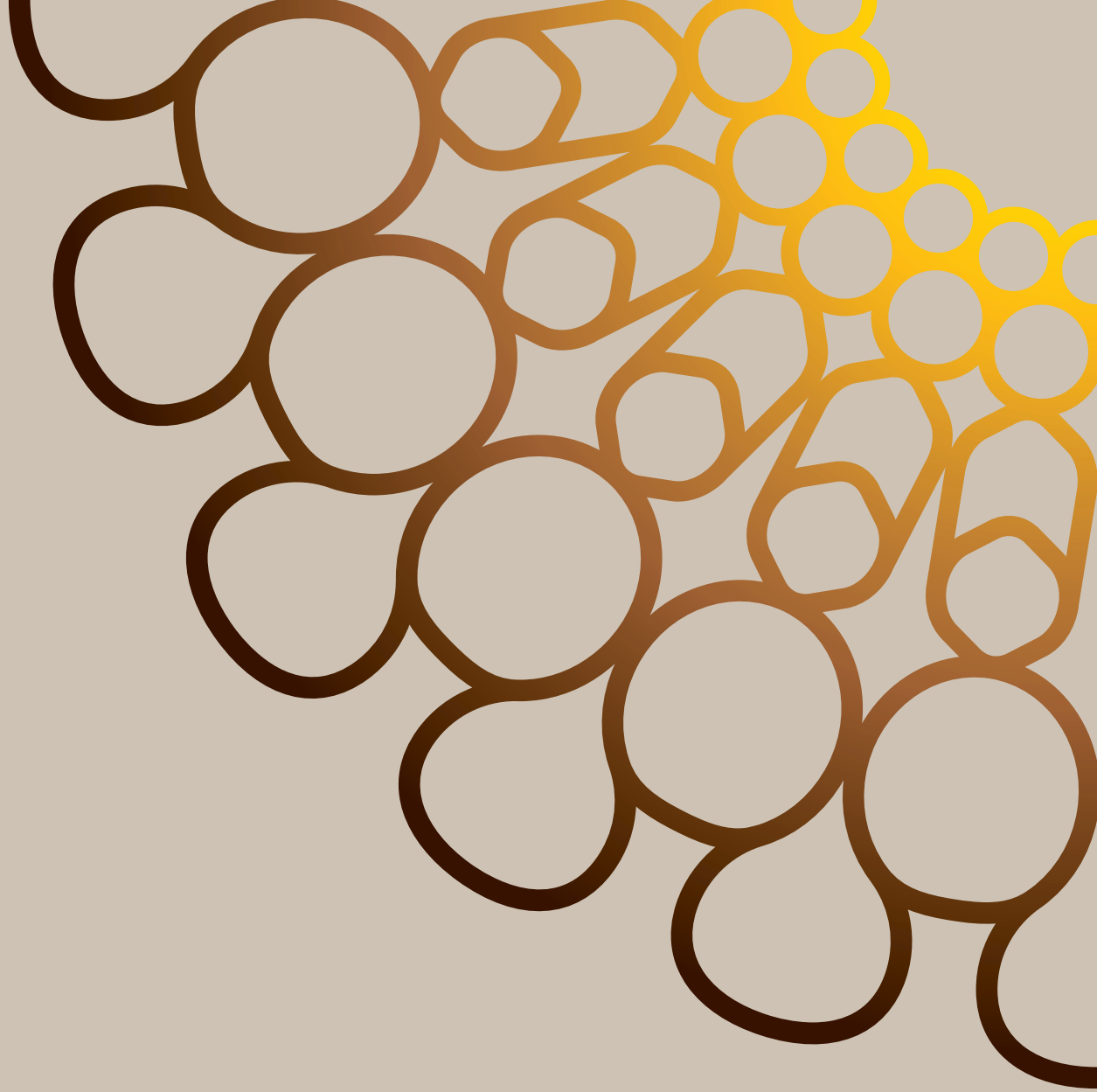




Rented Pavilions Guide



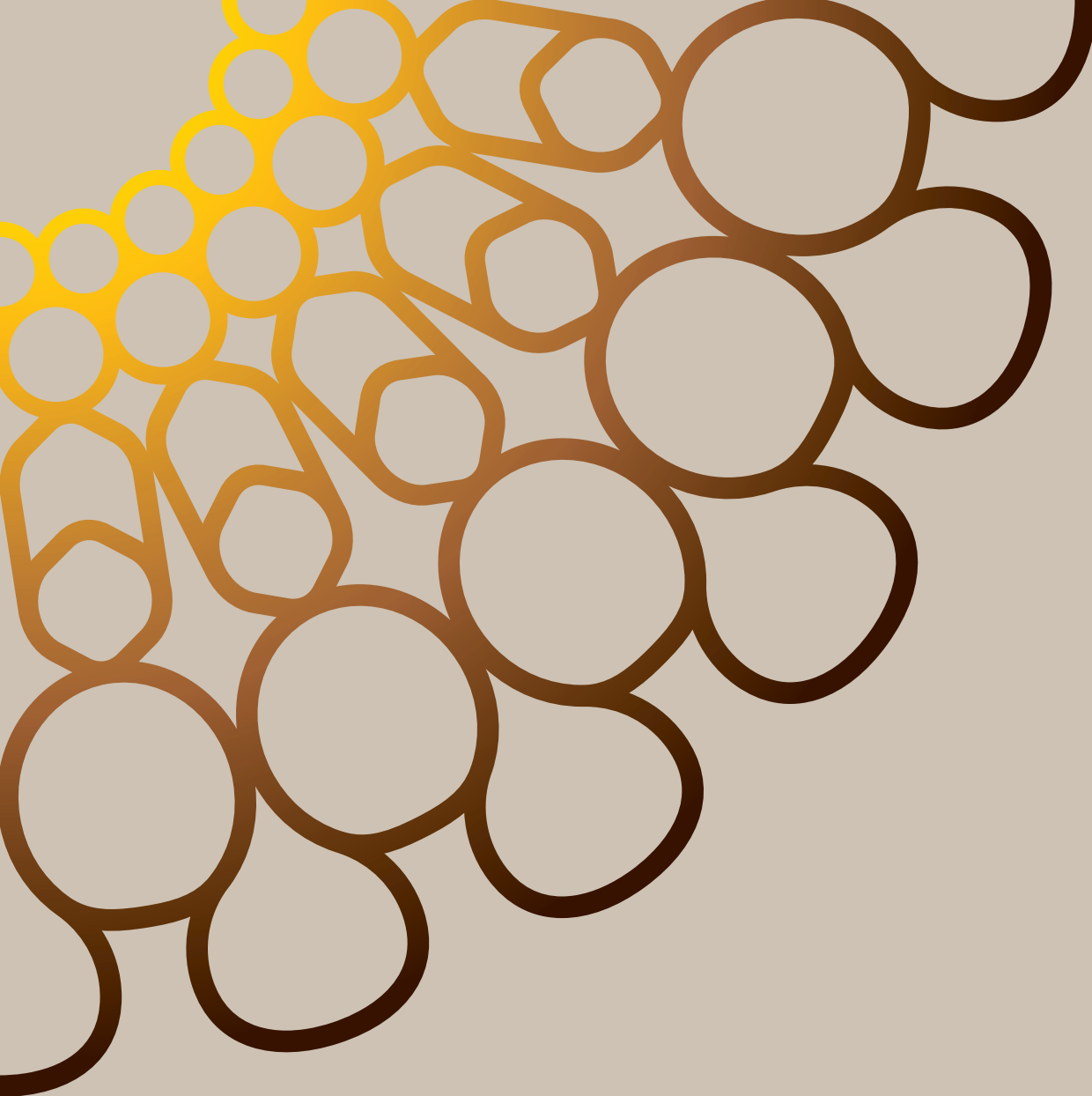
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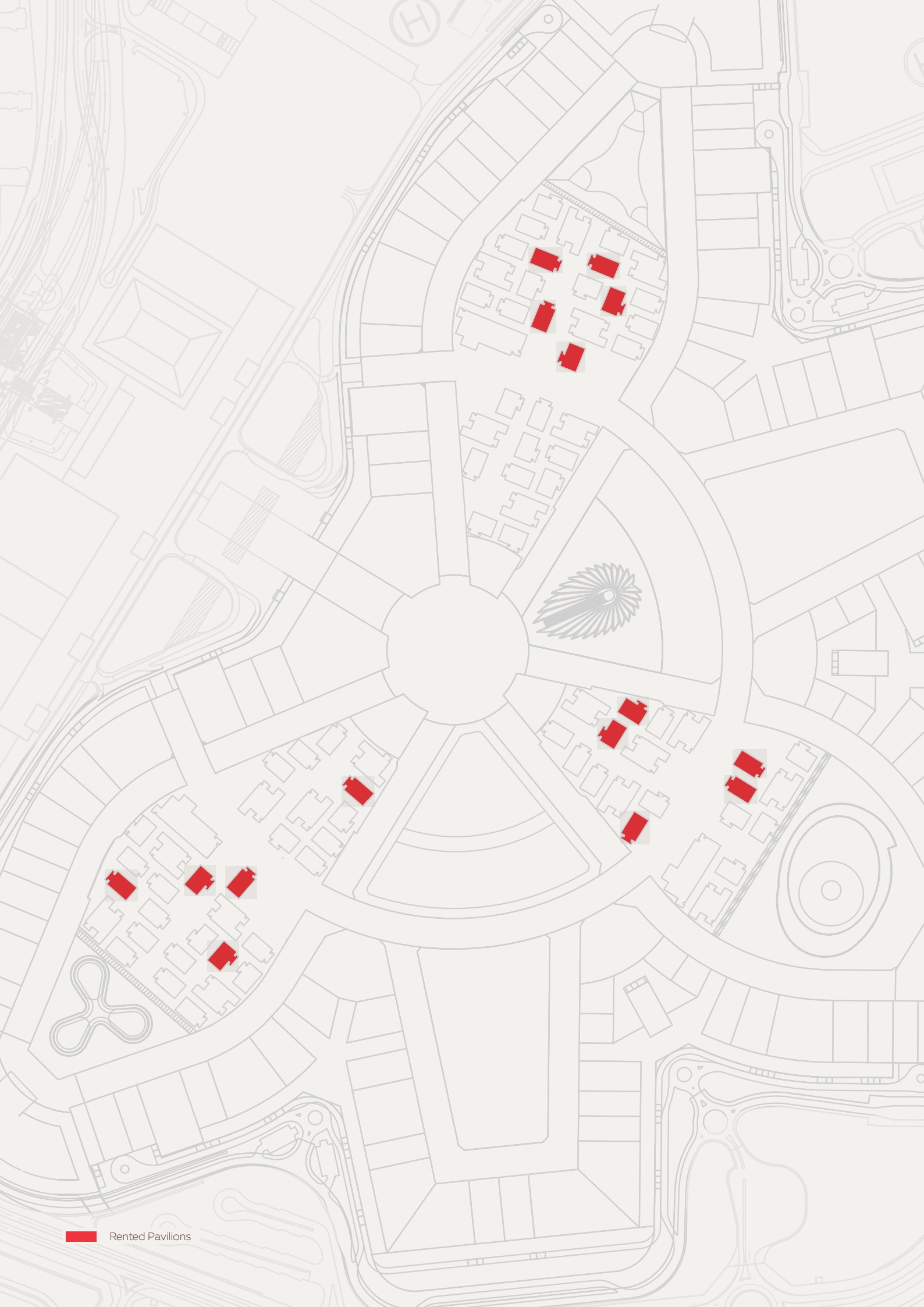


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 Rented Pavilions

Preface

The Expo 2020 Dubai theme of *Connecting Minds, Creating the Future* is a formula for innovation and progress. It was carefully designed to reflect the critical needs of this era and to build on a platform of global innovation for the participants to fulfil their potential, share their journey, and enhance the visitor experience.

Along with the subthemes of Opportunity, Mobility, and Sustainability, the theme supports the participants in maximising their benefits from Expo 2020 Dubai by developing synergies with the visitors, with other participants, and with the Organiser.

The Rented Pavilions on the Expo site are located within the Thematic Districts. These pavilions are built by the Organiser and form a key element of the Expo 2020 Dubai Master Plan. Participants will design their pavilion and install their exhibits in the Rented Pavilions in time for the Expo event with support from the Organiser through the One-Stop Shop.

To guide the participants in delivering their pavilions, the Organiser has developed this **Rented Pavilions Guide**. This document outlines the Organiser's pavilion delivery process and the compliance criteria for designing the pavilions and installing the exhibits. It also details elements of the Master Plan, construction logistics, permitting and approval processes, general requirements of the statutory authorities, and specific requirements of the Organiser to deliver the pavilions aligned with the theme and subthemes of Expo 2020 Dubai.

The content of this Rented Pavilions Guide is outlined in the accompanying table.

Chapter	Content
CHAPTER 1 Introducing the Delivery Process	High-level description of the delivery process detailing the steps from setting up the participant's team through to decommissioning and removal
CHAPTER 2 Understanding the Master Plan	Key elements of the Master Plan to help the participants and their pavilion designers to understand the wider planning context
CHAPTER 3 Designing the Pavilions	Specific compliance framework for designing the pavilions
CHAPTER 4 Designing for Fire and Life Safety	Design requirements to ensure fire and life safety during the Expo event
CHAPTER 5 Achieving Sustainability	Sustainability requirements during construction
CHAPTER 6 Designing for Food and Beverage	Excerpts from the design and layout guidelines of Dubai Municipality's Food Safety Department, providing initial guidance to participants regarding the minimum requirements on the design and layout of retail food and beverage sections within pavilions
CHAPTER 7 Managing Construction Logistics	Extracts from the Construction Logistics Plan to assist participants in planning their construction logistics
CHAPTER 8 Complying with Health and Safety Standards	Health and safety as well as fire and life safety requirements during construction
CHAPTER 9 Complying with Worker Welfare Standards	Worker welfare requirements during construction
CHAPTER 10 Complying with Environmental Standards	Environmental requirements during construction
CHAPTER 11 Understanding Governance and Quality Assurance	Communication protocols, non-conformance procedures, reporting requirements, audits and inspections, and quality assurance requirements during construction
CHAPTER 12 Interfacing with Statutory Authorities	Consultant and contractor registration requirements as well as processes and requirements to obtain the necessary approvals, permits, and certificates from the permitting authority, statutory authorities, and service providers
CHAPTER 13 Customs and Import	Special arrangements that the Organiser will offer to participants with regard to taxes and import of goods
CHAPTER 14 Optional Supply Chain Services	Support services that the Organiser will offer and facilitate to assist the participants during construction
CHAPTER 15 Decommissioning, Removal, and Repossession	Requirements prior to decommissioning and removal as well as compliance criteria that participants need to adhere to during this phase

Understanding Controls and Guides

Coding for Control

C-06

Participants **must** ensure that their consultants and contractors possess appropriate visas in the UAE and relevant trade/professional licences in Dubai.

Coding for Guide

G-33

Construction vehicles **should** use alternative fuel sources such as electricity, fuel cells, or hybrid technology, where possible.

Example of a Control Statement (top)
and a Guide Statement (bottom)

Throughout this document, two criteria for compliance—controls and guides—have been established to assist the participants in the delivery of their pavilions.

Controls are 'must' statements that establish the compulsory requirements for all participants taking part in Expo 2020 Dubai to ensure that the standards and aspirations are achieved for the benefit of all parties as a whole.

Guides are 'can' or 'should' statements that describe methods or suggested ways that a construction practice can demonstrate whether a particular development meets the specified goals and objectives of Expo 2020 Dubai.

Each control and guide is assigned a unique alphanumeric code. The first character of the code identifies if the statement is a control (**C**) or a guide (**G**). The numeric character identifies the sequential order of the control or guide. For example, in the accompanying figure, **C-06** is a control while **G-33** is a guide.

The controls and guides will facilitate the Organiser in assessing the submissions of the participants and managing any audits that may need to be carried out. These will also assist the participants in:

- › Constructing the interior of their pavilions and installing their exhibits in line with the requirements of the Organiser and the statutory authorities
- › Checking their design and construction delivery for alignment with the delivery framework
- › Communicating the standards for construction, decommissioning, and removal to their consultants and contractors



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Acronyms, Abbreviations, Units, and Definitions

Acronyms and Abbreviations

Acronym/Abbreviation	Expansion
AS	Australian Standards
AS/NZS	Australian Standards and New Zealand Standards
ASTM	American Society for Testing and Materials
ATCM	Airborne Toxic Control Measure
ATP	Authority to Proceed
BIE	Bureau International des Expositions
BIM	Building Information Modelling
CCTV	Closed-Circuit Television
CEMP	Construction Environmental Management Plan
CIF	Cost, Insurance, and Freight
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CV	Curriculum Vitae
CWMP	Construction Waste Management Plan
DED	Department of Economic Development
DEWA	Dubai Electricity and Water Authority
DIN	German Institute for Standardisation
DM	Dubai Municipality
DWC	Dubai World Central
DWF	Design Web Format
DWG	Drawing (Computer-Aided Design program filename extension)
EIA	Environmental Impact Assessment
EN	European Standards
EPSS-DM	Environmental Planning and Studies Section of the Dubai Municipality
FIDIC	International Federation of Consulting Engineers
HVAC	Heating, Ventilation, and Air Conditioning
IES	Illuminating Engineering Society
ISO	International Organization for Standardization
IT	Information Technology
JIS	Japanese Industrial Standards
LEED®	Leadership in Energy and Environmental Design
LPG	Liquefied Petroleum Gas
LVL	Laminated Veneer Lumber
MAFF	Japanese Ministry of Agriculture, Forestry, and Fisheries
MDF	Medium Density Fibreboard
MEP	Mechanical, Electrical, and Plumbing
NCR	Non-Conformance Report
NFPA	National Fire Protection Association
NOC	No Objection Certificate
PDF	Portable Document Format
PVC	Polyvinyl Chloride
RICS	Royal Institution of Chartered Surveyors
SIRA	Security Industry Regulatory Agency
UAE	United Arab Emirates
UK	United Kingdom
UNEP	United Nations Environment Programme
USA	United States of America
VCM	Vinyl Chloride Monomer
VOC	Volatile Organic Compound

Units

Unit	Expansion
µs	Microsecond
°C	Degree Celsius
km/h	Kilometres per Hour
kN/m ²	Kilonewton per Square Metre
kPa	Kilopascal
kW	Kilowatt
kWh/m ²	Kilowatt-Hours per Square Metre
L	Litre
L/Flush	Litres per Flush
L/m ² /day	Litres per Square Metre per Day
L/min	Litres per Minute
m	Metre
m ²	Square Metre
m ³ /s	Cubic Metres per Second
mg/L	Milligrams per Litre
mg/m ² /h	Milligrams per Square Metre per Hour
mg/m ³	Milligrams per Cubic Metre
mm	Millimetre
W/m ²	Watts per Square Metre

Definitions

Term	Definition
Abnormal Load	An extra long or extra wide delivery that requires prior arrangement such as a vehicle escort or temporary reconfiguration of route (widening of road).
Accreditation	The pass issued by the Organiser to participants and their workforce granting access to the Expo site and to specific areas within the site during construction and during the event.
Architect of Record	A consultant appointed by a participant to take the responsibility of design and obtain necessary permits. The Architect of Record holds the appropriate registration and are prequalified in Dubai to obtain the Fit-out Work Permit for the project.
Assisted Pavilions	Pavilions built by the Organiser and allocated to participants.
Assurance Standards	A set of documents developed by the Organiser defining the minimum requirements applicable to all organisations for Health and Safety, Worker Welfare, Environment, and Quality, published on the Participant Portal.
Calendar Days	All days in a month, including weekends and holidays. All construction and decommissioning and removal work durations are counted in calendar days.
Central Command Centre	A venue that will act as the central hub of command and control, integrating city operations to the Expo site.
Commissioner General of Section	The official participant's representative appointed to manage the participation file in accordance with Article 13 of the Convention Relating to International Exhibitions signed in Paris on 22 November 1928.
Construction Equipment	General machines and equipment used in construction works such as cranes and forklifts.
Consultant	The entity appointed by a participant to design its pavilion and/or manage its construction activities. For ease of reference, the term 'consultant' also includes all appointed subconsultants who deliver specific services under the main consultant's contract.
Contractor	The entity appointed by a participant to deliver the construction works for its pavilion. For ease of reference, the term 'contractor' also includes all appointed subcontractors and the supply chain who deliver specific services under the main contractor's contract.

Term	Definition
Country Manager	The Organiser's representative appointed to provide end-to-end support to participants throughout their journey.
Cove	A concave arch or arched moulding, especially one formed at the junction of a wall with a ceiling.
Delivery Management System	A logistics solution that manages the access of delivery vehicles to the Expo site.
Emergency Services	Agencies or entities that enforce law, protect civilians, and respond to emergency situations. These include police, ambulance, firefighting services, and others.
Expo 2020 Dubai®	Name of the event that will be hosted on the Expo site; also referred to as 'Expo 2020,' 'Expo,' 'Dubai Expo 2020,' 'Expo Dubai 2020,' or 'Expo event'
Expo Site	The gated site on which Expo 2020 Dubai will be hosted; also referred to as 'site.'
Fit-out Work Completion Certificate	A certificate issued by the One-Stop Shop after the completion and acceptance of the final inspection of the works as requested by the contractor.
Fit-out Work Permit	A permit issued by the One-Stop Shop to participants to undertake interior construction works in their pavilion according to the approved design submitted by licenced consultants.
General Regulations	The regulations of Expo 2020 Dubai which constitute part of the Registration Document.
Global Warming Potential	Measure of how much energy the emissions of 1 tonne of a gas will absorb over a given period of time relative to the emissions of 1 tonne of carbon dioxide.
Grey Water	Untreated wastewater including water from bathroom wash basins and cloth washers.
Gross Floor Area (Dubai Municipality)	Total floor area less area of parking lots, access roads, loading and unloading bays, covered way, swimming pools, basement floors allocated for parking and services, mechanical services floors, roof service floors, non-closed balconies, and terraces.
Gross Floor Area (RICS)	Equal to the gross internal area defined by the RICS Code of Measuring Practice 6th Edition.
Gross Internal Area	Defined by the RICS Code of Measuring Practice 6th Edition.
Inaccessible Void	A space that is permanently inaccessible once manufacturing, construction, or prefabrication is complete.
Incident	A work-related event in which injury or ill health occurred, or could have occurred.
Lux	International standard unit of illuminance and luminous emittance measuring luminous flux per unit area.
Master Plan	The detailed plan that outlines the different real estate elements, open spaces, buildings, and other facilities within the Expo site.
Material Safety Data Sheet	A document provided by a relevant supplier that contains information on the potential risk (such as health, environmental, fire, and reactivity) of a hazardous substance and how to safely use it.
Mechanical Handling Equipment	Mechanical equipment that is used for the movement of materials.
Non-Conformance Report	A document issued by the Organiser to a participant in the event of breach of contract or the Assurance Standards by the participant itself, or its consultants or contractors.
One-Stop Shop	A combination of a physical representation and a virtual portal (the Participant Portal) that will offer end-to-end support to participants for aspects such as permitting, approvals, submissions, certifications, and inspections. The One-Stop Shop will also respond to any queries or requests raised by participants.
Operation Fitness Certificate	A certificate issued by the Organiser to participants to commence pavilion operations.
Organiser	Expo Dubai 2020 LLC; established by virtue of Decree No. 30 of 2014 issued on 25 June 2014 to administer the organisation and delivery of Expo 2020 Dubai.
Ozone Depletion Potential	Potential for a single molecule of the refrigerant to destroy the ozone layer.

Term	Definition
Participant Guides	A set of documents issued by the Organiser to participants to explain and guide them in all aspects of the participation process before, during, and after the Expo event.
Participant Portal	A web-based portal that facilitates communication between the participant and the One-Stop Shop.
Participants	Foreign governments, non-governments, and international organisations who have received and accepted the official invitation from the Government of the United Arab Emirates (UAE) to participate in Expo 2020 Dubai. There are two types of participants: official participants and non-official participants. Official participants include countries and multilateral organisations. Non-official participants include corporations, non-government organisations, academic and research institutions, global initiatives, and foundations.
Participation Contract	The contract agreed upon between a Commissioner General of Section and the Organiser to establish the terms and procedures by which the participants will take part in Expo 2020 Dubai.
Pavilion Drawing	An information sheet provided by the Organiser to participants, containing information on the pavilion space including clearance height, structural loading allowance, utility allocation, and elevations.
Pavilion Possession	The process by which the Organiser hands over the pavilion to participant to commence construction.
Pavilion Possession Request	A request submitted by participants to the Organiser to obtain approval for pavilion possession.
Pavilion Repossession	The process by which the participant hands back the pavilion to the Organiser after completing their decommissioning and removal activities.
Pavilion Repossession Certificate	A certificate issued by the One-Stop Shop to participants to confirm that the pavilion repossession process has been successful.
Prohibited Goods	Goods that are not allowed to be imported into the UAE.
Public Realm	Public spaces within the security fence.
Recycled Content	Proportion, by mass, of recycled material in a product or packaging. Only pre-consumer and post-consumer materials should be considered.
Registration Document	The document relating to the realisation and feasibility of Expo 2020 Dubai which the UAE submitted to the Bureau International des Expositions (BIE), and which the BIE registered during the 158th General Assembly on 25 November 2015.
Rented Pavilions	Pavilions built by the Organiser and rented out to participants.
Restricted Goods	Goods that are required to meet certain conditions before clearance through the UAE customs.
Security Fence	A fence erected by the Organiser to control access to the secure area of the Expo site.
Self-Build Pavilions	Pavilions built by the participants.
Serious Incident	An incident that has the potential severity to cause serious injury or death.
Service Provider	A government or semi-government entity that provides services such as electricity, water, or telecommunications to consumers.
Site Entrance	Vehicular access point located on the site perimeter fence during construction.
Site Perimeter Fence	A fence erected by the Organiser to control access of personnel to the Expo site during construction.
Special Regulations	The Special Regulations listed in Article 34 of the General Regulations.
Subthemes	Expo 2020 subthemes of Opportunity, Mobility, and Sustainability.
Supervision Consultant	The entity appointed by a participant to supervise the works of the contractor.
Sustainability Targets	Expo 2020 Dubai's aspirations and targets on the different sustainability components such as energy, water, materials, waste, carbon emissions, public realm and ecology, and sustainability awareness.

Term	Definition
Task Briefing	A meeting at which information and instructions are given to workforce to ensure that they understand their tasks.
Thematic Districts	Physical areas on the Expo site hosting Self-Build Pavilions, Rented Pavilions, Assisted Pavilions, Theme Pavilions, and other pavilions.
Theme	Expo 2020 Dubai theme of <i>Connecting Minds, Creating the Future</i> .
Theme Pavilions	Pavilions located in each Thematic District addressing the subthemes of Expo 2020 Dubai.
Theme Statement	The first official document submitted by participants to the Organiser for approval through the Participant Portal. The Theme Statement defines the overall theme and the general contents of the participant's pavilion, providing a general overview of the proposed strategy, thematic content, installations, and events.
Work Permit	A permit issued by the One-Stop Shop to participants to carry out decommissioning and removal activities.
Working Days	All official business days of the week, excluding public holidays and weekends. The processing durations for all approvals, permits, and requests by statutory authorities and the Organiser are counted in working days. In the UAE, the official business days are from Sunday to Thursday. All Fridays and Saturdays are considered weekends.



1 Introducing the Delivery Process



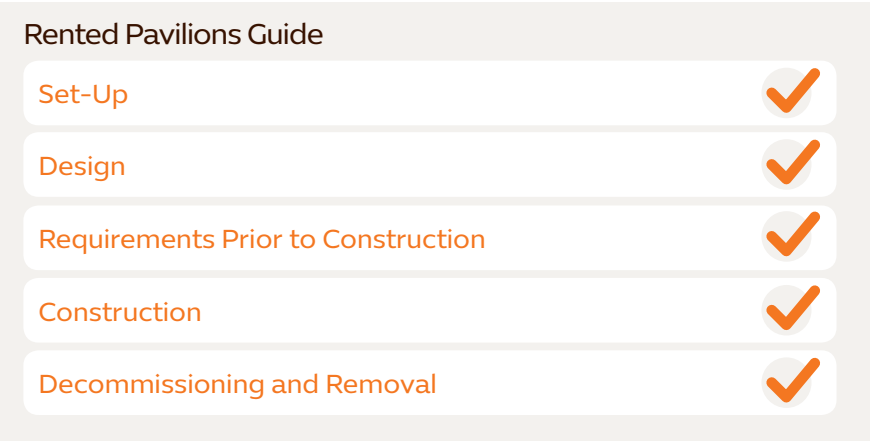


This chapter details the Organiser’s delivery process by providing a seamless journey for participants, walking them through the step-by-step procedure for delivering their pavilions.

The Organiser has developed this **Rented Pavilions Guide** to support the participants in the pavilion delivery process and inform them of the requirements and standards to construct the interior of their pavilions and install their exhibits.

Throughout the chapter, the Organiser has provided clear criteria and guidance for each step of the delivery process to ensure that participants meet the legal requirements as well as the requirements of the Organiser and the statutory authorities. Figure 1.1 shows the main steps in the pavilion delivery process.

Figure 1.1 Pavilion Delivery Process



1.1 The One-Stop Shop

Committed to delivering smart and efficient services, the Organiser has set up the One-Stop Shop to provide end-to-end support to participants.

The One-Stop Shop aligns with the Smart Dubai Government initiative that aims to transform Dubai into the world’s smartest and happiest city.

The One-Stop Shop will be a combination of a physical representation and a virtual portal (the Participant Portal) that will respond to the participants’ requirements, answer their queries, and receive their submissions and requests, offering services such as:

- › Support for and response to technical queries
- › Facilitation of design submission approvals and statutory authority approvals

- › Issuance of permits and certificates
- › Construction site management

All submissions to the Organiser and to statutory authorities will be through the Participant Portal. For further details, see Section 11.1.

