participants:

- Type 1: refers to a pavilion designed and built by an official participant on the plot allocated by the Organizer, or Self-built Pavilion;
- Type 2: refers to a stand-alone pavilion built by the Organizer and rented to an official participant, or Rented Pavilions;
- Type 3: refers to the covered exhibition space in a joint pavilion constructed by the Organizer and allocated to developing countries free of charge, or Joint Pavilion.



## 1.1 Basic Documentations for Pavilion Design

After the application of official participants for exhibition site is approved, the Organizer shall supply the appropriate and complete documentations for pavilion design, including:

- a. A map showing the location of roads, parking lots and green areas, and public utilities in relation to the building site; and
- b. A topographical map and photograph of the allocated building site including

specifications of the surface area, infrastructure, the boundary lines, surface elevations, and a preliminary site survey report as required.

## 1.2 Supplementation to the Design Documentations

In the process of architectural design, official participants may request additional design information as necessary from the Organizer.

## 2. Type 1: Pavilions designed and built by official participants

### 2.1 Description and Design Parameters

Allocated sites for Type 1 pavilions are offered in units of 500 m<sup>2</sup> land area, ranging from minimum 2 units or 1000 m<sup>2</sup>, to maximum 12 units or 6000 m<sup>2</sup>.

The ratio of the floor area (ratio of total floorage of a pavilion to its plot area, or FAR) to the site shall not exceed 1. If any participants hope that the restriction should be relaxed, the Organizer will go over this matter with relevant participants individually according to their pavilion design.

The building coverage rate (ratio of the ground floor area of a pavilion to the allocated site) shall be between 60% and 80%.

Application for exhibition sites should be filed by November 1, 2007, or at least be 24 months prior to the Opening of the Exposition. The Organizer will hand over the exhibition site to participants by November 1, 2007 and participants must return their allocated sites in their original condition to the Organizer by May 1, 2011.

Unit Plot Area	500 m <sup>2</sup>
Allocated Area	2 to 12 units, or 1,000 m <sup>2</sup> to 6,000 m <sup>2</sup>
FAR	Not exceeding 1
Building Height	Not higher than 20 meters
Building Coverage Rate	60%–80%
Hand-over of Site to Participants	From November 1, 2007
Application for Site	24 Months Prior to the Opening of the Exposition
Return of Site to the Organizer	Before May 1, 2011

### **2.1.1 Building Setback**

- Where the building setback is above 24 meters, the width of planned urban roads between red lines shall be no less than 5 meters; Where the building setback is below (including) 24 meters, the width of planned urban roads between red lines shall be no less than 3 meters;
- Where the main entrance of a pavilion faces a motor drive, the setback distance shall be more than 5 meters, and the entrance shall not be located at any curve of the motor drive. A small square is recommended at the entrance;
- The setback of pavilions from the control lines of roads in the same plot shall be no less than 3 meters;
- No setback is recommended for pavilions in relation to squares, greenery and pedestrians passages;
- No setback is recommended for pavilions in relation to neighbouring elevated pedestrian passages except otherwise required;
- The setback of pavilions in relation to a neighbouring plot shall be no less than 3 meters, and the space between neighbouring structures shall satisfy requirements for fire control.

### **2.1.2 Height of Buildings**

- Newly built pavilions shall be no more than 20 meters in height;
- The ground floor of pavilions in all plots shall not be less than 5 meters high;
- The height of pavilions beside elevated pedestrian passages shall be considered and designed in proportion to the 10-meter standard height of the main entrance.

### **2.1.3 Spatial Interface**

- The setback rate of spatial interface of pavilions around central greeneries or public activity centres shall be no lower than 70%;
- Partial elevation on the ground floor is recommended as spatial interface of pavilions around central greeneries or public activity centres;
- Elevation on the ground floor is recommended for corners or entrances of buildings, and the width of passage on the elevated ground floor shall be no less than 3 meters;
- Outlying structures and facilities shall meet landscaping requirements.

### **2.1.4 Entrance and Exit Control**

- The entrance and exit of pavilion structures shall be designed reasonably to meet the landscaping requirements by taking into consideration surrounding conditions;
- For pavilion structures near elevated pedestrian passages, should the possibility of queuing up for entry directly from the elevated passage be taken into consideration, elevated entrance and exit may be included in the planning;
- The space of queuing up for entry should be considered in the design of entrance and exit of newly built pavilion structures, and partial elevation is recommended.

### **2.1.5 Platform and Roof Facilities**

- The greening rate of construction platforms and roofs shall be no lower than 40%;
- Structures and facilities on roofs shall meet landscaping requirements.

### **2.1.6 Basement**

According to regulations of the BIE and the usual practices of previous world expositions, all foreign national pavilions shall be temporary structures, so such pavilions shall not have any underground structure.

### **2.1.7 Architectural Styles**

New materials and new technologies are encouraged.

- Architectural styles, in form and function, of pavilions shall be consistent with the theme of exhibition;
- Eco-friendly technologies are encouraged in order for the structures to attain the standard of green architectures.

### **2.1.8 Others**

If any official participants request the above restrictions to be relaxed, the Organizer will consider the request individually according to the actual design of the pavilion concerned.

## **2.2 Design Bidding, Qualification of Designers, and Quality of Design**

Please refer to document “D1. Architectural Design of Type 1 (Self-built Pavilions”.

## 2.3 Approval Procedure for Designs of Pavilions to Be Built by Official Participants

Please refer to document “D2. Approval of Architectural Design of Type 2 (Self-built) Pavilions”.

## 3. Type 2: Stand-alone Pavilions to Be Built by the Organizer and Rented to Participants

### 3.1 Descriptions

Exhibition space in Type 2 pavilions is allocated in units of 500 m<sup>2</sup> each.

Official participants who may not wish to build their own pavilions may rent stand-alone pavilions built by the Organizer.

Stand-alone pavilion structures shall be offered to participants in 3 sizes, namely: 1 unit or 500 m<sup>2</sup>, 2 units or 1,000 m<sup>2</sup> and 4 units or 2,000 m<sup>2</sup>.

Application for rented pavilion structures should be provided at least 24 months prior to the opening of the Exposition.

The rented pavilion structures will be handed over to the official participants by May 1, 2009 and must be returned in their original condition to the Organizer by December 31, 2010.

Unit Area	<i>One unit: 500 m<sup>2</sup></i>
	<i>2 units: 1,000 m<sup>2</sup></i>
	<i>4 units: 2,000 m<sup>2</sup></i>
Allocated Space	<i>4 units at the most</i>
Hand-over of Pavilions to Participants	<i>Before May 1, 2009</i>
Application for Pavilions	<i>24 months before the Exposition</i>
Return of Pavilions to the Organizer	<i>Before December 31, 2010</i>

### 3.2 Approval of Application for Modification of Rented Pavilions

In principle, official participants shall not make any modification to the main structure, fixed facilities and installations of pavilions provided by the Organizer for rent. Any official participants who need to make any other modifications to the rented pavilion structures than those specified above, shall submit to the Technical Office a written official application, and actual modification shall not start until the application is approved. For more information concerning the modification of Type 2 (Rented) pavilions, please refer to document “D3. Structure Modification

Procedure of Type 2 (Rented) Pavilions”.

### **3.3 Design of Rented Pavilions**

Official participants who rent stand-alone pavilions built by the Organizer may request from the Organizer blueprints and other technical documents of pavilions they rent before concluding the Participation Contract.

In making exhibition designs in rented pavilions, official participants shall not make any modification to the structure, facilities and fixed installations provided by the Organizer except in the areas as follows:

#### **3.3.1 Ceiling Decoration and Fixtures**

- The Organizer will not make any decoration to the ceiling of pavilions for rent so that official participants may decide and design the finish work and fixtures on their own.
- While fixing any accessory to the ceiling, official participants shall make it fast and meet the requirements of document “D6. Fire Prevention for Official Participants’ Pavilions” and document “D9. Environmental Protection”.

#### **3.3.2 Suspension Exhibits**

- In principle, no exhibits shall be hung from the roof or ceiling of pavilion structures provided by the Organizer except for lighter exhibits, such as textiles, shades and screens and banners on the condition that they must be fixed fast to the roof or ceiling.
- Heavy suspension exhibits must be attached to self-supporting frames installed by official participants.

#### **3.3.3 Interlayer**

- Official participants may build interlayer in rented pavilion structures on the condition that the total area of interlayer does not exceed the limit set by the Organizer, and the interlayer must bear its own weight and do not affect the original structure and facilities of the pavilion.
- Interlayer shall meet structural and architectural safety requirements, and the requirements of document “D6. Fire Prevention for Official Participants’ Pavilions”, document “D7. Barrier-free Design” and document “D9. Environmental Protection”.

### **3.3.4 Internal Walls**

- Official participants may build internal walls on the condition that materials used are light and the walls do not affect the original structure and facilities of the pavilion provided by the Organizer.
- Internal walls shall meet safety requirements and the requirements of document “D6. Fire Prevention for Official Participants’ Pavilions” and document “D9. Environmental Protection”.

### **3.3.5 Decoration of Internal Walls**

- Official participants may decorate the internal walls on their own.
- Decorations of internal walls shall meet safety requirements and the requirements of document “D6. Fire Prevention for Official Participants’ Pavilions”, document “D7. Barrier-free Design” and document “D9. Environmental Protection”.

### **3.3.6 Floor Decoration**

- Parameters such as the load limit of the floor will be provided in relevant technical documents.
- Holes may be drilled on the floor on the condition that the structure is not affected.
- The floor may be strengthened if it cannot bear the load.

### **3.3.7 Front Wall**

- The parameters of the load capacity of the front wall will be provided in relevant technical documents.

### **3.3.8 Entrances and Exits**

- There shall be two entrances/exits (width  $\geq$  3m and height  $\geq$  3m) every 18 meters in the front to facilitate the entry and exit of visitors.
- Entrances and exits may be modified or increased on the condition that the structure is not affected.

### **3.3.9 Windows**

- Windows may be installed on the condition that the structure is not affected.

### **3.3.10 Basic Facilities in the Pavilions Provided by the Organizer for Rent**

The pavilions provided by the Organizer for rent shall include interface with

infrastructure systems such as: water supply, rain water drainage, sewage, gas supply, power supply, and telecom. For more information about the above systems, please refer to relevant technical documents. For additional facilities, official participants shall apply to the Organizer in writing and provide the cost.

## **4. Type 3: Joint Pavilions Offered to Developing Countries**

### **4.1 Description of Design Parameters**

The third-type pavilions are built by the Organizer offering covered exhibition space to developing countries free of charge.

Each exhibition unit covers 324 m<sup>2</sup>. In principle, only one exhibition unit of 324 m<sup>2</sup> will be offered free of charge to each developing country. Each participant may get a maximum 2 exhibition units or 648 m<sup>2</sup> free of charge, if there is sufficient justification.

The Organizer will consider, case by case, the participant's request to get a second exhibition unit. The Organizer will make the final decision on each request according to the participant's exhibition project as well as the actual condition of exhibition space utilization.

Limited outdoor space may be available depending on site conditions.

Application for covered exhibition space should be submitted by May 1, 2008, or 24 months prior to the Opening of the Exposition.

Exhibition space within joint pavilions will be available to participants before November 1, 2009, and must be returned in its original condition by November 30, 2010.

### **4.2 Exhibition Arrangement**

Participants shall be responsible for exhibition arrangement in their allocated exhibition space.

## **5. Procedure for Exhibition Design**

Exhibition design is divided into two stages: concept design and blueprint design. Concept design will provide the basic concepts and outline of the design, while blueprint design will provide details of the design and instructions for implementation. The concept design shall be approved before the blueprint design may begin.

An exhibition design shall include the following details and drawings:

- Name;
- Theme of exhibition;
- Description of exhibits;
- Internal structure, decorations and exhibition design.

Official participants shall submit relevant documents of exhibition design to the Organizer, and then the Organizer will settle relevant procedures on a consolidated basis.

## 6. Others

### 6.1 The Technical Office

The Organizer has set up a Technical Office which will provide official participants with necessary supports for pavilion construction and exhibition arrangement. Official participants shall submit their application documents to the Technical Office, and the Technical Office shall conduct preliminary reviews of applications on behalf of the Organizer and assist official participants to obtain ratification and licensing from relevant organs of the Chinese government.

The Technical Office  
 Bureau of Shanghai World Expo Coordination  
 Expo Mansion, 3588, Pudong Road (South)  
 Shanghai 200125  
 People's Republic of China

Tel.: +86-21-22062010  
 Fax: +86-21-22060653

### 6.2 Annexes

To this section of the *Participation Guide*, the Organizer has attached relevant documents in order for official participants to better understand rules adopted by the Organizer concerning construction projects.

- D1. Architectural Design of Type 1 (Self-built) Pavilions
- D2. Approval of Architectural Design of Type 1 (Self-built) Pavilions
- D3. Decoration of Type 2 (Rented) Pavilions
- D4. Construction of Official Participants' Pavilions
- D5. Dismantling Official Participants' Pavilions
- D6. Fire Prevention for Official Participants' Pavilions

D7. Barrier-free Design

D8. Barrier-free Activities and Services

D9. Environmental Protection

D10. Environmental Sanitation

D11. Security and Protection

D12. Fire and Disaster Control

More documents concerning exhibition arrangement will be provided in future updates of the *Participation Guide*.

**D1. Architectural Design of Type 1  
(Self-built) Pavilions**

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for Official Participants

# D1. Architectural Design of Type 1 (Self-built) Pavilions

This document is intended to introduce regulations concerning the architectural design of Type 1 (stand-alone pavilions to be designed and built by official participants) pavilions. Official participants are supposed to cooperate with designers with appropriate professional qualifications required by Chinese laws, and the architectural design making process shall comply with relevant Chinese laws, regulations and standards, and regulations formulated by the Organizer. In order to help official participants look for a cooperating designer, the Organizer has selected and recruited a number of recommended service providers for Expo 2010 Shanghai China, and compiled a *List of Recommended Service Providers*. Service providers relating to this document can be found in the category of “Architectural Design”. Official participants may also conduct the design of their pavilions by themselves, but the procedure and results of any such design shall comply with relevant laws of China.

Documents and drawings as required by this document shall be prepared in simplified Chinese. Whereas participants may also prepare such documents and drawings in English with a duplicate in simplified Chinese, the Chinese version shall prevail in case of difference in meaning or ambiguity in expression.

## 1. Architectural Designers

### 1.1 Statutory Qualifications of Designers

In this document, architectural designers refer to organizations and/or individuals commissioned and/or hired by official participants to provide all or part of the designing and/or consulting services for the pavilions, other buildings and structures and outdoor projects on behalf of said official participants on their allocated plot.

Architectural designers must possess appropriate professional qualifications as required by Chinese laws in order for their design results to be validated and ratified.

## **1.2 Bidding**

Official participants may select and engage architectural designers through public bidding or direct engagement, or pick from the list of service providers recommended by the Organizer.

When official participants need to invite public bidding in China for selecting designers, official participants must commission organizations with appropriate agency qualifications to handle the bidding and tendering activities.

## **1.3 Design Contract**

Official participants shall conclude a design contract with the architectural designers they have engaged, for the purpose of which official participants may choose to use the standard contract formulated by the Chinese Government or negotiate with the designers on the terms and conditions of the design contract.

The design contract signed by and between official participants and their designer should be put on record of the Organizer, or otherwise any such contract shall be deemed ineffective.

# **2. Architectural Design**

## **2.1 Design Parameters**

After confirming the participation, official participants shall request pavilion design parameters from the Organizer. The Technical Office of the Organizer shall provide relevant pavilion planning and design documentations as requested to official participants who may then start to develop the conceptual and schematic designs of their pavilions.

## **2.2 Review of Schematic Designs**

After completing the conceptual and schematic designs of their pavilions, official participants shall submit such designs to the Technical Office for preliminary review. After obtaining the result of preliminary review, official participants may start to develop architectural designs of the Type 1 (self-built) pavilions.

## **2.3 Overseas Architectural Standards**

Where official participants and/or designers intend to adopt architectural standards of foreign countries, Hong Kong SAR, Macao SAR and Taiwan in their design or construction of self-built pavilions, such standards as adopted and relevant materials should be reported to the Technical Office along with submission of the “Application Form for Preliminary Review of the Schematic Design of Type 1

Pavilions”. The Technical Office shall hold a session for agencies with appropriate statutory qualifications to review the application of such standards. Only after such architectural standards are approved and put on record of Shanghai Municipal Construction and Transportation Commission can official participants and designers apply such standards.