1.2 The Journey

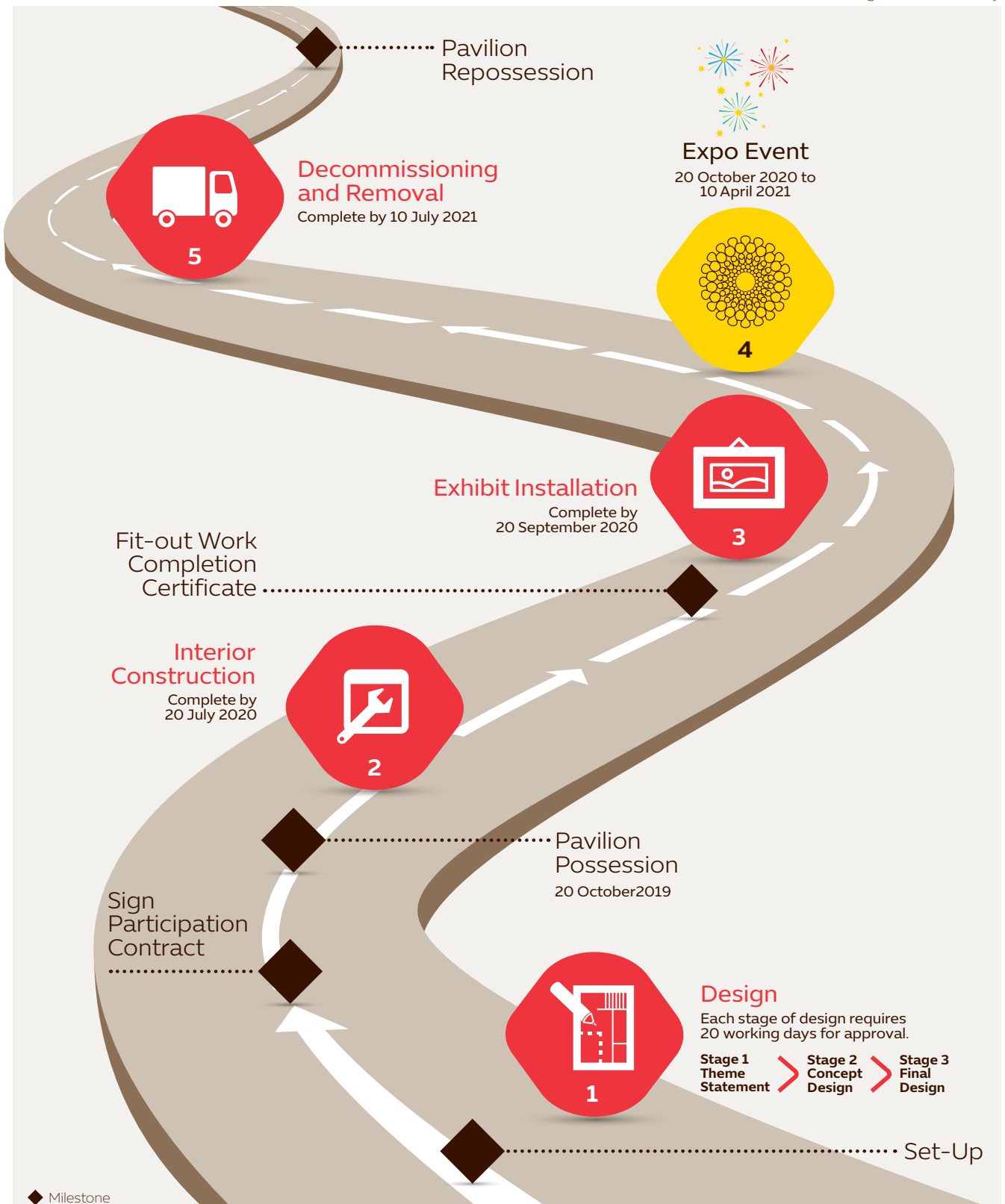
Participants will embark on a journey to deliver their pavilions, transforming spaces into exciting exhibits that truly reflect their ambitions, national priorities, identity, and culture. This journey will take the participants through the different phases of pavilion delivery, from setting up their team for design and construction through to decommissioning and removing their pavilion.

An overview of the participants’ journey is shown in Figure 1.2. Each phase is discussed in summary in the following sections.

At the start of their journey, participants will **set up** their team and identify the designated functions to deliver their pavilion before design activities commence. The designated functions will oversee the delivery of the pavilion from design to construction and finally to decommissioning and removal.

The Commissioner General of Section or the appointed Participant Project Management function, or both, will coordinate all queries, requests, and submissions with the Organiser through the Participant Portal. The Participant Project Management function will be the conduit between the Organiser and the participant's consultants and contractors. Communication protocols between all parties are discussed in Section 11.1.

Figure 12 The Journey



Design is split into three stages: Stage 1 Theme Statement, Stage 2 Concept Design, and Stage 3 Final Design (see Figure 1.3). These stages are discussed in detail in Section 1.4.2 and Section 12.4.

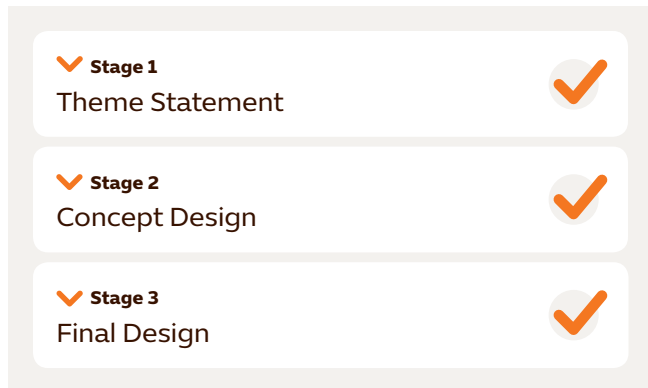


Figure 1.3 Stages of the Design Approval Process

During design, participants will develop their Stage 1 **Theme Statement** submission describing the key concept of their exhibits and interior design to help the Organiser visualise the story that their pavilion intends to tell. The **Theme Guide** was developed to help participants translate the Expo 2020 Dubai theme's message into a unified direction for design and exhibition content. Further details on the requirements of the Theme Statement submission are provided in Section 1.4.2.1.

On approval of the Theme Statement, Stage 2 **Concept Design** will commence. The requirements of the Concept Design submission are discussed in Section 1.4.2.2. The compliance criteria that participants need to design the interior of their pavilion are provided in Chapter 3.

The delivery schedule of the participants will be part of the design development and will provide information on the duration of design, construction, and decommissioning and removal. This schedule will be updated and submitted to the Organiser through the Participant Portal on a monthly basis.

C-01 Participants must submit their delivery schedule and Concept Design to the Organiser through the Participant Portal. The delivery schedule must present the details of the pavilion design development as well as an overview of construction and decommissioning and removal activities. A delivery schedule template is available on the portal.

On approval of the Concept Design, Stage 3 **Final Design** will commence. In addition to the Final Design submission as discussed in Section 1.4.2.3, participants are also required to submit additional documents to obtain a Fit-out Work Permit. See Section 12.4.2.

Participants will be able to access their pavilion for possession as early as 20 October 2019 subject to the Organiser's approval of the **requirements prior to construction** (see Section 1.5).

C-02 Participants must sign the Participation Contract before taking possession of the pavilion from the Organiser.

Pavilion possession is a milestone signifying the participants taking possession of their pavilion from the Organiser to commence construction. The requirements for pavilion possession are discussed in Section 1.5.2.

All interior construction works are to be completed latest by 20 July 2020. Exhibit installation is to be completed latest by 20 September 2020, one month before the opening of the Expo event

Figure 1.4 shows the key delivery dates, milestones, and the Organiser's submission processing durations which form the framework for the participants' delivery schedules.

By this stage, the delivery schedule of the participants will be mature and will form an important part of the pavilion possession process.

C-03 Participants must submit the next iteration of their delivery schedule to the Organiser through the Participant Portal as part of their Pavilion Possession Request (see Section 1.5.2). This schedule must present the details of construction, decommissioning, and removal activities.

C-04 Participants must ensure that their schedules and milestones are aligned with the Organiser's Master Schedule and major milestones. See Figure 1.4.

G-01 Participants should allow for sufficient time periods within their schedules, given all constraints, to ensure timely delivery of their pavilions. Participants should consider the following factors that may affect their schedules:

- › UAE public holidays (see Section 1.9)
- › Delivery schedule for long lead items, including associated transport and customs clearance durations for materials sourced from outside of the UAE, particularly from a sustainability perspective
- › Approval period of materials not yet endorsed by the statutory authorities (see Section 1.9)
- › Timeframe for consultant and contractor procurement process (see Section 1.3.2)
- › Timeframe for pavilion possession process (see Section 1.5.2)
- › Timeframes for permitting and approval process (see Chapter 12)
- › Confirmation for site delivery bookings (see Chapter 7)

Following pavilion possession and after obtaining a Fit-out Work Permit, participants may commence construction which includes **interior construction** and **exhibit installation**.

All contractors on the Expo site are required to comply with the requirements of the Organiser for construction logistics, sustainability, health and safety, worker welfare, environment, governance, and quality assurance. These requirements are discussed in detail in the following chapters.

After the conclusion of the Expo event, participants will commence their **decommissioning and removal activities**. See Chapter 15.

1.3 Participant Set-Up

As previously discussed, the first step in the participants' journey is setting up their team. Participants are required to assemble their teams in line with the specific requirements of the Organiser and the statutory authorities to manage and deliver their pavilion. See Figure 1.5.

Figure 1.4 Fixed Durations and Major Milestones for Rented Pavilions

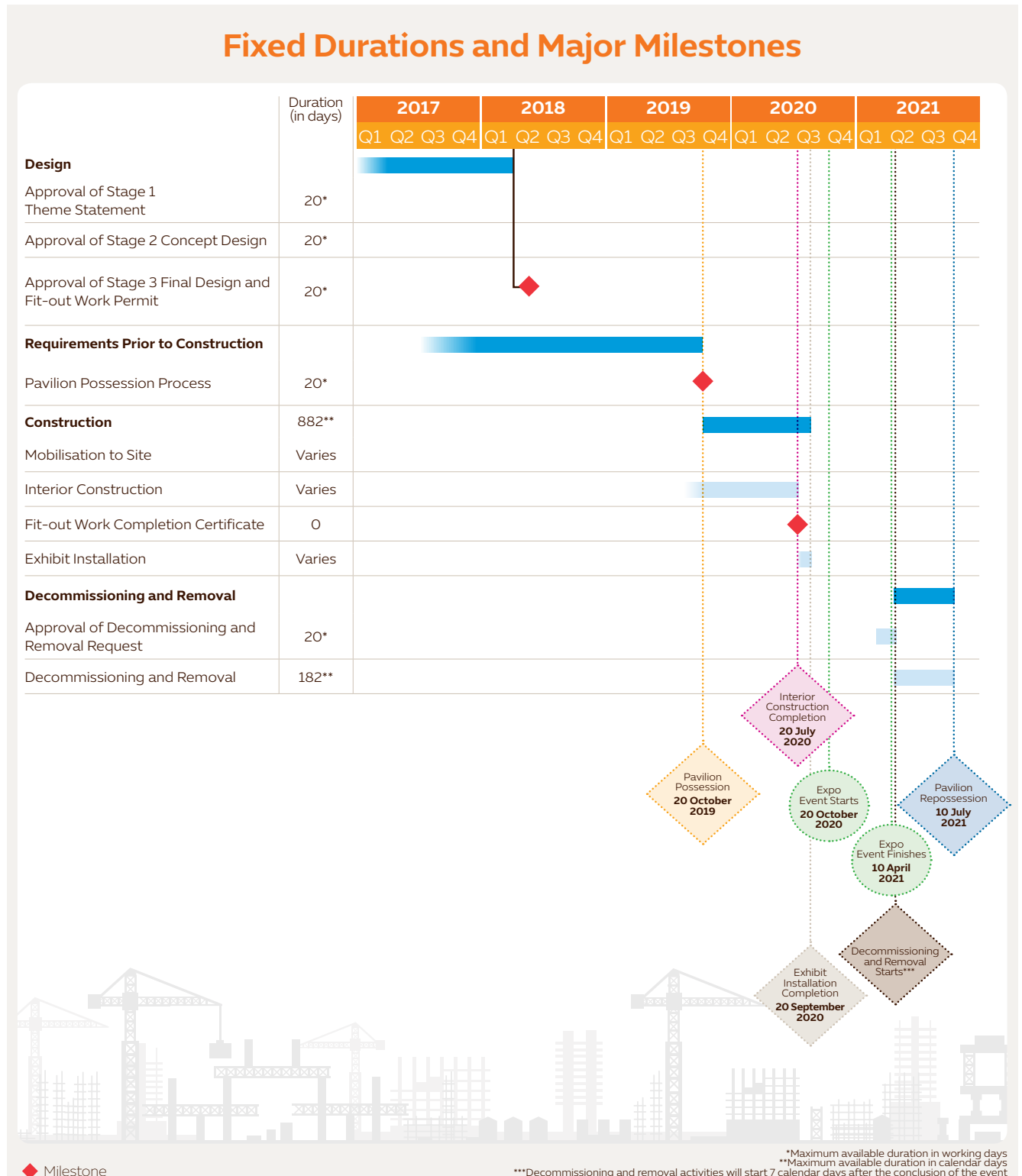


Figure 1.5 Participant Set-Up



1.3.1 Participants' Designated Functions

C-05 Participants must confirm a Participant Project Management function in their organisation, as a minimum, to the Organiser in a letter from the Commissioner General of Section. This function will be the participant's representative and the main point of contact with the Organiser (One-Stop Shop) during the life cycle of the pavilion delivery (design, construction, and decommissioning and removal). This function will also oversee the activities of the consultants and contractors, and report progress to the Organiser through the Participant Portal in accordance with the Organiser's requirements. See Section 11.3.

1.3.2 Selecting Consultants and Contractors

Participants are required to appoint a locally licenced and registered consultant (Architect of Record) and contractor with the right qualifications to their teams that will enable them to comply with the requirements of One-Stop Shop. See Chapter 12.

The appointed consultants and contractors need to demonstrate experience in delivering works of similar size, scope, and value as the pavilion. In the interest of health and safety, all contractors need to be prequalified against the Organiser's standards to access the Expo site.

To assist participants with the prequalification of their potential contractors, the Organiser has provided specific controls and guides relating particularly to worker welfare. See Chapter 9.

Participants may choose from the list of consultants or contractors selected by the Organiser to work on the Expo site. The Organiser will provide, on request, an updated list of these consultants and contractors for various works and disciplines.

The list will include contractors for works such as:

- > Mechanical, electrical, and plumbing works
- > Landscaping works
- > Interior construction
- > Decommissioning and removal works

See Chapter 14 for other services offered by the contractors.

FIDIC is the most commonly used form of contract in Dubai for hiring consultants and contractors. Participants may use FIDIC in the absence of an alternative.

C-06 Participants must ensure that their consultants and contractors possess appropriate visas in the UAE and relevant trade/professional licences in Dubai.

C-07 On contract awards, participants must submit the details of their appointed consultants and contractors, including licences, prequalification, and insurance, to the Organiser through the Participant Portal.

1.4 Design

For the participants to effectively implement the spatial aspirations of the Master Plan, an overview of the plan, its guiding principles, and elements are provided in Chapter 2. The controls and guides to be considered for interior design, fire and life safety design, sustainability, and food and beverage design are provided in Chapter 3 to Chapter 6, respectively.

1.4.1 Design Inputs from the Organiser

The Organiser will provide each participant with a pavilion drawing to facilitate the development of their design. The pavilion drawing provides pavilion details such as clearance height, structural loading allowance, utility allocation, and elevations.

In addition to the pavilion drawing, the Organiser will also provide architectural drawings, MEP drawings, and structural drawings to the participants to guide them in designing the interior of their pavilion. See Section 3.1 and Section 12.3.

Throughout design, participants will receive technical support from the One-Stop Shop. See Section 11.1.

1.4.2 Design Submission, Review, and Approvals

The design submission process is split into three stages as discussed in the following sections.

1.4.2.1 Stage 1: Theme Statement

The Theme Statement will be a general proposal for the design. The submission will reflect the proposed concepts, events, thematic content, and exhibit design.

The Theme Statement needs to comply with all the requirements shown in Figure 1.6 as a minimum. Once the Theme Statement is approved by the Organiser, participants may then proceed to Stage 2 Exhibit Design.

If additional information is needed for approval, the Organiser will provide technical guidance and recommend modifications.

For further information on the theme and subthemes of Expo 2020 Dubai, see the Theme Guide.

1.4.2.2 Stage 2: Concept Design

The Concept Design will expand on the approved Theme Statement and will include the documentation as shown in Figure 1.7 as a minimum.

Once the Concept Design is approved by the Organiser, participants may then proceed to Stage 3 Final Design.

If additional information is needed for approval, the Organiser will provide technical guidance and recommend modifications.

Figure 1.6 Requirements of the Theme Statement



1.4.2.3 Stage 3: Final Design

The Final Design will expand on the approved Concept Design. It will also be to a standard and level of detail that will allow all necessary approvals and permits to be issued by the Organiser (One-Stop Shop) for the construction to commence.

The Final Design will include the documentation as shown in Figure 1.8 as a minimum.

1.4.3 Submission Approval

All submissions to the Organiser will be through the Participant Portal in PDF format. Each of the Theme Statement, Concept Design, and Final Design will require 20 working days for approval on the first submission. Each resubmission will require 5 working days for approval.

All drawing files are required to be submitted in PDF format as well as in native formats as listed in the Summary of Requirements and Supporting Information.

Figure 1.7 Requirements of the Concept Design



1.5 Requirements Prior to Construction

Before commencing any construction activities, participants are required to comply with the following requirements.

1.5.1 Construction Insurance

All contractors are required to possess appropriate insurance coverage before accessing the Expo site.

The responsibility for the insurance of any works within a participant's pavilion is jointly held by the participant and their onsite representative.

- C-08** Participants must ensure that they have insurance coverage for the entire duration of their presence on site from pavilion possession before the Expo event until pavilion handover after the event.

Figure 1.8 Requirements of the Final Design



C-09 Participants and their onsite representatives must submit the following insurances to the Organiser through the Participant Portal before construction commences. These insurances must remain in effect while construction works are being carried out in the pavilion. Participants must ensure that their onsite representatives provide insurance in line with the requirements of the Insurance Guide (as a minimum), as summarised below:

- › Third Party Liability Insurance
- › Construction All Risk Insurance
- › Contractor's Equipment All Risk Insurance
- › Workers' Compensation and Employer's Liability Insurance
- › Marine Cargo Insurance (land, sea, and air from country of origin)
- › Automobile Liability (including off-road cover)
- › Professional Indemnity Insurance (for any design elements carried out by the participant or their onsite representatives)
- › Other insurances required to comply with the local applicable laws and the Participation Contract

Further information on construction insurance will be provided in the Insurance Guide and will be aligned with Special Regulation Numbers 5 and 8.

1.5.2 Pavilion Possession Requirements

Pavilion possession is the process by which participants take possession of their pavilion from the Organiser to commence construction activities.

C-10 Participants must submit a Pavilion Possession Request to the Organiser for approval through the Participant Portal at least 20 working days before the planned date for possession. The request must be supported by the following documents (see Figure 1.9):

- › Contractor Self-Assessment Checklist, including Worker Welfare Improvement Action Plan (if applicable), and Health and Safety and Worker Welfare Commitment Statement (see Section 8.8 and Section 9.7)
- › Delivery schedule of activities as described in C-03
- › Construction Logistics Plan, where applicable (see Section 7.1)
- › Supervision consultant's Health and Safety Management Plan including the curriculum vitae (CV) of their health and safety lead (see Section 8.4 and Section 8.7)
- › Supervision consultant's Worker Welfare Management Plan (see Section 9.4)
- › Supervision consultant's Quality Management Plan (see Section 11.5.3)

An onboarding meeting will be held 5 working days after the Organiser receives these documents. See Section 1.5.3.

During the approval period, the Organiser may conduct audits or inspections to verify the health and safety and worker welfare information received in the participants' submissions.

On approval of the documents, a pavilion possession review meeting will be held between the participant and the Organiser. Once the Organiser hands over the pavilions to the participants, construction activities may then commence.

Figure 1.9 Requirements for Pavilion Possession



Interior construction activities cannot commence without the required Fit-out Work Permit. See Section 12.4.2.

If participants choose to change or appoint additional contractors after pavilion possession, then they need to inform the Organiser through the Participant Portal. The appointed contractors will be required to submit all information presented in this section to the Organiser through the portal at least 20 working days before mobilisation.

1.5.3 Onboarding Meeting Prior to Construction

A face-to-face onboarding meeting will be held between the participant, the supervision consultant, the contractor, and the Organiser to reinforce the expectations of working on the Expo site.

C-11 Participants must ensure that their contractor's site representative and an appropriate member of its senior leadership attend the onboarding meeting.

The Organiser will provide the relevant contact details for site emergency and serious incident notifications to the participants and their supervision consultants and contractors on the Participant Portal.

1.6 Construction

Once the Pavilion Possession Request is approved and the Fit-out Work Permit is obtained from the One-Stop Shop, participants will commence their construction activities in their pavilion.

1.6.1 Working on the Expo Site

All contractors working on the Expo site are required to work within the framework set up for construction logistics discussed in Chapter 7.

Sustainability is one of the subthemes of Expo 2020 Dubai; therefore participants are encouraged to demonstrate their commitment to sustainability in their construction activities and in their pavilions. See Chapter 5.

1.6.2 Construction Completion

As discussed in Section 1.2, the following dates are the specific key delivery dates during construction. Participants are required to adhere to these dates.

- › Interior construction may start as early as **20 October 2019** and to be completed latest by **20 July 2020**
- › Exhibit installation to be completed latest by **20 September 2020**

The Organiser's Master Schedule will be available on the Participant Portal for reference.

C-12 Participants must develop, document, and implement a robust testing and commissioning procedure. The Organiser may audit the testing and commissioning process. Participants must submit a copy of the commissioning plan to the Organiser through the Participant Portal at least 10 working days before commencing the commissioning process for coordination of interface with the Organiser's services. The plan must include the details and schedule on the commissioning of:

- › Power
- › Potable water
- › Chilled water
- › Fire protection and alarm system
- › Any other services that interface with the Organiser's services

C-13 Following the commissioning of pavilions, participants must obtain the necessary approvals from the One-Stop Shop to confirm the completion of the construction works. See Chapter 12.

C-14 Participants must submit a copy of their operations and maintenance manual and as-built drawings to the One-Stop Shop on completion of construction works.

C-15 Once the interior work in the pavilion is complete, participants must obtain an Occupation Certificate from the One-Stop Shop before occupying the pavilion.

C-16 Participants must obtain an Operation Fitness Certificate from the Organiser on completion of exhibit installation. See Section 12.7.

1.7 Decommissioning and Removal

Participants will reinstate their pavilion back to its original condition latest by 10 July 2021, three months after the conclusion of the Expo event. See Chapter 15 for further details.

1.8 Deliverables

Table 1.1 lists the deliverables that the participants are required to submit to the Organiser in relation to this chapter.

Table 1.1 Deliverables

Deliverable Name	Reason for Issue	Time of Issue	Reference
Delivery Schedule	For information	See Section 1.2	C-01, C-03
Letter Confirming the Participant's Designated Functions	For information	Before Theme Statement submission	C-05
Stage 1 Theme Statement Submission Stage 2 Concept Design Submission Stage 3 Final Design Submission	For approval	See Section 1.4	Section 1.4
Pavilion Possession Request	For approval	At least 20 working days before the planned date for pavilion possession	C-10
Testing and Commissioning Plans	For information	At least 10 working days before commencing the commissioning process	C-12
Operations and Maintenance Manuals including As-Built Drawings	For information	On completion of construction works	C-14

1.9 Supporting Information

The following resources can be accessed either from the Participant Portal or using the website address provided.

1. Delivery Schedule Template
2. Dubai Municipality (Construction Materials Laboratories Section)
<https://www.dm.gov.ae/>
3. Insurance Guide
4. Pavilion Drawing
5. Pavilion Possession Request Form
6. Theme Guide
7. UAE Labour Law (UAE public holidays)
<http://www.mohre.gov.ae/en/labour-law/labour-law.aspx>



2 Understanding the Master Plan



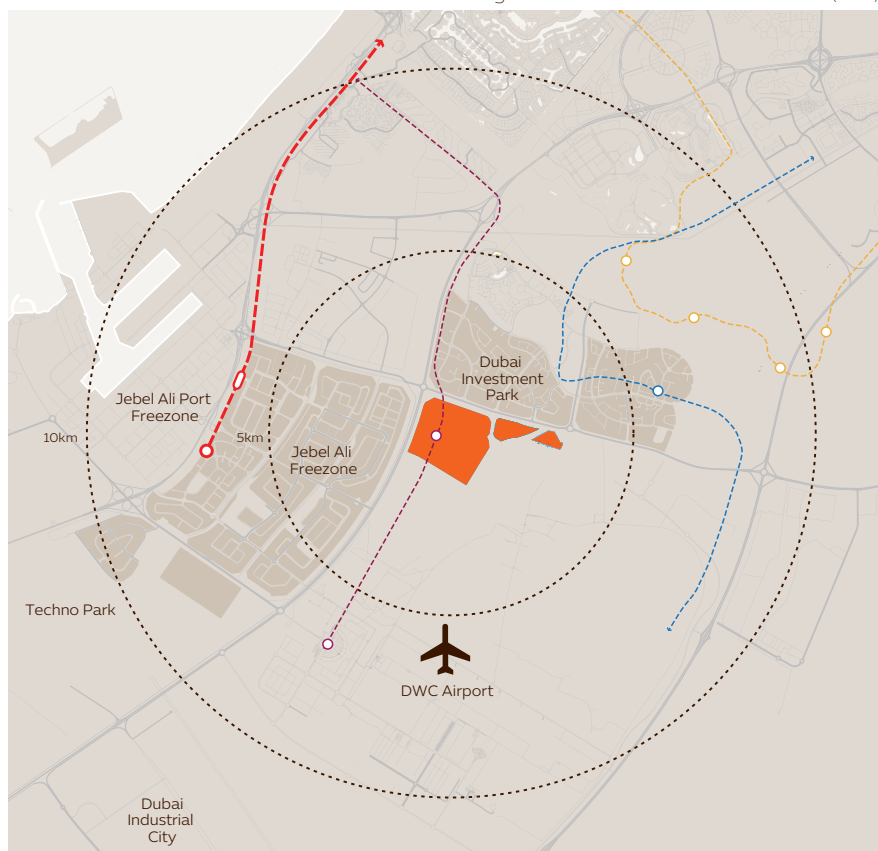


The Master Plan was developed to create a space that embraces and reinforces the vision, theme, and subthemes for Expo 2020 Dubai. By seamlessly accommodating the requirements of all visitors and participants, the Master Plan will help deliver an Expo event that amazes, inspires, entertains, and educates everyone, while delivering an authentic cultural experience.

2.1 Site Context

The site for Expo 2020 Dubai was carefully chosen to provide maximum operational and logistical efficiency for the participants, ease of local and regional access for visitors, a high level of international visibility, and strong consideration for safety and security. Situated in an area of burgeoning economic growth that is home to Dubai World Central (DWC), Dubai Industrial City, Jebel Ali Free Zone, and Dubai Investments Park, the Expo site provides a unique opportunity to support the development of the core growth areas of Dubai South within the city of Dubai and its urban development strategy. See Figure 2.1 for site context and location plan.

Figure 2.1 Site Context and Location Plan (UAE)



KEY

- | | | | |
|---|---------------------------|--|----------------------------|
|  | Expo Site |  | Metro Red Line (Existing) |
|  | Radius from the Expo Site |  | Metro Red Line (Extension) |
|  | Existing Road Network | | |

2.2 Master Plan Guiding Principles

The Master Plan is based on guiding principles that define its components such as site layout, building positioning and massing, services, and operations. These guiding principles are briefly discussed in the following sections.

2.2.1 Showcase Theme and Subthemes

The Master Plan reflects the theme of *Connecting Minds, Creating the Future*, and aims to seamlessly integrate the three subthemes of Opportunity, Mobility, and Sustainability into the urban design, infrastructure, delivery, operations, and legacy.

2.2.2 Catalyse and Showcase Innovation and Culture

Expo 2020 Dubai will leverage technological and cultural components across the site to foster programmes for developing solutions to challenges related to the subthemes.

2.2.3 Embrace Accessibility for All

The Master Plan lays a strong emphasis on ensuring that the Expo event is accessible, engaging, and appropriate for everyone. It aims to enable all involved with the event to benefit from an inclusive experience with specific attractions, services, amenities, and design considerations that maximise enjoyment and comfort for all.

2.2.4 Raise Visitor Experience Standards

The Expo site has been designed to provide a memorable experience for all visitors. All visitors arriving at the site will embark on a journey of discovery. All facilities and attractions will be conveniently located to enhance the visitor experience.

2.2.5 Facilitate Collaboration among Participants

The Master Plan allows collaboration among participants through a spatial layout that provides a blend of pavilion types in an interactive environment to foster engagement and partnership.

2.2.6 Maximise Visibility for All Participants

The configuration of the Master Plan maximises the exposure of all participants and minimises a hierarchy of locations. This guiding principle is also reflected in the pavilion allocation and entrance orientation for participants.

2.2.7 Reflect UAE's Culture and Heritage

Several structures built by the Organiser will showcase local culture. Specifically, the public realms and parks will be inspired by local landscapes, and will incorporate native plant species.

2.2.8 Achieve Efficiency in Participants' Operations

Expo 2020 Dubai aims to set logistics management standards. The Master Plan accounts for the logistics and service routes needed to provide efficient service levels to all areas where participants will be hosted.

2.2.9 Become a Reference in Sustainability for Future World Expos

Expo 2020 Dubai is driven by four high-level sustainability objectives:

- › Host one of the most sustainable World Expos ever, leaving a legacy of sustainable infrastructure, operations, and practices
- › Catalyse and support sustainability efforts in Dubai and the UAE
- › Increase public awareness on sustainability
- › Act as catalyst for the development of solutions to existing sustainability challenges

2.2.10 Demonstrate Smart Site Initiatives

Expo 2020 Dubai aims to excel in combining technology/innovation and culture to showcase Smart Site operations that will provide interactive, educational, and cultural experiences for both visitors and participants. Smart Site operations are incorporated into the Master Plan components and into the strategy to deliver an effective platform for visitors and participants.

2.2.11 Prioritise Health and Safety in Design, Delivery, and Operations

Health and safety in design, delivery, and operations is a priority for Expo 2020 Dubai. A centralised health and safety control room ensures that venue operations planning is integrated into every aspect. Health and safety considered throughout all design stages will minimise the risks associated during construction, event, and decommissioning and removal.

2.2.12 Build a Lasting and Viable Legacy

Planning for legacy has been a key driver for the master planning process. To ensure minimal deconstruction of the pavilions built by the Organiser, the Master Plan has considered the following:

- › Maximising the number of pavilions built by the Organiser that will remain in legacy
- › Providing efficient utility design
- › Ensuring flexibility in the legacy Master Plan to be able to respond to market demands and ensure commercially viable legacy development opportunities

2.3 Master Plan Elements

The Master Plan has a variety of specifically designed key open spaces, building types, and several unique structures to provide an intriguing architectural and experiential urban environment.

2.3.1 Building Typologies

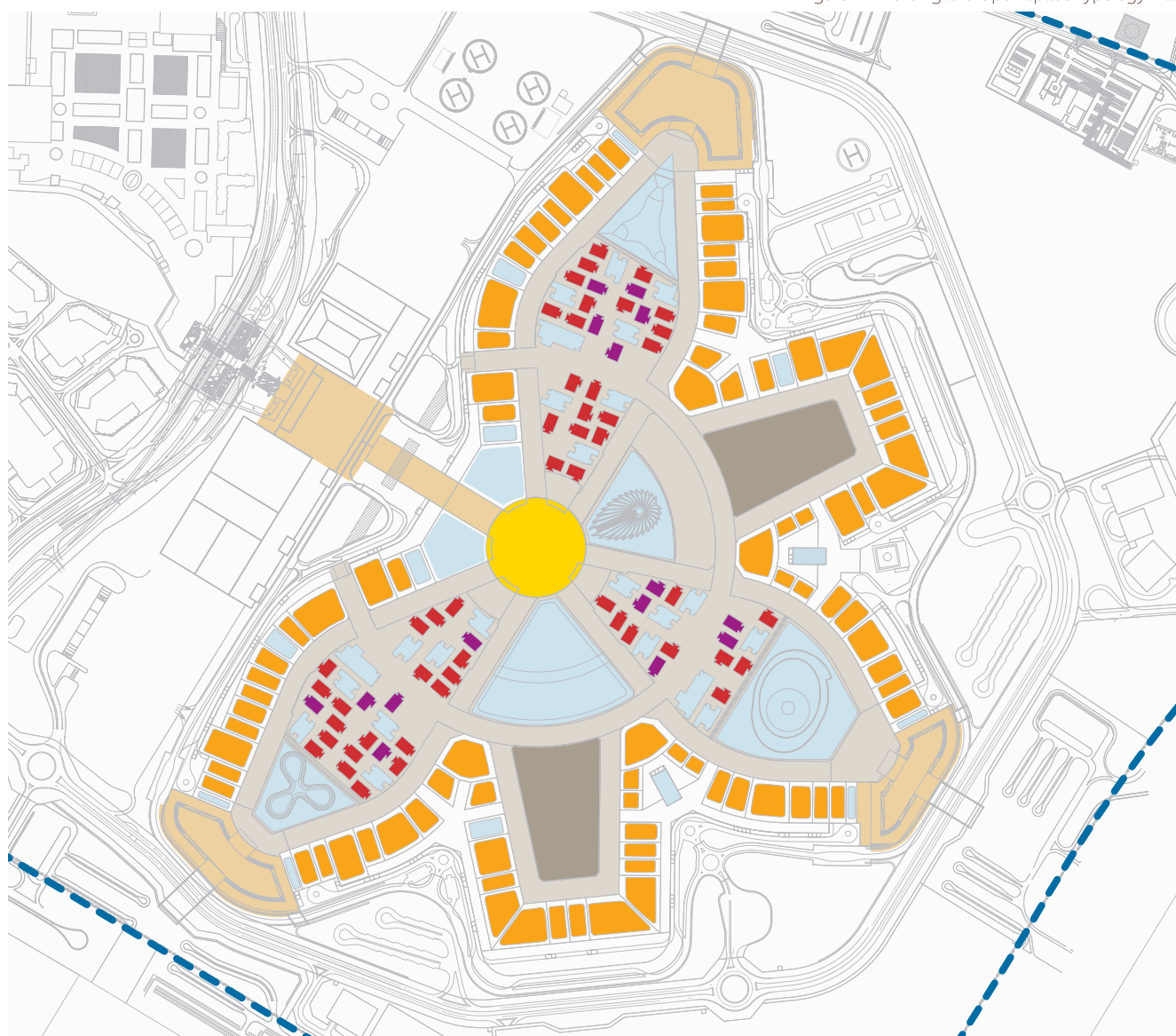
The Master Plan creates distinct districts for a range of building types. Defined according to their spatial distribution, the main building types are: Self-Build Pavilions, Rented Pavilions, Assisted Pavilions, and other pavilions including Service Pavilions and Theme Pavilions. See Figure 2.2.

2.3.2 Rented Pavilions

The Thematic Districts will consist of structures built by the Organiser including Rented Pavilions. These are designed around a permeable urban form with internal routes and courtyard/exhibition spaces. The pavilions will be located above a basement which will be used for operations and logistics during the Expo event.

The Rented Pavilions are two-storey rectangular buildings with exhibition space on the ground floor and office space on the first floor.

Figure 2.2 Building and Open Space Typology Plan



KEY

■ Self-Build Pavilions	■ Concourse and Circulation
■ Assisted Pavilions	■ Entrances and Welcome Plazas
■ Rented Pavilions	■ Al Wasl Plaza
■ Other Pavilions	- - - Site Boundary
■ Parks	

2.3.3 Open Space Typologies

Open spaces are carefully designed for an exciting and comfortable visitor experience. The Metro Station entrance, as well as its Welcome Plaza, connects with Al Wasl Plaza. Three entrances invite visitors to discover various pavilions while wandering through concourses or routes through the Thematic Districts, gardens, and parks. See Figure 2.2.

2.3.4 Entertainment Expo

The entire Expo site will be fully activated day and night with a range of entertainment options and exhibits including art installations, interactive displays, performance stages, and rest and play areas that will host a rolling programme of events.

Examples of how this activation may be distributed in the Thematic Districts are indicated in Figure 2.3.

Participants are encouraged to use the available spaces to present cultural and musical performances, parades, interactives, and other forms of edutainment.

Figure 2.3 Examples of Entertainment Options for Thematic Districts



3 :: Designing the Pavilions





This chapter guides the participants in designing the interior of their pavilion while showcasing the theme and subthemes of Expo 2020 Dubai.

To support the participants in designing their pavilion, the Organiser has set up a compliance framework that covers the following areas:

- › Content development
- › Pavilion design parameters
- › Operational design
- › Pavilion facade wrap
- › Signage and language hierarchy
- › Decommissioning and removal

3.1 Pavilion Information

Each pavilion has two floors, of which the ground floor will be used for exhibits and the first floor will serve as an office space for the participants.

The Organiser will build the following facilities in each pavilion:

- › Dry waste rooms (ground floor and first floor)
- › Wet waste room (ground floor only)
- › Toilet (first floor only)
- › Lift and staircase
- › Utility service rooms

During design, the Organiser will provide each participant with the following drawings to guide them in designing the interior of their pavilion:

- › Pavilion drawings
- › Architectural drawings
- › MEP drawings
- › Structural drawings

The pavilion drawing is a graphical representation of the participant's pavilion space that shows pavilion details such as clearance height, structural loading allowance, utility allocation, and elevations. An example of a pavilion drawing is shown in Figure 3.2 on page 25.

The Organiser will fit-out every pavilion with basic MEP services ready for participants' use if they choose to avoid any interior modifications.

The location of entrances and exits to pavilions may vary depending on the location of a pavilion. See Section 3.4.1.

3.2 Content Development Considerations

Expo 2020 Dubai is an opportunity for participants to present unique and exceptional stories of their country by showcasing new or untold narratives. By this process, participants will have the chance to go beyond the visitors' common knowledge, and refresh perspectives and understanding of their nation and its people's journey towards the future.

To develop their exhibition content, participants are encouraged to consider the following:

- › The content presented offers different levels of engagement
- › The content is original and authentic, reflecting aspects of the participant's country that cannot be found elsewhere.
- › The content is diverse enough to appeal to different age groups and visitors.

The Theme Guide provides the participants with guidance in developing their exhibition content focused around the theme *Connecting Minds, Creating the Future*, and structured around the subthemes of Opportunity, Mobility, and Sustainability.

3.3 Design Parameters

The pavilion space provides the participants with design freedom to express their culture, events, entertainment, and resources in line with the theme and subthemes of Expo 2020 Dubai.

The Organiser will hand over the pavilions to the participants as an occupiable space to set up their exhibits on the ground floor and office space on the first floor. The Organiser will provide a Completion Certificate for each pavilion.

- C-17** If participants modify their pavilion, they must obtain an updated Completion Certificate from the One-Stop Shop and replace the existing certificate.

The pavilions have concrete floors that are left exposed and polished/sealed to achieve a matt or satin finish. The underside of the concrete slab is left open with exposed ductwork, electrical conduit, light fixtures, and pipework. The ceiling is an exposed concrete slab with exposed services suspended from it. Figure 3.1 shows an initial rendering of a pavilion space.

3.3.1 Pavilion Modifications

- C-18** Participants must obtain approval from the Organiser before modifying the interior of their pavilion.
- C-19** Modifications must not impact the pavilion's structural integrity or the building systems.
- C-20** If structural modifications are required, participants must submit full design and specifications to the Organiser for approval. The Organiser will evaluate the submission and decide if the modifications are feasible.

Modifications may be carried out by the Organiser at the participant's expense.

3.3.2 Floor Coverings

- G-02** Temporary surface applications to the internal concrete floor can be considered to provide colour and directional wayfinding.

- C-21** The floor levels of pavilions must comply with the Americans with Disabilities Act (ADA) accessibility standards. See Section 3.8.

3.3.3 Walls

- C-22** Participants' work must not compromise the fire rating of the pavilion walls.

3.3.4 Doors

- C-23** Pavilion doors, including locks, must not be altered or changed. Participants must obtain approval from the Organiser before modifying their pavilion doors.

- C-24** The upper floors of the pavilions allow for a fire escape route across link bridges to adjoining pavilions. Participants must not install locks or security devices on the doors to these links, which could interfere with the ability to access the route in the event of an emergency.

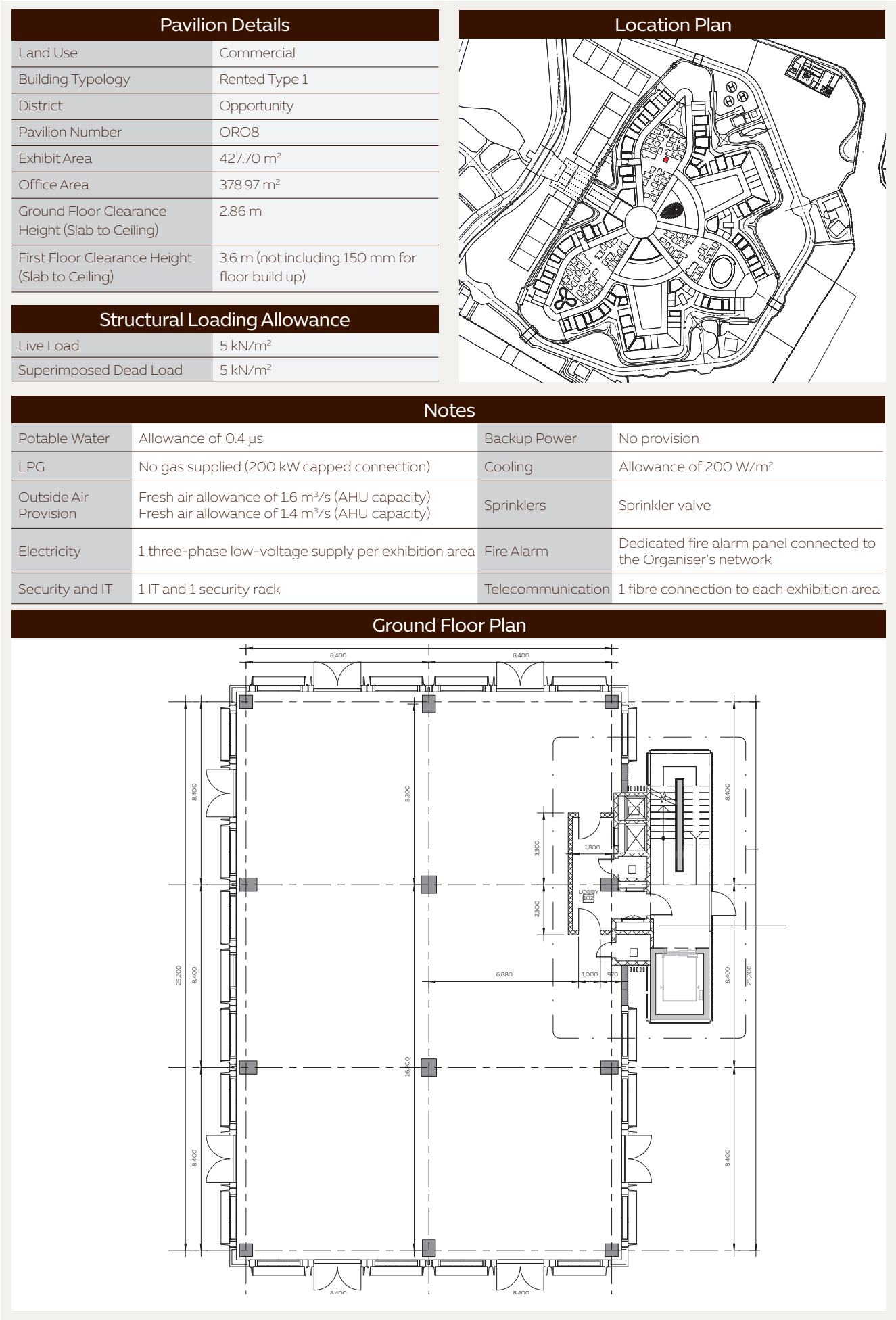
3.3.5 Ceiling

- C-25** Access panels must be provided to all valves, switches, and mechanical equipment that require service and that are concealed behind a ceiling. Locations of access panels must be agreed with the Organiser at the Final Design stage.

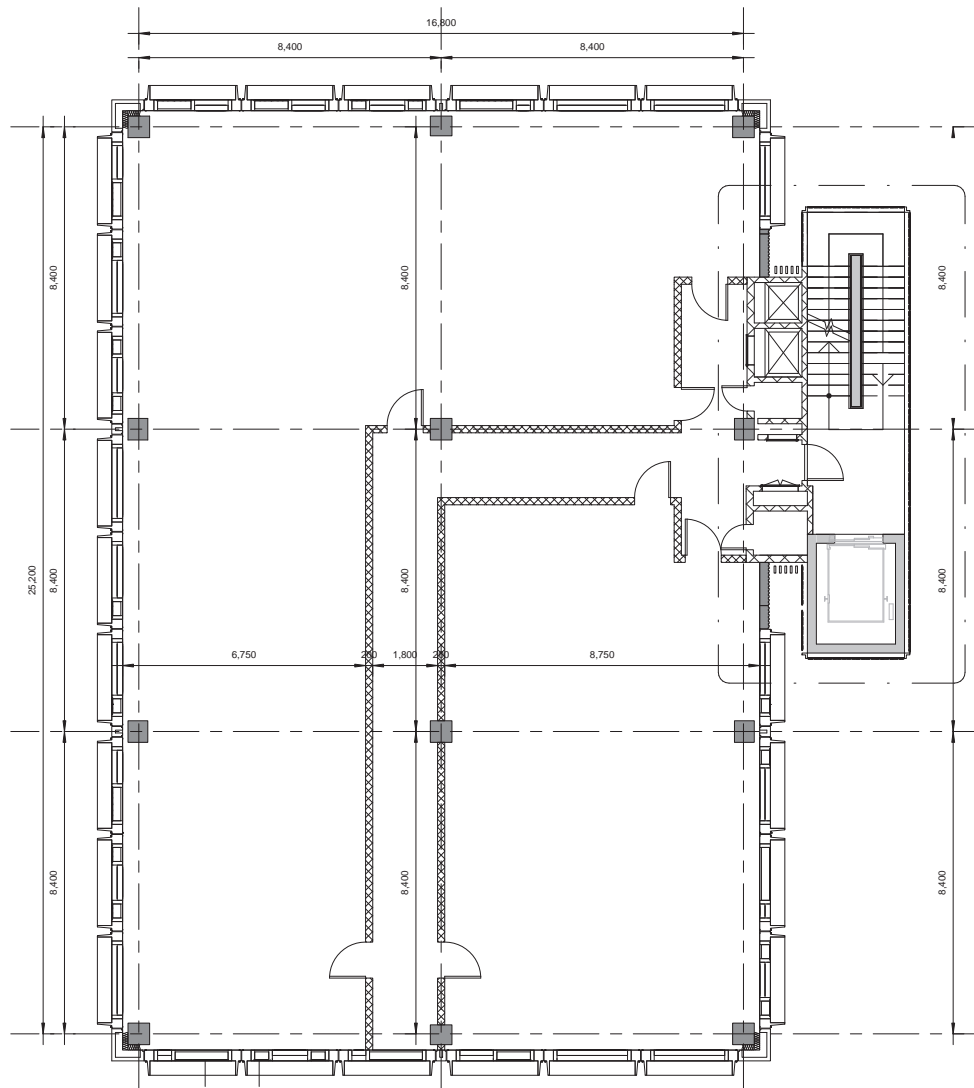


Figure 3.1 Rendering of a Pavilion Space

Figure 3.2 Example of Pavilion Drawing



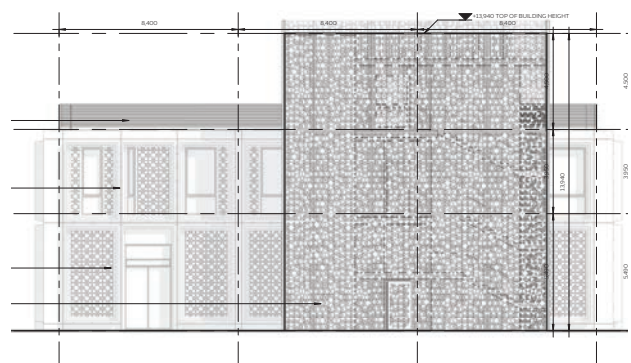
First Floor Plan



Elevation



North Elevation



East Elevation

3.3.6 Lighting

The Organiser will provide ambient internal lighting and fitted track system of movable spot lighting to pavilions. Additional spot lighting may be provided by the Organiser on request.

- C-26** If participants choose to install their own lighting, specifications must be provided in their design submission for approval by the Organiser.
- C-27** Lighting must be glare-free and must be approved by the Organiser for aesthetics. Fittings must consider sustainable requirements. See Chapter 5.
- C-28** Showcases and displays must be adequately lit and ventilated to avoid the risk of fire.

3.3.7 Feature Elements

- C-29** Mirrors and glass elements must be made of tempered glass.
- C-30** Where necessary, metalwork must be earthed for safety.

3.3.8 Electricity

The Organiser will provide power supply to the pavilions which will be metered by the service provider. British Standard electrical sockets will be used in the pavilions.

- C-31** Participants must carefully plan their interior design to efficiently utilise electricity within their power allowance as shown in the pavilion drawing. Details of their plan must be submitted to the Organiser as part of their design submissions.
- C-32** If participants modify their pavilion, they must provide complete electrical installation including lighting and power distribution (trays, trunking, conduit, and wiring), wiring accessories (socket outlets and lighting fixtures), and power supply to all equipment and systems. Low smoke and fume (LSF) cables and wires must be used for lighting and power distribution in the pavilion.

3.3.9 Ventilation and Air Conditioning

The Organiser will provide cooling to the pavilions through capped flow and return insulated chilled water pipe work. This is connected to the central chilled water network with isolating valves, metering/flow rate test point, and energy meter which is linked to the central building management system.

The Organiser will provide a fresh air handling unit, ventilation and extract, and ducting in the pavilions, however extension within the premises will be provided by the participants in case of any modifications. The Organiser will not provide heating and kitchen/smoke extract systems.

- C-33** Where necessary, participants must provide kitchen extract in accordance with the requirements of the statutory authorities and with prior approval of the Organiser. See Chapter 6.

- C-34** Any structural openings must be identified during the design submission for approval by the Organiser.

3.3.10 Water Supply, Drainage, and Public Health

- C-35** The Organiser will provide a metered potable cold water supply connection valve to the pavilions. Water will be supplied through a 32-mm diameter pipe at a pressure of 1.5 bar to the toilet on the first floor. Participants must obtain approval from the Organiser before modifying the water supply system.
- C-36** Participants must provide grease traps in their pavilion, if required, and must detail it in their design submission for the Organiser's approval.

The Organiser will provide one 100-mm diameter capped soil pipe, one 100-mm diameter capped waste pipe, and one vent pipe in the toilet on the first floor.

3.3.11 Gas

- C-37** The Organiser will provide gas supply to the Thematic Districts. Participants must obtain approval from the Organiser if they wish to extend the gas supply system to their pavilion.

3.3.12 Closed-Circuit Television and Other Security Equipment

The Organiser aims to provide a safe and secure environment for all participants and visitors without inhibiting the Expo 2020 Dubai experience. To support this, the Organiser will install closed-circuit television (CCTV) systems in all pavilions.

- C-38** If participants modify their pavilions, for compliance with the security requirements, pavilions must have 100 percent CCTV coverage throughout the public space, exhibition space, and food and beverage space. CCTV coverage must be compliant with the latest Dubai Law (24). The CCTV network must be linked to the Central Command Centre.
- C-39** Participants' CCTV cameras must provide full high-definition (1,920 x 1,080 pixels) quality colour images and must have the ability to capture images in low light. All camera images must be recorded at not less than 25 frames per second and stored for at least 45 calendar days. The system may be designed to allow images to be stored only when movement is detected by the video management system.
- C-40** Security equipment storage and CCTV review workstations must be located in a secure room within the pavilion to prevent unauthorised access.
- C-41** All security equipment must have a backup power supply for at least 2 hours in the event of a power failure.

3.3.13 Access Control

The Organiser will install electronic access control system on some pavilion doors. Participants need to consider the following controls and guides in case of modifications.

- G-03** Participants should provide access control either by manual or electronic means.
- C-42** Where an electronic access control system is used, the system must be linked to the CCTV system and interfaced with the fire alarm system to freely allow opening of doors in the event of fire.
- C-43** Participants must provide the Organiser with an appropriate means of access to their pavilion in case of emergencies. In the event of an emergency, the Organiser reserves the right to take reasonable measures to enter a pavilion to protect life.
- G-04** Electronic access control systems should be backed up by battery or an uninterruptible power supply device.
- C-44** Participants must consider an intruder detection system in areas where high-value items are stored or displayed. The intruder detection system must be linked to the Organiser's security system. The responsibility for the insurance and security of any assets remains with the participants.

3.3.14 Inaccessible Voids

- C-45** Participants must design out all inaccessible voids in their pavilion. Participants must highlight any inaccessible voids in their design submission for approval by the Organiser (One-Stop Shop). For further detail, see Section 7.5.

3.3.15 Telecommunications

The Organiser will provide telecommunications systems and information and communications technology (ICT) distribution, including limited number of data points, at the ground floor and first floor of the pavilions.

- C-46** Participants must provide telephone distribution, intercom system, and data points for any modification works they intend to do.

3.3.16 Waste Management

The Organiser will provide waste rooms on the ground floor and first floor levels of each pavilion. Waste rooms will be designed taking into consideration the external access for waste collection, and will allow for holding of waste for up to 24 hours.

The site-wide waste management contractor will collect waste directly from the bins on the ground floor. Further information on waste management during the Expo event will be provided in the Event Operations Guides.

- C-47** Participants must hold their waste in the appropriate waste rooms.

3.3.17 Universal Access and Inclusive Design

The Organiser will provide the participants with a Pavilion Accessibility Design Guide through the Participant Portal to assist with pavilion design. The following criteria need to be considered when designing pavilion access.

- C-48** The surface of exhibit areas must be firm, smooth, and slip resistant, and with a gradient of no more than 2.5 percent.
- C-49** Walkways, ramps, or step ramps must be incorporated at changes of level along the path of travel within a pavilion.
- C-50** The path of travel for people with limited mobility must not incorporate any step, stairway, turnstile, or other impediment that limit accessibility.
- C-51** Exhibits must be of size that can access the pavilion openings. Participants may consider disassembling their exhibits into smaller parts to access the pavilion.

3.4 Operational Design Considerations

Participants are required to consider the following criteria in their operational design.

3.4.1 Visitor Flow

The Organiser will provide participants with a site-wide visitor flow strategy.

The pavilion space may be fitted according to the requirements of the participants while allowing for one-way flow of visitors.

- C-52** Participants must integrate their pavilion design with the Organiser's site-wide requirements and must follow the entrance and exit strategy.
- C-53** Participants must consider visitor flow when designing their pavilion, taking note of critical points such as length of an audio-visual presentation that could cause a queue.

Further information on the external visitor flow management will be provided in the Event Operations Guides.

3.4.2 Servicing

- C-54** Servicing of pavilions must be done outside of operating hours listed on the Participant Portal.
- C-55** Pavilion storage must accommodate stock requirements for a minimum of 2 calendar days.

3.4.3 Emergency Plan

- C-56** When modifying pavilions, participants must take the Organiser's Emergency Plan into consideration. The Emergency Plan will be available on the Participant Portal.

3.4.4 Maintenance Access

- C-57** Participants must ensure that access is provided to the Organiser for routine check or maintenance on any services which pass through their pavilion such as chilled water pipe or sprinkler pipe valves.

3.5 Pavilion Facade Wrap

The Organiser will offer a range of designs for the pavilion facade wrap. Participants will have the opportunity to choose their wrap design to suit their requirements. Participants may also create a graphics to be integrated into their wrap design, if requested. This will be discussed with the Organiser during design and will form part of the design submission for the Organiser's approval. The Organiser will install the pavilion facade wrap.

3.6 Signage and Language Hierarchy

- C-58** Arabic is the primary language and must be placed above English in all signage placement. See Figure 3.3.
- C-59** Arabic is read from right to left and must be right justified in all wayfinding and signage placement.
- C-60** Participants must obtain the approval of the Organiser for their signage content and typeface.

3.7 Decommissioning and Removal Considerations

- C-61** Participants must provide the Organiser with a plan and strategy that details how their pavilion will be stripped out on time after the conclusion of the Expo event (see Section 15.1). Decommissioning and removal works must ensure the health and safety of everyone on the site, and must minimise the environmental impacts and risks associated with waste.
- C-62** Participants must aim to redeploy, recycle, or return 75 percent of their construction materials to the manufacturer.
- G-05** Participants should use prefabricated, factory assembled or constructed components which can be transported to and assembled on the site.
- G-06** Participants should aim to redeploy, recycle, or return 75 percent of their exhibit materials to the manufacturer.

Figure 3.3 Arabic and English Language Hierarchy



3.8 Supporting Information

The following resources can be accessed either on the Participant Portal or on the website address provided.

1. Americans with Disabilities Act
<https://adata.org/learn-about-ada>
2. Dubai Law (24)
<https://portal.dps.ae/laws.html>
3. Emergency Plan
4. Event Operations Guides
5. Pavilion Accessibility Design Guide
6. Pavilion Drawing
7. Site-Wide Visitor Flow Strategy
8. Theme Guide

4 Designing for Fire and Life Safety





Safety is the #1 priority on the Expo site. To ensure safety for all during the event, the entire Expo site will be connected to a Central Command Centre.

This chapter provides controls and guides that need to be built into the design of the pavilions. Construction-related fire and life safety is discussed in Chapter 8. Although the controls and guides in this chapter are extracts from the existing UAE Fire and Life Safety Code of Practice, participants are required to adhere to the full content of that document in addition to the information in this Rented Pavilions Guide.

C-63 Participants must adhere to the latest UAE Fire and Life Safety Code of Practice as a minimum (see Section 4.5). This includes specifications in relation to occupancy loads, fire service access requirements, emergency egress, fire detection and alarm systems, and control rooms. Where the UAE Fire and Life Safety

Code of Practice does not address specific fire protection features, the design must comply with the requirements of the National Fire Protection Association's Life Safety Code® (NFPA 101 [2015]) and Building Construction and Safety Code® (NFPA 5000 [2015]).

C-64 The design and interior construction of pavilions must adhere to the UAE building codes as well as other relevant local and national standards. See Section 4.5.

C-65 Modifications to the existing fire and life safety systems must be carried out by Organiser-approved fire and life safety contractor for the Thematic Districts. Details will be communicated via the Participant Portal.



Figure 4.1 Examples of Fire and Life Safety Equipment and Signage (clockwise from top left): Assembly Point Sign, Fire Extinguisher inside Hose Reel Cabinet, Smoke Detector, Fire Alarm Control Panel, Exit Sign, Fire Alarm Call Point

4.1 Fire and Life Safety Design and Approvals

- C-66** Participants must ensure that their consultants are fully aware of the fire and life safety design requirements, and are registered (see Section 12.1) and qualified to complete the design as per the relevant codes. The Final Design must be submitted to the Dubai Civil Defence and other relevant authorities for approval through the One-Stop Shop.
- C-67** Participants must ensure that their design submissions follow the requirements of the Dubai Civil Defence such as layout, legend, and scale. Further details on the submission requirements are provided in the UAE Fire and Life Safety Code of Practice.
- C-68** Participants must ensure that their contractors submit all necessary documentation to the One-Stop Shop (Dubai Civil Defence) to obtain approval for final inspection before occupying the pavilion. See Section 12.6.
- C-69** Participants must submit as-built information to the One-Stop Shop as part of their request for final inspection.

4.2 Fire and Life Safety Arrangements

The Organiser will provide the following fire and life safety systems to pavilions:

- › Single zone addressable fire alarm system interface unit
- › Emergency lighting system including central battery system, wiring, and fittings
- › High-level firefighting sprinkler system including zone control valve, distribution piping, droppers, sprinkler heads, and controls
- C-70** Participants must provide all extensions and modifications to the fire alarm, emergency lighting, and firefighting systems to suit their layout design and in compliance with the UAE Fire and Life Safety Code of Practice. Participants must also provide fire extinguishers and fire blankets.
- C-71** The pavilions' own public address/audio visual systems must turn to silent mode upon receiving signal from the Organiser's fire alarm system.

4.3 Fire Safety Management

- C-72** Pavilions must have specific emergency and evacuation plans and procedures covering construction, event, and decommissioning and removal as required in the UAE Fire and Life Safety Code of Practice.
- C-73** Participants must identify dedicated emergency response staff who have appropriate training to act as fire wardens in case of an emergency.
- C-74** Fire safety management during construction must comply with the Organiser's Health and Safety Assurance Standards (see Section 8.3).

4.3.1 Emergency Egress and Assembly Points and Signage

- C-75** In the event of fire, everyone must be evacuated to a designated place of safety or an assembly point. If necessary, participants may evacuate to the nearest site-wide assembly point.
- G-07** In selecting the assembly point, NFPA 5000 (2015) should be used for spatial requirements, and AS 3745 (2010) is recommended. See Section 4.5.
- C-76** Evacuation routes and exits must be easily accessible and relevant signage must be clearly displayed within the pavilion. Exit signs must be compliant with the UAE Fire and Life Safety Code of Practice. An example of exit sign is shown in Figure 4.1.
- C-77** Assembly points must be clearly identified. An example of a signage for assembly point is shown in Figure 4.1.
- C-78** Pavilions must include signage at all storage areas to clearly identify the products stored and the hazard ratings.
- C-79** Adequate management procedures must be in place to ensure the safety of everyone in the assembly points and those evacuating the pavilion. Evacuation plans showing exit routes must be clearly displayed within the pavilion.
- C-80** Assembly points must be aligned with the site-wide evacuation plan. The evacuation process needs to consider the following:
 - › Evacuation from within a pavilion to an exit leading directly to outside of the pavilion
 - › Evacuation from outside of the pavilion to a designated place of safety or assembly point

4.3.2 Emergency Refuge Points

- C-81** Emergency refuge points are safe areas designed to hold people, including those with limited mobility, during a fire or other emergency, when evacuation may not be safe or possible. Participants must provide emergency refuge points with emergency two-way communication connected to the Central Command Centre.

4.3.3 Emergency Lighting

- C-82** Pavilions must have emergency lighting throughout all evacuation routes and emergency exits as required in the UAE Fire and Life Safety Code of Practice. Illumination level must be compliant with the legal requirements and the Health and Safety Assurance Standards (see Section 8.3).
- C-83** Emergency lighting must be provided for at least 3 hours in the event of failure of normal lighting. Emergency lighting must be powered from either a monitored central battery system or a self-contained fitting.

4.3.4 Liquefied Petroleum Gas

A centralised liquefied petroleum gas (LPG) distribution system will serve each pavilion during the Expo event.

- C-84** Participants must not use LPG cylinders anywhere in their pavilion.
- C-85** All kitchens must have silicon-coated fire blankets.

4.4 Fire Protection Systems

To mitigate the effects of potentially destructive fires, participants are required to adhere to the following criteria while designing their pavilions.

- C-86** Modifications to the automatic sprinkler protection system to suit pavilion layout must be undertaken in accordance with the UAE Fire and Life Safety Code of Practice.
- C-87** Participants must manage open flames in accordance with the UAE Fire and Life Safety Code of Practice.
- C-88** Fire and smoke detection and alarm systems must be installed throughout the pavilion and the public realm in accordance with the UAE Fire and Life Safety Code of Practice. All alarms must be linked to the Organiser's Fire Command Centre located within the Central Command Centre. An example of a smoke detector is shown in Figure 4.1.
- C-89** Pavilions must include manual call points and a localised fire alarm control panel (see Figure 4.1) in accordance with the UAE Fire and Life Safety Code of Practice. The panel will send a signal to the Central Command Centre in case of a fire. The panel must include the facility to manually remove the detection device, activate or deactivate the alarm notification system, or detect faults.
- C-90** Pavilions must have fire extinguishers in accordance with the UAE Fire and Life Safety Code of Practice. See Figure 4.1.

4.5 Supporting Information

The following resources can be accessed either from the Participant Portal or using the website address provided.

1. AS 3745 (2010)
<https://infostore.saiglobal.com/store/PreviewDoc.aspx?saleItemID=2182780>
2. Dubai Civil Defence
<http://www.dcd.gov.ae>
3. Health and Safety Assurance Standards
4. NFPA 101 (2015)
<http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=101>
5. NFPA 5000 (2015)
<http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=5000>
6. UAE Fire and Life Safety Code of Practice
http://www.dcd.gov.ae/portal/eng/UAEFIRECODE_ENG.pdf

5 :: Achieving Sustainability





Sustainability is one of the three subthemes of Expo 2020 Dubai and will be a highlight of the event. In addition to providing content for exhibitions and programming during the event, sustainability considerations are a fundamental pillar of the design and delivery of the Expo site.