For projects designed by the architectural standards of foreign countries, Hong Kong SAR, Macao SAR and Taiwan that have been put on record of Shanghai Municipal Construction and Transportation Commission, official participants’ designers shall indicate the review and acceptance standards in the construction documents and shop drawings.

## 2.4 Schematic Design

The schematic design shall include:

- Design Specifications
- Investment Estimate
- General ichnography and architectural design drawings
- Preliminary design drawings in various areas and specialties, and
- Elevation and bird’s-eye view as required by the design contract.

## 2.5 Shop Drawings

Official participants shall commission at their own cost organizations with appropriate statutory qualifications to conduct site survey and reconnaissance to obtain rock soil project reconnaissance data that shall be the basis of architectural design.

Construction documents and shop drawings shall include:

- A catalogue of all technical drawings, notes to shop drawings, and blueprints;
- Project budget;
- Other documents and drawings as required by the design contract.

## 3. Construction and Project Delivery and Acceptance

While a Type 1 pavilion is under construction, the designer shall assign at least one technical person to assist the official participant and its contractor in implementing and completing the construction project.

When a pavilion structure is completed, the designer shall assign its technical persons to assist the official participant concerned to check and accept the building.

#### **4. Intellectual Property Rights**

For issues concerning intellectual property rights of the design of self-built pavilions, official participants shall observe and refer to *Special Regulation N°. 11 concerning Intellectual Property Rights*, or make clear arrangements in the design contract or any other documents.

#### **5. Design Insurance**

Official participants and designers shall resolve in their design contract issues concerning insurance for the process of design.

## **D2. Approval of Architectural Design of Type 1 (Self-built) Pavilions**

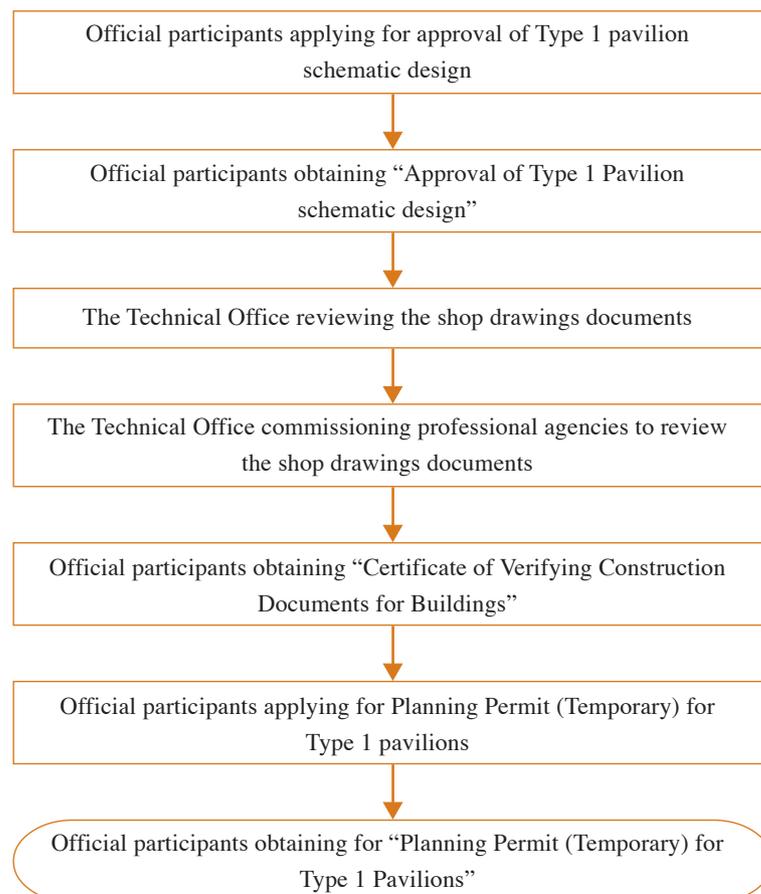
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## D2. Approval of Architectural Design of Type 1 (Self-built) Pavilions

This document is intended to introduce regulations that official participants should follow or understand concerning the approval procedure for designs of Type 1 (self-built) pavilions.

Where this document requires official participants to submit any application in writing, such an application should be made in simplified Chinese. Official participants may produce an application in English as well, but the Chinese version shall prevail where there is any difference in meaning or ambiguity in expression.

### 1. Procedure of Application and Approval



## **2. Review of Schematic Design**

### **2.1 Submitting the “Application Form for Approval of Type 1 Pavilion Schematic Design”**

To ensure that all preparations for Expo 2010 proceed smoothly, official participants who will build Type 1 pavilions are expected to apply to the Technical Office for examination and approval of their schematic design before April 15, 2008 according to the requirements stated in the “Application Form for Approval of Type 1 Pavilion Schematic Design”.

Official participants may request the Application Form from the Technical Office or download the form from the official website of Expo 2010.

The Technical Office shall make a preliminary review of documents submitted by official participants for approval, and if the documents still fall short of requirements, give a notice to the official participants in question requiring addition or modification to the application documents within 5 working days after receiving the documents.

### **2.2 Obtaining “Approval of Type 1 Pavilion Schematic Design”**

After receiving the “Application Form for Approval of Type 1 Pavilion Schematic Design” and a complete set of documents and drawings as required, the Technical Office shall complete the reviewing process within 20 working days. If the application complies with all relevant requirements, the Technical Office shall issue the “Approval of Type 1 Pavilion Schematic Design”. For the schematic design that fails the review, the Technical Office shall provide its review opinions and set a deadline for adjustment. After receiving the review opinions, the official participants in question shall make adjustments accordingly and submit the revised design to the Technical Office and apply anew for review and approval.

While their schematic design is under review, official participants shall answer all relevant questions and inquiries.

## **3. Review of Shop Drawings**

To ensure that preparations for Expo 2010 proceed smoothly, the Organizer hopes that official participants who will build their own Type 1 pavilions submit their shop drawings and engineering documentations of their pavilions before September 15, 2008.

### **3.1 Review by the Technical Office**

Official participants should submit to the Technical Office the “Approval of Type

1 Pavilion Schematic Design” and its annexes along with a complete set of shop drawings (including the calculation sheet, name and version of the software used for calculation) for review.

After the submitted documents and drawings pass its review, the Technical Office shall commission on behalf of official participants a professional agency with appropriate statutory qualifications to review the shop drawings. If the reviewing agency disqualifies the shop drawings, the Technical Office shall provide the review opinions and set a deadline for adjustment. After receiving the review opinions, the official participants in question shall make adjustments accordingly and submit the revised drawings to the Technical Office within the deadline and apply anew for examination and review.

While their shop drawings are under review, official participants shall answer all relevant questions and inquiries.

### **3.2 Review by Professional Agency**

#### **3.2.1 Documents Required for Review**

Official participants shall submit a complete set of shop drawings and engineering documentations, including the “Approval of Type 1 Pavilion Schematic Design” and its annexes, a complete set of shop drawings (including the calculation sheet, name and version of the software used for calculation), rock soil engineering reconnaissance documents (detailed reconnaissance), and other documents required for the review.

#### **3.2.2 Obtaining the “Certificate of Verifying Construction Documents for Buildings”**

After their documents pass the review of the professional agency, official participants will obtain a “Certificate of Verifying Construction Documents for Buildings”.

## **4. Application for and Awarding of Planning Permit (Temporary) for Self-built Pavilions**

### **4.1 Submitting the “Application Form for Planning Permit (Temporary) for Type 1 Pavilions”**

Official participants shall handle certain formalities with the Technical Office to apply for the Planning Permit (temporary) for their Type 1 pavilions according to the requirements stated in the Application Form.

Official participants may request the application form from the Organizer, or download

the application form from the official website of Expo 2010.

The Technical Office shall conduct a preliminary examination of the application documents from official participants, and if such documents still fall short of relevant requirements, give a notice to the official participants in question within 5 working days requiring addition or modification to the application documents.

#### **4.2 Obtaining the “Planning Permit (Temporary) for Type 1 Pavilions”**

After receiving the complete and qualified application documents, including the “Application Form for Planning Permit (Temporary) for Type 1 Pavilions”, and other documents and drawings, the Technical Office shall complete the review process within 20 working days. If the application is approved, the Technical Office shall issue the “Planning Permit (Temporary) for Type 1 Pavilions”, whereas if the application fails the review, the Technical Office shall provide relevant review opinions. After receiving the review opinions, the official participants in question shall make adjustments accordingly and submit the revised documents to the Technical Office and apply anew for review and approval.

While their application is under review, official participants shall answer all relevant questions and inquiries.

### **5. Alteration to Design**

Where official participants have obtained approval for any of the above purpose, and make significant changes to the approved matters and results of design, they must go through the application procedures for approval anew.

Such significant changes refer to changes that breach the planning parameters and the shop drawing review results.

### **6. Archive Management**

All documents that official participants submit for review and approval (including but not limited to design documents and shop drawings) shall be archived by the Organizer.

## **D4. Construction of Official Participants' Pavilions**

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## D4. Construction of Official Participants' Pavilions

In accordance with the *General Regulations* and *Special Regulation N<sup>o</sup>. 4 Concerning Construction, Installation, Labour Safety, Fire Prevention and Environment Protection*, this document introduces to official participants rules and regulations concerning the construction and related works of Type 1 (self-built) pavilions, Type 2 (rented) pavilions or Type 3 (joint) pavilions. This document applies to indoor and outdoor construction engineering, installation and decoration projects relating to participants' pavilions in the Expo Park.

Contractors and suppliers undertaking the construction, installation and decoration of official participants' pavilions must have appropriate professional qualifications and business licenses. Their construction engineering and installation activities shall comply with relevant Chinese laws and regulations. Overseas contractors and suppliers, including those from Hong Kong SAR, Macao SAR and Taiwan, shall also go through licensing formalities with the government authority.

Official participants shall oversee the work of contractors and suppliers to make sure that they comply with Chinese laws and regulations. While their pavilions are under construction, official participants shall submit necessary documents and drawings to the Organizer. For more information, please refer to the Technical Office of the Organizer.

### 1. Preparations for Construction

The Organizer shall start to hand over allocated plots for Type 1 pavilions to the official participants concerned as early as November 1, 2007.

The Organizer shall hand over Type 2 pavilions to the official participants concerned by May 1, 2009.

The Organizer shall hand over allocated exhibition space in Type 3 pavilions to the official participants concerned by November 1, 2009.

The Organizer shall hand over land plots, pavilions or exhibition space to official participants according to the *Participation Contract* with the official participants concerned respectively in terms of location and size.

After land plots, pavilions or exhibition space are delivered, official participants shall observe provisions hereunder and make sure that their contractors and suppliers comply with the same provisions in the process of construction and other related projects.

## **1.1 Project Managers**

### **1.1.1 On-site Manager**

- a. Each official participant shall appoint an on-site manager, and notify the Organizer of the appointment with a “Notice of Appointment of On-site Manager” at least 10 days before construction starts.
- b. Where any on-site manager violates laws and regulations, the Organizer has the right to give an injunction for the official participant concerned to dismiss the transgressing on-site manager, and the official participant must appoint a new on-site manager within 3 days.

### **1.1.2 Technical Supervisor**

- a. Each official participant shall appoint a technical supervisor, and notify the Organizer of the appointment with a “Notice of Appointment of Technical Supervisor” at least 10 days before construction starts.
- b. Where any technical supervisor violates laws and regulations, the Organizer has the right to give an injunction for the official participant concerned to dismiss the transgressing technical supervisor and the official participant must appoint a new technical supervisor within 3 days.

## **1.2 Securing Financial Resources**

Official participants shall raise and secure sufficient funds for pavilion construction before the construction project starts, deposit a certain proportion of the funds at a Chinese domestic bank as appointed by the Organizer, and produce the bank statement to the Organizer proving that funding for construction has been made available.

Before the construction project actually starts, official participants shall have made an advance payment to their contractors at a proportion (generally no less than 30%) to the total sum as agreed in the building contract concluded by and between official participants and their contractors, deposit the advance payment into the contractors’ account at a bank within the territory of China, and produce to the Organizer the bank statement warranting that the payment has entered the account.

### **1.3 Bidding**

For services such as supervision and construction as well as material supplies for pavilion construction within the Expo Park, official participants may recruit providers through public bidding or direct engagement, or pick from the list of service providers recommended by the Organizer. For contact information about recommended service providers, please refer to the *List of Recommended Service Providers*.

After the *Participation Contract* is signed, official participants shall handle necessary formalities, by the Technical Office of the Organizer, to obtain the permit to invite bidders for providing services such as supervision and construction and supplies necessary for pavilion construction.

For pavilion projects that require public bidding, official participants shall compile on their own or commission an agency to compile the tendering document.

Official participants shall put the contracts and related documents they have made with tendering agencies and supervision and construction contractors on the record of the Technical Office of the Organizer.

### **1.4 Technical Preparations**

#### **1.4.1 Field Investigation of Environment and Conditions for Construction**

Official participants shall see to it that their contractors assign their technical staff to conduct field investigations of the site, so as to gather information about the environment and conditions for construction.

#### **1.4.2 Joint Review of Design Drawings and Notification**

Official participants shall organize a joint review session where their designers demonstrate the intention of design, main content of shop drawings to the technical staff of construction and supervision contractors, and resolve technical questions concerning the design raised by them. Minutes shall be kept of the joint review and notification, and shall become part of the design document and a basis of project implementation after they are approved with signature by all parties concerned. A copy of the minutes of the joint review and notification shall be provided to the Technical Office of the Organizer for record keeping.

#### **1.4.3 Compiling the “Project Organization Design”**

a. Official participants shall instruct their pavilion contractors to compile a “Project Organization Design” for each pavilion construction project to serve as an important guiding document for the construction project. It shall be filed to the Technical

Office of the Organizer for record keeping.

b. Official participants shall make sure that pavilion contractors start their construction only after their “Project Organization Design” is approved by the technical director of contractors and filed to the Technical Office of the Organizer. The “Project Organization Design” shall not be modified or revised in any way during the construction project. Any modifications or revisions, if really necessary, must be examined and ratified by the original approver while be notified the Technical Office before they can be actually made.

c. Official participants shall instruct their contractors to let all managers and operators clearly understand the management goals and guarantee measures formulated in the “Project Organization Design” for each stage of implementation.

#### ***1.4.4 Implementing the “Project Organization Design”***

Official participants shall see to it that their contractors organize project implementation according to relevant contracts and the “Project Organization Design”, make labourers, materials, equipment and machines available, and conduct all construction activities in accordance with the “Project Organization Design”.

### **1.5 Site Preparation**

#### ***1.5.1 Checking the Red-line Stakes, Relative Position and Elevation Control Point of Plot***

To make sure that they build their pavilions within the plot provided by the Organizer as marked by the red line, official participants shall see to it that their contractors double check the red-line stakes, relative position and elevation control points of the plot provided by the Organizer before site preparation actually gets started, and results of the double check shall be considered as the official data of the red-line control area, relative position and elevation control point of the plot.

#### ***1.5.2 Levelling the Site***

Official participants shall see to it that their contractors make a survey of the elevation of the plot, and take the average elevation as the base elevation for levelling the site. The error should be controlled at within 100 mm, and the roadbed and the stock yard should be pressed hard and solid.

#### ***1.5.3 Temporary Stock Yards for Construction Materials and Equipment***

Official participants shall see to it that their contractors stock various construction materials at temporary yards by category, and assign special personnel to be in

charge of the stock yard.

#### **1.5.4 Entry and Exit of Staff and Vehicles**

Construction contractors shall apply to the Participants Service Centre of the Organizer for pass permits for their staff and vehicles. Staff or vehicles without a pass permit shall be registered before they are allowed entry.

#### **1.5.5 Access Roads**

Official participants shall make sure that their contractors build access roads within the site for the construction purpose according to the “Construction General Layout”. Fire truck accesses shall reach pavilions under construction and all temporary facilities, and fulfil standards as stipulated by relevant laws and regulations.

#### **1.5.6 Electricity Supply**

Official participants shall apply to the Technical Office in writing for electricity supply according to the estimated need for construction and duplex feeding units as specified in the “Project Organization Design”, and pay fees at applicable rates.

#### **1.5.7 Water Supply**

Official participants shall apply to the Technical Office in writing for water supply according to the estimated need for construction and requirement for sources as specified in the “Project Organization Design”, and pay fees at applicable rates.