Through its sustainability efforts, the Organiser aims to make Expo 2020 Dubai a benchmark for future World Expo events. To achieve this goal, participants are encouraged to contribute to the site-wide sustainability commitments by complying with sustainability controls and guides presented in this chapter.

In line with the sustainability approach of Expo 2020 Dubai, all pavilions need to consider sustainability as an integral component of their pavilion design, interior construction, and exhibit installation.

5.1 Sustainability Drivers

Expo 2020 Dubai's vision for sustainability draws its influence from a number of key initiatives in the UAE which establish the roadmap for the future. Expo 2020 Dubai aims to make a substantive contribution to support these national efforts.

- › **UAE Vision 2021:** The vision outlines the challenges that the UAE will face in the future and provides an overarching perspective on mitigation over the coming years. The strategy focuses on economic, social, and environmental factors.
- › **UAE Green Growth Strategy:** This strategy was launched in January 2012 by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai. It is a long-term initiative that aims to promote sustainability in the economy and the public and private sectors to help the UAE become a global hub and a successful model of the new economy.

- › **United Nations Environment Programme's (UNEP) Sustainable Public Procurement Programme:**

The UAE's Green Economy push aligns with UNEP's Sustainable Public Procurement Programme, of which the Ministry of Climate Change and Environment is a member. The Sustainable Public Procurement Programme supports the implementation of sustainable public procurement around the world under the mandate of UNEP's 10-year framework of programmes, with a vision of embedding environmental, economic, and social aspects of sustainability into public procurement and associated supply chains.

- › **Dubai Green Economy Partnership:**

Launched in May 2012 by His Highness Sheikh Hamdan Bin Mohammed Bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of Dubai Executive Council, the Dubai Green Economy Partnership is inspired by the UAE Green Growth Strategy. The Dubai Green Economy Partnership is a multi-stakeholder and cross-sector partnership to promote green growth in the Middle East and position Dubai as a global gateway for green investment and trade.

- › **Dubai Integrated Energy Strategy 2030:**

Outlined by the Dubai Supreme Council of Energy, this strategy sets an ambitious target of a 30 percent reduction in energy consumption by 2030. Renewable energy will be tapped to satisfy 7 percent of Dubai's energy requirements by 2020, increasing to 15 percent by 2030.

› Green Building Regulations and Specifications

in Dubai: The Green Building Regulations and Specifications administered by the Dubai Municipality covers the standard elements of green building design such as energy, water, healthy buildings, ecology, materials, and waste.

Where relevant, alignment with these strategies will also provide the participants with an opportunity to demonstrate their country's broader vision through the pavilion.

5.2 Sustainability Key Areas

Expo 2020 Dubai has identified a number of sustainability key areas (see Figure 5.1) which will contribute to enhance the standards for the event while also providing opportunities for showcasing innovations, breakthrough developments, and new solutions.

5.3 Sustainability Policy

The Organiser has developed a Sustainability Policy that is aligned with and fully committed to complying with the laws of the UAE and Dubai. The Sustainability Policy is available on the Participant Portal.

Figure 5.1 Key Areas of Sustainability



5.4 Sustainability Certification

- G-08** Participants are not required to achieve sustainability certification, however, they should target certification. Due to the international nature of the Expo event, participants may choose to use recognised certification systems of their own choice that align with LEED® Gold New Construction Version 4.

5.5 Sustainability Design Requirements

The sustainability requirements that participants need to satisfy in their pavilion design are provided in the following sections.

5.5.1 Energy

- C-91** Pavilions represent one of the largest energy demands across the Expo event and must implement energy efficiency measures to meet the site-wide sustainability principles.
- G-09** Energy-efficient electrical appliances and cooking facilities that hold international certification for efficient or sustainable operations should be used. Where possible, these appliances should be powered using renewable energy sources.
- 5.5.1.1 Renewable Energy Production**
- G-10** Onsite renewable energy generation should be adopted. Participants should consider generating 25 percent of their energy demand from renewable sources to align with the site-wide sustainability commitments. Note that across the Expo site, 50 percent of the overall energy demand will be supplied from renewable technologies, of which a minimum 25 percent will be generated onsite. If sustainability certification is targeted, participants are advised to consult individual schemes and consider how onsite renewable strategies can contribute to the site-wide sustainability targets.
- G-11** Participants should incorporate renewable energy technologies, such as solar, thermal storage, fuel cells, or small-scale wind turbines, in their pavilion.

For guidance, see Dubai Electricity and Water Authority's (DEWA) Standards for Distributed Renewable Resources Generators Connected to the Distribution Network and Connection Guidelines for Distributed Renewable Resources Generation Connected to the Distribution Network. See Section 5.8

5.5.1.2 Natural Ventilation

- G-12** Participants should consider the use of fans powered by renewable energy to increase air flow within their pavilions.

5.5.1.3 Active Cooling System Performance

- C-92** Active cooling systems must comply with the minimum standards outlined in Section 502.01 of the Green Building Regulations and Specifications in Dubai.

5.5.1.4 Energy Consumption

- C-93** To support the site-wide target of Expo 2020 Dubai to reduce energy consumption during operations, participants must either:
- › Reduce participant energy consumption by 20 percent compared to ASHRAE 90.1 Baseline, or
 - › Demonstrate that their predicted participant energy consumption during the Expo event is less than 90 kWh/m². This must be based on the total gross floor area and include all energy used for cooling, lighting, small power, and process loads. All renewable energy generated by the participant may be deducted from the total energy consumption.

5.5.1.5 Metering and Controls

- C-94** Energy and water consumption within pavilions must be captured through smart metering. The submeters must be connected to the Building Management System with the hardware and software capability to:
- › Record consumption hourly, daily, weekly, monthly, and annually for each end-use
 - › Compare consumption to previous days, weeks, months, and years for trend analysis
 - › Determine 'out-of-range' values to alert participants to unusually high consumption
 - › Record peak consumption for each end-use
- G-13** Metering, water monitoring, and leak detection should be tied to the pavilion's sustainability awareness strategy.
- C-95** Accessible water fixtures must be fitted with smart controls.

5.5.2 Lighting

Participants are required to consider the following criteria in pavilion lighting.

5.5.2.1 Lighting Levels and Brightness

- C-96** Lighting must be provided to safely move around, enter, and exit the pavilions.
- G-14** Pavilions should express design identity and individuality through lighting design and technology.
- G-15** Dynamic and functional lighting should be coordinated with concourse lighting applications and content.
- C-97** Light levels must comply with the Illuminating Engineering Society (IES) Guidelines.

5.5.2.2 Obtrusive Lighting Limitations

- G-16** Lighting effects should be localised with minimal impact on neighbouring pavilions. Light trespass, glare, uplight, and light spill should be avoided.
- C-98** External lighting must comply with the IES Guidelines.

5.5.2.3 Installed Lighting Power

- C-99** The power density of external lighting and landscape feature lighting must be reduced by 20 percent and 50 percent, respectively, as compared to International Energy Conservation Code 2009, Section 505.6.
- C-100** Incandescent light bulbs must not be used.

5.5.2.4 Lighting Control

- C-101** Localised and centralised control systems must be coordinated with the site-wide lighting control infrastructure.
- C-102** Photoelectric lighting control must be incorporated into the external lighting systems to reduce energy demand. Lighting power density must be reduced or external lighting must be shut off outside of operating hours.
- C-103** Motion lighting control must be used to limit lighting in areas with infrequent usage.

5.5.3 Water

This section addresses water holistically, looking at indoor use, outdoor use, specialised reduction strategies, and metering. There is particular emphasis on reducing potable water demand within the region and taking an 'efficiency first' approach to water conservation.

- C-104** Water saving measures must consider the use of both indoor and outdoor water demand within the pavilions.

5.5.3.1 Irrigation

- C-105** Consumption of irrigation water must not exceed 4 L/m²/day.
- C-106** One hundred percent of irrigation demand must be met from non-potable water sources.
- C-107** Smart moisture and air flow must be used to reduce irrigation demand.
- C-108** High-efficiency equipment, such as climate-based controllers, must be used for irrigation. Plant irrigation density must be matched to irrigation requirements and piping arrangement.
- C-109** Permits must be obtained when importing plants and seeds for soft landscaping. Import of plants and seeds is controlled by the regulations and legislations of the UAE Federal Customs Authority and the Ministry of Climate Change and Environment.
- G-17** Water retention within landscape areas should be facilitated using traditional water harvesting techniques.

5.5.3.2 Grey Water Usage

- G-18** Participants should investigate opportunities to recycle grey water within pavilions through the installation of septic tanks and landscape filtration technologies.

5.5.3.3 Condensate Capture

- C-110** Pavilions must reuse at least 80 percent of the condensate collected from pavilions with cooling loads over 350 kW.

5.5.3.4 Indoor Water Consumption

- C-111** Water demand must be reduced by 25 percent compared to the DEWA Guidelines. Where possible, participants are encouraged to install:
 - › Low-flush, high-efficiency, or dual-flush toilets
 - › Ultra-low flush urinals
 - › Waterless urinals
 - › High-efficiency faucets
- C-112** Water-efficient fixtures and fittings must be installed in line with Section 601.01 of the Green Building Regulations and Specifications in Dubai. The following maximum flow rates must be met:
 - › Shower – 8 L/min
 - › Hand basin – 2.5 L/min
 - › Kitchen sink – 4.5 L/min
 - › Toilet main – 4.5 L/flush
 - › Toilet low – 3 L/flush
 - › Urinal – 0.5 L/flush or waterless
 - › Hand ablution spray – 4.5 L/min

5.5.4 Materials

- G-19** When selecting materials, participants should consider non-hazardous materials, life cycle impacts, promotion of recycled and reused content, and local sourcing for reduced carbon footprint.

5.5.4.1 Hazardous Materials

- C-113** Materials must not be carcinogenic and must not emit toxicants or irritants. An environmental health product declaration or manufacturer inventory must be used to determine the toxicity of a product's ingredients.

5.5.4.2 Recycled and Reused Materials

- C-114** Participants must maximise the use of products with identifiable recycled content, including post-industrial content, with a preference for post-consumer content.
- C-115** Materials must be selected based on their capacity to be reused or recycled in accordance with the guidance in Section 3.7.

5.5.4.3 Materials Life Cycle Impacts

- G-20** External materials should be sufficiently durable to withstand the local environmental extremes including high humidity and sandstorms.
- G-21** Materials should be procured from sustainably managed sources accredited by independent third-party organisations. For example, timber should have certification from Forestry Stewardship Council or Programme for the Endorsement of Forest Certification.
- C-116** Rapidly renewable materials (such as bamboo, rubber, or agrifiber products) must have a harvest cycle of 10 years or less.

5.5.4.4 Polyvinyl Chloride

- C-117** Where polyvinyl chloride (PVC) is required for performance-based reasons, and if it can be robustly demonstrated that no other more suitable alternative substance or material exists, mitigating measures must be pursued. The supplier must confirm that the production of PVC does not result in effluent discharges exceeding the established water quality standards, or vent gases exceeding the European Standards for waste incineration. The supplier must also confirm that the production of PVC is conducted in a way that prevents fugitive emissions during manufacture and protects the health and safety of everyone.
- C-118** Participants must ensure that the PVC used in pavilions is compliant with the European Council of Vinyl Manufacturers Industry Charter for the Production of VCM and PVC.
- C-119** The non-recycled content of PVC must not contain lead, mercury, or cadmium stabilisers and must be produced using non-phthalate plasticisers.
- C-120** Participants must use PVC with at least 30 percent recycled content.

5.5.5 Waste

Through Expo 2020 Dubai, participants have the opportunity to showcase innovative responses to waste management, disposal, and materials reuse.

- G-22** Participants should develop a Solid Waste Management Plan detailing all major waste streams generated during operation including disposal, segregation, and diversion rates.
- C-121** Participants must achieve at least 85 percent segregation of all waste streams (by weight) to support the site-wide waste strategy.

- G-23** Collection stations for recyclable materials should be integrated into the pavilion design and layout. These stations should be dedicated to the separation, collection, and storage of materials for recycling.

- C-122** Participants must develop a recycling strategy in line with the Organiser's strategy. Further details will be provided in the Event Operations Guides.
- C-123** Participants must avoid using hazardous materials as they are detrimental to the natural environment and are non-reusable. Participants must also interface with site-wide waste network and hazardous waste management during operation. Potentially hazardous wastes include paints, solvents, oil, mercury-containing lamps, electronic waste, and batteries.

- G-24** Containers for collection of recyclable materials should be installed either adjacent to or integrated into the design of other receptacles.

- G-25** Green waste (which requires disposal) should be kept onsite to be recycled.

5.5.6 Emissions

- C-124** All refrigerants and insulation products must have an ozone depletion potential of 0.
- C-125** All insulation products must have a global warming potential of less than 5.
- C-126** Chlorofluorocarbon-based refrigerants must not be used in HVAC and refrigeration systems.
- G-26** Carbon emissions should be reduced by considering the embodied and operational emissions as a result of the design, construction, materials procurement, and operations of the pavilion.

5.5.7 Indoor Environmental Quality

- G-27** Pavilion design should aim to improve the quality of indoor environment through design decisions that passively improve air quality, access to daylight, acoustic conditions, and thermal comfort.
- C-127** Participants must select materials with low or no volatile organic compounds (VOCs), whenever possible, to ensure that 95 percent of internal material finishes, by cost, meet the total VOC content limits as shown in Section 5.8.
- C-128** Participants must select composite wood products with low formaldehyde emissions for joinery application, whenever possible. This is demonstrated by ensuring that 95 percent of materials, by cost, do not exceed the emission levels. Details on the formaldehyde emission limits are provided in Section 5.8.

5.5.7.1 Ventilation

- G-28** Adequate ventilation and exhaust is important to prevent build-up of odours, carbon dioxide, allergens, and toxins in indoor air. Separate exhaust should be provided to food preparation areas, toilets, and waste storage areas.

5.5.7.2 Daylighting

- G-29** Light-coloured surfaces should be used to disperse daylight throughout the space.

5.5.7.3 Indoor Air Quality

- G-30** The design of the HVAC system, if used, should be considered to meet the requirements of ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy.
- G-31** Indoor planting should include species that improve indoor air quality and can support the removal of formaldehyde, benzene, carbon monoxide, and xylene from air.

5.5.8 Sustainability Awareness

- G-32** Educational signage, displays, and any smart technology should be incorporated within the pavilion to highlight the sustainable features of the design and educate the visitors.

5.6 Sustainability Construction Requirements

The sustainability requirements that participants need to satisfy during construction are provided in the following sections.

5.6.1 Materials

- C-129** Participants' contractors must incorporate sustainability assessment into the procurement process for all materials and products, and include this assessment with all material approval requests to ensure compliance with Section 5.5.4.
- C-130** Changes to materials or products must align with the overall sustainability goals for the participants' pavilions. Participants must approve such changes.
- C-131** Procurement of materials must be based on optimised packaging solutions with recycled packaging and/or taken-back/stewardship schemes.

5.6.2 Waste

- C-132** Participants must ensure that their contractors implement the Construction Waste Management Plan (CWMP), which is embedded in the Construction Environmental Management Plan (CEMP), to segregate at least 85 percent of waste (by weight). See Section 7.1.5.

5.6.3 Air Quality

- C-133** Diesel fuel used during construction must include at least 20 percent biodiesel, where technically feasible. If the equipment or vehicle is under warranty, then the manufacturer's fuel type recommendation must be followed.
- G-33** Construction vehicles should use alternative fuel sources such as electricity, fuel cells, or hybrid technology, where possible.
- C-134** The biodiesel component of any fuel suppliers' mix must meet EN 14214 or ASTM D6751 as tested by a laboratory approved to test to this standard. Visual spot checks of fuel may be carried out onsite during construction.
- G-34** To ensure minimal vehicular journeys, participants should optimise trips and schedules related to delivery of goods and removal of packaging by ordering the right amounts of materials.

5.7 Sustainability Performance Reporting

- C-135** Participants must record and maintain information of all their sustainability activities. Records must be updated monthly or when the latest data is available (see Section 10.6.1 and Section 11.3). This information will contribute to the assessment of their performance against sustainability targets and to the site-wide integrated sustainability reporting.
- C-136** Participants must ensure that their contractors maintain the performance of the design at all times to ensure compliance with Expo 2020 Dubai's sustainability requirements. Changes recommended by the contractor must align with the overall sustainability goals for the participants' pavilions. Evidence confirming this must be provided by the contractor where such recommendations occur. Participants must approve such changes.

5.8 Supporting Information

The following resources can be accessed either from the Participant Portal or using the website address provided.

1. ASHRAE 90.1
<https://www.ashrae.org/resources--publications/bookstore/standard-90-1>
2. ASHRAE Standard 55
<https://www.ashrae.org/resources--publications/bookstore/standard-55-and-user-s-manual>
3. ASTM D6751
<https://www.astm.org/Standards/D6751.htm>
4. Connection Guidelines for Distributed Renewable Resources Generation Connected to the Distribution Network (DEWA)
https://www.dewa.gov.ae/images/smartinitiatives/DRRG_Connection_guidelines_final.pdf
5. Construction Environmental Management Plan (including Construction Waste Management Plan)
6. DEWA
<https://www.dewa.gov.ae/en>
7. Dubai Green Economy Partnership
<http://greeneconomy.ae/>
8. Dubai Integrated Energy Strategy 2030
<http://taqati.ae/dies-2030/>
9. EN 14214
<https://www.cenelec.eu/standardsdevelopment/ourproducts/europeanstandards.html>
10. European Standards for Waste Incineration
<http://ec.europa.eu/environment/archives/air/stationary/wid/legislation.htm>
11. Event Operations Guides
12. Green Building Regulations and Specifications in Dubai
<https://www.dm.gov.ae/wps/wcm/connect/662c2fc7-03b4-41a5-aad0-c9d1959773a3/Green+Building+Regulations+and+Speci.pdf?MOD=AJPERES>
13. IES
<http://www.ies.org/>
14. International Energy Conservation Code
<http://www.iccsafe.org/about-icc/government-relations/international-energy-conservation-code-resource-page/>
15. LEED® Gold New Construction Version 4
<http://www.usgbc.org/leed-v4>
16. Ministry of Climate Change and Environment
<http://www.moccae.gov.ae/en/home.aspx>
17. Standards for Distributed Renewable Resources Generators Connected to the Distribution Network (DEWA)
https://www.dewa.gov.ae/images/smartforms/DEWA_Standards_for_Distributed_Renewable_Resources_Generators.pdf

18. Sustainability Policy
19. UAE Federal Customs Authority
<https://www.fca.gov.ae/en/Home/Pages/default.aspx>
20. UAE Green Growth Strategy
<http://www.moccae.gov.ae/default.aspx>
21. UAE Vision 2021
<https://www.vision2021.ae/en>
22. UNEP's Sustainable Public Procurement Programme
<http://www.unep.org/>
23. Formaldehyde Emission Limits and VOC Limits

Formaldehyde Emission Limits

Product Type	Emission Limit/Unit of Measurement
California Air Resources Board ATCM for various composite wood applications http://www.arb.ca.gov/toxics/compwood/compwood.htm	As defined by the standard
AS/NZS 2269:2004, Testing Procedure AS/NZS 2098.11:2005 Method 10 for Plywood https://infostore.saiglobal.com/store/PreviewDoc.aspx?saleItemID=453141	≤ 1 mg/L
AS/NZS 1859:2004, Particle Board with Use of Testing Procedure AS/NZS 4266.16: 2004 Method 16 https://infostore.saiglobal.com/store/PreviewDoc.aspx?saleItemID=448701	≤ 1.5 mg/L
AS/NZS 1859:2004, MDF with Use of Testing Procedure AS/NZS 4266.16: 2004 Method 16 https://infostore.saiglobal.com/store/PreviewDoc.aspx?saleItemID=448701	≤ 1 mg/L
AS/NZS 4357.4, Laminated Veneer Lumber (LVL) https://shop.standards.govt.nz/catalog/4357.4%3A2005(AS%7CNZS)/view	≤ 1 mg/L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) – LVL http://www.maff.go.jp/e/jas/jas/index.html	≤ 1 mg/L
JIS A 5908:2003 Particle Board and Plywood with use of Testing Procedures JIS A 1460 https://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyoid=JIS+A+5908%3A2015&dantaiCd=JIS&status=1&pageNo=0	≤ 1 mg/L
JIS A 5905:2003 MDF with use of Testing Procedures JIS A 1460 http://www.webstore.jsa.or.jp/ebstore/Com/FlowControl.sp?lang=en&bunsyoid=JIS+A+5905%A2014&dantaiCd=JIS&status=1&pageNo=0	≤ 1 mg/L
ASTM D5116 http://www.astm.org/Standards/D5116.htm	≤ 0.1(±0.0005) mg/m ² /h
ISO 16000 Parts 9, 10, and 11 (also known as EN 13419) http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=38203	≤ 0.1(±0.0005) mg/m ² /h (at 3 days)
ASTM D6007 http://www.astm.org/Standards/D6007.htm	≤ 0.1(±0.0005) mg/m ² /h (at 3 days)
ASTM E1333 http://www.astm.org/Standards/E1333.htm	≤ 0.12 mg/m ³
EN 717-1 (also known as DIN EN 717-1) http://www.beuth.de/en/standard/din-en-717-1/72155632	≤ 0.12 mg/m ³
EN 717-2 (also known as DIN EN 717-2) http://www.beuth.de/en/standard/din-en-717-2/2473367	≤ 0.12 mg/m ³

VOC Limits

Product Type	Maximum Total VOC (g/L ready-to-use product)
Paints, varnishes, and coatings	
California Air Resources Board 2007 Suggested Control Measure for Architectural Coatings https://www.arb.ca.gov/coatings/arch/approved_2007_scm.pdf	As defined by the standard
South Coast Air Quality Management District Rule 1113 (USA) http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf	
European Decopaint Directive (2004/42/EC) http://ec.europa.eu/environment/air/pollutants/stationary/paints/paints_legis.htm	
Canadian VOC Concentration Limits for Architectural Coatings http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=117	
Hong Kong Air Pollution Control (VOC) Regulation http://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/air/prob_solutions/files/voc_reg_guide.pdf	
Walls and ceilings – interior gloss	75
Trim – gloss, semi-gloss, satin, varnishes, and wood stains	
Walls and ceilings – interior semi-gloss, low sheen, and flat washable	16
Ceilings – interior flat	14
Timber and binding primers	30
Latex primer for galvanised iron and zincalume	60
Interior latex undercoat and sealer	65
Adhesives and sealants	
South Coast Air Quality Management District Rule 1168 (USA) http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1168.pdf	As defined by the standard
European Decopaint Directive (2004/42/EC) http://ec.europa.eu/environment/air/pollutants/stationary/paints/paints_legis.htm	
Canadian VOC Concentration Limits for Architectural Coatings http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=117	
Hong Kong Air Pollution Control (VOC) Regulation http://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/air/prob_solutions/files/voc_reg_guide.pdf	
Indoor carpet and carpet pad adhesive	50
Wood flooring and laminate adhesive	100
Rubber flooring adhesive	60
Sub-floor and cover base adhesive	50
Ceramic tile adhesive	65
Dry wall and panel adhesive	50
Structural glazing adhesive	100
Architectural sealants	250
Carpets and floor coverings	
Carpets	4-PC (4-Phenylclohexene)
Floor coverings other than carpets (ASTM D5116 or ISO 16000) http://www.astm.org/Standards/D5116.htm	5 mg/m ² /h at 3 days, 0.5 mg/m ² /h at 28 days
Floor coverings other than carpets (ISO 10580) https://www.iso.org/obp/ui/#iso:std:iso:10580:ed-1:v1:en	0.5 mg/m ² /h at 24 hours



6 Designing for Food and Beverage





This chapter contains excerpts from the design and layout guidelines of Dubai Municipality's Food Safety Department. It provides information required to ensure the highest standards of food safety.

Dubai will leverage its distinguished food and beverage appeal to offer a world-class experience to the participants and visitors of Expo 2020 Dubai.

Visitors will be able to choose from a wide variety of quality food and beverage offerings during the Expo event including a full range of dining options from quick service and snacks to fine dining and international cuisines.

6.1 Spatial Planning

The maximum allowed commercial area per pavilion is 20 percent of the ground floor area of the pavilion.

- G-35** Participants' kitchen layout should include adequate space for:
- › Receiving, handling, and storing raw materials
 - › Preparing food
 - › Holding food before service
 - › Cleaning and storing equipment, utensils, crockery, and cutlery
 - › Efficient and effective movement of staff, equipment, materials, and waste
 - › Storing packaging materials
 - › Storing cleaning tools

6.1.1 Space Calculation

G-36 Participants should ensure that there is enough space in the premises for staff to handle food and perform other food-related activities. The amount of space allocated for activities should be based on the following criteria:

- › Quantity of food to be prepared per day (an estimate number of meals or portions)
- › Type of menu and process involved in preparing the food
- › Days and hours of operation
- › Number of staff who will work in the kitchen per shift
- › Shape, size, and number of equipment used for food preparation and storage
- › Type of facilities available for staff such as changing room, lockers, and handwash area

6.1.2 Minimum Space Requirement

G-37 To maintain effective movement of staff through spaces in a kitchen, participants should follow the recommended minimum area per person according to use of equipment, which is 10 m².

6.2 Workflow

The layout and design of the premises need to allow smooth and continuous workflow, from delivery of raw materials to storage, through to preparation and serving of the food and beverages. This will facilitate efficient operation supervision, better productivity, and cost effectiveness.

6.2.1 Continuous Flow

C-137 The flow of raw materials, work in progress, finished goods, equipment, and personnel must be continuous. Work progress must be in a single logical linear flow to avoid cross-contamination.

C-138 Clean and dirty operations as well as pre-cook and post-cook operations must be segregated to prevent the risk of cross-contamination.

6.2.2 Physical Separation

C-139 The production or handling of high-risk finished foods, such as cooked foods, must have complete physical separation in terms of product, equipment, utensils, and tools.

6.2.3 Floors

C-140 Floors must be constructed of smooth, durable material.

C-141 Floors that are water-flushed for cleaning, or that receive water or fluid waste discharge from equipment, or where pressure spraying is used for equipment cleaning must be graded to drain and must have properly installed trapped floor drains and floor drain covers.

G-38 Duckboards and mats, if used, should be of non-absorbent, grease-resistant materials and easily cleanable.

6.2.4 Walls

C-142 Walls, non-supporting partitions, and wall coverings in preparation areas, equipment washing facilities, and toilet rooms must be light-coloured, smooth, non-absorbent, and easily cleanable.

C-143 Wall-to-floor joints must be coved to facilitate cleaning.

6.2.5 Ceilings

C-144 Ceilings in food preparation areas, equipment washing facilities, and toilet rooms must be light-coloured, smooth, non-absorbent, and easily cleanable with no exposed rafters, drainage pipes, or any material that would contaminate food.

6.2.6 Lighting

C-145 The premises must be supplied with sufficient natural or artificial light to ensure safe and sanitary food and beverage production and to facilitate cleaning. Unless specified, the minimum lighting intensities must be:

- › 110 lux in walk-in coolers, dry food storage areas, and all other areas and rooms during periods of cleaning
- › 220 lux in areas where fresh produce or packaged foods are sold or offered for consumption; in areas used for handwashing, warewashing, and equipment and utensil storage; and in toilet rooms
- › 540 lux at the surface where a food handler is working with unpackaged potentially hazardous food or with food utensils and equipment such as knives, slicers, grinders, or saws where handler's safety is a factor

G-39 Light should be shielded when over or within food storage, preparation, service, and display areas as well as equipment cleaning and storage areas.

6.2.7 Utensils and Equipment

G-40 Participants should provide adequate operations equipment to maintain the required temperatures of food during transportation, storage, display, preparation, and service.

C-146 Non-portable equipment that is placed on a table or counter must be sealed to the table or counter, or elevated on legs.

C-147 Floor-mounted equipment must be sealed to the floor, or installed on a raised platform of smooth masonry (meeting the requirements of floor clearances), or elevated on legs with at least 102 to 153 mm clearance from the floor.

C-148 Equipment must have sufficient space around it to facilitate cleaning.

6.2.8 Food Contact Surfaces

C-149 Food contact surfaces must be made of non-absorbent, safe, smooth, easily cleanable, durable, and corrosion-resistant materials such as stainless steel, hardwood, or plastic.

C-150 Wooden counters or shelves must not be used in food preparation areas.

6.2.9 Temperature and Humidity

- C-151** Provisions must be made to ensure that the temperature in the kitchen is comfortable. The recommended temperature is less than 30°C and the recommended humidity is less than 60 percent.
- C-152** When food is prepared in partially enclosed area, measures must be put in place to ensure that food handlers are not at risk.

6.2.10 Pest Control

- C-153** The premises must be pest-proof and protected against entry of insects, rodents, and birds.
- C-154** The premises must use tight-fitting and self-closing doors, closed windows, and screening not less than 16-mesh to the inch. Air curtains, plastic curtains, or a combination of both must be used on the doors leading to outdoors.
- G-41** Electronic fly killers should be installed in suitable location, ideally between 2 to 2.5 m in height. The units should be placed on the side of the doors and not directly facing the open door to prevent the light from attracting insects from outside the room and making the problem worse. Units should also be installed away from sensitive areas and not directly above the food preparation area.

6.2.11 Utility and Mop Room

- C-155** The premises must have a service sink with floor drain for cleaning mops and for disposing of liquid waste, and a chemical storage cabinet with lock (of suitable size), resistant shelving, and ventilation.

6.2.12 Laundry

- C-156** The premises must have a storage area for dirty linen and uniforms, away from food and cleaning equipment.
- G-42** Clean uniforms and linen should be stored in a clean area that is protected from contamination. Cabinets can be used in areas where open food is not handled.

6.2.13 Employee Facilities

- G-43** The premises should have adequate space and should be conveniently located and easily accessible to toilet facilities. It should also provide a designated area or room for routine change of clothes, and adequate and secure storage facilities, such as lockers, for employees' personal belongings.

6.2.14 Receiving Area

- G-44** An area should be allocated for receiving and de-boxing foods with primary packaging that could be contaminated. This area should be equipped with handwashing sink, receiving scale, sorting table for separating spoiled or contaminated food, containers for boxes and trash, and space for return items.

6.2.15 Dry Storage Area

- G-45** The dry store should be of suitable size enough to store all dry foods, food contact equipment, and unused packing materials that come in direct contact with food. It should also have sufficient racks that are made of durable and easy-to-clean materials.

6.3 Food Preparation and Storage

The provision of food preparation and storage areas will be based on the type of food and processes involved in the business.

6.3.1 Food Preparation Facilities

- C-157** A preparation sink with adequate work surface areas (tables) must be allocated separately for:
 - › Raw meat and poultry products (including eggs)
 - › Raw fish
 - › Raw vegetables, especially vegetables that are intended to be cooked before consumption and root vegetables that are usually contaminated with soil or dirt
 - › High-risk foods such as cooked foods, salads, and other ready-to-eat foods
- G-46** The size of the preparation table and sink should be based on the quantity of food handled. Standard sizes should be used as a minimum requirement.
- C-158** The premises must have an accessible handwash sink.
- G-47** Areas or processes that may pose cross-contamination, such as toilets, clean-up and chemical storage areas, should be reasonably separated from food preparation and processing areas.
- G-48** Work areas should consider the following dimensions:
 - › The recommended aisle space is at least 1,067 mm.
 - › If employee uses one side of the aisle, the recommended aisle space is at least 762 mm.
 - › If employee uses both sides of the aisle, the recommended aisle space is at least 1,067 mm.
 - › If employee must pass behind workers on both sides of the aisle, the recommended aisle space is between 1,067 to 1,220 mm.
- G-49** The size of the doors should be 915 mm, 1,067 mm, 1,220 mm, or 1,524 mm for double doors.

6.3.1.1 Requirements for Preparation of Special Foods

- C-159** Special foods must be displayed or sold in an area that is physically and completely separate from other foods.
- C-160** Non-special foods or products must be cooked in designated ovens. If cooked in common ovens, non-special foods must be cooked last, and then isolated from any other food products.
- C-161** Warmers for non-special foods must not be used for special foods.
- C-162** Plates, utensils, and equipment used for non-special foods must be washed separately, preferably in a separate dishwashing machine. Use disposable plates and utensils, if possible.
- C-163** Non-special foods must not be prepared or stored in areas that are designated for special foods.

6.3.2 Storage Facilities for Refrigerated and Frozen Food

- G-50** Raw meat and fish should be stored separately from high-risk foods to prevent cross-contamination. Where possible, separate chillers and freezers should be used for storing high-risk foods.
- G-51** Refrigerators and freezers should be of adequate size, consistent with the quantity of food stored, to avoid overcrowding and disruption of circulation of cold air inside.

6.4 Pot and Pan Washing

- G-52** The pot and pan washing area should have at least one 2-compartment sink of suitable size to handle the volume of food.
- C-164** The sink compartments must be large enough to submerge the largest pan and cutting boards.
- C-165** An adequate landing area, such as landing table or portable shelving, must be provided for clean pots and pans.

6.5 Dishwashing Facility

- C-166** Participants must provide an automatic or manual dishwashing facility that is suitable for the size of their operation.

6.6 Handwashing Area

- G-53** Participants should provide foot- or sensor-operated handwashing stations in all work areas.
- C-167** Handwashing stations must have sufficient flow of water and must be equipped with liquid soap dispenser, paper towel dispenser, and proper handwashing signage.

6.7 Ice Machine

- C-168** Ice machine, if used, must be located in a place free from contamination and must have water filter with easy access for cleaning.

6.8 Permit and Licencing Requirements

The Organiser will facilitate the submission of the design and layout of the food preparation and handling sites (master layout) to the Food Safety Department of the Dubai Municipality. In addition, the Organiser will also ensure that relevant permissions are obtained within the required timescales.

To obtain the necessary permit, participants are required to completely fill out the application form for Temporary Food Events, which will include the following details:

- › Layout and workflow
- › Number of people who will work on site
- › Number of people anticipated to be served
- › List of foods to be served
- › Food source
- › Food preparation techniques and mode of transportation of food
- › Precautions to be taken to prevent contamination

All participants are advised to consult with the Dubai Municipality for further updates on the necessary documentation to obtain the relevant permits.

6.9 Supporting Information

The following resources can be accessed using the website address provided.

1. Dubai Municipality
<https://www.dm.gov.ae/wps/portal/home>
2. Design and Layout Requirements for Food Establishments (by Dubai Municipality's Food Safety Department)
<http://www.foodsafe.ae/pic/business-requirements.aspx>



7 Managing Construction Logistics



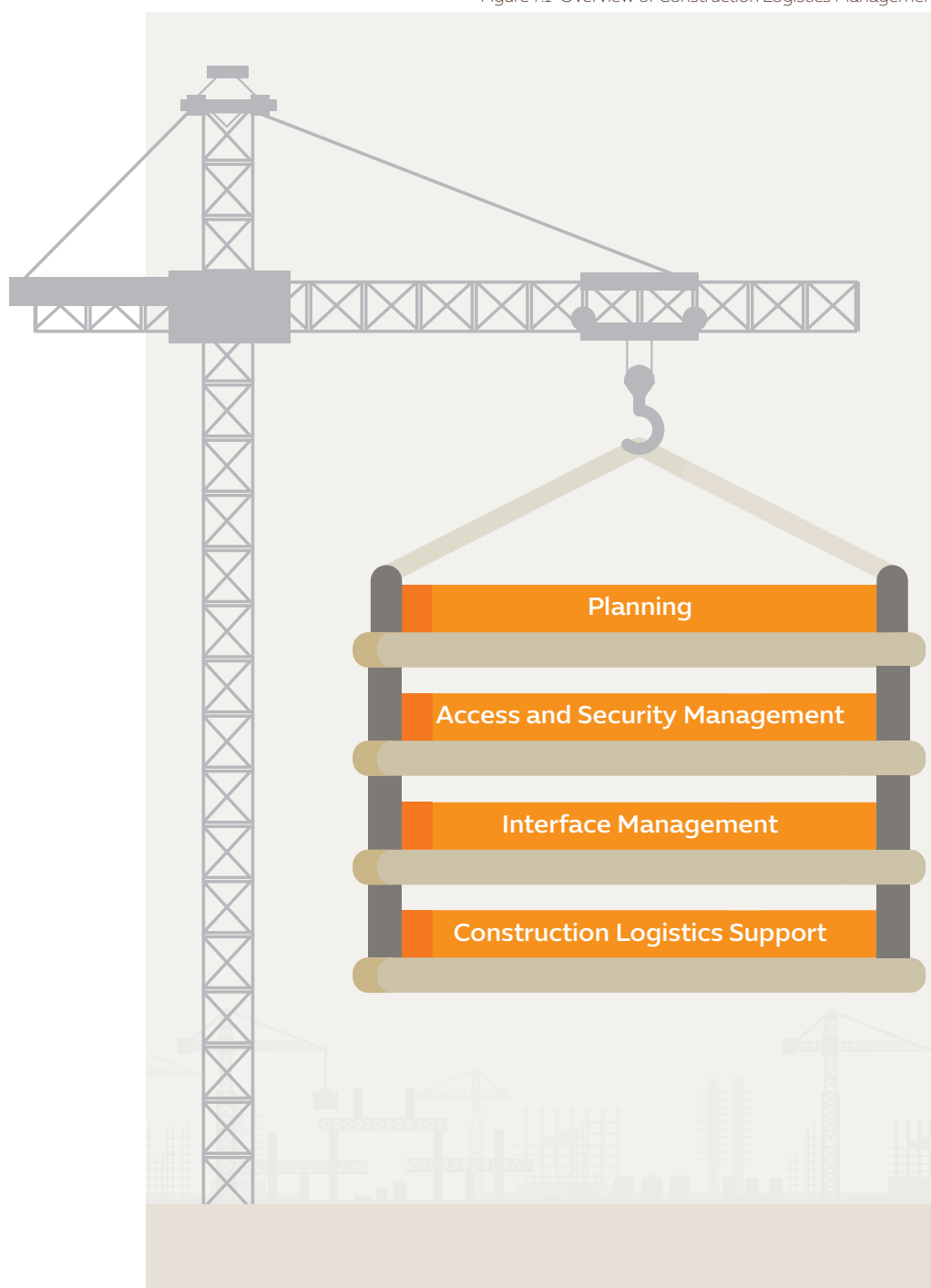


This chapter provides a set of controls and guides on site management to support the participants during construction.

The Organiser has developed a Contractor Site-Wide Logistics Obligations document to assist the participants in managing their pavilion-specific logistics in tandem with site-wide activities.

This document is available on the Participant Portal and will be updated regularly to reflect changes to construction logistics activities. Figure 7.1 shows an overview of the topics covered in this chapter. Event logistics will be discussed in a separate Guide.

Figure 7.1 Overview of Construction Logistics Management



7.1 Construction Logistics Planning

From possession of their pavilion up to the opening of the Expo event, participants will work within a large site that will be in full construction mode, hence they are encouraged to effectively and efficiently plan their activities.

The Organiser (One-Stop Shop) will provide construction logistics support to all participants during construction. This support will include construction logistics planning, access control and traffic management, site-wide construction emergency response, and allocation of space and laydown areas.

C-169 Participants must submit a Construction Logistics Plan to the Organiser through the Participant Portal as part of the Pavilion Possession Request at least 20 working days before the planned date for possession (see Section 1.5.2). The plan must detail the management of the participants' construction logistics arrangements including:

- › Schedule of deliveries (approximate number and timing of anticipated deliveries, heavy goods vehicles, and light vehicles)
- › Workforce forecast
- › Construction strategy
- › Serious incident notification process
- › Crane operations strategy for any works to external facades, pavilion signage, or similar works (subject to the Organiser's approval)
- › Pavilion layout including the location of welfare facilities
- › Vehicle and pedestrian access and egress routes
- › Vehicle loading/unloading areas and manoeuvring areas
- › Temporary fire alarm and firefighting equipment
- › Worker bussing drop-off and pickup points
- › Agreed assembly points
- › Waste management arrangements
- › Security management within pavilion
- › Any movements of construction equipment within the Expo site that may need an escort or other special measures
- › Pavilion access and egress strategy and facility management/operations plan

C-170 Participants must take all the necessary measures to limit the risks and effects of their activities on adjacent pavilions and on the Expo site as a whole. These measures include confining construction activities in their pavilion. For exceptional cases, see Section 7.4.

C-171 During their own construction activities, participants must not cause damage to the completed works or works under construction by the Organiser or other participants.

C-172 Participants must report and take liability for any damage caused by themselves or their contractors to any works within the Expo site. If required by the Organiser, participants must repair any damaged works or refund the costs of any repairs sustained by the Organiser or other participants.

C-173 Participants must conduct their construction activities within their pavilion and in coordination with the adjacent pavilions and the site-wide work to:

- › Minimise the risk of injury to people working near their pavilion
- › Minimise disruption or delay to works of participants on adjacent pavilions or to other nearby construction activities

C-174 The necessary statutory authority documentation and pavilion identification name/number must be displayed to the pavilion entrance and clearly visible at all times.

7.1.1 Expo Site Construction Operations Hours

During construction, the Expo site will be accessible 24 hours a day, 7 days a week; however, the Organiser has the right to close or limit access to the Expo site or evacuate the site for operational or emergency reasons.

7.1.2 Project Offices and Temporary Buildings

C-175 Project offices and temporary buildings during construction must be contained within the pavilion.

C-176 To set up an alternative temporary establishment or office accommodation, participants must submit a Laydown Area Access Request to the Organiser through the Participant Portal at least 20 working days before the required access. The request form is available on the portal. Approval of the request will be on a first come, first serve basis depending on the availability of space.

C-177 Participants must take responsibility for transporting their workforce to their pavilions.

7.1.3 Temporary Utilities and Services

C-178 Participants must provide their own temporary supply of power, construction water, and sewage collection until connection is made to permanent services. The Organiser will provide utility services on a rate card basis, if required.

C-179 Participants must pay the costs of all utility consumption in their pavilion.

C-180 If temporary toilets are adopted by participants, then sewage disposal must be in accordance with the requirements of the statutory authorities, and sewage must be collected at night to reduce daytime congestion on the site.

C-181 Participants must adopt their own temporary telecommunications arrangements until a permanent connection is completed.

7.1.4 Plant and Materials Delivery, Handling, and Storage

C-182 Participants must comply with the local regulations on the delivery, handling, and storage of construction materials and equipment.

C-183 Participants must take responsibility for the movement of their goods from outside of the Expo site to their pavilion.

C-184 Participants must provide their own mechanical handling equipment to handle materials.

C-185 All requests for vehicle access to the Expo site must be booked using the Delivery Management System which is accessed via the Participant Portal. Time slots for vehicle access will be allocated to regulate the flow of vehicles to the site.

G-54 Delivery vehicles may be subject to security inspection on arrival and on departure. Participants should factor this time into their delivery schedule. Inspection duration is dependent on the type and content of the goods in a vehicle.

C-186 Participants must offload their plant and materials within their pavilion. Where there is no space available within their pavilion, participants must offload their goods directly outside of the pavilion in areas approved by the Organiser. See Section 7.4.

7.1.5 Housekeeping and Waste Management

The Organiser will appoint a site-wide waste management contractor to collect waste from pavilions. Details on the availability and operations of the contractor will be communicated to the participants through the Participant Portal.

During construction, decommissioning, and removal, participants may choose an alternative waste management contractor if they wish to do so.

C-187 Participants and their contractors must achieve at least 85 percent segregation of waste (by weight). See Section 5.6.2.

C-188 Waste must be contained within the participants' pavilions before disposal. Regular waste collection must be arranged to reduce fire risk.

G-55 Participants' Construction Logistics Plans should present the best housekeeping practices and the most efficient use of space available in the pavilion.

G-56 Where space permits, participants should segregate waste in their pavilion before collection.

C-189 Areas immediately outside of pavilions must be clear of waste at all times.

C-190 Waste and any loose materials must be properly secured to prevent it from being blown around or out of the participants' pavilions.

C-191 Participants must bear the costs of waste collection and disposal even if they use the services of the site-wide waste management contractor.

7.1.6 External Cranes or Access Equipment

C-192 Participants must request facilitation for crane coordination with other parties working on the site from the Organiser (through the One-Stop Shop), where required.

C-193 Crane jibs, equipment, or suspended loads must not operate above (over sail) adjoining pavilions or work zones of others without prior approval from the Organiser. See Section 7.4.

7.2 Access and Security Management

As works progress on the Expo site, access control and security management will evolve to adapt to the requirements of the site. Updates to access control and security management will be communicated to the participants.

The Organiser will develop a site-wide Construction Emergency Plan. All parties onsite will be required to comply with the requirements of this plan in their construction logistics planning.

7.2.1 Security Responsibility

The Organiser will manage access to and traffic within the Expo site, and issue accreditation, vehicle passes, and visitor passes during construction.

Participants are responsible for any losses or damages to their assets. The Organiser will not indemnify any losses or damages.

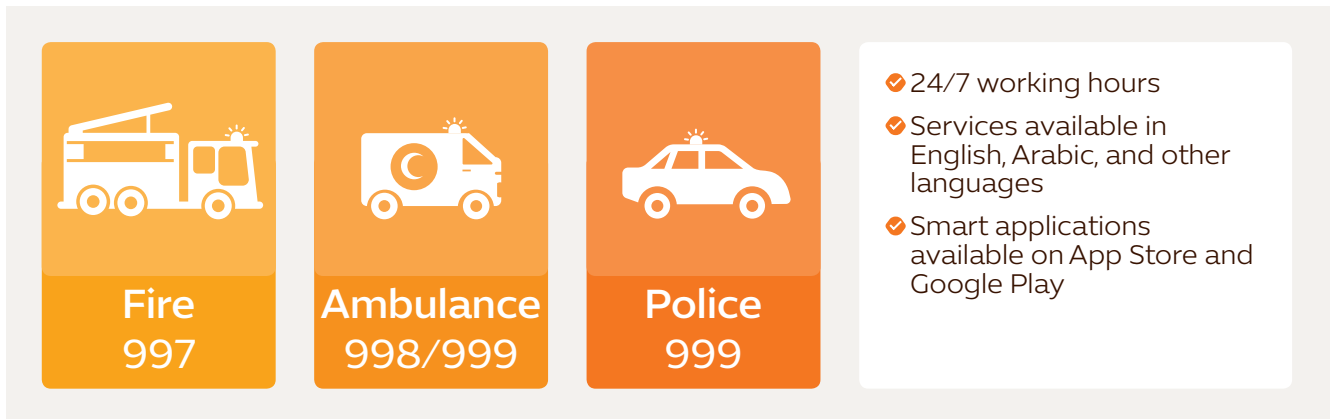
C-194 Participants must provide security arrangements, such as manned guarding, to safeguard their plant, equipment, and other assets in their pavilion.

C-195 Participants must ensure that a procedure is in place to facilitate the Organiser's access to their pavilion in the event of serious incidents such as fire outbreak. The Organiser must have full access to the pavilion to ensure timely response to emergencies.

C-196 If an incident requires attention from emergency services, participants must do the following:

- › Directly call the emergency services and provide full information of the nature and location of the incident. Toll-free telephone numbers are shown in Figure 7.2.

Figure 7.2 Emergency Services Contact Numbers



- › Inform the Organiser's security team of the incident in accordance with the serious incident notification process (see Section 11.1.2). Provide the Organiser with the name and contact details of the person making the call, and the exact location and nature of the incident. The contact number of the Organiser's security team will be provided to participants. This team is available 24 hours for assistance.
- › Where possible, immediately dispatch a representative in a vehicle to the agreed site entrance to meet the emergency services response team and guide them to the incident.

7.2.2 Security Locations

The Organiser has round the clock security presence at all site access points. Access and egress control will be implemented at each site entrance. Further access and egress locations may be added in accordance with operational requirements.

The Organiser's security teams will frequently patrol the common areas of the Expo site.

7.2.3 Vehicle Pass (Excluding for Deliveries)

C-197 All vehicles accessing the site will need to have a valid pass issued by the Organiser and appropriate insurances. Vehicle passes must be displayed on the windscreen at all times. Applications for single- or multi-trip vehicle passes must be submitted to the Organiser through the Participant Portal at least 3 working days in advance of the intended arrival. Vehicle passes will be issued at the discretion of the Organiser.

C-198 Participants and their consultants and contractors must strictly adhere to site rules and regulations printed on the vehicle pass. The Organiser will withdraw vehicle passes and implement further restrictions for traffic violations such as overspeeding.

Speed bumps may be used across the site, hence vehicles with very low ground clearance will be unsuitable for use on the site.

7.2.4 Accreditation

C-199 Workforce entering the site must have valid accreditation issued by the Organiser (One-Stop Shop). All members of the workforce must carry the accreditation at all times.

C-200 For the workforce to be issued with access accreditation, participants must provide the Organiser with a dataset of their workforce information on a Microsoft Excel spreadsheet through the Participant Portal. The spreadsheet must be accompanied with the following documents:

- › Scanned copy of passport
- › Electronic copy of passport-compliant photograph
- › Valid UAE work visa
- › Emirates ID (if available)

C-201 Original Emirates ID or original passport with a valid UAE work visa must be presented to collect accreditation.

C-202 Request for a single accreditation pass must be submitted to the Organiser through the Participant Portal at least 1 working day in advance of the intended arrival on site. To allow efficient processing of 10 or more accreditations, participants must submit their workforce information dataset to the Organiser through the Participant Portal at least 3 working days in advance of the intended arrival.

7.2.5 Visitor Pass

C-203 All visitors must obtain a visitor pass to enter the Expo site. Request for a visitor pass must be submitted to the Organiser through the Participant Portal at least 1 working day in advance of the intended arrival on site.

C-204 Visitors must be picked up in a vehicle from the main site entrance by a host who holds valid accreditation. The host must escort the visitors for the duration of their visit and escort them back to the main site entrance on conclusion of the visit.

7.3 Roads and Traffic Management

The Organiser will oversee and manage access to all areas of the Expo site to ensure safe and prompt movement of people and goods. For an overview of the general site, including indicative site perimeter fence, security fence, and site entrances, see Figure 7.3.

As part of the preparations for Expo 2020 Dubai, extensive external highway construction works are planned around the Expo site which may increase congestion in the area.

G-57 Participants should account for local traffic conditions when planning movement of people and goods to the Expo site. The Organiser will periodically update the participants with information about the conditions of roads around the site through the Participant Portal.

C-205 Abnormal loads routing to the Expo site must comply with the local and national highway regulations.

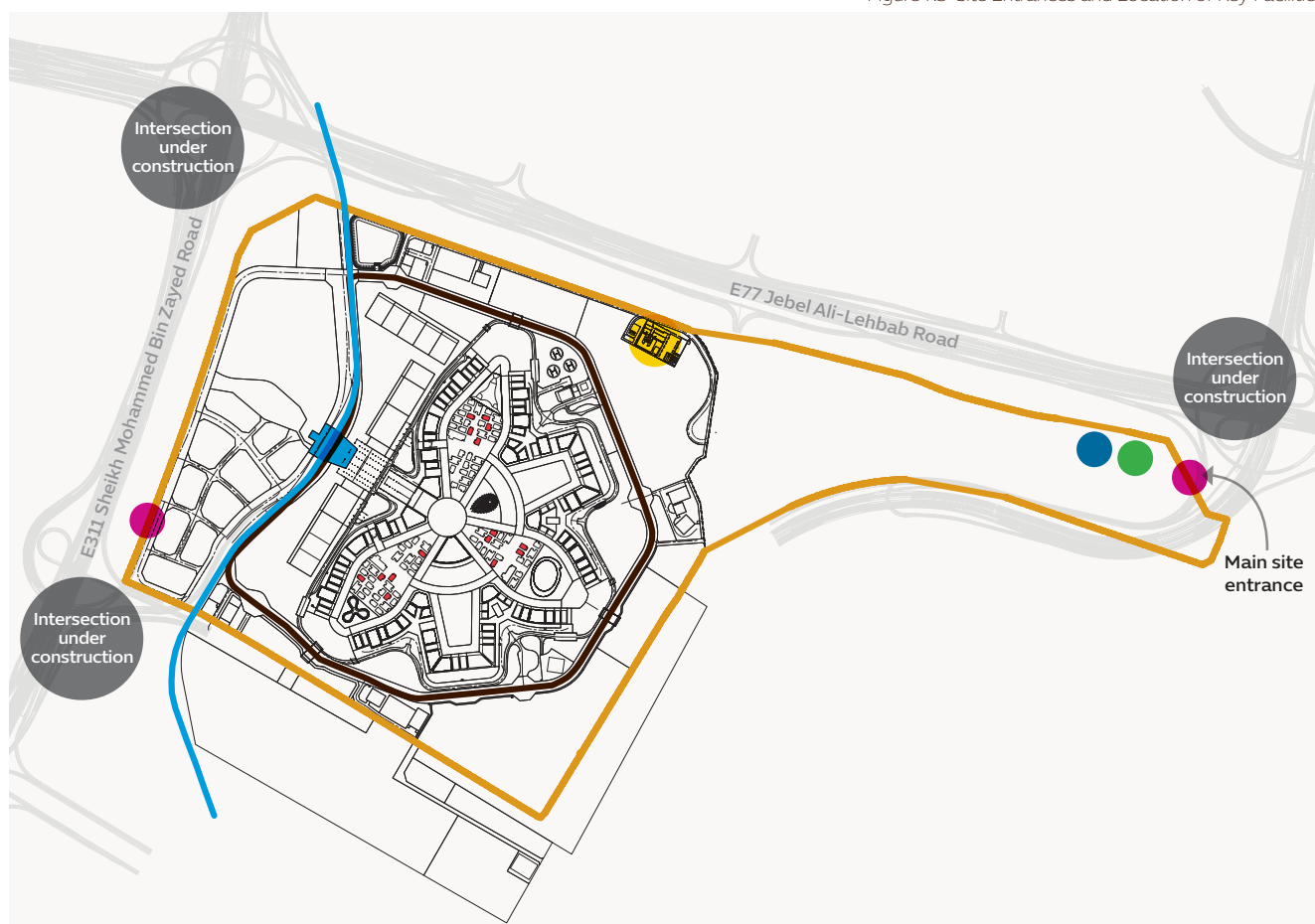
7.3.1 Access to the Expo Site

C-206 Workforce and visitors must use vehicles to access the Expo site. Due to the location of the site, pedestrians cannot walk to the site from the highway. Walking between work locations on the site is currently prohibited except on designated pedestrian walkways.

C-207 To transport the workforce from the site entrance to their own pavilions, participants must arrange their own transportation that connects with external pickup locations and satellite car parks during construction as may be provisioned within the Expo site.

C-208 Vehicles accessing the Expo site, including private vehicles, must be equipped with appropriate lights as stated in the Health and Safety Assurance Standards. See Section 8.3.

Figure 7.3 Site Entrances and Location of Key Facilities



KEY

- | | |
|--|--|
| ● Expo 2020 Main Office | Security Fence |
| ● Site Entrances | Site Perimeter Fence |
| ● Hire Centres/Shops (indicative location) | — Metro Line and Station |
| ● Site-Wide Waste Management Compound (indicative location) | ■ Rented Pavilions |

- C-209** Motorcycles, taxis, and ad hoc catering and food deliveries are permitted up to the Expo site entrance only. Participants must make arrangements to collect such deliveries from the site entrance.
- C-210** Participants must pre-book all their deliveries via the Delivery Management System on the Participant Portal. Couriers will not be admitted to site unless pre-booked. Alternatively, participants may use the Organiser's Official Logistics Partner for courier shipments from home country to the participant's pavilion – at the participant's expense. See Section 14.4.
- C-211** Bookings of vehicles entering the site must identify all passengers.
- C-212** Participants must note that security checks may take place on persons and vehicles at the site entrances, and further checks will be required on entry and exit from the security fence.
- C-213** Vehicles entering the site must not bring any kind of animals or contraband such as alcohol, non-prescription drugs, explosives, firearms, or any other weapons.

7.3.2 Site Entrances

For operational reasons, entrances to the Expo site from the external highway may change location from time to time. Updates will be communicated via the Participant Portal as soon as they are available. An up-to-date Site Entrances Plan will be maintained on the portal.

Based on the positions of individual pavilions and the requirements of the Expo site, the Organiser may identify one or more specific site entrances for use by the participants. See Figure 7.3.

7.3.3 Site Roads

The primary access for vehicles across the development will be initially via the temporary site roads and later by permanent infrastructure when it becomes available. Site roads will extend to designated drop-off points at the Thematic Districts. Temporary site road layouts are subject to constant review or alteration, and will be developed further as works progress.

- C-214** Site roads must always be clear of obstacles. Materials cannot be stored and vehicles cannot be parked on or adjacent to the site roads.
- C-215** In the event that a participant temporarily needs to partially block a site road for an essential construction activity, an approved Authority to Proceed must be obtained from the Organiser. See Section 7.4.
- C-216** Vehicles must not stop or wait on site roads or back-of-house service aprons. Parking areas will not be provided within the Expo site except for any clearly marked satellite car parks during construction as may be provisioned by the Organiser.

7.3.4 Site Road Signage and Lighting

The Expo site is a 24-hour work site, hence, access lighting and safety/directional signage will be installed, as appropriate, on all site roads.

- C-217** Signage and access lighting in the participants' pavilions and any allocated laydown areas onsite are the responsibility of the participants. Participants must comply with the legal requirements and the Health and Safety Assurance Standards (see Chapter 8) on signage and lighting necessary for a safe working environment.

7.3.5 Traffic Management

Directional signage will be installed along the external highways and other nearby roads to guide vehicles and personnel to the site entrances.

- C-218** Drivers must comply with the speed limits on the site and the UAE traffic law such as wearing seatbelts and not using mobile devices while driving. Maximum speed limit on site roads is generally 30 km/h, but may differ in certain locations. Such locations will have appropriate signs specifying the speed limits. Site road signage, speed control measures, and traffic controls will be installed for safe operation of the site.
- C-219** Participants must adhere to the designated routes, including access points, within the Thematic Districts.

7.4 Authority to Proceed

- C-220** In exceptional circumstances, participants may need to conduct temporary construction logistics activity from space outside their pavilion. In such cases, participants must obtain approval from the Organiser by submitting an Authority to Proceed (ATP) form through the Participant Portal at least 20 working days in advance of the intended activity.
- C-221** Applications for ATP will be reviewed taking into account planned activities outside of the participants' pavilions to avoid any clashes. Works must only proceed with formal written ATP approval from the Organiser.

7.5 Inaccessible Voids

- C-222** Participants must obtain approval from the Organiser (One-Stop Shop) before bringing equipment or materials with inaccessible voids on to the site. The Organiser will provide information on the inspection requirements through the Participant Portal. The void may need to be inspected onsite or at the fabrication plant by a qualified void inspector before closure. Inspection will be as directed by the Organiser and at the expense of the participant.

7.6 Deliverables

Table 7.1 lists the deliverables that the participants are required to submit to the Organiser in relation to this chapter.

Table 7.1 Deliverables

Deliverable Name	Reason for Issue	Time of Issue	Reference
Construction Logistics Plan (including manpower and delivery vehicle forecasts)	For information	At least 20 working days before the planned date for possession	C-169

7.7 Supporting Information

The following resources can be accessed from the Participant Portal.

1. Accreditation, Vehicle Pass, and Visitor Pass Application Forms
2. Authority to Proceed Application Form
3. Contractor Site-Wide Logistics Obligations
4. Laydown Area Access Request Form
5. Site Entrances Plan
6. Site-Wide Construction Emergency Plan



8 | Complying with Health and Safety Standards





Expo 2020 Dubai puts 'Health and Safety First' to deliver 'Target Zero.' At the core of this Target Zero objective is ensuring that no one gets hurt or suffers ill health as a result of working on Expo 2020 Dubai.

8.1 Legal and Other Health and Safety Requirements

- C-223** All participants, consultants, and contractors must adhere to the following:
- › Relevant laws of the UAE and Dubai, including decrees, regulations, orders, guidelines, decisions, or directives issued by the relevant authorities
 - › International standards, codes of practices, and other requirements as identified in the Health and Safety Assurance Standards (see Section 8.3)
 - › Relevant manufacturer's instructions and guidelines

8.2 Health and Safety Policy

The Organiser has developed a Health and Safety Policy that is aligned with and fully committed to complying with the laws of the UAE and Dubai. The Health and Safety Policy is available on the Participant Portal.

8.3 Health and Safety Assurance Standards

The Health and Safety Assurance Standards is a document that describes the operational practices and health and safety standards that need to be adopted by the participants' consultants and contractors to ensure the successful implementation and management of the Organiser's health and safety policies and goals.

The Health and Safety Assurance Standards is available on the Participant Portal.

- C-224** Participants must ensure that their consultants and contractors cascade the Health and Safety Assurance Standards to their supply chain.

The criteria for prequalification of contractors are included in the Health and Safety Assurance Standards.

8.4 Health and Safety Plans

- C-225** Participants must ensure that their consultants prepare a Health and Safety Management Plan which includes arrangements for monitoring, auditing, and reporting on their contractors' implementation of the Health and Safety Assurance Standards. Consultants must submit this plan to the Organiser through the Participant Portal for information at least 20 working days before pavilion possession.

C-226 Participants must ensure that their contractors submit a Construction Health and Safety Plan to their consultants for approval. Consultants must submit this plan to the Organiser through the Participant Portal for information no later than 10 working days after pavilion possession.

G-58 Health and Safety Plans should be relevant, sufficiently detailed, clear, concise, and proportional to the scale and complexity of the project and the risks involved.

Health and Safety Plan Checklists outlining the requirements for the plans are available on the Participant Portal.

8.5 Health and Safety Performance Monitoring

Participants are required to support the consultants and contractors, monitor their performance, and drive compliance to achieve the overall aims and objectives of the Health and Safety Assurance Standards.

C-227 Participants must ensure that their contractors prepare a Health and Safety Monthly Report (see Section 11.3) that measures and reports against the requirements presented in the Health and Safety Assurance Standards. A report template is available on the Participant Portal.

G-59 Participants should ensure that their consultants monitor health and safety performance by reviewing the reports of their contractors and inspecting and auditing their contractor's arrangements (see Section 11.4).

8.6 Work Management Measures

The Organiser, stakeholders, and statutory authorities will periodically review the construction activities on the Expo site.

C-228 Risk assessments, method statements, and additional control measures for high-risk works must be developed to manage health and safety hazards.

C-229 Risk assessments must consider work activities and the work environment.

C-230 Key control measures from risk assessments must be built into method statements. Task briefings must be given to the workforce to ensure that methods are known and understood by all.

8.7 Health and Safety Competence

Participants' consultants and contractors are required to have the appropriate knowledge, skills, and experience to safely undertake tasks. Further details are provided in the Health and Safety Assurance Standards.

C-231 Participants must submit the CV of their consultant's health and safety lead to the Organiser through the Participant Portal for information at least 20 working days before pavilion possession. Participants must also submit the CV of their contractor's approved health and safety lead to the Organiser through the Participant Portal for information no later than 10 working days after pavilion possession.

C-232 Participants must ensure that their contractors develop a pavilion-specific induction presentation and deliver it to all personnel entering the pavilion. The induction must include Organiser-specific induction material which will be available on the Participant Portal.

8.8 Mobilisation Requirements

C-233 At least 20 working days before pavilion possession and mobilisation, participants must submit a Health and Safety and Worker Welfare Commitment Statement, from their chosen contractor, to the Organiser through the Participant Portal. The Commitment Statement must confirm the contractor's intention to comply with and uphold the Health and Safety Assurance Standards and the Worker Welfare Assurance Standards (see Section 9.3). The Commitment Statement must be signed by the selected contractor's most senior executive, submitted to the participant, and then issued to the Organiser through the Participant Portal for information. A Commitment Statement template is available on the portal.