#### **1.5.8 Temporary Production Facilities and Life Amenities**

Official participants shall make sure that pavilion contractors provide, through efforts of contractors themselves or concentrated efforts led by the Organizer, necessary temporary production facilities and temporary life amenities according to the “Construction General Layout”. Along the inside of red lines circling the land plot for pavilion construction, official participants shall build enclosing walls or fences with no fewer than two entrances/exits.

Such temporary production facilities and life amenities shall pass inspection and examination before they can be put into actual use.

For more information about requirements for temporary facilities, official participants may refer to “Regulations concerning Temporary Facilities in the Site for Expo 2010 Shanghai China.”

## **2. Permit to Start Construction**

All relevant forms mentioned under this section can be obtained at the Technical Office of the Organizer, or be downloaded from the official website of Expo

2010. While going through relevant formalities, official participants may seek help from the Technical Office.

## **2.1 Declaring for Safety and Quality Supervision**

Before the pavilion construction formally starts, official participants shall go through certain formalities with the Technical Office of the Organizer to apply for “Construction Project Safety and Quality Supervision and Certification”, and pay a certain fee according to relevant regulations.

While handling the application and certification formalities, official participants may inquire the Technical Office about necessary documents and materials.

Official participants must start construction within three months after completing the “Construction Project Safety and Quality Supervision and Certification” formalities. Where the project cannot start for any reason, official participants shall apply to the Technical Office for postponement.

## **2.2 Applying for Planning Permit (Temporary)**

Before starting to build Type 1 pavilions, official participants shall apply to the Technical Office for a “Planning Permit (Temporary)”.

For more information about application for the planning permit, please refer to document “D2. Approval of Architectural Design of Type 1 (Self-built) Pavilions”.

## **2.3 Setting-out Re-inspection**

For Type 1 pavilions that have been awarded the “Planning Permit (Temporary)” and completed the onsite setting-out and pavilion construction project positioning recheck, official participants shall go through “Construction Project Setting-out Re-inspection” procedures with the Technical Office.

Official participants may inquire the Technical Office about documents and other materials necessary for the construction project setting-out re-inspection procedures.

## **2.4 Applying for Building Permit**

After completing site preparations and application for the planning permit for their pavilions and 15 calendar days before the construction project formally starts, official participants shall apply to the Technical Office of the Organizer for a “Construction Project Building Permit”.

Official participants may inquire the Technical Office about documents and other materials necessary for the application procedure.

Where the Technical Office recognizes through proper review and inspection that official participants have provided documents and materials as required, and that the pavilion construction site fulfils necessary conditions for starting construction, the Technical Office shall issue a “Letter of Application Acceptance” and award the “Pavilion Project Building Permit” to the official participants concerned.

### **3. Construction Management**

#### **3.1 Construction Schedule**

Type 1 pavilions: After the date when the Organizer hands over the land plot to official participants to October 31, 2009.

Type 2 pavilions: From May 1, 2009 to October 31, 2009.

#### **3.2 Construction Management**

While their pavilions are under construction, official participants shall see to it that their contractors conduct proper progress management, quality management and project coordination according to the requirements of the Organizer and their construction contracts. For that purpose, contractors shall have their personnel attend relevant meetings called by the Technical Office, and fulfil schedule and quality requirements. In case of problems concerning project progress and quality, contractors must take prompt remedial actions and assume all responsibilities.

#### **3.3 Safety Responsibility**

While their pavilions are under construction, official participants shall make sure that their contractors take effective measures to guarantee safety in project operations. Great importance should be attached to project safety and personal safety of all operators and other third parties. Effective measures should be taken to eliminate all and any safety risks.

Official participants shall make sure that their contractors observe strictly all and any laws and regulations concerning construction project safety. Official participants and their contractors shall be accountable for all losses and damages due to breach of such laws and regulations in the process of pavilion construction.

#### **3.4 Payment of Project Funds**

Official participants shall make advance payments and progress payments to their service providers and contractors in time according to their “Construction Contracts”, “Purchase Contracts” and “Service Contracts”. The final settlement shall be completed within 30 days after the pavilions finish construction and pass

examination for acceptance. Outstanding payments shall be made within 40 days after the completion of pavilions construction.

The Organizer shall check whether official participants have made all payments to their contractors, suppliers or service providers in time as promised and stipulated under relevant contracts. Where any default in payment is found, the Organizer may give injunctions to official participants in question for prompt remedy and has the right to realize their legal liability.

### **3.5 Information Management**

Official participants shall see to it that their contractors shall keep monthly statistics of the progress and production value of projects already completed, project funds already paid, treatment of quality and safety accidents, availability of main materials and equipment, and report such statistics in writing to the Technical Office.

## **4. Fire Control**

While their pavilion is under construction, official participants shall see to it that their contractors pay close attention to fire control in accordance with relevant laws and regulations. Sufficient fire prevention and distinguishing facilities should be installed on site, construction workers should receive sufficient fire control trainings, inspections shall be conducted concerning fire control efforts and performance, and special personnel should be assigned to ensure that all fire control facilities are effective and working well. In case any fire risk or accident occurs due to breach of relevant laws and regulations in the process of pavilion construction, official participants and their contractors shall be fully accountable.

For more information about fire prevention requirements in the process of pavilion construction, official participants may refer to document “D6. Fire Prevention for Official Participants’ Pavilions” and document “D12. Fire and Disaster Control”.

## **5. Environment Conservation**

Official participants shall, in the process of pavilion construction, draw up plans and guarantee measures for environment protection, and take effective measures to have such goals, plans and measures implemented effectively. Official participants and their contractors shall assume full responsibility for any disturbance to the citizens and impairment of the environment due to their negligence and violation of laws and regulations.

For more information about environment protection standards and requirements for pavilion construction projects, official participants may refer to document “D9. Environment Protection”.

## **6. Hygiene and Sanitation**

In the process of pavilion construction, official participants shall make sure that their contractors set up for their construction workers temporary production facilities and life amenities with necessary sanitary management regulations in place, assign special personnel to fulfil sanitation tasks, conduct regular inspection of the environment sanitation, and pay special attention to hygiene and disease prevention. In case any sanitation or hygiene accident occurs on the construction site due to breach of relevant laws and regulations, official participants and their contractors shall be held fully responsible.

For more information about sanitation requirements and hygiene performance standards, official participants may refer to document “D10. Environmental Sanitation”.

## **7. Completion of Pavilions Construction and Use Permit**

### **7.1 Completion of Pavilions Construction**

Official participants shall make sure that their contractors have completed in fulfilling schedule and quality requirements the construction engineering, installation, and decoration of the pavilions according to their design drawings, construction contracts, construction engineering and installation standards and contingent special regulations of the Organizer, that the pavilions have fulfilled design standards and quality requirements, that documents for pavilion acceptance are complete and correct, and that project funds have been paid according to relevant provisions.

### **7.2 Documentation**

For pavilions already completed, official participants shall collect, check and compile “Building Engineering Quality Acceptance Materials” and “Building Installation Quality Acceptance Materials”, and make such materials into a book or books ready for archive keeping.

### **7.3 Acceptance**

After a pavilion is completed, the official participant concerned shall apply in writing to the Technical Office for review and final acceptance. The Technical Office shall then arrange for relevant government authorities such as the sanitation, fire and quality inspection departments and the engineering supervision, survey, design, construction and installation contractors to check and review the project. After the project passes the review and fulfils acceptance standards, the Technical

Office shall issue a construction engineering acceptance certificate.

#### **7.4 Registration of Project Completion and Acceptance**

After a pavilion is completed and has passed the review and inspection of all government agencies and contractors, the official participant in question shall go through necessary formalities with relevant government organs for keeping the “Final Check and Acceptance of Construction Project on Record”. The official participant may inquire the Technical Office about documents necessary for the record-keeping formalities.

Confirming that the materials submitted for project acceptance record-keeping are complete, correct and valid, the Technical Office shall complete the record-keeping procedure on site and issue a “Shanghai Construction Engineering Acceptance Record-keeping Certificate” to the official participant.

#### **7.5 Use Permit**

For pavilions that have passed the quality inspection and acceptance by relevant government authorities and all contractors, official participants shall, within 5 days after the date of acceptance, submit the “Application Form for Permit to Use Pavilions” to the Technical Office. Official participants may inquire the Technical Office about necessary documents and materials for the application purpose.

Within five days after receiving the “Application Form for Permit to Use Pavilions”, the Technical Office shall issue the use permit to official participants for pavilions that have fulfilled application requirements.

Any pavilion cannot be put into use without the use permit.

#### **7.6 Maintenance of Pavilions**

From the date when the use permit is obtained to the conclusion of Expo 2010, official participants shall keep regular check and maintenance of their own pavilions to keep them in good condition. The maintenance cost is the responsibility of official participants.

While pavilions are put into use, official participants must not change the structure of the pavilions and their machinery facilities without prior consent by the Technical Office and the original designer.

The Organizer shall enter pavilions to inspect and check official participants’ performance of maintenance duties, arrangement of goods, security facilities and fire facilities and equipment. When necessary, the Organizer has the right to demand official participants to take corrective actions.

Where the official participants in question refuse or fail to take remedial actions as demanded, the Organizer has the right to commission other contractors to fulfil such tasks instead at the cost and expense of the official participants.

## **D5. Dismantling Official Participants' Pavilions**

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## **D5. Dismantling Official Participants' Pavilions**

After the conclusion of Expo 2010, official participants that have built and used Type 1 pavilions shall dismantle and clear from the site all buildings, structures, equipment and facilities (including base piles, base and pipelines) of the pavilions they have built, installed and decorated, and official participants who have used Type 2 and Type 3 pavilions shall remove all their exhibits, exhibition equipment and facilities from the pavilions or allocated exhibition spaces they have occupied.

First-type pavilions shall be dismantled before May 1, 2011 at the latest, and for that matter official participants shall remove from the site all garbage, dregs, wastes, reusables and recyclables produced in the process of pavilion dismantling. Effective measures shall be taken to ensure that the site, pavilions and the environment are not polluted and the site or pavilions return to their original condition.

### **1. General Regulations**

#### **1.1 Project Record-keeping**

Official participants shall record-keeping formalities of Type 1 pavilion dismantling projects with the Technical Office of the Organizer at least 20 days before the dismantling project starts. Participants may inquire the Technical Office about necessary documents and materials.

#### **1.2 Contractors for Design and Implementation of Dismantling and Removal Projects**

Official participants shall make sure that the contractors for design and implementation of their pavilion dismantling and removal projects have relevant statutory qualifications and business license for architectural structure dismantling (including explosion) and undertake tasks within their qualification and business scope as approved.

Official participants may recruit contractors for design and implementation of their pavilion dismantling and removal projects through public bidding or direct engagement.

Official participants must take strict prohibitive measures to ensure that their contractors do not re-commission their pavilion dismantling projects to sub-contractors.

### **1.3 On-site Manager**

Each official participant shall appoint an on-site manager, and notify the Organizer of the appointment with a “Notice of Appointment of On-site Manager” at least 10 days before their dismantling project starts.

On-site managers shall assume full responsibility for project site management on behalf of official participants, and handle daily project arrangements on site. They shall also be responsible for contacts and coordination between the Organizer and official participants to ensure that the pavilion dismantling project is carried out smoothly.

On-site managers shall also be responsible for the safety, progress, and quality of the pavilion dismantling project, and the removal and disposal of wastes, renewables and recyclables from the site.

Official participants shall make sure that their on-site manager observes relevant laws and regulations. When any on-site manager violates laws and regulations, the Organizer has the right to give an injunction for official participants concerned to dismiss the transgressing on-site manager, and the official participants concerned must appoint a substitute on-site manager within 3 days.

### **1.4 Assistance of the Organizer**

For the purpose of dismantling Type 1 pavilions, the Organizer shall give official participants instructions and assistance as necessary for project preparation, pavilion dismantling, safety management, environment protection, site rehabilitation, project evaluation and acceptance. The Organizer will also conduct on-site inspection on the project progress, disposal of wastes, renewables and recyclables, and rehabilitation of the site or pavilions. When any transgression of laws and regulations is detected, the Organizer has the right to issue injunctions to the official participants concerned requiring remedial actions and the official participants in question must take such remedial actions as required earnestly and effectively.

### **1.5 Supervision of the Organizer**

When official participants refuse or fail to take remedial actions as required, the Organizer has the right to commission other contractors to take the remedial actions at the cost and expense of the official participants in question.

## **2. Project Preparations**

### **2.1 Project Contract and Agreement on Project Safety**

Official participants shall conclude a “Project Contract” with pavilion dismantling contractors defining their respective rights and obligations. At the same time, official participants shall sign an “Agreement on Project Safety Management” to define their respective responsibilities for safety during the project.

### **2.2 Documentation**

Official participants shall provide such documentations to their contractors as follows:

- a. Shop drawings and design specifications of the structure, decoration and facilities of Type 1 pavilions such as water, electricity and ventilation;
- b. Data of underground and above-ground buildings, structures, pipelines and facilities related to the pavilion to be dismantled.

### **2.3 Cutting off Pipelines**

Official participants shall remove all their exhibits first of all, then remove the exhibition stands, boards, racks and other exhibition facilities, and then cut off all pipelines that may otherwise affect the dismantling project.

### **2.4 Reading Relevant Drawings**

Official participants shall see to it that their contractors read, study and analyze the relevant drawings and documents provided by official participants.

### **2.5 Field Survey of the Site**

Official participants shall arrange for the technical staff of their contractors to conduct a field survey of the site.

### **2.6 Compiling the “Pavilion Dismantling Project Organization Design”**

Official participants shall make sure that their contractors compile a document entitled “Pavilion Dismantling Project Organization Design” which includes measures to guarantee project safety, and the project cannot start until the design document is approved by their superior managers and put on the record of the Technical Office of the Organizer, and all managers and operators understand the design clearly.

During the project, official participants shall see to it that their contractors

observe strictly the “Project Organization Design” and do not make any changes on their own. Any change to the “Project Organization Design”, if proved necessary, shall be ratified by the original approver and a written notice shall be given to the Technical Office.

## **2.7 Technical Review**

In any one of the cases as follows, official participants shall organize a consulting session and invite a panel of relevant professionals and experts to review the Project Organization Design:

- a. The project is located in areas with heavy traffic and may therefore affect the safety of pedestrians, traffic, and other buildings and structures;
- b. The building or structure to be dismantled is huge, complicated in composition, and therefore difficult to dismantle;
- c. The project is surrounded by buildings with cultural interests, and excellent historical buildings subject to conservation;
- d. There are underground gas pipelines, water supply and drainage pipelines, important cables and telecom network facilities close to the project site; or
- e. The contractor has required technical consultation and demonstration.

Official participants shall inquire the Technical Office about documents and materials necessary for the technical review.

Results of the review shall be made into a written document which shall, after signature by the panel leader, serve as a reference document for supervision over the contractor and the project implementation.

## **3. Sequence of, Methods and Requirements for Dismantling Pavilions**

### **3.1 Sequence of Pavilion Dismantling**

For the purpose of dismantling first-type pavilions, official participants shall make sure that their contractors design and implement a scientific and reasonable pavilion dismantling order and sequence.

### **3.2 Methods for Pavilion Dismantling**

For the purpose of dismantling Type 1 pavilions, official participants shall make sure that their contractors adopt safe, effective and efficient methods that comply with relevant laws and regulations and do not pollute the environment.

### **3.3 Project Management**

Official participants shall see to it that their contractors implement the pavilion dismantling project according to the “Project Organization Design”, adopt a unified commanding system and assign special staff to supervise over operations on the site.

### **3.4 Safety Responsibility**

Official participants shall see to it that their contractors develop and implement safety guarantee plans and measures according to relevant laws and regulations and in light of actual conditions of projects to ensure the safe and smooth progress of the projects. In case any accident arises from transgressions from relevant laws and regulations, official participants and their contractors should take prompt and proper remedial measures and assume full responsibility for all losses incurred by the accident.

### **3.5 Dust and Noise Control**

In the process of pavilion dismantling, official participants shall make sure that their contractors develop and implement effective measures to control dust and noise under a certain level according to legal regulations.

### **3.6 Disposal of Renewables and Recyclables**

In the process of pavilion dismantling, official participants shall see to it that their contractors sort out renewable and recyclable remains, store such remains at designated places and transport them out of the site with special vehicles so that they remain in good condition and can be reused or recycled.

### **3.7 Wastes Removal**

In the process of pavilion dismantling, official participants shall see to it that their contractors remove all the wastes out of the site in time so as not to let them pollute the site and the environment.