Consultants are required to submit their Health and Safety Management Plan to the Organiser through the Participant Portal before mobilisation as identified in Section 8.4.

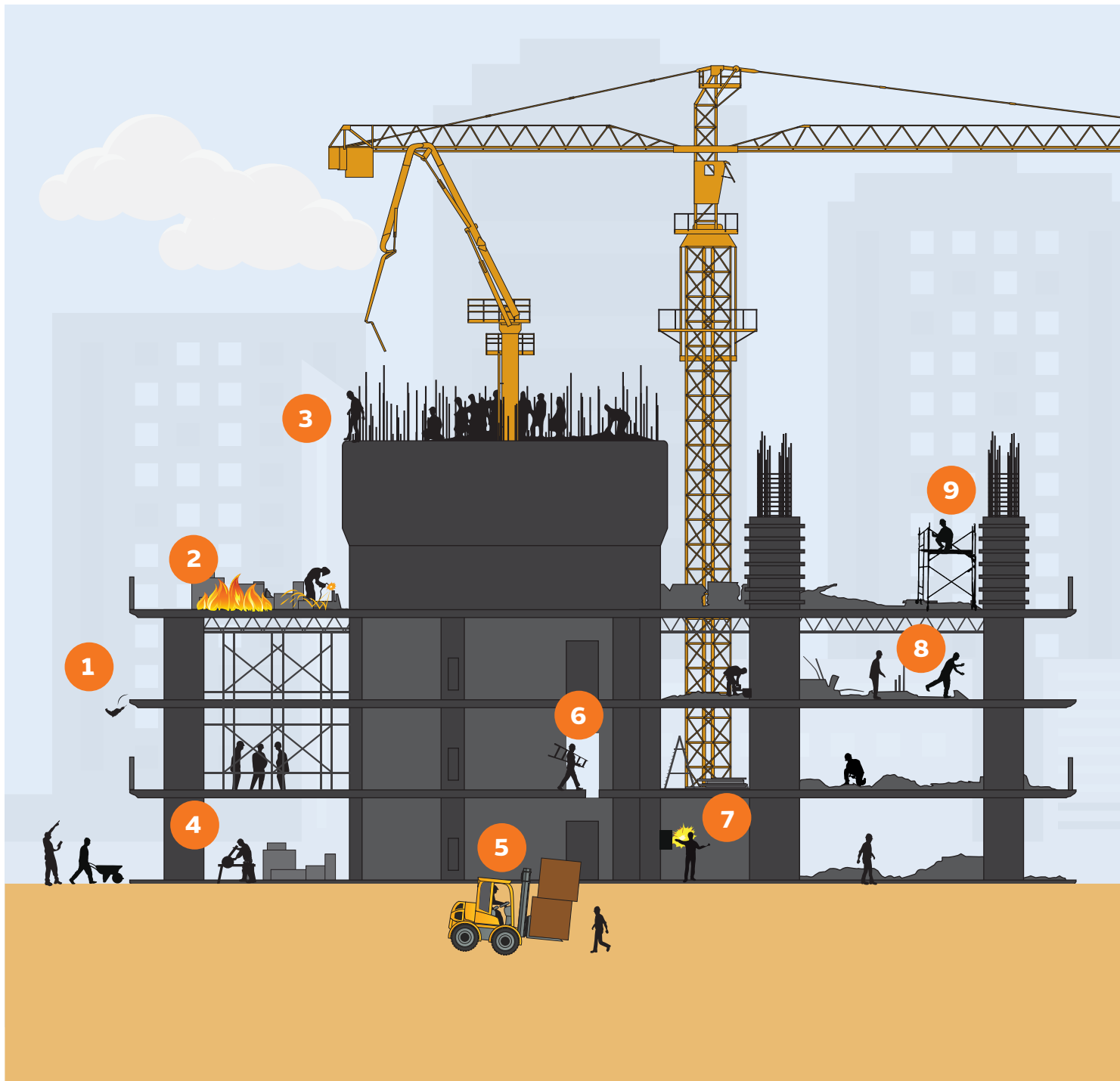
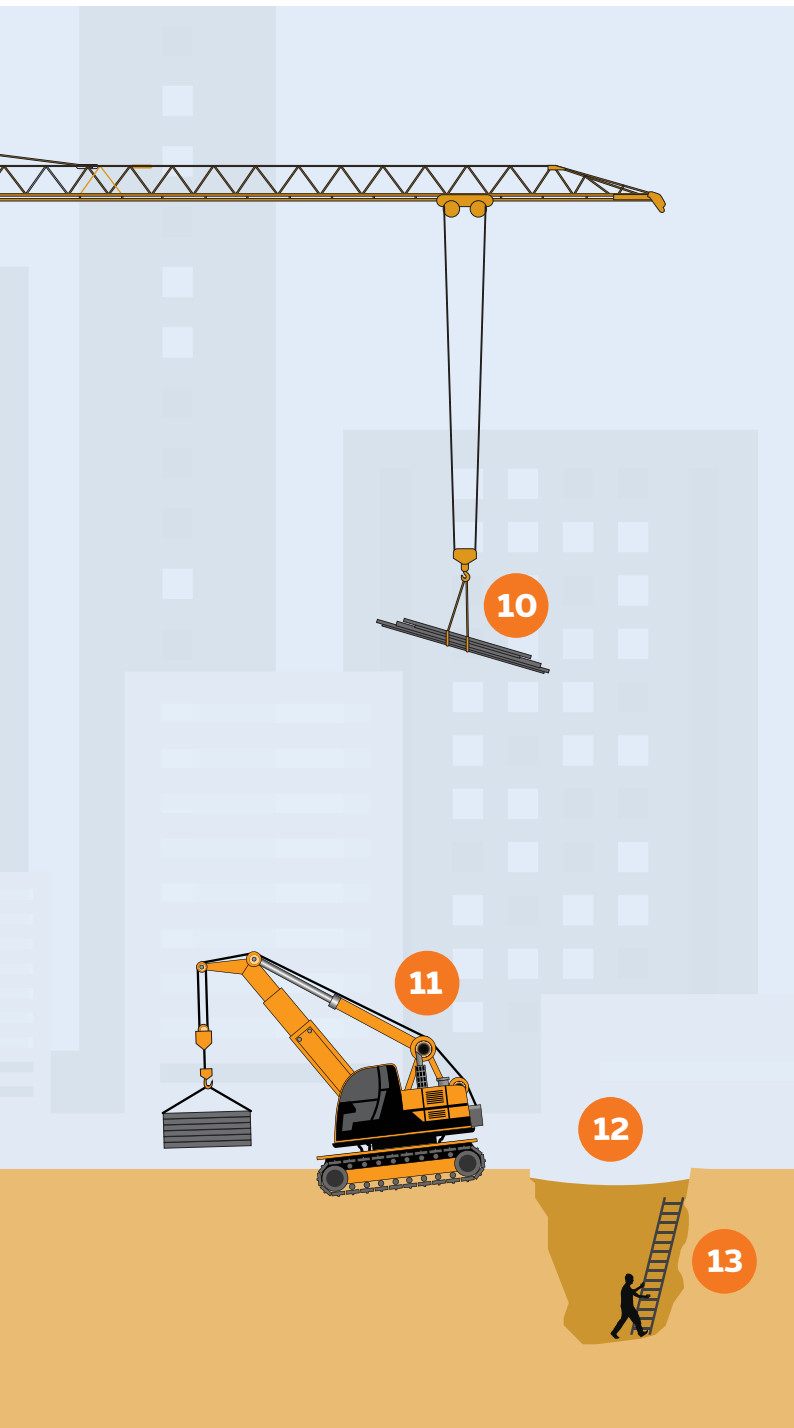


Figure 8.1 Construction Site Hazards

- 1 Falling Objects
- 2 Fire
- 3 Unsafe Working at Height
- 4 Unguarded Machinery
- 5 Plant and Pedestrian Interfaces
- 6 Open Shafts and Edges
- 7 Unsafe Electrical Equipment
- 8 Slips, Trips, and Falls
- 9 Unsafe Working Platforms
- 10 Unsafe Lifting Operations
- 11 Unsafe Construction Equipment
- 12 Unsafe Excavations
- 13 Unsafe Access and Egress

8.9 Health and Safety Site Operational Standards

C-234 The Health and Safety Assurance Standards includes specific requirements to manage known hazards associated with construction. Participants must ensure that they review the Health and Safety Assurance Standards against their own scope and that appropriate controls are cascaded to their consultants and contractors. Figure 8.1 illustrates the typical hazards on a construction site.



C-235 Participants must ensure that their contractor's health and safety plans include pavilion-specific arrangements to manage the following hazards as a minimum:

- › Lifting
- › Fall prevention
- › Temporary works including electrical works
- › Traffic management

8.10 Site Welfare

- C-236** Participants must ensure that their contractors provide and maintain welfare facilities from the start of mobilisation to the end of construction. Welfare facilities must include drinking water stations, washing and ablution areas, prayer rooms, toilets, and resting areas.
- G-60** Welfare facilities should be as close as is practical to work locations. Participants should ensure that their contractors develop specific temporary facilities and welfare plans detailing arrangements.
- C-237** Welfare facilities must be constructed of suitable materials and must be fitted with fire detection and alarm systems and fire extinguishers, where applicable. Facilities must also be compliant with the requirements of the Dubai Civil Defence in line with the UAE Fire and Life Safety Code of Practice.

8.11 Emergency Plans

- C-238** Contractors must establish Emergency Plans that consider all potential scenarios, including fire, security, and medical incidents as well as task-specific emergencies such as tower crane or confined space rescues. Contractors must regularly review, update, and test their Emergency Plans.
- C-239** Participants must ensure that their consultants and contractors are aware of the UAE Fire and Life Safety Code of Practice as well as the Fire Safety section of the Health and Safety Assurance Standards. Specific controls require:
- › A Fire Risk Assessment and Fire Management Plan to be included in the Emergency Plan
 - › Fire safety management arrangements to be in line with Section 4.3
 - › Ignition sources to be tightly controlled including smoking only in designated areas and controlling any hot works such as welding and cutting
 - › Flammable materials to be stored in designated storage areas, use of fuel-consuming tools to be minimised or replaced with electrical tools (where possible), and flammable materials to be removed from buildings to designated storage areas at the end of each day, where possible
 - › Flammable and combustible materials to be covered with flame-retardant material
 - › Materials brought to site to be in a 'just in time' manner to reduce fire risk
 - › Temporary protection of completed works to be made of non-flammable or non-combustible materials

G-61 Emergency incidents should be investigated to maximise learning. Investigations should be proportional to the severity or potential severity of an incident.

C-240 All serious incidents must be notified to the Organiser as defined in Section 11.1.2.

8.12 Protection of the Public and Third Parties

C-241 Participants must ensure that their contractors implement adequate precautionary measures for the protection of the public and third parties who may be affected by their construction works. Participants must keep the pedestrian walkways and site roads clean and free of construction-related hazards or materials. See Section 7.3.3.

8.13 Key Health and Safety Rules

C-242 The Organiser's induction material contains guidance and requirements for all personnel entering the Expo site. Participants must ensure that this induction material is cascaded by their contractors to all personnel.

C-243 While on the site, participants and their consultants and contractors must observe the health and safety rules listed in Figure 8.2.

Figure 8.2 Key Health and Safety Rules



8.14 Deliverables

Table 8.1 lists the deliverables that the participants are required to submit to the Organiser in relation to this chapter.

Table 8.1 Deliverables

Deliverable Name	Reason for Issue	Time of Issue	Reference
Health and Safety Management Plan – Consultant	For information	At least 20 working days before pavilion possession	C-225
Construction Health and Safety Plan – Contractor (Approved by Consultant)	For information	No later than 10 working days after pavilion possession	C-226
CV of Health and Safety Lead – Consultant	For information	At least 20 working days before pavilion possession	C-231
CV of Health and Safety Lead – Contractor (Approved by Consultant)	For information	No later than 10 working days after pavilion possession	C-231

8.15 Supporting Information

The following resources can be accessed either from the Participant Portal or using the website address provided.

1. Dubai Civil Defence
<http://www.dcd.gov.ae>
2. Health and Safety Assurance Standards
3. Health and Safety Plan Checklists
4. Health and Safety Policy
5. UAE Fire and Life Safety Code of Practice
http://www.dcd.gov.ae/portal/eng/UAEFIRECODE_ENG.pdf

9 Complying with Worker Welfare Standards





The Organiser is committed to providing conditions that protect and support the health, safety, welfare, security, rights, and dignity of construction workers on the Expo site.

To achieve this commitment, the Organiser has developed the Worker Welfare Assurance Standards document to ensure fair and ethical treatment of all construction workers on the site. The requirements listed in this chapter and in the Worker Welfare Assurance Standards are applicable to all participants and their contractors working to deliver Expo 2020 Dubai.

Compliance with the Worker Welfare Assurance Standards is achievable through collaboration and proactive worker welfare management.

- › Dubai Municipality, Public Health and Safety Department, Health Requirements for Permanent Labour Accommodation (2011)
- › Dubai Municipality, Health Requirements for the Services Provided Inside Labour Accommodations (2011)
- › UAE Federal Law No. (8) of 1980
- › Ministerial Decrees 764, 765, and 766 of 2015
- › Any relevant amendments or additions to the aforementioned laws and any relevant new laws promulgated during the run up to the Expo event

9.1 Legal and Other Worker Welfare Requirements

C-244 All contractors must adhere to the relevant laws of the UAE and Dubai as well as decrees, regulations, orders, guidelines, decisions, or directives issued by the relevant authorities including:

- › Cabinet Decision No. (13) of 2009 Approving the General Standards Manual for Group Labour Accommodation and Related Services
- › Ministerial Resolution No. 212 of 2014 Adopting General Criteria for Collective Labour Accommodation Designated to Accommodate Less Than Five Hundred Labourers

Where provisions in the Organiser's Worker Welfare Assurance Standards differ from the laws of the UAE and Dubai, or where different standards are provided by the law, the more stringent standards will apply.

9.2 Worker Welfare Policy

The Organiser has developed a Worker Welfare Policy that is aligned with and fully committed to complying with the laws of the UAE and Dubai. The Worker Welfare Policy is available on the Participant Portal.

9.3 Worker Welfare Assurance Standards

The Worker Welfare Assurance Standards is a document that describes the operational practices and welfare standards that need to be adopted by the participants' contractors to ensure the successful implementation and management of the Organiser's worker welfare policies and goals.

This document is available on the Participant Portal and includes specific requirements for employment practices and accommodation facilities.

- C-245** Participants must ensure that their contractors cascade the Worker Welfare Assurance Standards to their supply chain.

9.4 Worker Welfare Management Plans

- C-246** Participants must ensure that their consultants prepare a Worker Welfare Management Plan which includes arrangements for monitoring, auditing, and reporting on their contractors' implementation of the Worker Welfare Assurance Standards. Consultants must submit this plan to the Organiser through the Participant Portal for information at least 20 working days before pavilion possession.

- C-247** Participants must ensure that their contractors submit a Worker Welfare Management Plan to their consultants for approval. Consultants must submit this plan to the Organiser through the Participant Portal for information no later than 10 working days after pavilion possession.

A Worker Welfare Management Plan Checklist outlining the requirements for the plans is available on the Participant Portal.

9.5 Worker Welfare Performance Monitoring

Participants are required to support the contractors, monitor their performance, and drive compliance to achieve the overall aims and objectives of the Worker Welfare Assurance Standards.

- C-248** Participants must ensure that their contractors prepare a Worker Welfare Monthly Report (see Section 11.3) that measures and reports against the requirements presented in the Worker Welfare Assurance Standards. A report template is available on the Participant Portal.

- G-62** Participants should ensure that their consultants monitor worker welfare performance by reviewing the reports of their contractors and inspecting and auditing their contractors' arrangements (see Section 11.4).

9.6 Contractor Prequalification and Tendering

- G-63** Participants should prequalify their potential contractors for compliance with the worker welfare requirements. Prequalification questions are available on request.
- G-64** Participants should validate the prequalified contractors through inspection of their accommodation facilities and employment practices. A worker welfare inspection checklist is available on request.
- G-65** Contractors that do not meet the Worker Welfare Assurance Standards should be disqualified unless they are able to commit to resolving all serious issues (as defined in the inspection checklist) by submitting a Worker Welfare Improvement Action Plan. A plan template is available on the Participant Portal.
- G-66** During the tender stage, participants should evaluate their prequalified contractors' progress on their Worker Welfare Improvement Action Plan. In the event that the selected contractor is unable to close out serious issues before award, the participant should validate the reasons and ensure that the issues are closed out before pavilion possession.

Participants may use the contractors that have already been selected by the Organiser or, if required by the participants, the Organiser may arrange support to manage the prequalification process on behalf of the participants.

9.7 Mobilisation Requirements

- C-249** At least 20 working days before pavilion possession and mobilisation, participants must submit the following documents, from their chosen contractor, to the Organiser through the Participant Portal:
- › A completed contractor self-assessment checklist, including an updated Worker Welfare Improvement Action Plan (if applicable).
 - › A Health and Safety and Worker Welfare Commitment Statement confirming the contractor's intention to comply with and uphold the Health and Safety Assurance Standards (see Section 8.3) and the Worker Welfare Assurance Standards. The Commitment Statement must be signed by the selected contractor's most senior executive, submitted to the participant, and then issued to the Organiser through the Participant Portal for information.

Consultants are required to submit their Worker Welfare Management Plan to the Organiser through the Participant Portal before mobilisation as identified in Section 9.4.

A template for the contractor self-assessment checklist is available on the Participant Portal.

If the requirements in this section are not met, the Organiser will notify the participant and may request additional information for review.

- C-250** Participants must ensure that their contractors satisfy the requirements of the Organiser. The Organiser has the right to assess the selected contractor's accommodation facilities and employment practices. The Pavilion Possession Request may be placed on hold until the Organiser's requirements are satisfied.

9.8 Deliverables

Table 9.1 lists the deliverables that the participants are required to submit to the Organiser in relation to this chapter.

Table 9.1 Deliverables

Deliverable Name	Reason for Issue	Time of Issue	Reference
Worker Welfare Management Plan – Consultant	For information	At least 20 working days before pavilion possession	C-246
Worker Welfare Management Plan – Contractor (Approved by Consultant)	For information	No later than 10 working days after pavilion possession	C-247
Contractor Self-Assessment Checklist, including Worker Welfare Improvement Action Plan (if applicable), and Health and Safety and Worker Welfare Commitment Statement	For approval	At least 20 working days before pavilion possession and mobilisation	C-249

9.9 Supporting Information

The following resources can be accessed either from the Participant Portal or using the website address provided.

1. Contractor Self-Assessment Checklist Template
2. Health and Safety and Worker Welfare Commitment Statement Template
3. UAE Labour Law
<http://www.mohre.gov.ae/en/labour-law/labour-law.aspx>
4. Worker Welfare Assurance Standards
5. Worker Welfare Improvement Action Plan Template
6. Worker Welfare Inspection Checklist
7. Worker Welfare Management Plan Checklist
8. Worker Welfare Policy
9. Worker Welfare Prequalification Questions

10 | Complying with Environmental Standards





Expo 2020 Dubai is committed to developing and implementing innovative solutions to protect and sustain the environment.

The Organiser's strategic goal is to promote environmental excellence in all aspects of delivery through a proactive and collaborative Target Zero culture. Target Zero focuses on zero environmental incidents and applies a continuous improvement approach in case an incident occurs.

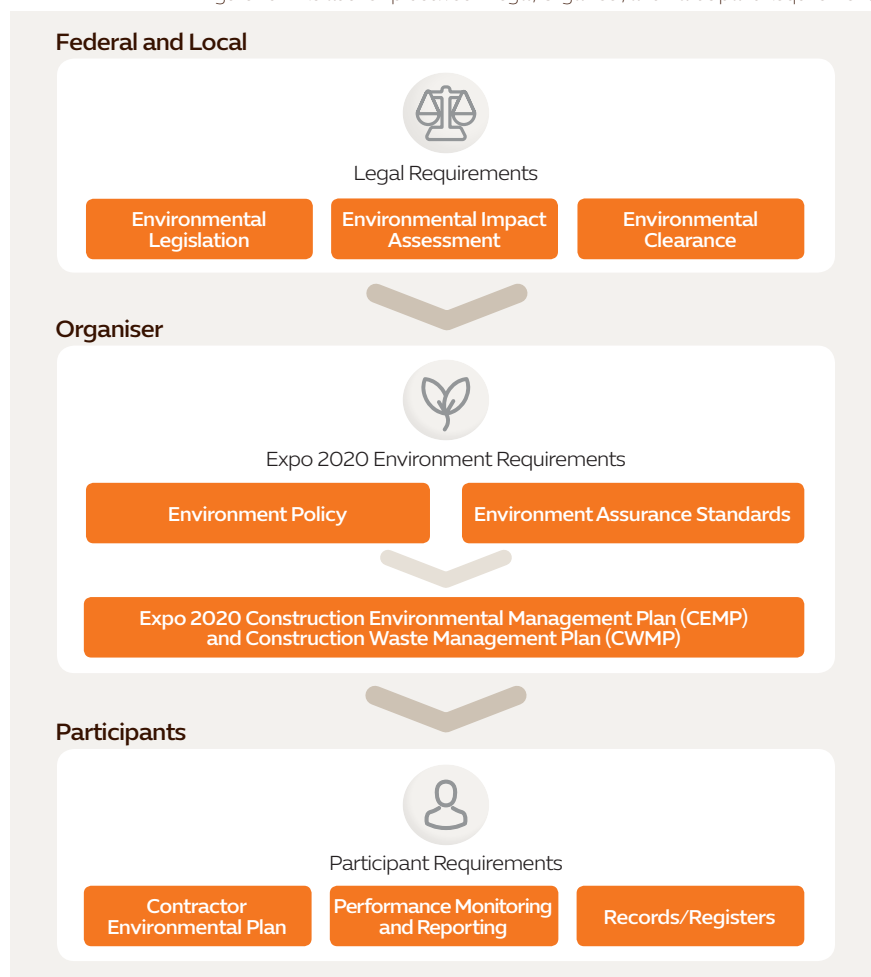
The Environment Impact Assessment (EIA) report outlines the environmental legislation framework in the UAE and Dubai (see Section 10.4). Specifically, it includes the international conventions and treaties that were ratified by the UAE and integrated into the federal law. The environmental legislation focuses on the prevailing environmental laws relevant to Expo 2020 Dubai.

10.1 Legal and Other Environmental Requirements

Participants are required to comply with the requirements presented in this chapter and in the Environment Assurance Standards document.

Figure 10.1 shows an overview of the relationship between the legal, Organiser, and participant requirements. Applicable environmental laws and regulations (together with a legal register) will be included in the CEMP. See Section 10.5.

Figure 10.1 Relationship between Legal, Organiser, and Participant Requirements



C-251 Participants must ensure that their consultants and contractors comply with the applicable environmental laws, regulations, and requirements listed in the EIA report and the CEMP.

G-67 Participants should maintain the legal register (included in the CEMP) that lists the laws, regulations, and other requirements relevant to the environmental aspects of their activities. This register should be reviewed as part of the participants' management review processes to ensure that it remains updated with current requirements.

G-68 Participants should ensure that their consultants and contractors cascade all environment-related legal requirements within their organisations.

10.2 Environment Policy

The Organiser has developed an Environment Policy that is aligned with and fully committed to complying with the laws of the UAE and Dubai. The Environment Policy is available on the Participant Portal.

10.3 Environment Assurance Standards

The Environment Assurance Standards is a document that describes the operational practices and environmental standards that need to be adopted by the participants' consultants and contractors to ensure the successful implementation and management of the Organiser's environmental policies and goals.

The Environment Assurance Standards is available on the Participant Portal.

C-252 Participants must ensure that their consultants and contractors cascade the Environment Assurance Standards to their supply chain.

10.4 Environmental Impact Assessment

An EIA report for the Master Plan of Expo 2020 Dubai was prepared in November 2014. The EIA aids the development of site-wide CEMP, the environmental aspects and impacts register, and a suite of Environmental Control Procedures.

In December 2014, the Environmental Clearance was received from the Environmental Planning and Studies Section of the Dubai Municipality (EPSS-DM). The Environmental Clearance is renewed yearly subject to the following conditions:

- › A site-wide CEMP being developed before commencing construction activities
- › Conducting site monitoring (sampling and analysis)
- › Submitting a quarterly environment performance report to EPSS-DM

The Organiser has contracted a third-party environment consultant to gather environmental data from consultants and contractors working on the Expo site. This environment consultant will also provide the services mentioned above.

C-253 Participants must ensure that their consultants and contractors consider and integrate all findings of the EIA report into the design and construction of their pavilion.

10.5 Construction Environmental Management Plan

A third-party environment consultant has developed the site-wide CEMP (including a CWMP) for Expo 2020 Dubai. The focus of the CEMP is for Expo 2020 Dubai to achieve exceptional performance against the environmental key performance indicators, and to regularly check compliance with the EIA, relevant legislation, and best practices.

C-254 During design, participants must ensure that their consultants and contractors provide the required design inputs and information to assist the environment consultant in updating the CEMP.

C-255 Participants must ensure that their consultants and contractors regularly monitor the implementation of the CEMP (inspections and audits). An audit and inspection schedule for construction activities must be developed to monitor compliance with the CEMP.

C-256 Participants must ensure that their consultants review and approve all environment-related data reports and submittals of their contractors.

10.5.1 Contractor Environmental Plan

Each pavilion within the Expo site boundary will require an Environmental Plan to be developed by the contractor. The plan needs to outline pavilion-specific environmental aspects, controls, and monitoring measures as well as define the environmental roles and responsibilities of different parties involved in a project. The Contractor Environmental Plan will ensure awareness of, implementation of, and compliance with the site-wide CEMP.

C-257 Participants must ensure that their contractors submit an Environmental Plan to their consultants for approval. Consultants must submit this plan to the Organiser through the Participant Portal for information no later than 10 working days after pavilion possession.

C-258 Participants must ensure that their consultants review and assess the contractors' Environmental Plans for compliance with the CEMP.

A Contractor Environmental Plan Checklist outlining the requirements for the plan is available on the Participant Portal.

10.5.2 Resources and Competency

Qualified and competent environmental resources are key to successfully implementing the site-wide CEMP. Review and assessment of environmental staff for competency against requirements will be detailed in the CEMP.

- C-259** Participants must allocate adequate resources to ensure effective environmental management and effective implementation of the CEMP by the consultants and contractors.
- C-260** Participants must ensure that their consultants nominate an environmental point of contact for all environmental matters. This person must be competent and must have sufficient and adequate experience in construction environmental management.
- C-261** Participants, their consultants, or both, must review and approve the contractors' environmental staff against the criteria given in the CEMP.

10.5.3 Environmental Approvals

As part of Dubai Municipality's requirements, applicable construction activities or areas of work may require environmental pre-approvals (before commencing work) from the Environment Department of Dubai Municipality. This service will be available through the One-Stop Shop.

- C-262** Participants must ensure that their consultants and contractors obtain all environmental approvals, permits, and licences required for their activities, if needed. These must be maintained and tracked in a register. An indicative list of environmental approvals needed during a typical construction project or activity is included in the CEMP.

10.6 Environmental Monitoring

Environmental monitoring aims to assess progress made to achieve Expo 2020 Dubai's environmental objectives and to help identify environmental issues.

10.6.1 Data Monitoring and Reporting

The third-party environment consultant contracted by the Organiser will undertake site-wide environmental data monitoring (sampling and analysis) and reporting during construction. The environment consultant will monitor the quality of air, noise, and water across the Expo site and will gather environmental data from the participants' consultants and contractors.

- C-263** As required by EPSS-DM, participants must ensure that their contractors monitor and report on the following environmental metrics every month:

- › Sewage and wastewater
- › Solid waste (non-hazardous)
- › Hazardous waste
- › Dangerous goods and hazardous materials
- › Energy and fuel consumption
- › Water consumption
- › Water quality (where applicable)
- › Emissions

- C-264** Participants must ensure that their consultants collect monitoring data from the contractors on a monthly basis, review the results, highlight any issues, and submit the final monitoring data/records to the Organiser through the Participant Portal. The Organiser will then forward the data to the environment consultant who will develop the quarterly site-wide environment performance report as required by EPSS-DM. The data reporting template and other details will be included in the CEMP.

10.6.2 Environmental Performance Monitoring

Participants are required to support the contractors, monitor their performance, and drive compliance to achieve the overall aims and objectives of the Environment Assurance Standards.

- C-265** Participants must ensure that their contractors prepare an Environment Monthly Report (see Section 11.3) that measures and reports against the requirements presented in the Environment Assurance Standards. A report template is available on the Participant Portal.

- G-69** Participants should ensure that their consultants monitor environmental performance by reviewing the reports of their contractors and inspecting and auditing their contractors' arrangements (see Section 11.4).

10.7 Key Environmental Guidelines

Figure 10.2 provides participants with key guidelines on how to implement sound practices that minimise environmental impact. Further details on these guidelines are included in the CEMP.

Figure 10.2 Key Environmental Guidelines

Environmental Guidelines on the Expo Site



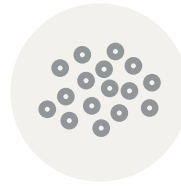
Litter

- Do not litter.
- Put all domestic litter in designated bins with lids.
- Place bins in appropriate locations to achieve adequate site coverage.



Waste

- Sort waste into material that can be salvaged, recycled, or composted, and place in a designated waste area or facility as per the CEMP requirements.



Dust

- Implement dust suppression measures.



Noise

- Where possible, reduce noise nuisance from sources such as fixed machinery, general construction, and vehicle movement.



Equipment

- Service and maintain equipment in accordance with the manufacturer's specifications.
- Retain a maintenance record for all equipment.



Ground Contamination

- Undertake all routine servicing such as on-the-job addition of oil, lubrication, and refuelling, only at a workshop.
- Observe adequate precautions to avoid ground contamination.



Chemicals

- Store minimum quantities of diesel, oil, paint, thinners, and other chemicals.
- Store chemicals to prevent any potential environmental/safety risks listed on the relevant Material Safety Data Sheets.



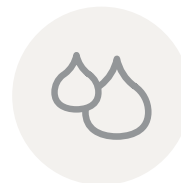
Secondary Containment

- Install bunds around fuel and chemical storage areas.
- Protect storage areas with an impervious surface coating.
- Design a bund to have minimum capacity equivalent to 110 percent of the volume of the liquid that it contains.



Concrete Washout Area

- Provide a designated washout area for washing out all concrete mixing plants or ready-mix concrete trucks.



Dewatering

- Control dewatering discharge to avoid soil erosion or sediment accumulation.

10.8 Deliverables

Table 10.1 lists the deliverables that the participants are required to submit to the Organiser in relation to this chapter.

Table 10.1 Deliverables

Deliverable Name	Reason for Issue	Time of Issue	Reference
Environmental Plan – Contractor (Approved by Consultant)	For information	No later than 10 working days after pavilion possession	C-257
Monthly Environmental Monitoring Data Logs	For information	Monthly	C-264

10.9 Supporting Information

The following resources can be accessed from the Participant Portal.

1. Construction Environmental Management Plan (including Construction Waste Management Plan)
2. Contractor Environmental Plan Checklist
3. Environment Assurance Standards
4. Environment Policy
5. Environmental Clearance
6. Environmental Impact Assessment Report



11 Understanding Governance and Quality Assurance





This chapter outlines the communication protocols, non-conformance procedures, reporting requirements, and quality assurance standards to provide direction to and monitor compliance of participants with requirements.

The Organiser has established a structure to manage and coordinate the delivery of pavilions as discussed in Section 1.2 and shown here in Figure 11.1.