## **4. Site Rehabilitation and Project Acceptance**

After restoring their pavilion sites to their original good condition, official participants shall submit to the Technical Office of the Organizer an “Application Form for Acceptance of Pavilion Dismantling and Site Rehabilitation”. Official participants may request for the Application Form from the Technical Office.

Within 5 days after receiving the “Application Form for Acceptance of Pavilion Dismantling and Site Rehabilitation” from official participants, the Technical

Office of the Organizer shall arrange for the inspection and acceptance of the official participants' pavilion dismantling and site rehabilitation project according to their *Participation Contract*.

After pavilion dismantling and site rehabilitation projects pass inspection and fulfil acceptance standards, the Technical Office of the Organizer shall produce a written certificate of acceptance to official participants proving that the site has been restored to good condition and returned to the Organizer.

If official participants refuse to dismantle their pavilions and rehabilitate the site, or fail to complete the task on time, the Organizer has the right to commission the task to other contractors at the cost and expense of the official participants in question.

## **D6. Fire Prevention for Official Participants' Pavilions**

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## D6. Fire Prevention for Official Participants' Pavilions

This document intends to introduce provisions for handling fire safety issues arising during pavilion construction, decoration, exhibition and activities in the Expo Park according to the *Fire Prevention Law of The People's Republic of China*, *Shanghai Regulations for Fire Prevention*, *Fire Prevention Standards for Architectural Design (GB50016-2006)*, *Fire Prevention Standards for Temporary Buildings and Constructions of Expo 2010 Shanghai China*, and other relevant documents and circulars issued by Shanghai Municipal Fire Department.

### 1. Fire Prevention Design

Pavilions (or exhibition spaces) in the Expo Park are all temporary buildings, and all new buildings and their interior decorations shall be designed in compliance with the *Fire Prevention Standards for Temporary Buildings and Constructions of Expo 2010 Shanghai China*.

### 2. Materials for Decoration and Exhibition Arrangement

For the purpose of interior decoration, exhibition arrangement and building of activity venues, materials used shall be non-flammable or difficult to burn, and partially flammable materials can be used only after they have gone through flame-retarding treatment to fulfil non-flammable standards.

### 3. Fire Products

All fire products used in pavilion construction, decoration and activities during Expo 2010 shall comply with relevant standards, quality management requirements, and market entry conditions of China. Any products that fail to pass tests or comply with relevant requirements must not be used.

### 4. Review Scope

The fire prevention design of new temporary buildings is subject to the review of the Technical Office of the Organizer. Their schematic designs and design development shall be approved by the Fire Department of Shanghai, and their shop drawings and design documents shall be reviewed and approved by shop

drawing review firms.

Interior decoration and exhibition arrangement designs shall be reviewed by the Technical Office and approved by the Fire Department of Shanghai. For documents and other materials required for the review, please refer to the annex to the *Fire Prevention Standards for Temporary Buildings and Constructions of Expo 2010 Shanghai China* concerning necessary materials for the purpose of fire prevention design review.

Official participants who intend to organize performances or other large events within the Expo site with fire risks shall report the event to the Organizer within 10 working days before the event, and the event can be held only after the Organizer and other relevant government authorities have reviewed the fire safety conditions of the venue and given the consent.

For the purpose of fire safety review, official participants shall submit documents and materials as follows:

- Application Form for Fire Safety Review;
- Fire prevention plan, fire control and emergency evacuation plans;
- Official Participants' Letter of Fire Safety Commitment, Fire Control Agreements with Activity Organizer, Sponsors and Venue Operator;
- Opinions of Fire Control Inspection on Activity Venue;
- Certificates and other documents that the fire department deems relevant to fire prevention for large-scale events.

Official participants who intend to hold fireworks evenings within the Expo Park featuring firework display or firing of salute cannons shall report the event to the Organizer, and such an event can be staged only after it is approved by relevant government authorities and awarded the "Opinion on the Safety of Firework Evenings by Shanghai Fire Department".

For the purpose of safety declaration for firework evenings, official participants shall submit documents and materials as follows:

- "Application Form for Fireworks Display in Shanghai";
- Original copy of the approval document by Shanghai Municipal Government and photocopy of the contract of entrustment by official participants;
- Purchase contract of fireworks or other necessary certificates;
- Photocopy of "License for Firework Display at Firework Evenings" and "Certificate of Firework Displayers at Firework Evenings";
- Technical designs and organization plans, technical arrangements for safety

management, safety alarms and other documents made according to the *Safety Procedures for Firework Display at Firework Evenings*.

## 5. Safety Declarers

The fire safety review of construction projects of official participants' self-built pavilions shall be arranged and coordinated by the Technical Office which shall commission relevant agencies to go through declaration formalities.

For large-scale performances, firework evenings and other large-scale events with fire risks, official participants or their entrusted agency shall handle the declaration formalities.

## 6. Check and Acceptance of Fire Control

After construction engineering and decoration projects are completed in the Expo Park, official participants shall apply to the Organizer for fire safety check and acceptance and pavilions and other facilities can be put into use only after they have passed fire safety check and inspection.

For the purpose of application for fire safety check and acceptance, such documents as follows shall be submitted:

- a. Original copy of "Declaration Form for Fire Safety Acceptance of Construction Engineering Projects in Shanghai" (including enclosed tables 1 – 5);
- b. All review opinions of the fire control supervision authority and photocopy of "Certificate of Approval of Design Drawings and Documents of Construction Engineering Project"; for interior decoration projects subject to inspection and review, review opinions on fire control of interior decoration projects and Table 1 and Table 4 annexed to the "Declaration Form for Fire Control Inspection of Construction Engineering Projects of Shanghai";
- c. Original copy of standard-format "Inspection Report on Fire Facilities of Buildings in Shanghai"; for interior decoration or improvement projects of construction projects subject to fire facility inspection, if no systematic change is made, no interactive functions have been added, and the general systematic function has not been affected, the inspection can be exempted until the project is completed;
- d. Original copy of standard-format "Debugging Certificate of Fire Facilities in Buildings";
- e. Drawings or explanation of the interactive control mechanism of fire accident automatic alarm system;
- f. Engineering records of fire-proof coating of steel structure;

- g. Standard-format list of fire products;
- h. Original copy of Fire Control Office's personnel on duty;

Items c-h are optional depending on actual situations.

## **7. Inspection of Fire Facilities and Fire Alarm Network**

Except for multi-story buildings that are equipped only with indoor fire hydrants and are not subject to indoor fire facility test before the construction project is completed, other newly-built, modified and expanded buildings equipped with automatic fire facilities shall go through a fire facility test by professional organizations with relevant qualifications before the project is completed. If the interior decoration or improvement of a building subject to fire facility test does not change the original fire facility systematically or add any interactive function, so that the general systematic function is not affected, the project can be exempted from the fire facility test before it is completed.

The automatic fire alarm system of pavilions shall be connected with the automatic fire alarm system of the city of Shanghai, and official participants shall be responsible for the cost of connection.

## **8. Time Limit for Reviews**

The fire safety review of architectural designs and design developments shall be completed within 10 working days, the fire safety review of interior decoration projects and exhibition arrangement designs shall be completed within 5 working days, and the fire safety review for project completion and acceptance shall be completed within 10 working days after the application for approval is submitted. The review and approval of large-scale events and fire work displays shall be completed within 5 working days after the application is submitted.

## **9. Fire Safety Management**

In the process of pavilion construction and exhibition arrangement, official participants shall conduct management for onsite fire safety according to Regulations of Shanghai for Fire Safety of Construction Engineering Project Sites. While using their pavilion or exhibition space, official participants shall observe the Organizer's regulations concerning fire control.

Fixed fire extinguishing facilities shall not be buried, covered, obstructed or dislodged for the purpose of interior decoration of pavilions, exhibition arrangement and activity design in pavilions; instead, fire distinguishers should be installed according to the specifications and standards of the pavilions.

Official participants shall keep regular repair and maintenance of the fire facilities in their pavilion or exhibition space, to make sure that they work effectively, and the emergency passages and exits of pavilions are free from obstruction.

Official participants shall not store Class A and Class B hazardous goods in their pavilions, and the stock of combustible goods in pavilions shall not be limited to the amount needed for one day's use. No storage of combustible goods is allowed in pavilions.

Official participants shall comply with relevant regulations in their use of gas, fire and electricity. They must not use open flames or draw or connect electric lines in their pavilions without proper licensing or approval.

## **10. Management of Open Flames**

Open flames must be subjected to rigorous management and control within the Expo site. When open flames are actually needed during pavilion construction, the fire operators must observe fire safety regulations and implement relevant fire safety measures. During the exhibition period, when operations with open flames (except for in kitchens), such as electrical welding or gas-powered welding, are needed for special purposes, the entity or individual using open flames shall go through examination and approval procedures with relevant authorities according to regulations for fire control, and must make sure that open flames are used only when there are on-site guards, and no risk of fire accident or explosion.

If any cooking section is set up in pavilions (or exhibition spaces) where open flames are allowed according to relevant specifications and standards, effective fire prevention facilities such as fire extinguishers should be installed, and the location of fire use must not change.

## **11. Inspection on Fire Prevention**

Official participants shall conduct fire control inspection on a daily basis, and should specify definitely the person or persons in charge of fire inspection, and the content, location and frequency of inspection. When an activity or operation ends, the site should be examined carefully to make sure that no kindling remains. For other key sections and locations for fire control, fire inspection shall be conducted at night as well according to actual needs, and the results of inspection shall be recorded and signed.

If any transgression or deviation from codes of fire control is detected, the fire inspectors of official participants shall demand the transgressor to take remedial actions and dispose of any hidden fire risk, or promptly report any risk that cannot be disposed of on site to the fire manager or the chief fire control officer of the

official participant concerned who shall specify the remedial measures, the deadline for remedy and the entity and person or persons responsible, and secure sufficient necessary funding for the remedial efforts.

## **12. Remedy for Potential Risks**

For any transgressions or deviations from fire control regulations as follows, official participants or person concerned shall take remedial actions on site and make sure that all potential risk is removed:

- a. unlawful entry into places where inflammable and explosive dangerous goods are stored;
- b. unlawful operations with open flames, or other deeds in violation against laws such as smoking and use of open flames in places with risk of fire accident and explosion;
- c. Locking up or obstructing emergency exits, or deeds hindering smooth emergency evacuation such as occupying or stocking goods in emergency evacuation passages;
- d. Obstructions affecting the use of fire hydrants and fire extinguishers, or abuse of fire hydrants and extinguishers for other purposes;
- e. Opening up normally closed fire doors, or stocking good below fire rolling curtain so the use of fire curtain is affected;
- f. Absence of fire facility managers, shift surveillants and fire inspectors from duty;
- g. Unlawfully closing down fire facilities and cutting off power of fire facilities;
- h. Other misconducts that can be corrected on site.

The above transgressions and deviations and the results of correction and remedy shall be recorded and kept on file by official participants.

For threats to fire safety that cannot be resolved on site, the fire control staff of official participants shall report promptly any such threat to the fire supervisor and propose a plan for correction and remedy. The fire supervisor shall determine the measures, deadline and person or persons responsible for remedy, and secure sufficient funding for the remedial actions.

Before fire risks are removed, official participants shall take preventive measures to guarantee fire safety. When fire safety cannot be guaranteed, or a fire accident may occur any time, or the occurrence of any fire may seriously affect personal safety, the section or location containing the fire risk shall be shut down for correction and remedy.

For any major fire risk that involves the planning of the whole Expo Park or which official participants cannot resolve independently, official participants shall propose solutions and report such risks and proposed solutions to the Organizer or the fire department of the police.

Official participants shall correct their transgressions or deviations, if any, within a certain deadline as demanded by the fire department of the police, and submit a report of correction and remedy to the Organizer who shall forward the report to the fire department of the police.

### **13. Disposal of Fire Emergencies**

When a fire incident occurs, official participants and all relevant entities and departments of the Expo Park shall implement promptly their emergency response plans to control the fire, evacuate people from the site and rescue any casualties. Efforts should be made to extinguish any fire at an early stage, and people on site should be evacuated in time.

A fire incident report to the police can be made by dialling “110” or “119”, and should clearly specify the location and section where the fire occurs, the substance burning, and whether there are people caught up in the fire.

Any entity and individual shall facilitate the reporting of fire incidents to the police free of charge, and must not hinder or obstruct any fire reporting and fire fighting efforts.

After a fire is extinguished, official participants and relevant entities and department of the Expo Park should keep the site intact and cooperate with the police in investigations. They must truthfully describe the situation of the fire, and assist the fire department of the police to find out causes of the fire, assess the loss suffered from the fire, and determine the responsibilities for the accident. Without prior consent of the Organizer, the site of the fire accident cannot be cleared.

### **14. Training**

Official participants shall attend regular fire safety training sessions of various kinds held in the Expo Park, and organize their pavilion staff to attend such training sessions before they are assigned to work in order to learn and master basic knowledge and skills for fire control.

Official participants and other entities shall develop their own fire control and emergency evacuation plans in light of their actual conditions, and engage themselves in fire and other emergency drills in the Expo Park.

## D7. Barrier-free Design

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## D7. Barrier-free Design

In order to provide a safe and convenient environment for people with disabilities in the Expo Park, this document introduces rules for design of barrier-free facilities in accordance with the *Architectural Design Standards for Temporary Buildings and Structures of Expo 2010*.

This document applies to all temporary buildings and structures of Expo 2010. The design of barrier-free should comply with the master plan for Expo 2010 and be compatible with the environment and surrounding buildings.

### 1. Terminologies

People with disabilities: referring to people who are not able to perform certain activities in a normal way due to complete or partial impairment of a certain organ or function in psychology, physiology or human body structure, including people with visual disability, hearing and speech disability, physical disability, intellectual disability and psychiatric disability. For purpose of this document, people with disabilities mainly refer to people with visual, hearing and physical disabilities.

Barrier-free facilities: referring to facilities on urban roads or in buildings designed in such a way so as to facilitate people with disabilities or mobility problems to participate in normal activities.

### 2. Pavilions

#### 2.1 General Regulations

- a. Each pavilion should have a barrier-free entrance. For instance, a ramp for wheelchair should be designed at the entrance.
- b. The ground floor of pavilions should have a barrier-free passage or pathways.
- c. Pavilions with elevators should have at least a barrier-free elevator.
- d. Multi-story pavilions with no elevator should have slope elevating devices.
- e. Pavilions should have barrier-free toilets or barrier-free toilet cubicles. Toilets, whether mobile or attached, must have a barrier-free entrance, barrier-free toilet cubicles and low-level urinals.

- f. Pavilions should have low-level service counters, low-level public telephone stands, and low-level drinking water fountains.
- g. Pavilions should have barrier-free direction signs, and barrier-free facilities should carry international-standard barrier-free signs.
- h. Barrier-free facilities inside pavilions should be connected with outdoor barrier-free facilities.
- i. Catering facilities in pavilions should provide a Braille menu.

## **2.2 Specific Requirements for Pavilions**

In addition to written materials, pavilions should also provide materials as follows to facilitate the visit and experience of people with disabilities:

- a. Recorded audio interpretation of the exhibition content, as well as portable interpreting machine for rent;
- b. Braille brochures and leaflets of the exhibition content;
- c. Electronic information boards of the exhibition content with photoelectric effect; and
- d. Sign language video of the exhibition content.

If possible, it would be better that pavilions provide real duplicates of exhibits (plastic) for the blind to touch. Exhibits should be placed in such a way as to facilitate the experience of visitors, especially those with disabilities:

- a. Exhibition stands should be no higher than 800mm;
- b. There should be Braille explanations of exhibits; and
- c. Operable exhibits should have both high-level and low-level operation units, so that all visitors including wheelchair users can operate them.

For the arrangement of exhibits, considerations should be given to wheelchair pathways. Pavilions should have resting places for visitors and seats for wheelchairs. Pavilions should have volunteer service stations to facilitate the visit of people with disabilities.

## **3. Barrier-free Facilities**

### **3.1 Ramp for Wheelchair**

- a. Width: The net width should be more than 1200 mm.
- b. Slope: No more than 1:12.
- c. Length: Where the horizontal project of a ramp for wheelchair is longer than 9

meters, there should be a landing for resting.

d. Handrail: Handrails should be installed on both sides of ramps and mounted at two levels. The first level should be 850 - 900 mm high, and the second level should be 650 mm high. The handrails should continue uninterrupted, and extend horizontally for 300 mm at the top and bottom of ramps respectively.

e. Safety guards: Below handrails there should be installed a safety guard no less than 100 mm high.

f. Ramp configuration: Ramps can have one of the following configurations: (a) Straight run; (b) 90 turn; and (c) Switch back or 180 turn.

### **3.2 Barrier-free Entrances**

The slope of ground outside barrier-free entrances shall be no more than 1:50. The barrier-free entrances should have a minimum width of 1500 mm, and the minimum width of door openings of barrier-free entrance is 1200 mm. Barrier-free entrances should not have steps, and should be covered by a canopy.

### **3.3 Building Entrance**

Where there are stairs at pavilion entrances, the ramp for wheelchair should be installed along side and handrails should be mounted. The landing of pavilion entrances should be at least 1500 mm wide and should be covered by a canopy. Where pavilion entrances have double doors at the lobby and the vestibule, the door opening should be no less than 1200 mm wide.

### **3.4 Platform Lifts**

Platform lifts can have either a vertical or an inclined movement. Vertical movement platform lifts are used for high-stair buildings where wheelchair ramps cannot be installed, and inclined movement platform lifts are used for multi-story buildings where no elevator is installed.

The minimum width of the lift platform should be 0.90 m and the minimum length should be 1.20 m. Safety guards and handrails should be mounted on both sides of platform lifts. There should be also a call button and control panel in each platform lift, which should be 650 – 900 mm above ground.

### **3.5 Doors**

The doors of barrier-free entrances shall comply with criteria as follows:

a. Door types may include automatic doors, pivoted doors, sliding and folding doors.

b. Beside a revolving door there should be installed another door convenient for people with disabilities.

c. For pivoted doors and sliding doors, the wall on the side of the doorknob should be no less than 500 mm wide.

Lever-type handles and pull handles are recommended for swinging doors, and at the lower part of the door there should be installed a kick plate about 350 mm high. Transparent glass is recommended. Door leaves should be operable with one hand, the height of threshold and the difference of ground levels inside and outside the door should be no more than 10mm, and there should be a transitional slope.

### **3.6 Barrier-free Pathways (Passages, Walkways and Floor)**

Pathways for wheelchair users should be no less than 1200 mm wide, and pedestrian passages should be smooth, continuous, non-slip, even, and there should be no ponding on the surface. Pathways built with different materials should be level and even with adjacent surfaces, and where there is a difference of level, the difference should be no more than 15 mm, and there must be a transitional slope. Handrails should be installed on both sides of pathways. There should be a clapboard of 350 mm high on the wall on both sides of pathways. The surface of pathways and indoor floor should be even and smooth, and non-slip materials should be used. The external corner of pathways should be an arc wall or a corner-cutting wall. There must not be any obstructions in the pathway. For changes in level between the pathway and the surrounding surface, guards, upstands or other types of protective barriers should be used. Where a door leaf swings into the pathway, there should be an alcove whose area should be no less than 1,300 mm × 900 mm.

### **3.7 Stairs**

Main traffic and emergency stairs should be straight-line stairs, and circular stairs or L-shape stairs without landing should be avoided. The width of main traffic and emergency stairways should be no less than 1,500 mm. Handrails should be installed on both sides of the stairs, the surface of steps should be even and non-slip. Steps of stairs in pavilions should be no less than 280 mm wide, and no more than 150 mm high. Stair steps outside pavilions should be no less than 300 mm wide and no more than 140 mm high.

### **3.8 Barrier-free Elevators**

Relevant facilities in the elevator lobby should comply with criteria as follows:

- a. The width should be no less than 1,800 mm.
- b. The button would be better 900 – 1,100 mm high.
- c. The opening outside the elevator door should be no less than 900 mm wide.
- d. There should be elevator operation indicators and audio device to announce the arrival of the elevator in the lobby.
- e. There should be guide strips at the elevator entrance.

Facilities and fittings of the elevator cab should meet requirements as follows:

- a. The door opening of the elevator cab (or the elevator door) should be no less than 800mm. The door opening interval should be no less than 15 second, and when the door closes, there should be photo-sensitive safety measures.
- b. A control panel of floor selector buttons with tactile markings should be mounted 0.90 m to 1.10 m from the floor on the side wall of the elevator cab.
- c. The inside of the elevator should have a handrail on three sides mounted 900 mm from the floor.
- d. When the elevator cab moves up and down and arrives at each floor, there should be clear indication and audio announcement.
- e. A mirror should be mounted on the wall facing the door of the elevator cab at 900mm from the floor to the top of the cab.
- f. Dimensions of the elevator cab should be determined according to the nature of the building and requirements for use. The minimum size is 1,400 mm × 1,100 mm (allowing for the direct entry and exit of a wheelchair), the medium size is 1,600 mm × 1,400 mm (allowing for 180° turn of a wheelchair in the elevator cab and then get out of the elevator), and for the assistance facilities, the elevator cab should be no less than 2,000 mm in depth.
- g. The location of elevators should have international-standard barrier-free signs.

### **3.9 Handrails**

Handrails installed horizontal areas or areas without wheelchair pathways should be single-levelled at 900 mm from the floor. Handrails installed in non-horizontal areas with wheelchair pathways should be double-levelled. The upper level should be 850 – 900 mm high and the lower level should be 650 mm high. Handrails should continue uninterrupted, and extend horizontally for 300 mm at the top and bottom of ramps respectively. Handrails should not end abruptly but blend into the wall or extend for 100 mm, or extend downward to the floor. Handrails should be securely attached to the wall or to a supporting structure so as to withstand heavy loads. Handrails should allow a firm and easy grip. Circular cross-sections

with a diameter of 35 – 45 mm are preferable. The support for handrails should be 70 – 80 mm high, and the space between the handrail and the wall should be 40 – 50 mm. Tactile markings should be mounted at the horizontal section of the handrails.

### **3.10 Wheelchair Seats**

Wheelchair seats should be installed near pathways convenient for arrival and evacuation, and should not be installed in public passages. Every wheelchair seat should occupy an area of no less than 800 mm × 1,100 mm. The surface of ground for wheelchair seats should be smooth, and where there is difference in level, railings should be installed at the edge. At least one seat should be allocated beside the wheelchair seat for the accompanier.

### **3.11 Low-level Service Counters**

Service counters include inquiry counters, telephone booths, security check counters and general service counters. The surface of a service counter would be better 700 – 800 mm from the floor, and its width should be no less than 1,000 mm. The net space below the service counter should be no less than 650 mm, and its net depth should be no less than 450 mm. There should enough space for a wheelchair to turn around before the service counter. Tactile markings should be mounted in the front of a telephone booth, and wall phones should be no higher than 1000 mm from the floor.

### **3.12 Barrier-free Toilet Cubicles**

The doors of barrier-free toilet cubicles should open to the outside, and door leaves should be no less than 800 mm wide. Horizontal grab bars of no less than 400 mm long should be mounted on the interior side of the door leaf at 900 mm from the floor. Where the door of a barrier-free toilet cubical opens to the outside, it should be no less than 2,000 mm long and at least 1,500 mm wide. Toilet seats are recommended for toilet cubicles, and the height of the toilet seat should be preferably 450 mm. Horizontal grab bars of at least 700 mm long should be installed on both sides of toilet cubicles at 700 mm from the floor, and an L-shape grab bar should be installed on a side wall. The cross-section diameter of grab bars should be preferably between 30 and 40 mm, and there should be a space of no less than 40 mm between the grab bar and the wall.

### **3.13 Barrier-free Toilets**

The area of a barrier-free toilet should be no less than 2,000 mm × 2,000 mm. A barrier-free toilet should have toilet seats, wash basins, shelves and call buttons.

Toilets for gentlemen should have low-level urinals. The toilet seat should be 450mm high, and grab bars should be installed on both sides and the side walls that meet the same requirements as for those in barrier-free toilet cubicles. The wash basin should be suspended, and there should be horizontal handles on both sides at 700 mm from the floor. The table should be no less than 700 mm long, 300 mm wide and 700 mm high. The clear door opening should be no less than 800 mm, and the design of grab bars should meet the criteria prescribed by this document. Low-level urinals should be no more than 500 mm high from the floor, and vertical grab bars shall be mounted on both sides of urinals at 1200 mm from the floor, and the grab bars should be extent 550 mm from the wall. And a horizontal grab bar should be mounted above the urinal extent 250 mm from the wall and connected with the vertical grab bars.

### **3.14 Tactile Markings**

Tactile markings should be mounted beside the doors of barrier-free elevators, barrier-free toilet cubicles or barrier-free toilets, as well as in service facilities in pavilions.

### **3.15 Barrier-free signs**

Barrier-free signs include international barrier-free symbols, sign boards of barrier-free facilities, and direction signs for barrier-free facilities.

Barrier-free signs should be mounted in areas with barrier-free facilities as follows:

- a. International barrier-free signs and barrier-free sign boards should be mounted in areas with barrier-free facilities in pavilions such as barrier-free entrances, barrier-free pathways, barrier-free elevators, barrier-free toilets, barrier-free parking lots, and low-level service counters;
- b. Direction signs for barrier-free facilities should be set up in pavilions;
- c. International barrier-free accessibility symbols should be marked in barrier-free facilities other than the pavilions and venues described above;
- d. International barrier-free accessibility symbols should be used in the direction guiding system of each building.

## D8. Barrier-free Activities and Services

World Exposition Shanghai China *2010*  
**Participation Guide**  
for Official Participants

## **D8. Barrier-free Activities and Services**

In order to support and facilitate people with disabilities, elderly people and people with mobility problems to get in touch with, appreciate and participate in activities of and related to Expo 2010, this document introduces the barrier-free activities and services to be provided in the exhibitions, conventions, performances and other events during Expo 2010, with the hope that all visitors will feel free, safe and comfortable in participating in Expo 2010 activities.

This document applies to all exhibitions, conventions and performances during Expo 2010. Official participants shall provide relevant barrier-free services as required by this document.

### **1. Barrier-free Activities and Services Provided by the Organizer**

The Organizer of Expo 2010 shall set up a special department to serve people with disabilities, elderly people and people with mobility problems, and the department will have a certain number of sign language experts and other experts dedicated to services for people with disabilities.

The Organizer shall give priority to barrier-free facilities in the design and construction of pavilions and other facilities, including curb ramps, guide strips, barrier-free parking lots, barrier-free entrances, barrier-free pathways, barrier-free elevators, barrier-free toilet cubicles and special barrier-free toilets in public rest rooms, barrier-free guest rooms, low-level service counters, and wheelchair seats, and set up international barrier-free accessibility signs and signboards indicating the direction and location of said facilities.

The Organizer shall provide people with disabilities and elderly people with Braille, audio records, large-letter banners, and electronic screens. People with hearing and speech problems will receive help from sign language interpreters, and will be able to visit Expo 2010 under the guidance of mobile phone text messages. Visitors with visual problems will be facilitated by a tactile marking system and tour guide earphone with recordings that introduce the content of exhibition. And visitors with physical disabilities may rent small motorized wheelchairs.

## **2. Barrier-free Activities and Services Provided by Official Participants**

### **2.1 Information about Barrier-free Activities**

- a. Official participants shall provide information about the content and time table of barrier-free activities, and preferential policies for visitors with disabilities.
- b. Official participants shall provide information about access restrictions to particular venues, such as age and physical condition requirements.
- c. Official participants shall provide information about queuing up for entry.
- d. Official participants shall provide information about seats available (including wheelchair seats), and information about the availability and location of seats for people with mobility problems.
- e. Wheelchair seats shall be located in easily accessible areas where there is sufficient space. Such seats shall also be near emergency exits and toilets, and free from visual obstructions. It should be made sure that wheelchair users with hearing problems may receive the information sufficiently.
- f. Audio, lighting, colour and personal guides shall be provided to help visitors with hearing problems to find their seats. The location of toilets shall be marked clearly.
- g. Seats for people with disabilities and elderly people shall be marked clearly and easy to find.
- h. Official participants shall provide barrier-free equipments, such as transit (attendant push) wheelchairs, small motorized wheelchairs, crutches, tour guide earphones, and seats for infants.
- i. Official participants shall arrange for visitors accompanying people with disabilities and elderly people to be seated adjacent to the visitors with disabilities and elderly visitors so that they can be better taken care of.
- j. Official participants shall provide written introduction to and menu of performances for visitors with hearing disabilities.
- k. Official participants shall provide Braille versions of introduction to, menu and content of performances for visually-disabled visitors.

### **2.2 Barrier-free Services (for People with Various Disabilities)**

Official participants shall provide:

- a. General and inquiry services;

- b. Tour guide service;
- c. Services in baby breast-feeding areas (and ladies' toilets);
- d. Luggage deposit;
- e. Service of barrier-free facilities;
- f. Convenience accompaniment;
- g. Audio prompts;
- h. Sign language interpretation;
- i. Braille prompts;
- j. Caption explanation;
- k. Mobile phone text messages for visitors with hearing problems; and
- l. Guiding system for visitors with poor eyesight.

### **2.3 Barrier-free Trainings**

Official participants shall provide:

- a. Trainings on services for people with disabilities and elderly people, such as trainings to learn about the diverse needs of different groups of visitors, and trainings on language and action taboos and the use of barrier-free facilities;
- b. First aid training;
- c. Emergency evacuation training; and
- d. Sign language training.

### **2.4 Standardization of Barrier-free Services**

Verbal descriptions should be brief, simple and clear. Diction should be neutral and the content should not arouse any unpleasant feelings. Printed materials should use large letters in uniform size and style, with sharp contrast and bright colours. Distinctive signs or volume labels should be used. Expressions, tones and gestures of attendants should not arouse any unpleasant feelings.

## D9. Environmental Protection

World Exposition Shanghai China *2010*  
**Participation Guide**  
for Official Participants

## D9. Environmental Protection

This document provides the guidelines to be followed by official participants of Expo 2010 to ensure an efficient fulfilment of environmental management and urban ecological protection, and a successful demonstration of the Expo theme: “Better City, Better Life.”

### 1. Environmental Protection Requirements

#### 1.1 Overall Requirements

Official participants must observe all Chinese laws, regulations and rules, as well as the international treaties and conventions applicable in China in relation to environmental protection.

During the construction of pavilions and their demolition after the closing of Expo 2010, official participants must also request and ensure that the construction contractors should follow the environmental protection requirements and prevent any occurrence of environmental pollution, ecological disruption and civil disturbance.

#### 1.2 Atmospheric Environment Protection

The cooking fume emission equipment in pavilion restaurants and food service facilities must be designed in compliance with the *Design Code for Environmental Protection in Catering Industry* (DGJ08-110-2004) in Shanghai, and during the restaurant operation, the fume emission must be subject to the *Emission Standard of Cooking Fume* (GB18483-2001) of China.

During the construction and demolition of pavilions, official participants must request and ensure that the construction contractors concerned will abide by the provisions in the *Administrative Measures of Shanghai Municipality on Dust Pollution Control and Prevention* (Decree N°. 23 of the Shanghai Municipal People’s Government in 2004) to ensure the control of dust pollution.

#### 1.3 Water Environment

The split flow of clean and sewage water, and of rain and sewage water must be taken into account during the planning and design of pavilions.

Except for part of the waste water entering the middle water reuse system, all the generated waste water must firstly satisfy the requirements for the three-tiered pipe network as defined in the *Integrated Waste Water Discharge Standard* (DB31/199-1997) in Shanghai before entering the Municipal Sewage Pipe Network for treatment and drainage. No waste water is allowed to enter the surface water body. The waste water generated from restaurants must be treated for grease separation and sludge filtration before entering the sewage pipe network.

It is prohibited to use the drain water containing Type I pollutants defined in the *Integrated Waste Water Discharge Standard* in Shanghai as middle water source.

The quality of middle water used as scenic water should be subject to the *Quality Standard for Reclaimed Waste Water Reused as Scenic Water* (CJ/T 95-2000) issued by the Ministry of Construction of the People's Republic of China.

The internal design of pavilions should include the consideration of middle water reuse and use of water-saving devices.

During the construction and demolition of pavilions, official participants should request and ensure that the construction contractors should prevent and control any pollution over water environment during the whole process of work. The construction site should be equipped with facilities for collection of waste water and mud settling, and the settled mud should be transported away in the sealed tank car while the top clear liquid should be drained into the Municipal Sewage Pipe Network instead of surface water or the Municipal Storm Water Pipe Network. The domestic waste water generated by the working staff should be drained into the sewage network or treatment facilities instead of surface water or the storm water network.