Participants will complete each stage and satisfy the Organiser's requirements at the end of a stage by obtaining the necessary approvals before moving to the next stage.

11.1 Communication Protocols

C-266 Participants must formally communicate their queries, submissions, and requests to the Organiser through the appointed Country Manager (Participant Portal). Communications during construction may include:

- › General technical queries
- › Queries and requests related to construction logistics
- › Health and safety, worker welfare, environment, and quality assurance requirements
- › Facilitation of inspections and approvals from statutory authorities
- › Site access requests and security matters
- › Assistance on procurement of consultant and contractor

Figure 11.1 Pavilion Delivery Structure

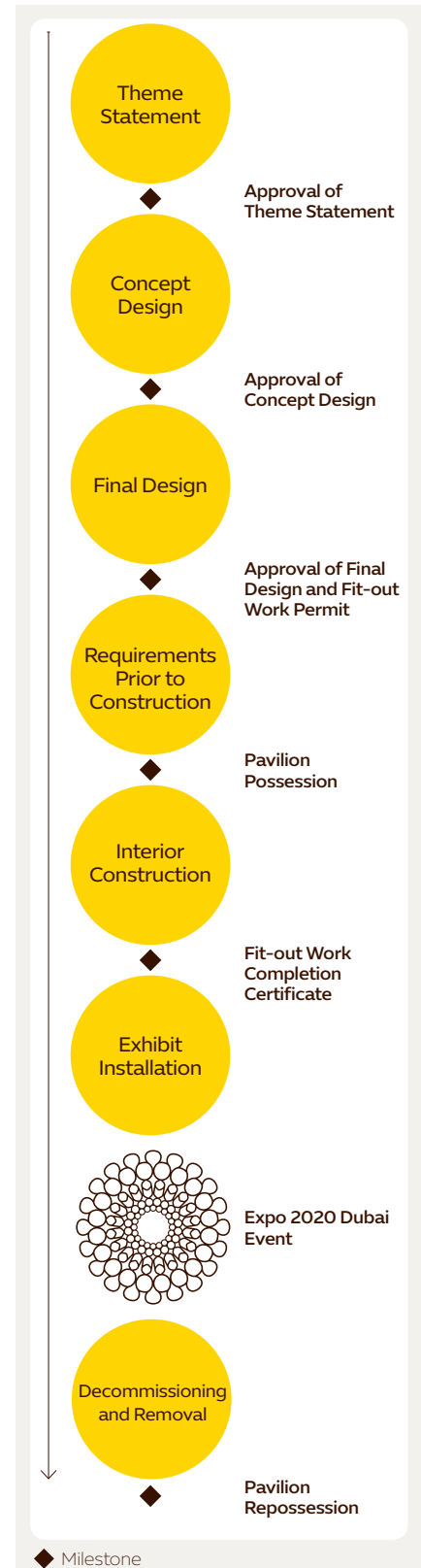
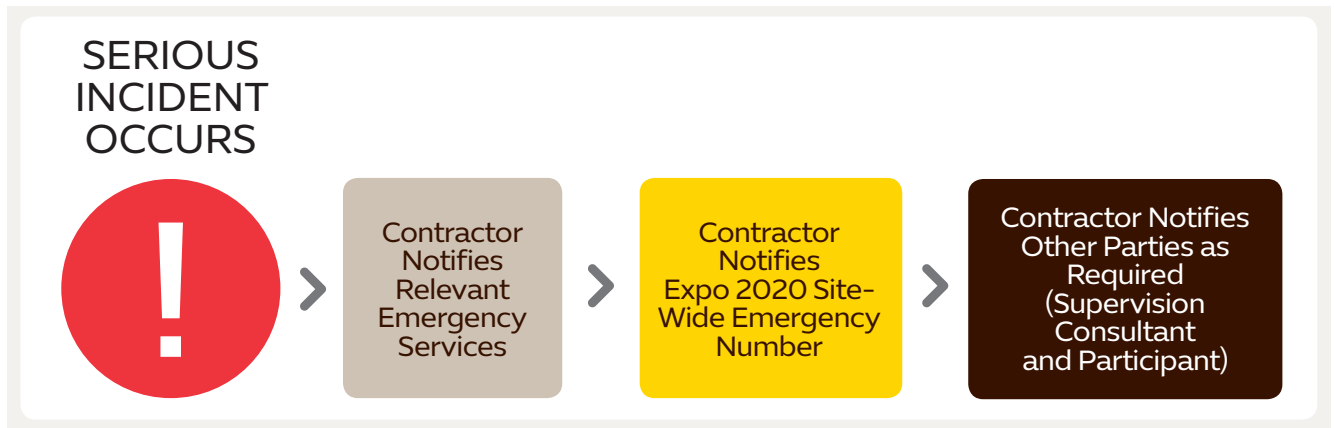


Figure 11.2 Serious Incident Notification Process



11.1.1 Interface Protocols

Participants are responsible for managing the design and construction interfaces with other participants on adjacent pavilions and with the Organiser (One-Stop Shop) for matters concerning the entire site.

C-267 Participants must obtain the Organiser's approval for any interface matters that have an impact outside of their pavilions.

G-70 Participants should maintain a coordination register, for records and reference, if needed by the Organiser to resolve any interface issues.

G-71 Participants should contact the Organiser for any concerns related to interface protocol.

11.1.2 Incident Notification and Reporting Protocols

The Organiser will publish a process for reporting all accidents and incidents on the Participant Portal, including contact details for notification of emergency incidents on the Expo site to the Organiser.

C-268 Participants must record all incidents in their pavilion and report to the Organiser via their monthly report (see Section 11.3). Incident reporting requirements are outlined in the Health and Safety Assurance Standards.

C-269 Participants must immediately notify the Organiser of any serious incidents while simultaneously invoking the emergency procedures. A list of serious incidents that require notification to the Organiser is available on the Participant Portal. Figure 11.2 shows the notification process when a serious incident occurs. Serious incidents may include:

- › Any reportable events such as a fatality, a lost-time injury, or a major environmental spill
- › Any injuries requiring hospitalisation or medical treatment
- › Any events with significant impact on the participant, the Organiser and their activities/assets, or other participants

- › Any events with significant impact on a member of the public
- › Any actions by enforcing authorities such as the Dubai Police, or the Dubai Civil Defence
- › Any serious near-miss
- › Any serious breach of site security
- › Any Expo-related adverse media coverage or potential reputation risk to the Organiser

C-270 Participants must establish their own incident notification and escalation procedures, inform the Organiser of these procedures through the Participant Portal, and provide the Organiser with the name and contact details of their personnel responsible for owning and executing the procedures.

11.2 Non-conformances

If the Organiser identifies a breach in contractual requirements specified in the Participation Contract or the Participant Guides, a non-conformance report (NCR) will be issued to the participants after formal notification.

On issuance of the NCR, the participant will be required to rectify the breach, complete their section of the NCR form, and return it to the Organiser. This section of the form needs to show the corrective action that the participant intends to take to conform to their obligations, and the time it will take to complete the action.

The Organiser has the right to reject the proposed corrective action and the proposed completion time if it does not appropriately address the breach. The participant will be required to resubmit the NCR until such time that it is acceptable to the Organiser. The Organiser will monitor the completion of the corrective action and determine if the action has been completed.

Where NCRs are issued by the Organiser and the agreed action has not been completed within the agreed time, the Organiser has the right to follow the agreed escalation process to reach an amicable resolution.

11.3 Reporting

- C-271** Participants must submit a monthly Pavilion Progress Report to the Organiser through the Participant Portal. The report must include the following information:
- › Executive summary including:
 - Progress summary
 - Key issues related to the Organiser and third parties
 - Known interfaces with works outside of the pavilion (shown in the delivery schedule)
 - Status of non-conformances
 - › Schedule including:
 - Schedule summary
 - Baseline schedule and monthly progress updates
 - Updated resource loaded schedule in P6 format
 - › Health and safety performance including:
 - Health and safety summary
 - Monthly statistics table
 - › Worker welfare performance including:
 - Worker welfare summary
 - Monthly statistics table
 - › Environmental performance including:
 - Environmental summary
 - CEMP/CWMP audits and findings
 - › Sustainability performance including:
 - Sustainability summary
 - Monthly statistics table
- C-272** Reports must be submitted from the Concept Design stage on an agreed monthly date through the Participant Portal. Participants must refer to the portal's reporting calendar for the submission dates.

A report template is available on the Participant Portal.

- G-72** Participants should ensure that their consultants provide weekly progress updates tracked against their delivery schedule.

11.4 Audits and Inspections

To comply with the construction requirements, the Organiser will conduct audits and inspections of the participants' consultants and contractors to ascertain the degree of their compliance with the Assurance Standards and the applicable sections of the Participant Guides. Audit and inspection reports may include findings, observations, and non-conformances that need to be closed out by the recipient.

- C-273** Participants' consultants must maintain a register of audits conducted.

11.5 Quality Assurance

The Organiser recognises that, to deliver on the commitments of Expo 2020 Dubai, everyone has to aim to achieve the highest standards of quality in all aspects of their work activities. ISO 9001: 2015 (Quality Management Systems – Requirements) has been adopted as the best practice standard for managing and delivering Expo and its component parts.

11.5.1 Quality Policy

The Organiser has developed a Quality Policy that is aligned with and fully committed to complying with the laws of the UAE and Dubai. The Quality Policy is available on the Participant Portal.

11.5.2 Quality Assurance Standards

The Quality Assurance Standards is a document that describes the operational practices and quality standards that need to be adopted by the participants' consultants and contractors to ensure the successful implementation and management of the Organiser's quality policies and goals.

The Quality Assurance Standards is available on the Participant Portal.

- C-274** Participants must ensure that their consultants and contractors cascade the Quality Assurance Standards to their supply chain.

11.5.3 Quality Plans

- C-275** Participants must ensure that their consultants prepare a Quality Management Plan which includes arrangements for monitoring, auditing, and reporting on their contractors' implementation of the Quality Assurance Standards. Consultants must submit this plan to the Organiser through the Participant Portal for information at least 20 working days before pavilion possession.

- G-73** Participants should ensure that their contractors submit a Project Quality Plan to their consultants for approval. Consultants should submit this plan to the Organiser through the Participant Portal for information no later than 10 working days after pavilion possession.

Quality Plan Checklists outlining the requirements for the plans are available on the Participant Portal.

11.5.4 Quality Performance Reporting

Participants are encouraged to support their consultants and contractors, monitor their performance, and drive compliance to achieve the overall aims and objectives of the Quality Assurance Standards.

- G-74** Participants should ensure that their consultants monitor quality performance by reviewing the reports and inspecting and auditing their contractors' arrangements (see Section 11.4).

11.6 Deliverables

Table 11.1 lists the deliverables that the participants are required to submit to the Organiser in relation to this chapter.

Table 11.1 Deliverables

Deliverable Name	Reason for Issue	Time of Issue	Reference
Non-conformances Issued and Closed	For information	Monthly	Section 11.2
Pavilion Progress Report	For information	Monthly after pavilion possession	C-271
Quality Management Plan – Consultant	For information	At least 20 working days before pavilion possession	C-275

11.7 Supporting Information

The following resources can be accessed either from the Participant Portal or using the website address provided.

1. Health and Safety Assurance Standards
2. ISO 9001: 2015
http://www.iso.org/iso/iso_9000
3. Pavilion Progress Report Template
4. Quality Assurance Standards
5. Quality Plan Checklists
6. Quality Policy
7. Serious Incident Notification Process

12 Interfacing with Statutory Authorities





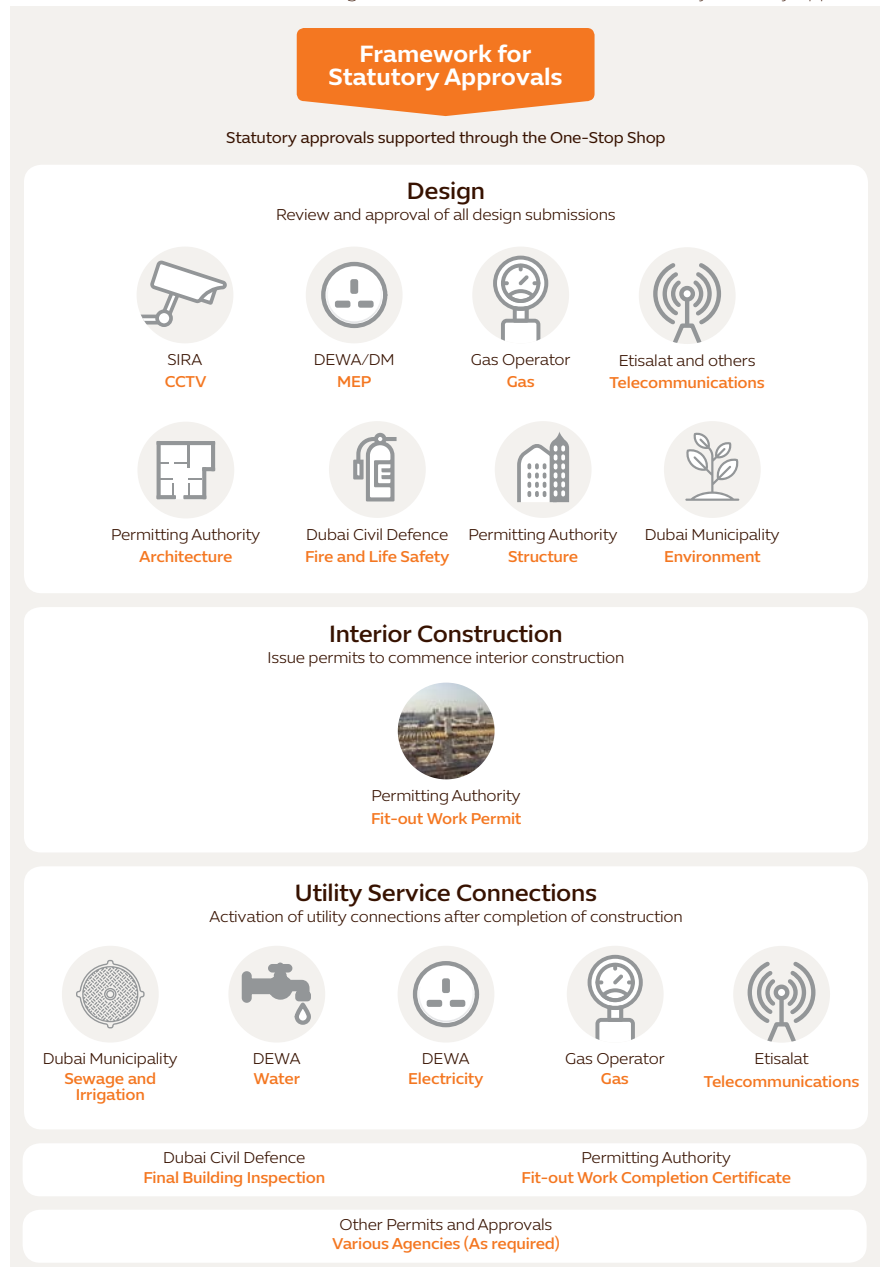
Statutory authorities are local government and semi-government entities which ensure that all organisations follow and adhere to the rules and regulations of Dubai and the UAE.

Participants will interface with statutory authorities through the One-Stop Shop for services such as submitting designs and applying for permits. The One-Stop Shop will also provide a platform for participants to interact with statutory authorities and get feedback on technical

queries during design, construction, and decommissioning and removal.

Figure 12.1 shows the general framework for statutory authority as part of the One-Stop Shop approvals.

Figure 12.1 General Framework for Statutory Authority Approvals



12.1 Consultant and Contractor Registration

- C-276** Consultants and contractors must have the right qualifications that enable them to submit to and communicate with the statutory authorities. These qualifications include:
- › **Commercial Licence:** Consultants and contractors must hold valid commercial licences issued by Dubai's Department of Economic Development (DED). The licences must clearly state the activities that the consultant or contractor is permitted to undertake.
 - › **Professional Licence:** Consultants and contractors must hold valid professional licences from the DED that identify their professional services. DED issues this licence only after the relevant service provider has approved the specified scope, for example, fire systems licence will require the approval of the Dubai Civil Defence.
 - › **Prequalification:** Consultants and contractors must be prequalified by the permitting authority and service providers to carry out works within the scope and scale of their activities for the purpose of appointment by the participants.
- C-277** Participants must ensure that the licences of their consultants and contractors are valid and active throughout the contractual period.
- C-278** Participants must appoint a qualified supervision consultant to take full responsibility of the construction activities and ensure compliance of works with the rules and regulations of the Organiser and the statutory authorities. The supervision consultant must manage the assurance and technical functions as well as the schedule to ensure timely delivery of the pavilion.
- C-279** In the event where a participant appoints an international consultant with no registration or qualification to carry out design work in Dubai, the participant must appoint another consultant to act as the Architect of Record to take responsibility for the design and obtain the necessary permits and approvals from the One-Stop Shop. The appointed Architect of Record must fully comply with local laws and must have all the necessary registrations and prequalification as specified.
- C-280** In the event where a participant appoints an international contractor with no registration or qualification to carry out construction work in Dubai, the participant must appoint a locally qualified and registered contractor to take responsibility for construction and obtain the necessary permits and approvals from the One-Stop Shop.

12.2 Submission and Approval Considerations

- C-281** All submissions must be compliant with the standards and regulations of the statutory authorities in Dubai and the UAE. For further details on the design submission requirements and the review and approval processes, see Chapter 1.
- C-282** All submissions must follow the processes and procedures of the One-Stop Shop.
- C-283** The software used in developing the designs must be compatible with the ones used by the statutory authorities.
- C-284** Building materials that are not listed with statutory authority but used in the design of the pavilions must be approved by the permitting authority and the Dubai Civil Defence before the design is finalised.
- C-285** Participants must bear all fees for approvals and permits.
- G-75** Participants' qualified consultants and contractors can organise meetings with the statutory authorities through the One-Stop Shop to facilitate discussions and address comments in a timely manner.

A high-level summary of key delivery dates, milestones, and associated approval durations is shown in Figure 12.2.

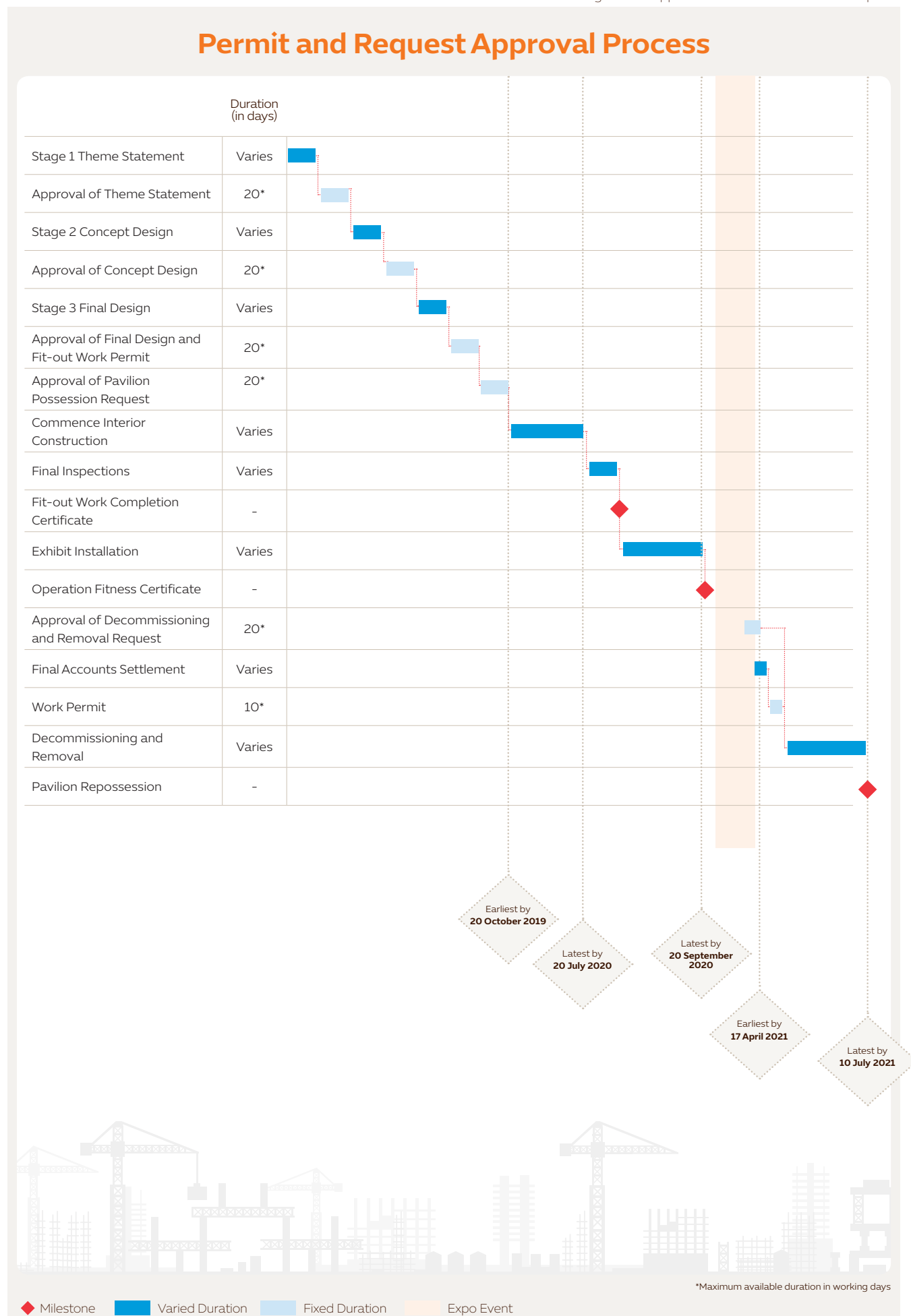
12.3 Information Package

The Organiser will provide the following drawings to the participants to guide them in designing the interior of their pavilion:

- › Pavilion drawings
- › Architectural drawings
- › MEP drawings
- › Structural drawings

See Section 1.4.1. and Section 3.1.

Figure 12.2 Approval Process for Permits and Requests



12.4 Design Approvals

The One-Stop Shop will review the design and provide comments or approval to the participants through the Participant Portal. Figure 12.3 shows the three stages of the design approval process.



Figure 12.3 Stages of the Design Approval Process

The Stage 1 Theme Statement submission will be approved by the Organiser. For further details, see Chapter 1 and the Theme Guide. Once the Theme Statement is approved, participants may proceed to Stage 2 Concept Design.

12.4.1 Concept Design Submission

The One-Stop Shop will review the Stage 2 Concept Design submissions and provide comments or initial approval to the participants through the Participant Portal within 20 working days of submission. Once the Concept Design submission is approved, participants may proceed to Stage 3 Final Design.

12.4.2 Final Design Submission and Fit-out Work Permit

Statutory authorities will access all Final Design submissions through the One-Stop Shop and provide comments, or No Objection Certificate (NOC) and Fit-out Work Permit to the participants within 20 working days of the submission.

C-286 Participants must ensure that all comments raised by the One-Stop Shop are addressed and closed out before requesting for approval of the Final Design.

C-287 In addition to the design and submission requirements discussed in Section 1.4, participants must ensure that their contractors submit the following documents to the One-Stop Shop to obtain a Fit-out Work Permit:

- › Updated delivery schedule including details of interior construction and decommissioning and removal activities
- › Contractor's Project Quality Plan, Construction Health and Safety Plan, and Environmental Plan
- › CV of contractor's health, safety, and environment personnel

On receipt of the Fit-out Work Permit and on approval of the Pavilion Possession Request (see Section 1.5.2), contractors may proceed with the interior construction activities.

12.5 Site Inspections

C-288 Participants must ensure that their supervision consultant conducts regular site inspections and monitors progress of work on site.

The One-Stop Shop may conduct planned and ad hoc inspections of the pavilion at select stages of the work progress to ensure that the construction is in line with the approved drawings.

12.6 Fit-out Work Completion Certificate

On completion of work, the contractor will request the service providers, through the One-Stop Shop, to conduct a final inspection on the pavilion and issue Compliance Certificates before participants are allowed to occupy their pavilion.

C-289 On receipt of the Compliance Certificates, the contractor must request for a Fit-out Work Completion Certificate from the One-Stop Shop. The request must be approved by the supervision consultant confirming that the work on site is complete and compliant with the approved drawings. All required supporting documents, including operations and maintenance manuals, as-built drawing specifications, and testing and commissioning reports, must be submitted to the One-Stop Shop at least 8 working days in advance to ensure timely receipt of the Fit-out Work Completion Certificate.

A representative of the One-Stop Shop will visit the pavilion to evaluate the completed work. If the work complies with the approved drawing, then the One-Stop Shop will issue the Fit-out Work Completion Certificate. If the work or part of it does not comply with the approved drawings, then the One-Stop Shop may require revisions to the work before issuing the Fit-out Work Completion Certificate.

12.7 Operation Fitness Certificate

After installing their exhibits, participants will request the Organiser to inspect their pavilion and check for readiness for the event. On satisfactory completion of the inspection, the Organiser will provide participants with an Operation Fitness Certificate. On receipt of the certificate, participants may commence their pavilion operations.

Participants are responsible for their own pavilion operations.

12.8 Work Permit for Decommissioning and Removal

Participants are responsible for reinstating their pavilion back to its original condition after the conclusion of the Expo event. Final bills from the service providers need to be settled first before requesting for a Work Permit for decommissioning and removal from the One-Stop Shop.

A Work Permit is required after obtaining approval for Decommissioning and Removal Request and before commencing the decommissioning and removal activities (see Figure 12.4). A date to commence decommissioning and removal needs to be agreed with the Organiser.

- C-290** To obtain a Work Permit for decommissioning and removal, participants must submit the following documents to the One-Stop Shop at least 10 working days in advance of the intended activity:
- › Evidence of final settlement of all utility bills and deactivation of connection NOCs
 - › Updated decommissioning and removal schedule
 - › Contractor’s Project Quality Plan, Construction Health and Safety Plan, and Environmental Plan
 - › CV of contractor’s health, safety, and environment personnel

After receiving the Work Permit and the approval for Decommissioning and Removal Request, participants may commence decommissioning and removal activities. See Section 15.1.

The One-Stop Shop will conduct planned and ad hoc inspections of the pavilion at chosen stages of the work progress to ensure that the decommissioning and removal activities are in line with the approved drawings.

On completion of the decommissioning and removal activities, the contractor needs to submit a Pavilion Repossession Request asking for final inspection from the One-Stop Shop for site clearance before handing over the pavilion to the participant.

On confirmation of the site clearance, participant may hand over the pavilion to the Organiser. For further details on pavilion repossession, see Section 15.7.

Figure 12.4 Permit and Request Approvals



12.9 Supporting Information

The following resources can be accessed either from the Participant Portal or using the website address provided.

1. Department of Economic Development – Dubai
https://eservices.dubaided.gov.ae/Pages/Anon/RLAForm.aspx?1=1&PID=10122&LID=&sname=Fill_Registration_&Licensing_Application_Form&srp=-1&sfn=-1&ifn=303467818&pn=173956&pn2=
2. DEWA
<https://www.dewa.gov.ae/en>
3. Dubai Civil Defence
<http://www.dcd.gov.ae>
4. Dubai Municipality
<https://www.dm.gov.ae/wps/portal/home>
5. Dubai Police (SIRA)
<https://dubaipolice.gov.ae/>
6. Dubai South
<https://www.dubaisouth.ae/>
7. Etisalat
<http://www.etisalat.ae/nrd/en/index.jsph>
8. Theme Guide

13 :: Customs and Import





The Organiser will work with the UAE Government to develop and adopt special legislatives and organisational measures to comply with the customs regulations (Customs Annex) under the BIE Convention of 22 November 1928 regarding the import of materials by the participants. The Organiser will also collaborate with the UAE Government to develop special tax exemption arrangements for the participants.

The following materials will be imported under a temporary importation procedure that is exempted from customs duties in compliance with the Customs Annex to the BIE Convention:

- › Materials necessary for building and maintaining the pavilions
- › Promotional and advertising materials
- › Any other materials to be used during the Expo event

The maximum duration of the temporary importation will be established in compliance with the applicable regulations for the types of materials imported.

Customs declarations are required for any goods entering or leaving the country; the goods are then presented to the customs authorities at the nearest customs office.

Duty rates vary from 0 to 100 percent. In the UAE, customs duty is calculated at 5 percent of the CIF (cost, insurance, and freight) value of the goods. Some goods may be imported free of duty such as the goods entering the Duty Free Storage Area at Port Rashid in Dubai and the goods imported to the free zones. Customs duty at 5 percent is applicable to all dutiable goods except tobacco (which has 100 percent duty rate) and alcohol (which has 70 percent duty rate). For tobacco, the duty is collected either on the value or on the quantity, whichever is higher.

Some of the goods that are prohibited and restricted for import to the UAE are listed in Figure 13.1.

Figure 13.1 Prohibited and Restricted Goods



If the participants choose to use the Organiser's Official Logistics Partner, then the latter will work with the former to ensure compliance with the procedures for import of goods as well as with the customs regulations of the UAE and relevant emirate.

Further details on the UAE's customs and taxation procedures will be discussed in a separate Guide and in the Special Regulation Number 7.

14 Optional Supply Chain Services





The Organiser will facilitate support services to help the participants during construction and decommissioning and removal. Services such as hire centres/shops will be located within the Expo site to provide convenience to participants and to reduce supply chain challenges.

The Organiser will engage with selected suppliers for providing construction support services. Participants may take advantage of the construction support services which will be delivered directly by the supply chain (not by the Organiser). The latest list of suppliers will be available on request from the Organiser.

Participants are free to seek other alternatives through the open market. If contractors from the open market are chosen, participants need to ensure that these contractors comply with the Organiser's standards as specified in this Guide.

Irrespective of the choice of supplier, participants will bear the cost of the services and will engage in a direct contract with the supplier at their own responsibility. Therefore, participants need to ensure that the contract terms satisfy their requirements.

14.1 Hire Centres/ Shops

The Organiser will arrange for specialist construction hire centres/shops to operate rental and sales outlets within the Expo site. These outlets are provided for the convenience of the participants, and may offer services such as:

- › Rental of a comprehensive range of construction plant, machinery, and powered equipment such as forklifts, mobile elevating work platforms, small mobile cranes, temporary lighting, and power tools

- › Rental or sale of standard construction equipment such as scaffolding and barriers
- › Sale of consumables such as personal protective equipment, hand tools, tape, and cutting blades/discs

Participants' contractors may opt to use other suppliers for their construction plant, machinery, equipment, and consumable needs.

14.2 Supply Chain Directory

Participants who wish to use the services of the selected suppliers need to engage with them at the earliest opportunity to ensure availability of resources and to allow onsite fulfilment of services to be completed to an agreed schedule. The supplier and the participant need to agree on the commercial arrangements including costs and delivery of the instructed works.

The supplier support services offered are expected to include:

- › Transportation of site personnel
- › Site offices and other welfare facilities
- › Security services (manned guarding)

14.3 Waste Management

As discussed in Chapter 7, the Organiser will appoint a site-wide waste management contractor who will have facilities in proximity to the Expo site.

A schedule of rates for the site-wide waste management contractor to collect and dispose construction waste will be made available to the participants on request.

Participants may choose an alternative waste management contractor during construction and decommissioning and removal.

14.4 Warehousing and Freight Forwarding

Participants are encouraged to use the Organiser's Official Logistics Partner for warehousing and freight forwarding requirements throughout the life cycle of the Expo event. The Official Logistics Partner will offer several services to participants on a rate card basis. Further details on the Official Logistics Partner's offered services, contact details, and rate card will be made available to participants on request.

Participants may choose an alternative logistics contractor during construction and decommissioning and removal.

15 Decommissioning, Removal, and Repossession





This chapter provides the framework for the decommissioning and removal activities, and details the logistical constraints and support provided by the Organiser and the One-Stop Shop.