#### **1.4 Solid Waste**

Official participants should make efforts to use as many reusable or renewable materials as possible in the construction of their pavilions as temporary buildings, while taking into account the requirements for classified collection, storage, transport, treatment and disposal of all types of waste materials during the design of pavilions. Where hazardous waste (including medical waste) may be generated during the operation of pavilions, the design should include special devices and sites for classified collection of hazardous waste. All types of solid waste generated during various stages of the Expo course should be subject to classified collection and separate storage and disposal.

During the construction and demolition of pavilions, official participants should request and ensure that the construction contractors will strictly control during the whole process of work environment pollution caused by solid waste. All types

of solid waste generated during the process of work should be subject to classified collection and separate disposal. Special devices and sites must be provided for classified collection of the hazardous waste generated from the work, such as waste paint and adhesives, and professional institutions qualified for treatment of hazardous waste must be hired for its disposal. The solid waste that can be comprehensively used or reused should be treated accordingly.

The collection, storage, transport, treatment and disposal of solid waste should be governed by the *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste*. The storage and transfer of hazardous waste should be subject to the *Standard for Pollution Control on Hazardous Waste Storage* (GB18597-2001) of China and *Measures on the Management of Duplicated Form for Transfer of Hazardous Wastes*, and the treatment of hazardous waste should be subject to the *Rules on Pollution Prevention and Control over Hazardous Waste in Shanghai*.

### **1.5 Noise Control**

During the design of pavilions, official participants should follow the principle of separating the motion and quiet sections to ensure the attainment of high environment quality standards in functional sections and major areas.

Official participants should adopt comprehensive measures for noise and vibration reduction to ensure that the noise emission at boundary of equipment rooms is in conformity with the *Standard of Noise at Boundary of Industrial Enterprises* (GB12348-90) of China. Where other relevant requirements are satisfied, low-noise equipment should be used.

During the construction and demolition of pavilions, official participants should request and ensure that the construction contractors will keep the construction noise under strict control during the whole process to prevent any occurrence of resident harassment caused by noise. The noise level during the construction work should be subject to the *Noise Limits for Construction Sites* (GB12523-90) of China. The construction contractors should follow the regulations of the Shanghai Municipal Government governing operation of construction work at night and, except for emergencies, no construction operation generating noise environment pollution is allowed at night or during any specific period of time determined by the Shanghai Municipal Government. In case night operation is needed for justifiable reasons such as continuous concrete casting, the contractors should submit an application, prior to the operation, to the environmental protection department in the district concerned (Huangpu District, Luwan District or Pudong New Area) where the construction site is located. When the application for night operation is approved, the contractors concerned should post in a prominent position

at the operation site the specific information of administrative permission.

During the operation of pavilions, no equipment noise should affect the surrounding public areas and residential buildings.

When high-powered sound equipment is used by official participants, sound isolation measures should be put in place to prevent any impact on the neighbouring pavilions.

The installation of air-conditioners in pavilions should be subject to the *Management Rules on Installation and Operation of Air-conditioning Facilities in Shanghai*.

## **1.6 Radiation Safety**

Before importing radioactive products and implementing a project involving radiation, official participants must apply for valid radioactive safety permission as per regulations. The pavilions must be equipped with protective appliances and monitoring instruments compatible with the type and level of radiation. Package examination must be conducted by official participants as per regulations for any cargo transport involving radioisotope.

The workplace involving radioisotopes and ray instruments must be equipped with safety systems preventing any misoperation and protecting the working staff or general public from accidental exposure, and where the production, selling or use of radioisotope is involved, temporary storage or apparatus for radiation sources in conformity with both radioactive protection and physical defence requirements must also be in place.

The facilities using Type I, Type II and Type III radiation sources and the ray instruments generating radioactive pollution after the terminating operation should be put out of commission upon the terminating operation as required by law.

Upon any import and export, transfer and relocation of radioisotope and disposal of used radiation sources, official participants should complete the required registration procedures with the competent environmental protection authorities.

## **2. Environment-Friendly Behaviour**

To protect the earth we all share, the Organizer will advocate environmental protection concepts such as green purchasing, green office operation, recycling, and ISO14000, and promote the public awareness of environmental protection by encouraging everyone to be involved.

### **2.1 Green Purchasing**

The Organizer encourages all official participants to implement “green purchasing”

in their material procurement by ensuring that:

- a. the procurement is in the first place necessary;
- b. the impact of the whole product life cycle on the environment is taken into account;
- c. the relevant environmental protection information will be provided promptly by the product supplier;
- d. the principle of “purchasing nearby” is observed.

In case of purchasing in other countries, official participants should give priority to the products certified under the applicable laws and regulations concerning green purchasing or in conformity with the provisions of such laws and regulations. In case of purchasing in China, priority should be given to China Environmental Labelling Products.

## **2.2 Green Office**

Official participants should, under the principle of quantity reducing, recycling and reclamation in resource consumption, select office supplies made of recyclable, renewable and plainly-packed materials, use waterless printing and non-VOC ink, and ensure double-sided printing and photocopying in using office paper.

Official participants should select environment-friendly decorations and furniture, and ensure the attainment of air quality in the office. Natural light should be used as much as possible in offices and public areas, and electrical lights should be turned off when not needed.

Official participants are encouraged to use automobiles in conformity to the environmental protection emission standards or other environment-friendly public transportation means, and to walk in case of short distance.

## **2.3 Environmental Protection in Logistics**

Official participants should select as a priority logistics service providers with ISO14000 Environmental Management System (EMS) certification.

## **2.4 Environmental Protection in Major Events**

The lighting equipment needed for major events presented by official participants should be in conformity to the requirements of the *Standard for the Urban Area Environment and Decorative Lighting* (DB31/T316 2004) in Shanghai.

Official participants should use promotional products made of reusable or recyclable materials and set up recycling facilities that can be easily recognized and used.

Official participants should strictly control the event schedules to avoid any disturbance caused by the noise or lighting to surrounding pavilions and the life of residents.

## **2.5 Environmental Management System**

Official participants should give priority to selecting service providers with ISO14000 EMS certification in design, construction, supervision, operation, and process and treatment.

# **3. Environmental Supervision and Services**

## **3.1 Environmental Supervision and Management**

During the design, construction, operation and demolition stages of the Expo, official participants must obtain an administrative approval from the Chinese government departments in charge of environmental protection for any of the following work.

a. Before a pavilion project is put into production or service, its facilities for pollution control and prevention must be examined and approved by the competent administrative authority of environmental protection in Shanghai. The environmental protection acceptance check for electromagnetic radiation facilities shall also be subject to provisions in the *Administrative Measures for Electromagnetic Radiation Environmental Protection* issued by the State Environmental Protection Administration of China.

b. For operation of night construction work, the contractors concerned must apply for permission to the district environmental protection department where the construction site is located. For detailed requirements, please refer to the websites of the Huangpu District Environmental Protection Bureau, the Luwan District Environmental Protection Bureau and the Pudong New District Environmental Protection Bureau:

<http://www.hphb.gov.cn:7005/hphb/index.do>

<http://hbj.luwan.sh.cn/>

<http://211.144.95.130:9080/website/index.jsp>

c. In case of generation of hazardous waste, it must be declared to the local district environmental protection department. In case of a need to transfer the generated hazardous waste out of Shanghai, official participants should apply to Shanghai Environmental Protection Bureau (SEPB) and complete the “Application Form for Transfer of Solid Waste from Shanghai to Other Provinces or Cities”. Approval

of the application by SEPB shall be subject to consent from the destination district or municipal environmental protection bureau. For detailed procedures, please check the SEPB website <http://www.sepb.gov.cn>.

d. A permission issued by the competent environmental protection authority under the State Council is needed for any use of Type I radiation sources and Type I ray instruments, and for any use of other types of radioisotopes and ray instruments, a permission issued by SEPB is needed. For detailed requirements, please check the website of Shanghai Station for Supervision over Radioactive Environment: <http://www.envir.online.sh.cn/sisr>.

e. Before the import of any new chemical substance, official participants must file a registration with the Chemical Registration Centre of State Environmental Protection Administration, and complete the notification of new chemical substance. For detailed requirements, please check the website of SEPA Chemical Registration Centre: <http://www.crc-sepa.org>.

### **3.2 Environmental Services**

The competent authority of environmental protection and related departments in Shanghai may provide for official participants the following services:

a. General assistance in filling out the registration form for environmental impact assessment of pavilion construction. Where an environmental impact report is needed, an institution specialized in environmental impact assessment with competent professional qualifications should be hired to complete the process of environmental impact assessment. Information on competent professional environmental impact assessment institutions is available at the website of SEPB.

b. In case of a need for services in environmental protection construction, official participants should entrust a professional institution with competent qualifications in design and construction with the task to conduct the needed environmental protection design and construction in compliance with all applicable standards and regulations. Please check the website of Shanghai construction and building industry ([http://www.ciac.sh.cn/ztl\\_zzzg.aspx](http://www.ciac.sh.cn/ztl_zzzg.aspx)) for information on institutions in Shanghai qualified for providing environmental protection construction services.

c. In case of a need for environmental monitoring services, such as the environmental protection acceptance check monitoring, official participants should entrust a professionally qualified environmental protection monitoring centre or environmental radiation monitoring centre with the task to conduct the monitoring and submit a monitoring report. Information on qualified environmental monitoring institutions in Shanghai is available at the websites of the municipal, district and county bureaus of environmental protection.

- d. Hazardous waste must be transported and disposed by an institution with a valid operation permit for hazardous waste. Please check the website of SEPB for a list of institutions in Shanghai with facilities and professional qualifications for pollution control and prevention or operation permits for hazardous waste.
- e. For procedures concerning radioactive safety permission or isotope registration and decommission, please check the website of Shanghai Station for Supervision over Radioactive Environment.
- f. In case of any occurrence or discovery within the Expo Park or pavilions of major environment pollution accidents, illegal discharge of pollutants, or emergent environment pollution accidents, please call the SEPB emergency lines at 86-21-62863110 or 86-21-12369.
- g. For information on China's environmental labelling products and their technical requirements, please check the website of China Green Purchasing Network: <http://www.cgpn.cn>.

### **3.3 Administrative Forms**

The environment-related administrative forms that official participants may be required to complete during the construction of pavilions and running of various events mainly include:

- a. "Application Form for Approval of Environmental Impact Assessment on Construction Project" (available for download at the websites of Shanghai municipal and district environmental protection bureaus)
- b. "Application Form for Operation of Night Construction Work" (available for download at the websites of Shanghai municipal and district environmental protection bureaus)
- c. "Application Form for Approval of Construction Project Trial Production (Trial Operation)" (available for download at the websites of Shanghai municipal and district environmental protection bureaus)
- d. "Application Report on Inspecting and Accepting Completed Environmental Protection Facilities for Construction Project" (available for download at the websites of Shanghai municipal and district environmental protection bureaus)
- e. "Report on Environmental Monitoring/Survey" (available for download at the websites of Shanghai municipal and district environmental protection bureaus)
- f. "Application Form for Transfer of Solid Waste from Shanghai to Other Provinces or Cities" (available for download at the website of Shanghai Environmental Protection Bureau)

g. “Application Form for Radioactive Safety Permission” and other administrative forms concerning procedures for recycle and disposal of radiation source, and transfer or relocation of radioisotope (available for download at the website of Shanghai Station for Supervision over Radioactive Environment)

h. “Notification of New Chemical Substance” (available for download at the website of Chemical Registration Centre of State Environmental Protection Administration)

## **D10. Environmental Sanitation**

World Exposition Shanghai China *2010*  
**Participation Guide**  
for Official Participants

# D10. Environmental Sanitation

This document is intended to provide the Expo 2010 official participants that design and build Type 1 Pavilions (Self-Built Pavilions) with guidelines needed in the process of design, construction, exhibition arrangement, operation and demolition of their pavilions in relation to the provision of environmental sanitation facilities and equipment, collection and disposal of solid wastes, maintenance of pavilion sanitation, and design and maintenance of urban landscape. This document is applicable within the red-line of the plot for Self-Built Pavilions.

## 1. General Regulations

- a. The official participant must observe all applicable Chinese national and Shanghai municipal laws and regulations during the design, construction, exhibition arrangement, operation and demolition of its pavilion.
- b. The official participant shall be responsible for providing environmental sanitation facilities, collecting solid wastes, and maintaining pavilion sanitation within the red-line of the plot for Self-Built Pavilions and for the cost thus incurred.
- c. The provision of environmental sanitation facilities shall be included in the pavilion design by the official participant.
- d. The official participant shall declare to the Organizer the output of solid wastes and pay the cost for collection and disposal.
- e. The official participant is not allowed to dispose solid wastes generated in its pavilion.
- f. During the design, construction, exhibition arrangement, operation and demolition of its pavilion, the official participant shall follow the policy of reducing the source of solid wastes and increasing resource reclamation and reuse.
- g. The official participant that plans to entrust a service provide with the operation of collecting solid wastes and maintaining pavilion sanitation shall conclude a contract with a service provider authorized by the Organizer.
- h. All signs in both Chinese and English used for environmental sanitation facilities must be subject to the *Terminology Standard for City Appearance and Environmental Sanitation* (CJJ/T65-2004) issued by the Ministry of Construction of the People's Republic of China.

i. The Organizer shall provide at a due time the approval procedures for solid waste output declaration and collection and other applicable administrative procedures.

## **2. Requirements for Environmental Sanitation Construction**

### **2.1 Domestic Wastes**

Domestic wastes generated from pavilions shall be collected in three different types, or the recyclable wastes (substance good for recycle and resource reclamation, such as uncontaminated and highly reclaimable newspapers, magazines, waste plastics, and noncombustible scrap metal and waste glass), hazard wastes (used consumer electronic products, empty paint casks or cans, discarded light tubes, waste chemicals for daily use and other trash directly or potentially harmful to human body or natural environment), and other wastes. The domestic wastes shall be collected from a fixed spot at a scheduled time, with the collection frequency increased during rush hours.

#### **2.1.1 Requirements for waste bins**

The waste bins refer to those provided in the public areas within the red-line of the plot for pavilions, including both outside and inside of the pavilions.

Waste bin sets composed of different types as classified according to the Organizer's regulations shall be provided for the pavilions, and the number of sets provided shall satisfy the needs of the maximum flow of visitors. The distance between two sets shall be no more than 30 metres, and a minimum of 5 sets shall be provided for each space of 1,000 m<sup>2</sup>. The waste bins shall be placed in spots easily accessed by visitors, including the pavilion entrance. The Organizer shall designate the style, colour and marking of the waste bins provided.

#### **2.1.2 Requirements for domestic waste collection containers**

The domestic waste collection containers refer to those used for collecting the domestic waste in the waste bins provided in the pavilions.

There shall be one or two fixed spots to place the domestic waste collection containers in each pavilion, and the number of containers provided shall be calculated as per the following formula:

$$N_{ave} = \frac{V_{ave}}{EB} A_4$$

$N_{ave}$ : The average number of containers needed;

$V_{ave}$ : The average volume of waste generated per day (m<sup>3</sup>/d);

*E*: The holding capacity of each container ( $\text{m}^3/\text{container}$ );

*B*: The block coefficient of each container,  $=0.75 \sim 0.9$ ;

*A<sub>4</sub>*: The waste collection cycle (d/time); for collection twice a day,  $A_4=0.5$ ; for collection once a day,  $A_4=1$ ; for collection once every other day,  $A_4=2$ , etc.

The collection containers shall be placed out of the visitor's sight in places where the small waste collection vehicle operating in the Expo Park may enter easily to collect and remove the waste. Should the official participant fail to do as required, it shall be responsible for moving the waste to a designated location in the pavilion easily accessed by a collection vehicle.

The Organizer shall designate the style, colour and marking of the waste collection containers.

The collection containers must be closed with an intact outside surface and kept neat and clean.

The official participant must dispose the wastes separately in accordance with the classification standards provided by the Organizer, and no food waste, construction waste or heavy waste is allowed to be put into the domestic waste collection container.

In case the collection container is full at a non-scheduled collection time, the official participant concerned must promptly inform the Organizer, and call to book an increase of collection frequency.

During the construction of a pavilion, the official participant shall place temporary closed waste collection containers in the construction area, administration area, and living area respectively.

The specific schedule of collection time and spots shall be provided by the Organizer at a due time.

Special recycle boxes shall be placed in all pavilions for collection of paper waste such as paper advertisements or brochures and fliers.

## **2.2 Other Wastes**

Other wastes include the construction waste, food waste, heavy waste and feces. Disposal of such wastes shall be subject to a unified registration management and paid collection service.

### **2.2.1 Construction Waste**

Construction waste includes the waste generated during the process of pavilion construction, set-up and demolition by official participants, including the recyclable

type, such as stone chips, concrete blocks, asphalt rocks, and wood, plastic and metal pieces, and the hazard type, such as used paint and decoration trash.

Official participants shall separate the collection and storage of the recyclable type and hazard type of construction waste.

Official participants must register the construction waste pursuant to the filing and approval procedures provided by the Organizer.

Official participants must deposit the construction waste at a spot designated by the Organizer, and book a timely collection and disposal service by a sanitation service provider recommended by the Organizer.

The Organizer encourages official participants to use reclaimable green building materials for a better reuse of construction waste.

### **2.2.2 Food Waste**

Food waste refers to the waste generated from food services operated by official participants during the process of their pavilion construction, set-up and operation.

Official participant must place closed collection containers exclusively used for the food waste.

Official participants must register the food waste pursuant to the filing and approval procedures provided by the Organizer.

Official participants shall book a timely collection and disposal service by a service provider recommended by the Organizer.

### **2.2.3 Heavy Waste**

Heavy waste refers to the large-sized waste articles discarded during the process of pavilion construction, set-up and demolition by official participants. These articles are usually of a whole piece and need to be disassembled or re-treated, including broken electronics or appliances, office furniture, and large packing materials used during the exhibition set-up and removal.

Official participants shall separate the collection and storage of the electronic type and wood type of heavy waste.

Official participants must register the heavy waste pursuant to the filing and approval procedures provided by the Organizer.

Official participants shall book a timely collection and disposal service by a service provider recommended by the Organizer.

### **2.2.4 Feces**

All feces in the Expo Park during the course of Expo 2010 must be disposed

through the pipe network.

Temporary toilets qualified for sanitation standards must be provided for construction workers on the construction site.

The number of temporary toilets provided shall be determined according to the number of construction workers on the site, and there must be specially appointed personnel to clean and sterilize the toilets and to promptly empty the septic tanks.

Official participants must hire a service provider recommended by the Organizer to conduct the feces collection and disposal.

### **2.3 Public Lavatory**

Public lavatories refer to those installed in pavilions that are open for public use by visitors, including attached or mobile lavatories.

Each pavilion of a total construction area of 2,000 m<sup>2</sup> or more shall be provided with one public lavatory, and that of a total construction area of 3,000 m<sup>2</sup> or more shall proportionally increase the number of public lavatories.

The number of mobile public lavatories and toilet cubicles shall be subject to the maximum flow of visitors in each pavilion.

Each public lavatory in a pavilion shall contain no less than 18 toilet cubicles, of which different types shall be configured as follows: the ratio of men's to women's shall be 1:2.5, that of men's closets to urinals 1:1.5, that of toilet stools to squatting spans 1:1, and that of obstacle-free facilities to the total number of toilet cubicles 1:3.

The public lavatories shall be rationally structured, with eye-catching and standard signs for the convenience of visitors.

The public lavatory shall be built with environment-friendly materials, and painted in nice-looking colours both inside and outside matching the overall appearance of the pavilion.

### **2.4 Sanitation Work**

The sanitation work contained in this document refers to the sanitary maintenance of all pavilions, both inside and outside, construction façades, environmental sanitation facilities, and construction sites within the red-line of the plot for pavilions.

#### **2.4.1 Construction Site**

Official participants must regularly clean and maintain the fence surrounding the construction site to ensure that it is kept tidy and clean all the time.

Full-time or part-time sanitation workers shall be assigned in charge of the cleaning work and sanitary maintenance on the construction site.

The construction site must be kept clean all the time and equipments must be taken to prevent dust pollution.

All construction vehicles must be washed and cleaned before operation, and no mud-laden vehicles shall be allowed to keep the road clean.

### **2.4.2 Pavilion**

Outside a pavilion the ground must be kept clean in its natural colour with no smears of spitting or chewing gum, and the green areas must not be littered. Inside a pavilion the ground must be kept clean with no smears of spitting or chewing gum, or visible dust.

Official participants must keep the pavilion façade and ceiling clean, intact, nice-looking and in tune with the surrounding environment, and the roof free of litter or illegal structures.

General cleaning and washing shall be conducted during non-open hours (before the opening or after the closing of a pavilion), with ongoing patrolling sanitation workers assigned during the whole opening period. The frequency of sanitation work shall be increased during a special period of time (visitor rush hours, attendance by VIP guests or days of special weather, such as rainy days).

Official participants may hire a service provider recommended by the Organizer to conduct such operation, and safety of the sanitary operation and equipment must be ensured while the visitor's visual perception shall not be affected.

### **2.4.3 Public Lavatory**

The public lavatory must be free of bad odours, with no dust, stains or graffiti on the wall surface, ceiling, door, window and partition board, and no water on the floor. The toilet cubicles must be kept clean and all equipment and facilities in 100% good conditions. Its surrounding areas must be clean and well-maintained, and the cleaning tools placed in good order.

The public lavatory must be cleaned up before the opening and after the closing of a pavilion, with ongoing patrolling sanitation workers assigned during the opening period.

The sanitation of a public lavatory must be done according to the regulated procedures without interfering with the visitor's normal use. While the lavatory is being cleaned, caution signs must be displayed to avoid any personal slips or injuries.

The sanitation work shall cover the following aspects: verification of safety devices and supplementary goods, disinfection and cleaning of floors and facilities, re-supply of consumable goods, and collection and removal of trash and waste in the lavatory.

The sanitation of public lavatories must be performed by professional sanitation workers with special tools, and official participants may hire a service provider recommended by the Organizer to conduct such operation.

#### **2.4.4 Other Environmental Sanitation Facilities**

The domestic waste collection container must be regularly cleaned and well-maintained.

The waste bin shall be cleaned more frequently with the increase of visitors.

The trash must be promptly removed from the waste bin, of which the door and outer surface must be intact with no damages or stains. The waste bin must be kept clean both inside and outside with no smears or dirt; garbage bags shall be placed in a way that is convenient for visitors to use; the trash inside the bin must not be higher than the drop slot; and there must be no littered trash on the floor around the waste bin.

Official participants may hire a service provider recommended by the Organizer to conduct such operation.

### **2.5 Urban Landscaping**

#### **2.5.1 Outdoor Advertising and Non-advertising Displays**

No outdoor commercial advertising displays are allowed on the pavilion structures, and official participants must submit to the Organizer an application for any displays outside a pavilion in relation to the pavilion theme.

#### **2.5.2 Landscape Lighting**

The architectural style, appearance, colour, and external lighting of pavilion structures must be subject to the requirements provided in the master planning for Expo Park, and in tune with the overall landscaping style of the Park. The landscape lighting equipment, including the long-distance remote control signal receiver, must be designed, constructed, approved and put into service simultaneously with the whole construction project, and the detailed design plan shall be submitted to the Organizer's technical department for approval.

Temporary structures needed for pavilion construction shall be subject to review and approval by the Organizer, and must be removed as soon as the construction

is completed to ensure that the site is restored to the original condition.

The enclosure wall (fence) set up on the construction site during the pavilion construction shall be standard and artistically embellished, and the detailed plan shall be subject to review and approval by the Organizer.

The outer façade of pavilion structures shall be kept clean and intact, and the roof shall be free of litter.

The energy-saving light source, green electric power and illuminator of high technology content shall be used for landscape lighting.

The landscape lighting installations shall be simple and covered, and the advertising lamps and all types of night direction signs shall be incorporated naturally into the landscape lighting system with no conflicts or interference.

## **D11. Security and Protection**

World Exposition Shanghai China *2010*  
**Participation Guide**  
for Official Participants

# D11. Security and Protection

This document is intended to introduce the safety rules, measures and emergency response plans developed by the Organizer. Official participants shall implement effective security and protection measures in their respective allocated areas accordingly in order to ensure that all construction projects in the Expo Site proceed smoothly and safely.

## 1. Security Assurance of the Organizer

### 1.1 Organization Structure

The Security Department of the Expo Bureau is the executive department of the Organizer responsible for security and protection, and shall guarantee safety in the public spaces of the Expo Park, provide relevant services to official participants, handle emergencies and accidents, and cooperate with the police to prevent and crack down crimes.

The Organizer shall engage certain security service companies to undertake the security watch and risk prevention of the Expo Site. Official participants shall be responsible for security and protection of their pavilions, and the Organizer shall recommend security service providers to official participants. The Security Department shall assign a special person or persons to keep in touch and communicate with official participants concerning security and protection.

### 1.2. Mechanism of Communication with Official Participants

The Security Department shall communicate regularly with the security officer of official participants to discuss and settle issues and problems concerning safety during pavilion construction and exhibition arrangement, conduct special negotiations on relevant applications from official participants in order to resolve safety problems in time.

During pavilion construction and exhibition arrangement, the Security Department shall assign its staff to conduct regular safety inspection of the site together with the construction and operation departments of the Organizer.

## 2. Security Assurance of Official Participants

Each official participant shall appoint a Security Officer who shall be responsible

for contacts with the Organizer concerning issues of security and protection. In principle, official participants shall make the appointment two months before construction starts, and file the appointment to the Security Department for record keeping. Any change to the security office shall also be declared to the Security Department in time.

Official participants shall establish internal safety specifications in accordance with the security rules of the Expo Bureau in order to maintain a proper order and make sure that all relevant laws and regulations are observed.

## **2.1 Work Scope**

Official participants shall be responsible for security assurance of their own section.

## **2.2 Duties**

In the process of pavilion construction and exhibition arrangement, official participants shall be responsible for the management of construction workers in their respective areas. Official participants shall promptly settle any general safety issue arising in their section, and inform the Security Department of the issue and the result of settlement immediately. If the issue requires the intervention of the police, they shall also cooperate with the police for the purpose of investigation.

The Security Officer shall, in consultation with the Security Department, draw up their security and protection plan (“safety plan”), and implement their security and protection measures accordingly to maintain a proper order and security in the control area.

The Security Officer shall, joining hands with the construction and exhibition arrangement personnel and entities, establish a mechanism of communication, coordination and cooperation to ensure that they can communicate and cooperate with the police, the fire department and other relevant authorities, and the security service entities in case of emergency.

The Security Officer shall be responsible for the management of security guards in their own section. In case of emergency, the Security Office must follow the instructions of the Organizer.

## **2.3 Developing the Safety Plan**

The Security Officer shall try to understand the conditions of the site and the procedures of pavilion construction and exhibition arrangement and on the basis of sufficient understanding draw up a preliminary safety plan. After consultation with the Security Department, the Security Officer shall produce the final plan ten working days before the construction or exhibition arrangement project starts.

The final plan (two copies of the Chinese version and two copies of the version in the official language of the participating country) shall be submitted to the Security Department for record keeping. The safety plan shall contain:

- a. Name and method of contact of the Security Officer;
- b. Boundary of control area;
- c. Schedule of project progress;
- d. Routes for the entry and exit of construction vehicles;
- e. Deployment of security staff;
- f. Deployment of security and protection technologies and use of special devices;
- g. Agreement of Undertaking for Safety during Pavilion Construction and Exhibition Arrangement by and between contractors and official participants;
- h. Routes of VIP visits; and
- i. Emergency response procedures (preliminary plan).

### **3. Technical Requirements for Security and Protection System**

#### **3.1 General Requirements**

The preliminary design, design review, construction organization, technical evaluation, final check and acceptance of security and protection system shall be conducted in compliance with the national standards *Technical Code for Engineering of Security and Protection System* (GB 50348-2004), the trade standards for public security *Procedures and Requirements for Security and Protection Projects* (GA/T75-1994), and *Code of Acceptance for Security and Protection System* (GA308-2003).

The development of security and protection system shall be integrated as part of the general planning for the construction engineering of buildings, and such systems shall be designed in parallel and constructed together with the buildings but checked and accepted independently.

The development of security and protection system, while subject to the above standards, shall also comply with the current Chinese national standards for construction engineering, and relevant technical standards, specifications and regulations.

## **3.2 System Composition and Design Requirements**

### **3.2.1 Video Surveillance and Control System of Security and Protection**

Colour video cameras shall be used and fixed securely, and there should be an interface with the system of the Organizer and relevant protocols for networking control.

Fixed-up video cameras must be set a fixed focus and direction, and backlighting and birds-eye viewing shall be avoided as much as possible. Indoor video cameras shall be fixed no higher than 2.5 meters, while outdoor video cameras shall be no higher than 3.5 meters, and there shall be no obstructions in the scope of surveillance.

Within the surveillance scope of video cameras at entrances or exits, there shall be no blind spots, and the facial features of people entering or leaving shall be distinctly visible on the monitor screen, and the valid face image of the person shown shall be no less than 1/60 of the screen.

For video cameras with PAN/TILT or zoom lens, when the PAN/TILT or zoom lens stops operation, the video camera shall be able to automatically restore to its initial condition within 3-30 seconds as instructed.

When operating, video cameras must have sufficient illumination, and when necessary supplementary lighting devices shall be installed. Within the scope of surveillance, the average degree of illumination shall be no lower than 200 lux.

The system must possess character generation, recording and adjustment functions for time and date, the generation of characters shall not affect the image monitoring and recording effects, and the error between the shown time and the standard time must be no more than  $\pm 30$ .

The system must use hard-disk video cameras to keep 24 real-time or mobile sensing video recording, and the records shall be kept for no less than one month. According to actual needs, the system shall configure and enable its sound and visual alert function for image change or loss. Cameras with PAN/TILT lens must also be able to track the movement of objects automatically. The frame rate of image recording must be no less than 24 FPS.

The system shall be able to integrate with the second-level control network of security and protection of the Expo Park, and provide 8–16 channels for image uploading. The format of image recording must be compatible with the requirement of the image monitoring system of the Expo Park.

### **3.2.2 Intruder Alarm System**

The installation of indoor intruder detectors shall comply with relevant standards.

Boundary intruder detectors must be installed in such a way as to avoid blind spots, and the division of monitoring areas must be helpful for accurate positioning while alarms are made. The length of each monitoring area must be shorter than 80 square meters, and each area must be monitored 24 hours a day.

Construction sites must be physically separated with fences, and technical security and protection measures shall be taken as necessary.

The intruder alarm system must be equipped with image display terminals which shall show images synchronically with the alarm and accurately identify the alarm area. In addition, audio visual alert devices of the intruder alarm system must be installed in clearly visible places, and when the intruder detector is triggered, the audio visual alert devices must give audio visual alerts. The sound of alert must be no lower than 80 db, and the alert duration must be no less than 5 minutes.

Emergency alarm devices must be installed in places where they are covered up and easily operable. The devices must be configured as locked and must have measures to prevent triggering by mistake. When the alarm is triggered, the system must be able to give emergency alarm signals and lock up automatically until it is restored manually.

The control host computer of various intruder alarm systems must be installed in the central control room of security and protection, and all signals must be integrated with the second-level control network of security and protection of the Expo Park.

The alarm response of the system must be shorter than 2 seconds, and the network alarm response must be no longer than 5 seconds.

Information of the intruder alarm system must be kept at least 30 days.

The intruder alarm system must be interactive with the video surveillance control system and lights, and the interactive response must be shorter than 4 seconds.

### **3.2.3 Access Control Systems**

Access control systems must be installed at the entrance/exit of all stand-alone buildings, office blocks, equipment and machinery rooms, and safety control centres at various levels, and the products used must comply with the national standards for public security products – *Specifications for Access Control Systems* (GA/T 394–2002).

The application of access control systems must comply with the national standards *Technical Code for Engineering of Security and Protection System* (GB 50348–2004)

## **4. Requirements for Security and Protection Products**

Equipments and products used in security and protection systems must comply with Chinese laws, current Chinese national standards, industrial standards, local standards of Shanghai, and other technical standards and specifications. They must be safety-certified, registered, ratified, or pass the model test.

## **5. Requirements for Security and Protection System of Pavilions**

Official participants' pavilions must meet the criteria for Class I exhibition pavilions as prescribed in the local standards of Shanghai – “Requirements for the Security and Protection Systems in Key Positions of Key Buildings, Part I: Exhibition Pavilions” (DB31/329.1–2005), and optional clauses concerning the video surveillance and control systems, intruder alarm systems, access control systems must be implemented as compulsory standards.