Participants are required to follow the Organiser's processes starting with obtaining the necessary approvals before commencing any decommissioning and removal activities.

During decommissioning and removal, participants will remove their exhibits and strip out the interior of their pavilion. See Figure 15.1.

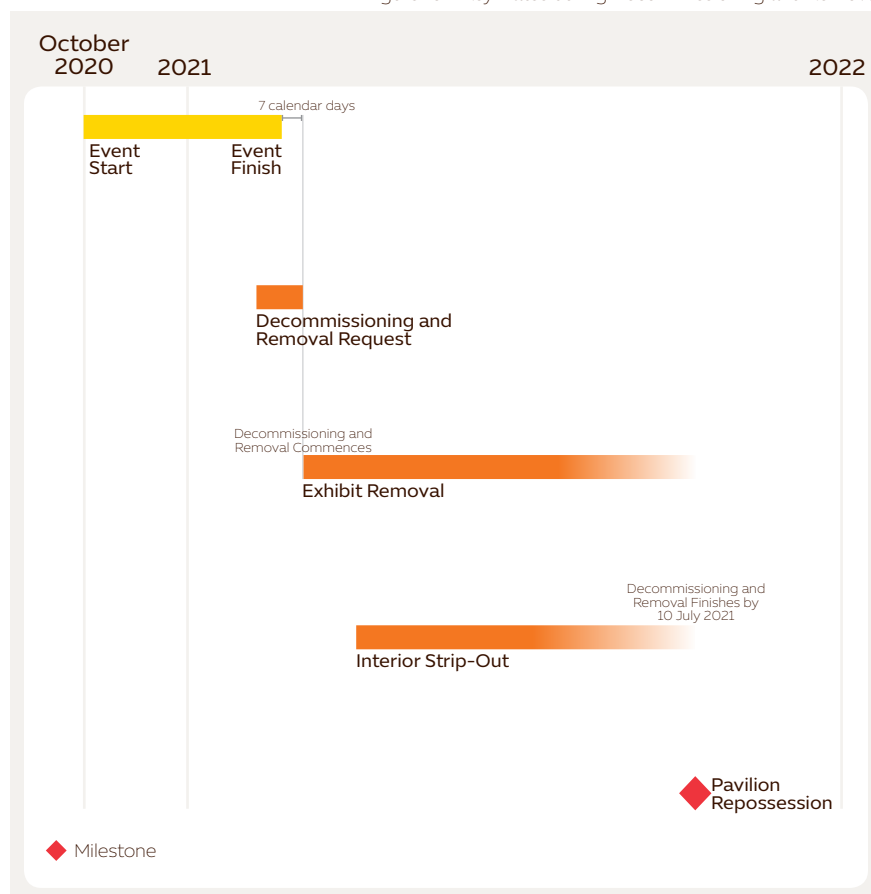
- C-291** Decommissioning and removal activities must only commence 7 calendar days after the conclusion of the Expo event.
- C-292** Decommissioning and removal activities must be completed as per the Organiser's Master Schedule. Pavilions must be cleared and ready for repossession by the Organiser no later than 10 July 2021.

C-293 Participants must take responsibility for the security of their own assets as well as the assets of their contractors during decommissioning and removal.

C-294 During decommissioning and removal, participants must conform to all requirements detailed in Chapter 7.

C-295 Participants must return their pavilion to the Organiser in the same condition as it was received. See Section 15.7.

Figure 15.1 Key Dates during Decommissioning and Removal



15.1 Requirements Prior to Decommissioning and Removal

- C-296** Participants must submit a Decommissioning and Removal Request to the Organiser for approval at least 20 working days before commencing work. The request must be supported by the following documents (see Figure 15.2):
- › Updated decommissioning and removal plan and strategy (see Section 3.7)
 - › Contractor Self-Assessment Checklist, including Worker Welfare Improvement Action Plan (if applicable), and Health and Safety and Worker Welfare Commitment Statement (see Section 8.8 and Section 9.7)
 - › Updated decommissioning and removal schedule aligned with the Organiser's Master Schedule
 - › Supervision consultant's Health and Safety Management Plan, including the CV of their health and safety lead (see Section 8.4 and Section 8.7)
 - › Supervision consultant's Worker Welfare Management Plan (see Section 9.4)
 - › Supervision consultant's Quality Management Plan (see Section 11.5.3)

On receipt of approval, participants may access the pavilion to commence decommissioning and removal activities.

- C-297** Participants must obtain a Work Permit before commencing any decommissioning and removal activities (see Section 12.8).

15.2 Decommissioning and Removal Logistics

The Organiser will develop a site-wide strategy to manage the decommissioning and removal logistics activities. This strategy will be shared with the participants through the Participant Portal.

- C-298** Participants must coordinate their decommissioning and removal activities with their neighbouring pavilions, especially in regard to crane and vehicle movement. The Organiser will support the participants where necessary.

- C-299** Participants must ensure that their contractors complete the decommissioning and removal activities while satisfying all contractor requirements stipulated in Chapter 7.

- C-300** Participants must obtain the Organiser's approval for vehicle access into the Thematic Districts (off the concourse).

The provision of a site-wide waste management contractor after the Expo event is yet to be confirmed. Updates will be communicated on the Participant Portal.

Figure 15.2 Requirements Prior to Decommissioning and Removal



15.3 Sustainability Considerations

C-301 Participants must ensure that their contractors complete the decommissioning and removal activities while satisfying all contractor requirements stipulated in Chapter 5.

15.4 Health and Safety, Worker Welfare, Environment, and Quality Assurance Considerations

C-302 Participants must ensure that their contractors complete the decommissioning and removal activities while satisfying all contractor requirements stipulated in Chapter 8 to Chapter 11.

15.5 Utilities Capping

C-303 During decommissioning and removal, participants must isolate and ensure safety of all utility connections. Participants must settle all final accounts, and notify the Organiser and other respective authorities that the utility service will no longer be required.

15.6 Optional Supply Chain Services

The Organiser may facilitate support services to participants during decommissioning and removal. Participants will bear the cost of the services and will engage in a direct contract with the respective contractor at their own responsibility. Therefore, participants need to ensure that the contract terms satisfy their requirements.

Participants may appoint a decommissioning and removal contractor of their choice.

15.7 Pavilion Repossession

C-304 To formally hand back their pavilion, participants must request an onsite repossession inspection and repossession meeting from the Organiser through the Participant Portal at least 10 working days in advance of the planned date for repossession.

C-305 Participants must ensure that the following activities are completed before handing the pavilion back to the Organiser:

- › Utility services are disconnected (and capped), as appropriate, and final accounts are settled
- › Pavilion is clear of any waste, spills, hazardous materials, or other contaminants
- › Restoration work is complete to return the pavilion back to its original condition
- › Pavilion clearance is obtained from the One-Stop Shop

Participants must provide the Organiser with appropriate evidence of completion of each of these activities.

The One-Stop Shop will conduct the necessary inspection of the pavilion and, if deemed satisfactory, will provide the participant with a signed Pavilion Repossession Certificate confirming that the process has been successfully completed.

15.8 Deliverables

Table 15.1 lists the deliverables that the participants are required to submit to the Organiser in relation to this chapter.

Table 15.1 Deliverables

Deliverable Name	Reason for Issue	Time of Issue	Reference
Decommissioning and Removal Request	For approval	At least 20 working days before commencing work	C-296
Request for Repossession Inspection and Repossession Meeting	For information	At least 10 working days in advance of the planned date for repossession	C-304

15.9 Supporting Information

The following resources can be accessed from the Participant Portal.







1. Decommissioning and Removal Request Form
2. Site-Wide Decommissioning and Removal Logistics Strategy







Summary of Requirements and Supporting Information

















Summary of Deliverables

					
Steps/Processes/ Services Required	Type	Form/ Template Available	Approval Duration	When	By Whom
1 Data Collection					
Pavilion drawings, architectural drawings, MEP drawings, and structural drawings	Request process	✓	5 working days	During Stage 2 Concept Design	Organiser to Participant
2 Participants' Set-up					
Participants' designated functions	Letter	N/A	N/A	At start of the project	Participant to Organiser
Details of participants' appointed consultants and contractors including licences, prequalification, and insurance	Documents	N/A	N/A	On appointment	Participant to Organiser
3 Design					
Stage 1: Theme Statement	Submission and approval process		20 working days	End of Stage 1 Theme Statement	Participant to Organiser
Theme Statement submission	Checklist	✓			
Stage 2: Concept Design	Submission and approval process		20 working days	End of Stage 2 Concept Design	Participant to Organiser
Statement of design compliance	Checklist	✓			
Interior design submission		N/A			
Exhibit design submission		N/A			
Retail and Food & Beverage submission		N/A			
Technology Plan		N/A			
Preliminary material specifications		N/A			
Preliminary engineering proposal (MEP/fire prevention)		N/A			
Preliminary Sustainability Report		N/A			
Delivery schedule	Template	✓		Monthly	
Building Information Modelling (BIM)		N/A		End of Stage 2 Concept Design	
Stage 3: Final Design	Submission and approval process		20 working days	End of Stage 3 Final Design	Participant to Organiser
Statement of design compliance	Checklist	✓			
Interior design submission		N/A			
Exhibit design submission		N/A			
Final material specifications		N/A			
Final engineering proposal (MEP/fire prevention)		N/A			
Final Sustainability Report		N/A			
Retail and Food & Beverage submission		N/A			
Accessibility Report		N/A			

					
Steps/Processes/ Services Required	Type	Form/ Template Available	Approval Duration	When	By Whom
Decommissioning and Removal Plan		N/A			
Final delivery schedule	Template	✓		Monthly	
BIM		N/A		End of Stage 3 Final Design	
Others Services during Design					Participant to Organiser
Technical queries	Request for Information and distribution process	N/A	3 working days	Anytime	
Monthly report	Template	✓	N/A	Monthly/end of month	
Design revisions as per Final Design review criteria	Resubmission process checklist	✓	5-10 working days	Anytime when design changes	
4 Requirements Prior to Construction					
Permit					One-Stop Shop to Participant
Fit-out Work Permit	Request process	✓		During Final Design	
Pavilion Possession Request	Request		20 working days	After approval of Concept/Final Design	Participant to Organiser
Pavilion Possession Request Approval	Approval process	✓	20 working days		Organiser to Participant
Worker welfare validation of selected contractors	Checklist	✓			Organiser
Commitment statement validation	Approval process	✓			Organiser
Contractor Self-Assessment Checklist	Checklist	✓			Participant
Delivery schedule	Template	✓			Participant
Construction Logistics Plan	Checklist	✓			Participant
Health and Safety Management Plan (supervision consultant)	Checklist	✓			Participant
Worker Welfare Management Plan (supervision consultant)	Checklist	✓			Participant
Quality Management Plan (supervision consultant)	Checklist	✓			Participant
Onboarding meeting	Meeting agenda	✓	1 working day	5 working days after submission of Pavilion Possession Request	Organiser and Participant
Pavilion possession meeting	Meeting agenda	✓	1 working day	Before pavilion handover to participants	Organiser and Participant
5 Construction					
Construction Health and Safety Plan	Checklist	✓	N/A	10 working days after pavilion possession	Participant
Contractor's Worker Welfare Management Plan	Checklist	✓	N/A	10 working days after pavilion possession	Participant
Contractor's Environmental Plan	Checklist	✓	N/A	10 working days after pavilion possession	Participant
Contractor's Project Quality Plan	Checklist	✓	N/A	10 working days after pavilion possession	Participant

					
Steps/Processes/ Services Required	Type	Form/ Template Available	Approval Duration	When	By Whom
Inspection and audit schedule	Template	✓	N/A	10 working days after pavilion possession	Participant
Laydown Area Access Request approval	Request process	✓	20 working days	During construction works	Organiser and Participant
Deliveries	Booking process	N/A	N/A	Anytime	Participant
Access management and accreditation	Access request process	✓	3 working days (vehicles/workforce), 1 working day (visitors)	Prior to access of vehicles, workforce, and visitors to site	Organiser
Authority to Proceed Application Form approval	Request and approval process	✓	20 working days	Before conducting activities outside the pavilion	Organiser
Inaccessible void inspection request	Request and inspection process	N/A	TBC	During interior construction and exhibit installation	Participant to Organiser
Monthly reporting	Reporting process	✓	N/A	Monthly/end of month	Participant
Waste management contractor support	Booking process	N/A	N/A	Anytime	Participant
New contractor approval	Review and approval process	✓	20 working days	On appointment after pavilion possession	Organiser
Serious incident response	Emergency response process	N/A	N/A	Anytime	Participant
Delivery schedule	Template	✓	N/A	Monthly	Participant
Non-conformance notification	Letter and report	✓	N/A	Anytime	Organiser and Participant
Sustainability/environment monitoring data logs	Template	✓	N/A	Monthly	Participant
Site queries		N/A	N/A	Anytime	Participant
Statutory Inspection Requests		Inspection process			
Health, Safety, Environment, and Quality inspection	Follow One-Stop Shop process	N/A	TBC	During construction works	One-Stop Shop
Final connections	Follow One-Stop Shop process	N/A	TBC	After completion of construction	One-Stop Shop
Fit-out Work Completion Certificate	Follow One-Stop Shop process	N/A	TBC	After the final inspection of the pavilion	One-Stop Shop
Operation Fitness Certificate	Follow One-Stop Shop process	N/A	TBC	After exhibit installation	Organiser

					
Steps/Processes/ Services Required	Type	Form/ Template Available	Approval Duration	When	By Whom
6 Decommissioning and Removal					
Decommissioning and Removal Request	Request		20 working days	Prior to decommissioning and removal activities	Participant to Organiser
Decommissioning and Removal Request approval	Approval process	✓	20 working days	7 calendar days after the conclusion of the Expo event	Organiser
Decommissioning and Removal Plan and Strategy					Participant
Contractor Self-Assessment Checklist	Checklist	✓			Participant
Commitment statement validation	Approval process	✓			
Decommissioning and removal schedule	Template	✓			Participant
Health and Safety Management Plan (supervision consultant)	Checklist	✓			Participant
Worker Welfare Management Plan (supervision consultant)	Checklist	✓			Participant
Quality Management Plan (supervision consultant)	Checklist	✓			Participant
Work Permit for decommissioning and removal	Request process	✓	10 working days	Prior to decommissioning and removal activities	One-Stop Shop
Pavilion repossession	Repossession meeting	N/A	10 working days	Completion of decommissioning and removal activities	Organiser and Participant

Information Provided by the Organiser to Support the Participants

The following is a summary of the resources that are presented in this document and will be available on the Participant Portal.

- › Accreditation, Vehicle Pass, and Visitor Pass Application Forms
- › Authority to Proceed Application Form
- › Construction Environmental Management Plan (including Construction Waste Management Plan)
- › Contractor Environmental Plan Checklist
- › Contractor Self-Assessment Checklist Template
- › Contractor Site-Wide Logistics Obligations
- › Decommissioning and Removal Request Form
- › Delivery Schedule Template
- › Dubai Civil Defence
- › Emergency Plan
- › Environment Assurance Standards
- › Environment Policy
- › Environmental Clearance
- › Environmental Impact Assessment Report
- › Event Operations Guides
- › Health and Safety and Worker Welfare Commitment Statement Template
- › Health and Safety Assurance Standards
- › Health and Safety Plan Checklists
- › Health and Safety Policy
- › Insurance Guide
- › Laydown Area Access Request Form
- › Pavilion Accessibility Design Guide
- › Pavilion Drawing
- › Pavilion Possession Request Form
- › Pavilion Progress Report Template
- › Quality Assurance Standards
- › Quality Plan Checklists
- › Quality Policy
- › Serious Incident Notification Process
- › Site Entrances Plan
- › Site-Wide Construction Emergency Plan
- › Site-Wide Decommissioning and Removal Logistics Strategy
- › Site-Wide Visitor Flow Strategy
- › Sustainability Policy
- › Theme Guide
- › Worker Welfare Assurance Standards
- › Worker Welfare Improvement Action Plan Template
- › Worker Welfare Inspection Checklist
- › Worker Welfare Management Plan Checklist
- › Worker Welfare Policy
- › Worker Welfare Prequalification Questions

External Links

The following is a summary of links to external websites that are presented in this document.

› **Americans with Disabilities Act**

<https://adata.org/learn-about-ada>

› **AS 3745 (2010)**

<https://infostore.saiglobal.com/store/PreviewDoc.aspx?saleItemID=2182780>

› **ASHRAE 90.1**

<https://www.ashrae.org/resources--publications/bookstore/standard-90-1>

› **ASHRAE Standard 55**

<https://www.ashrae.org/resources--publications/bookstore/standard-55-and-user-s-manual>

› **ASTM D6751**

<https://www.astm.org/Standards/D6751.htm>

› **Connection Guidelines for Distributed Renewable Resources Generation Connected to the Distribution Network (DEWA)**

https://www.dewa.gov.ae/images/smartinitiatives/DRRG_Connection_guidelines_final.pdf

› **Department of Economic Development - Dubai**

https://eservices.dubaied.gov.ae/Pages/Anon/RLAForm.aspx?1=1&PID=10122&LID=&sname=Fill_Registration_&Licensing_Application_Form&srp=-1&sf=-1&ifn=303467818&pn=173956&pn2=

› **Design and Layout Requirements for Food Establishments (by Dubai Municipality's Food Safety Department)**

<http://www.foodsafe.ae/pic/business-requirements.aspx>

› **DEWA**

<https://www.dewa.gov.ae/en>

› **Dubai Civil Defence**

<http://www.dcd.gov.ae>

› **Dubai Green Economy Partnership**

<http://greeneconomy.ae/>

› **Dubai Integrated Energy Strategy 2030**

<http://taqati.ae/dies-2030/>

› **Dubai Law (24)**

<https://portal.dps.ae/laws.html>

› **Dubai Municipality**

<https://www.dm.gov.ae/>

› **Dubai Police (SIRA)**

<https://dubaipolice.gov.ae/>

› **Dubai South**

<https://www.dubaisouth.ae/>

› **EN 14214**

<https://www.cenelec.eu/standardsdevelopment/ourproducts/europeanstandards.html>

› **Etisalat**

<http://www.etisalat.ae/nrd/en/index.jsph>

› **European Standards for Waste Incineration**

<http://ec.europa.eu/environment/archives/air/stationary/wid/legislation.htm>

› **Green Building Regulations and Specifications in Dubai**

<https://www.dm.gov.ae/wps/wcm/connect/662c2fc7-03b4-41a5-aad0-c9d1959773a3/Green+Building+Regulations+and+Speci.pdf?MOD=AJPERES>

› **IES**

<http://www.ies.org/>

› **International Energy Conservation Code**

<http://www.iccsafe.org/about-icc/government-relations/international-energy-conservation-code-resource-page/>

› **ISO 9001: 2015**

http://www.iso.org/iso/iso_9000

› **LEED® Gold New Construction Version 4**

<http://www.usgbc.org/leed-v4>

› **Ministry of Climate Change and Environment**

<http://www.moccae.gov.ae/en/home.aspx>

› **NFPA 101 (2015)**

<http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=101>

› **NFPA 5000 (2015)**

<http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=5000>

› **Standards for Distributed Renewable Resources Generators Connected to the Distribution Network (DEWA)**

https://www.dewa.gov.ae/images/smartforms/DEWA_Standards_for_Distributed_Renewable_Resources_Generators.pdf

› **UAE Federal Customs Authority**

<https://www.fca.gov.ae/en/Home/Pages/default.aspx>

› **UAE Fire and Life Safety Code of Practice**

http://www.dcd.gov.ae/portal/eng/UAEFIRECODE_ENG.pdf

› **UAE Green Growth Strategy**

<http://www.moccae.gov.ae/default.aspx>

› **UAE Labour Law**

<http://www.mohre.gov.ae/en/labour-law/labour-law.aspx>

› **UAE Vision 2021**

<https://www.vision2021.ae/en>

› **UNEP's Sustainable Public Procurement Programme**

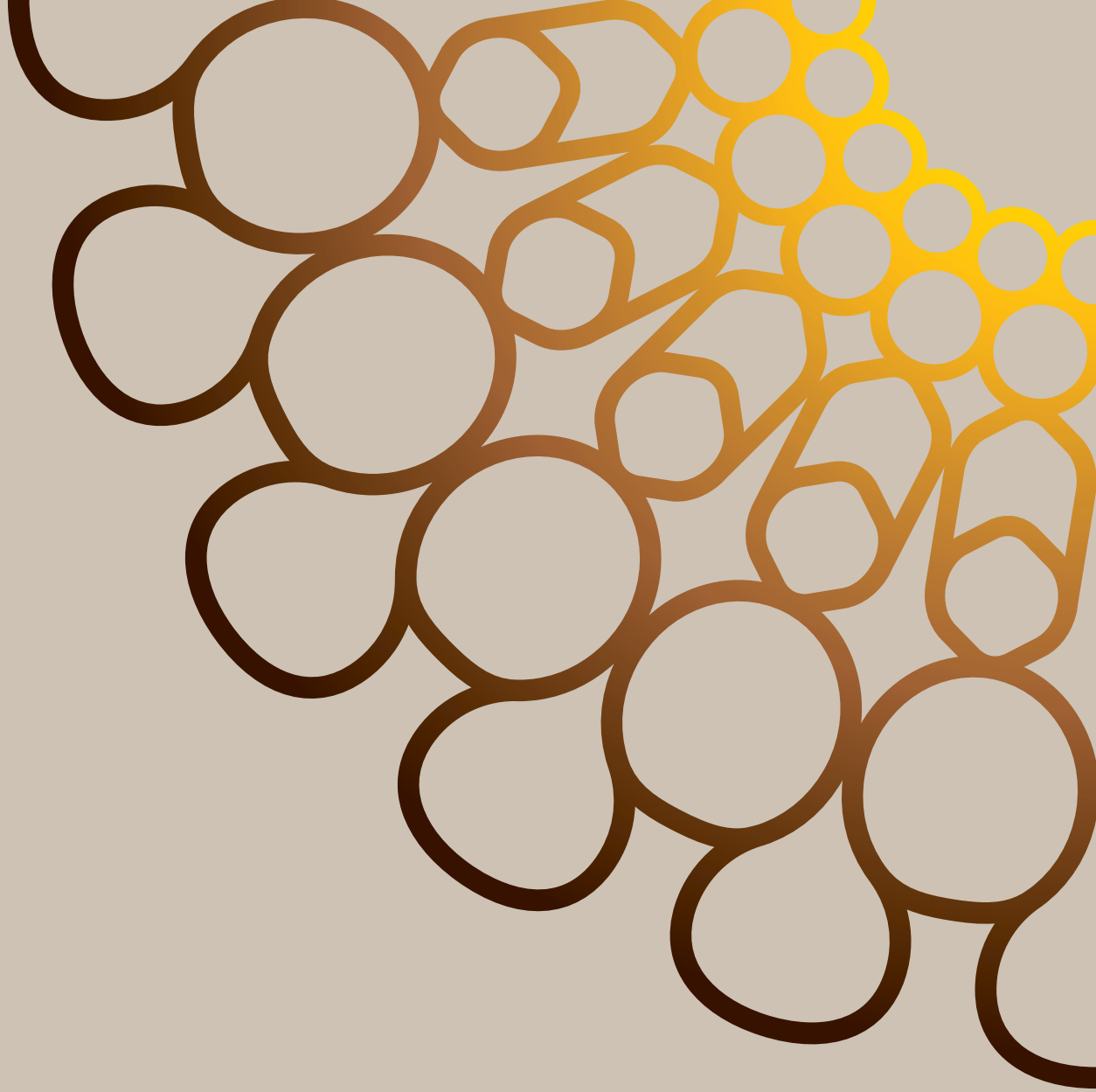
<http://www.unep.org/>

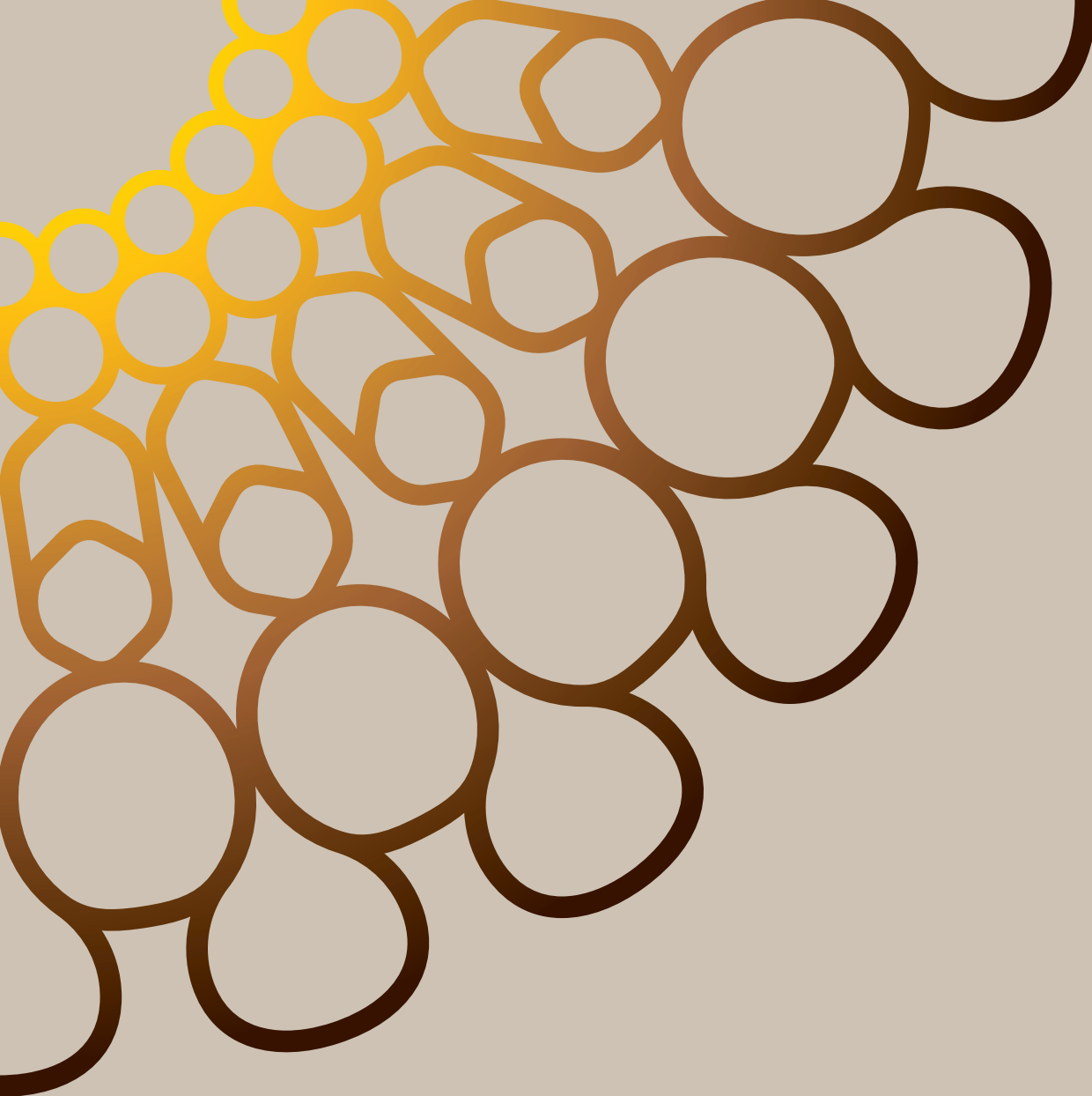
File Formats for Models and Drawings

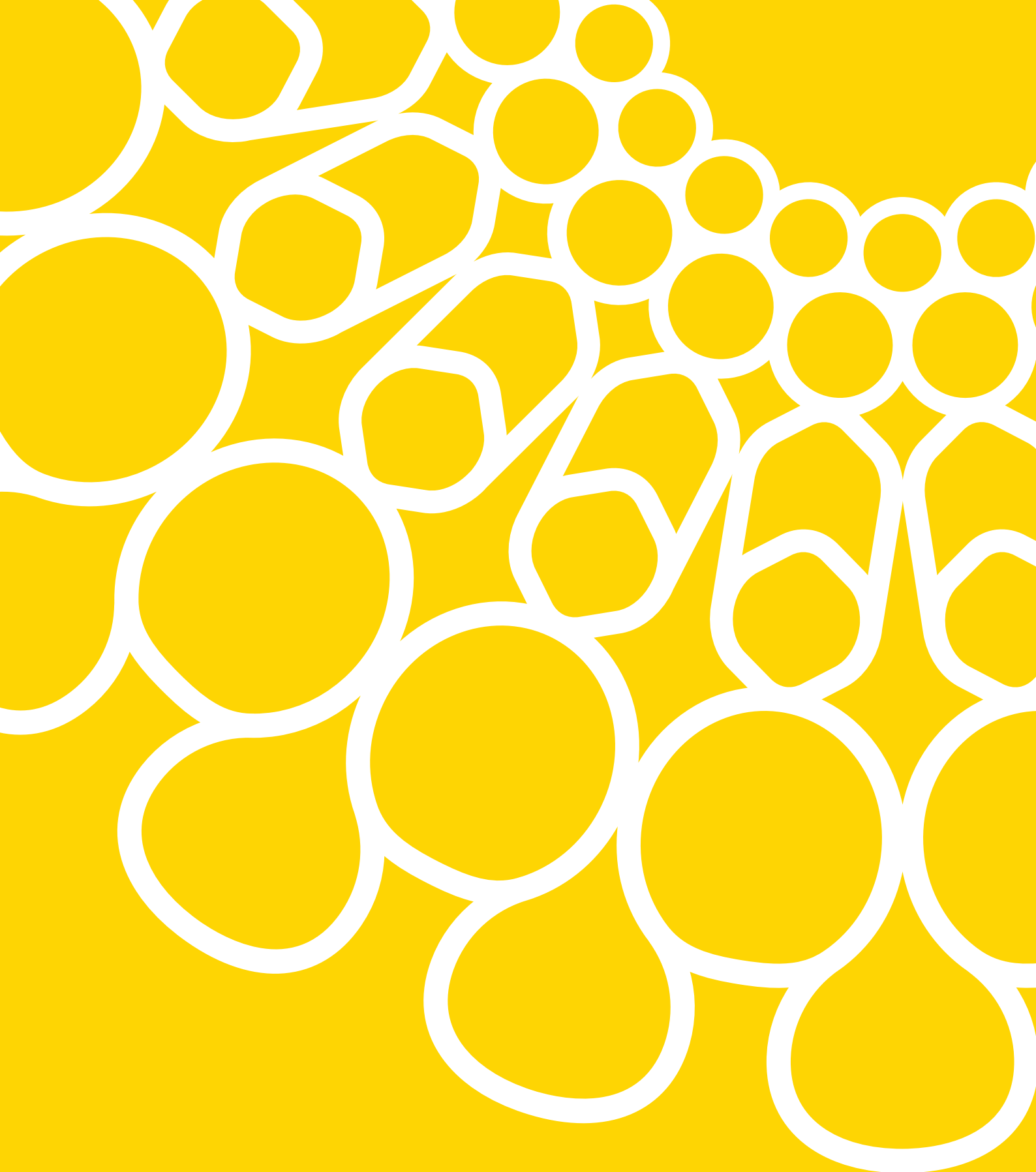
Submittal	File Format	Notes
3D BIM Models	Native, IFC, NWD	Specified file formats are required to be submitted from 3D models as a minimum.
2D Drawings	Native, DWG	PDF and DWG formats of each drawing deliverable are required to be submitted for records retention at each stage gate of each phase of the design submission process including the associate drawing register.

File Formats for Design Submission

Design Submission	PDF	BIM	DWG	DWF
Architectural and Structural	✓	✓	✓	
Electrical	✓	✓	✓	✓
Water	✓	✓	✓	
Drainage and Irrigation	✓	✓	✓	
Telecommunications	✓	✓	✓	✓
Firefighting	✓	✓	✓	✓







Contact info:

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