In exhibition areas where special exhibits are displayed (such as expensive jewellery, calligraphy and paintings, and watches), fixed-up video cameras must be installed at an intensity of at least 1/60m<sup>2</sup>, and the screen should be able to show the activities of people moving around in such areas.

The waiting areas for queuing for entry shall be equipped with video cameras with fast PAN/TILT and zoom lens, and the scope of surveillance shall cover all corners of the areas.

## **6. Security Staff**

Official participants (except for those receiving the assistance of the Organizer) may determine their own security staff in their respective control area, and the Organizer shall recommend qualified security service providers to official participants. All the security staff shall meet the following requirements:

- They shall be staff of security service companies with appropriate security service licenses of China (to be proved by pertinent documents or certificates);
- Their qualifications shall fit the grading criteria set forth in the national professional standards for security guards, and they shall hold pertinent vocational certificates;
- Their photos, names and other relevant information shall be provided to the Organizer's Security Department;
- They must obtain relevant permits and certificates in advance;
- Security services shall comply with Chinese laws and regulations and the

local statutory regulations of Shanghai;

- All security staff must perform their duties according to the *Operational Procedure and Quality Control for Security Services* (GA/T 594-2006), and the professional standards for security guards.
- Security staff who can effectively handle safety management in responsible areas shall be deployed in such areas;
- Security personnel or internal security guards who can skilfully operate all kinds of security and protection systems shall be deployed in the central control room of security and protection.

## **D12. Fire and Disaster Control**

World Exposition Shanghai China *2010*  
**Participation Guide**  
for Official Participants

## D12. Fire and Disaster Control

This document is intended to provide rules for fire and disaster control in the Expo Site with the hope that casualty and property damage can be minimized in case of emergency. The principle for the fire and disaster control rules is to ensure that Expo 2010 may run smoothly and visitors may enjoy a safe and comfortable environment.

### 1. Fire Control

#### 1.1 Mission of Fire Control

The aim of fire control is to avoid fire accidents and to control the damage, if any fire actually occurs, at the minimum. The task for fire control includes instituting a fire prevention and control plan which specifies the respective duties of the people concerned and the actions to be taken when a fire occurs. Daily fire administration, regular maintenance of fire facilities, and drills of fire fighting and people evacuation are all essential parts of the task for fire control.

#### 1.2 Fire Supervisors

According to relevant Chinese laws, official participants must appoint a fire supervisor who shall make sure that their fire control plan is implemented fully and effectively.

##### 1.2.1 Appointment of the Fire Supervisor

Each official participant shall appoint a fire supervisor before their pavilion is put into use. The appointed fire supervisor shall have rights and obligations for fire management and supervision as well as necessary qualifications.

While fire supervisors can be chosen from within their staff, official participants can also hire their fire supervisor from other organizations, such as security service company. For detailed information about the conditions and procedures for hiring external fire supervisors, official participants may contact the Security Department of the Organizer. Once the fire supervisor is appointed, the official participant concerned shall notify the Organizer's Security Department of the appointment. Substitution of the fire supervisor is subject to the same procedure.

### **1.2.2 Fire supervisors' Duties include:**

- a. Instituting regulations and rules for fire control;
- b. Implementing fire fighting, communication and evacuation drills;
- c. Checking and maintaining fire facilities;
- d. Overseeing the use of open flames;
- e. Maintaining structures and facilities for emergency evacuation and fire prevention;
- f. Managing the seat capacity of pavilions;
- g. Other duties necessary for fire prevention and control.

### **1.3 Measures for Fire Administration**

Measures for fire administration shall be adopted before the pavilion concerned is put into use. The administration measures shall include regular fire control trainings and drills, as well as routine measures for fire prevention, and make sure that fire control measures are smoothly operable in case of emergency.

Once fire administration measures are adopted, official participants shall notify the Organizer's Security Department of the measures. Any change to the administration measures is subject to the same procedure.

Official participants must also submit a notice or application to the Organizer's Security Department for any of the following purposes:

- a. Fire drills;
- b. Modification of or other projects concerning pavilions and other facilities;
- c. Management of safe construction;
- d. Permission for smoking, for use of open flames or for entry of dangerous goods;
- e. Storage and disposal of dangerous goods, designated combustible goods, and compressed combustible gas;
- f. Display of fireworks or other activities that may cause smoke and fog and a false impression that a fire accident has occurred;
- g. Staging of events;
- h. Installation of and modification to liquefied gas equipment or other fire using equipment or devices (hereinafter referred to categorically as "fire using equipment");
- i. Installation of power generation and transformation equipment and facilities, storage batteries or neon lights; and

j. Report of examination of fire equipment and system (equipment examination or systematic examination).

## **1.4 Rules for Fire Control**

### **1.4.1 Restrictions on Use of Fire**

Open flames and hazardous goods that may cause fire or explosion are banned within the Expo Park. If official participants would allow any actions as stated above, they shall apply to the Organizer's Security Department for approval.

In the Expo Park, smoking is prohibited either in indoor or outdoor areas except for in the smoking areas.

### **1.4.2 Management of Emergency Evacuation**

In pavilions and other facilities, goods that may hinder the evacuation of people in emergency must not be stocked at emergency exits, passages, stairways, escape paths, or other facilities for emergency evacuation. In exhibition, business, and activity zones, evacuation plans shall be posted where they are most visible to visitors.

When a special event is staged in a theatre, the official participant concerned shall determine and announce the seating capacity, control the entrance of audience within the capacity, and announce the emergency evacuation plan before the performance starts.

### **1.4.3 Fire Control during Construction**

During pavilion construction or other projects, the fire supervisor shall deliberate with the contractor on the safety guarantee measures.

When pavilions are open to the public, no construction project shall continue.

### **1.4.4 Measures to Prevent Arson**

No combustible articles shall be left near buildings unattended.

Closets and other rooms which no one may enter for most of the time must be locked up, and vehicles in car parks must be locked up as well.

Monitoring video cameras shall be installed, and regular patrolling and other monitoring measures shall be taken to prevent arson.

### **1.4.5 Inspection**

#### **a. Field Inspection**

The Organizer's Security Department shall inspect the pavilions together with

officials of the Fire Department of Shanghai. If any fire safety defect or problem concerning fire safety is discovered during the inspection, the official participant concerned shall take prompt remedial measures, and report the results of remedy to the Organizer.

#### b. Inspection when Pavilions and Other Facilities Are Closed

The fire supervisor, fire control staff and other staff members of official participants shall examine the fire using equipments in their pavilion before it is closed, or it must be ensured that the last person to leave the pavilion should examine the equipments. Objects of inspection when pavilions are closed include ashtrays, cigarette stubs, hazardous substances and fire-using locations. If any problem is found, the official participant concerned shall take necessary measures promptly, and report the problem to the Organizer and follow their instructions.

Official participants shall inspect and examine the fire-prevention equipment, system and structure, fire emergency evacuation facilities, fire-using equipments and electric equipments in their pavilion on their own initiative. Such inspections and examinations shall be conducted on the following items and by the measures as follows:

- Structure, fire prevention and evacuation facilities, fire-using equipment, and electric equipment should be inspected and examined at least once a month.
- Fire-using equipment should be examined before and after use.
- It should be made sure whether the kitchen pipelines are properly cleaned.

### **1.4.6 Fire-prevention Equipment and System**

Examinations of the fire-prevention facilities and system of pavilions shall be conducted from March 1 to March 24, 2010. In accordance with relevant laws and regulations, the fire-prevention facilities and system of pavilions shall be examined by professional fire control inspection agencies. If any defect is discovered, the official participant concerned shall take prompt remedial measures.

## **1.5 Training**

### **1.5.1 Staff Training**

Official participants shall organize and hold training sessions for their pavilion staff on fire prevention and control. In order to make sure that the pavilion staff understand sufficiently the measures for fire control and safety, and the measures to be taken once a fire incident or emergency of any other kind occurs, the training program shall give the audience a clear idea about:

- a. Responsibilities for fire safety. Trainees shall not only be familiar with their own duties, but also understand the responsibilities of their colleagues.
- b. Exact location of various passages, emergency exits (life doors) and evacuation routes.
- c. Location and usage of fire extinguishers, indoor and outdoor fire hydrants, alarm bells, emergency alarm system, fire doors and other fire-prevention equipments and system.
- d. Other information related to fire and disaster prevention that pavilion staff should know, and instructions for visitors concerning fire and disaster prevention and control.

### **1.5.2 Training of Part-time Fire Brigade**

After fire safety measures are adopted, the fire supervisor shall conduct fire control exercises, including fire extinguishing, communication and evacuation exercises. Through such exercises, the fire supervisor shall determine how the pavilion staff may act in case of fire or any other disaster. Before the opening of Expo 2010, at least one fire control exercise shall be conducted in each pavilion. Before each exercise, the official participant concerned shall submit an exercise plan to the Organizer.

### **1.6 Fire Control for the Expo Site**

Every pavilion shall, led by its Fire supervisor, fulfil its duty of fire control in its responsible area of pavilion.

Official participants may set up their part-time fire brigade composed of their pavilion staff, and appoint a captain for their fire brigade, or may also assign their staff to join the part-time fire brigade established by the Organizer. Part-time salvage corps shall handle fire incidents and other emergencies that occur in their responsible area of pavilion, evacuate visitors and other people to outdoor safe areas, and report such an incident or emergency to the Organizer.

In order to make sure that fire control efforts in the Expo Site are compatible and consistent, the Organizer shall convene joint meetings of fire supervisors as necessary.

## **2. Disaster Handling Measures**

In order to guard against and relieve natural disasters such as earthquakes, typhoons, rainstorms and thunderstorms, the Organizer shall draw up necessary emergency prevention measures, earthquake policy and emergency response actions.

## **2.1 Emergency Prevention Measures**

### **2.1.1 Organization and Planning of Disaster Prevention**

Official participants' fire supervisor shall also be responsible for implementing emergency prevention measures, and the part-time salvage corps shall take emergency handling actions. The Organizer shall, in due time, formulate and publicize its regulations concerning duties and arrangements for disaster prevention.

### **2.1.2 Preparation of Disaster Relief Materials**

The Organizer shall prepare disaster relief materials as follows:

- a. Food for visitors;
- b. Relevant equipment, tools and materials to be used in emergency handling actions.

Pavilions shall prepare: loudspeakers, flashlights, batteries, plastic cloth, drugs, ropes, shovels, pickaxes, first-aid boxes, sand bags, buckets and other equipment, tools and materials to be used for fire fighting and disaster rescue. It should be noted, however, that under normal circumstances loudspeakers and amplifiers must not be used in the Expo Park.

### **2.1.3 Evacuation Planning**

- a. Evacuation Spots

For visitor evacuation in emergency, the Organizer shall set up waiting areas for evacuation, temporary evacuation areas, evacuation areas and evacuation centres.

- b. Waiting Areas for Evacuation

Open areas near pavilions shall be used as waiting areas for visitor evacuation, to ease the dread of visitors and to prevent widespread panic when a disaster occurs and therefore to reduce the possible casualty resulting from secondary accidents after a disaster.

- c. Temporary Evacuation Areas

Temporary evacuation areas refer to outdoor spaces where visitors can be preliminarily settled after they are evacuated from a disaster. The Organizer has designated the Expo Square and other squares as temporary evacuation areas.

Temporary evacuation areas are transfers between the waiting areas for evacuation and the evacuation areas. Before visitors are transferred to evacuation areas, when the damage of the disaster is being assessed and the visitors affected are being grouped, temporary evacuation areas shall guarantee the security of visitors for the time being.

#### d. Evacuation Areas

For visitors who cannot go back home on the day when disaster occurs, the Organizer shall provide areas for settlement.

#### e. Evacuation Centres

The Organizer shall, in the first instance, transfer elderly people, people with disabilities and other people in need of special help in waiting areas for evacuation, the temporary evacuation areas and the evacuation areas to indoor evacuation centres.

After a disaster occurs, if any pavilions and other facilities in the Expo Park are considered and confirmed as safe, they can be used as evacuation centres.

### **2.1.4 Evacuation and Protection of Visitors and Pavilion Staff**

In case of emergency, official participants are liable to lead the visitors in their pavilion and their pavilion staff to safe areas (waiting areas for evacuation). According to the actual situation, the Organizer shall instruct them to transfer such visitors and pavilion staff to temporary evacuation areas or evacuation centres.

When evacuating visitors and pavilion staff, official participants shall take special care of people who need assistance, such as elderly people, people with disabilities, infants, pregnant women and the sick.

In waiting areas for evacuation, priority shall be given to those who need special assistance. For instance, such people shall be grouped together so that special protective measures may be administered.

### **2.1.5 Implementing Training Plans**

Pavilions shall provide disaster management trainings for their part-time salvage corps and other staff members.

## **2.2 Earthquake Policy**

When an earthquake is predicted in the Expo Park, the Organizer shall take countermeasures to prevent any disaster resulting from the earthquake.

### **2.2.1 Onsite Actions to Be Taken**

After the forecast of an earthquake in the Expo Park is released by the Earthquake Bureau of Shanghai, the Organizer shall take actions for the Expo Park as follows:

- Collecting information about the possible earthquake, communicating the observed information to relevant personnel and pavilions, and release the information to visitors where necessary;

- Determining whether to close down the Expo Park according to the result of earthquake monitoring and forecast;
- The Organizer's traffic control centre, relevant public transport entities and other sources obtaining information about the public transport system to make sure transport vehicles are available to take visitors back home, and announcing the traffic information thus obtained;
- Taking measures to prevent fire incidents resulting from the earthquake (halting the use of any equipment that may cause fire, limiting the supply of liquefied gas, confirming once again the location of fire extinguishers, checking indoor and outdoor fire hydrants and equipments, tools and materials necessary for disaster management);
- Conducting emergency inspections, and temporarily strengthening relevant facilities (inspecting facilities and equipment, taking measures to prevent goods from falling down, applying temporary fixtures and other necessary measures).

While the Organizer takes any of the above measures in response to an earthquake, all pavilions shall take coordinated disaster rescue and relief actions in line with these measures.

### ***2.2.2 Emergency Disposal after an Earthquake***

After an earthquake, the Organizer shall take corresponding emergency disposal actions according to the intensity of the earthquake.

## **2.3 Emergency Response after Disastrous Weathers**

### ***2.3.1 Rainstorms***

If a rainstorm hits the Expo Park, there may be widespread water in the Park. Therefore, the part-time salvage corps of the Organizer and pavilions shall assume that the water may flood the lower areas and relevant facilities underground, and take necessary preemptive measures.

When pavilions are threatened by any approaching flood, official participants shall report the situation to the Organizer, and deploy their pavilion staff and disaster rescue and relief equipment and materials to the threatened areas under assistance of the Security Department and other organizations in order to prevent flooding.

If bulletins and signboards are washed away by flood, official participants shall take necessary measures to prevent such articles from becoming obstructions in the way of visitors, ambulances or other rescue vehicles. If it is necessary to

evacuate visitors or other people from water, official participants shall contact the Organizer so that they may get help and cooperation from relevant entities in the process of evacuating visitors to safe areas.

### **2.3.2 Windstorms**

If a windstorm warning is issued or a windstorm is predicted to approach the Expo Park, official participants shall strengthen their mobile bulletins and signboards, and remove all banners and flags. Articles in some facilities that are especially vulnerable to windstorms must be strengthened or removed.

In order to prevent any casualty caused by wind attack, the Organizer shall evacuate visitors, and make sure that visitors who cannot go back home do not stay in exhibition sites. Visitors who cannot go home shall be settled in evacuation centres, and the Organizer shall provide visitors with necessary food for emergency.

### **2.3.3 Thunderstorms and Hails**

When a thunderstorm or hail is predicted, in order to avoid any visitor casualty and prevent any pavilion facility and telecom equipment from damage, the Organizer shall announce the approach of the thunderstorm or hail throughout the Expo Park and require visitors to take care.

If any thundercloud or hail is very likely to come, the Organizer and the security department of pavilions shall guide visitors into buildings. The Organizer shall patrol around the Expo Park, and any visitor still staying outdoors must be taken to safe areas.

If any thunderstorm or hail is approaching and very likely to hit the Expo Park, the Organizer shall require all pavilions to suspend outdoor activities or performances so that visitors may retreat to safe indoor areas, and give instructions as follows:

- a. Stay in a safe indoor area or bus (it is dangerous to stay under the eaves of any building);
- b. Don't stay under a tree (it is especially dangerous to stay under a tall tree).

Once the threat of thunderstorm or hail disappears, the Organizer shall announce the message to official participants and visitors.