2023

EXPO MASTER PLANNING

Preparing for an International Horticultural Expo

AIPH

The world's champion for the power of plants

ARCADIS

Design & Consultancy for natural and built assets

Preface

Elena Terekhova
International Relations Manager, AIPH

How can I create a Master Plan for an Expo?
Is there an ideal Master Plan?
Can you share some good examples?

Expo Organisers often ask me these questions, but giving a definitive answer is more complex.

Horticultural Expos have shaped entire city areas for many decades, not just for the Expo duration.

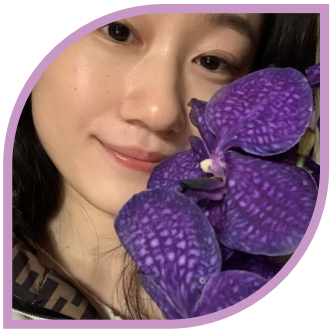
Sharing Master Plans of successful past Expos alone is never enough because each city's project is different and unique in its challenges and beauty.

I wanted to find a helpful answer for our Expo Organisers. So this is where the Expo Master Plan guide began.

From May to August 2022, AIPH welcomed an intern from Beijing Forestry University, Ms Yunlin Li, who collected and analysed the Master Plans of past Expos from her research and conclusions on the form and subjects to be covered; we handed the project over to Arcadis Landscape – a global design, engineering, and management consulting company.

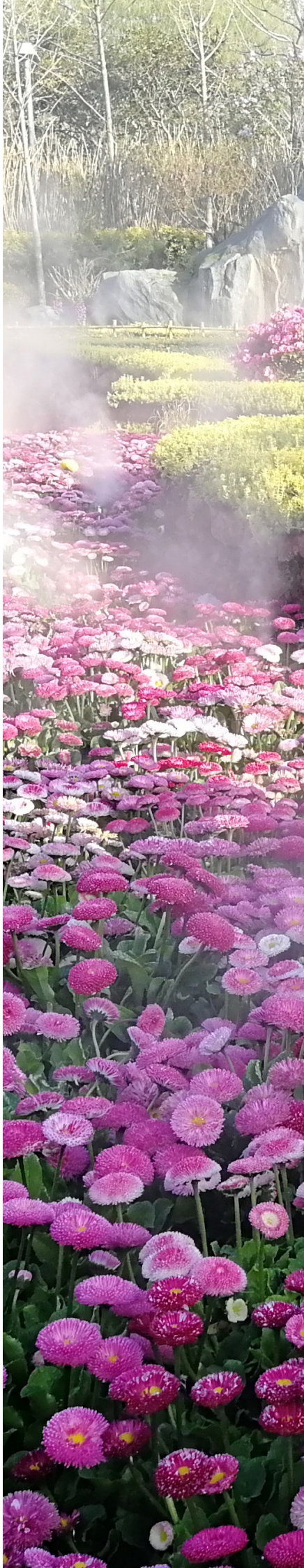
With this year-long collaboration across cultures and disciplines, the Expo Master Planning guide is ready to help Expo Organisers learn from the best practices from past International Horticultural Expos.

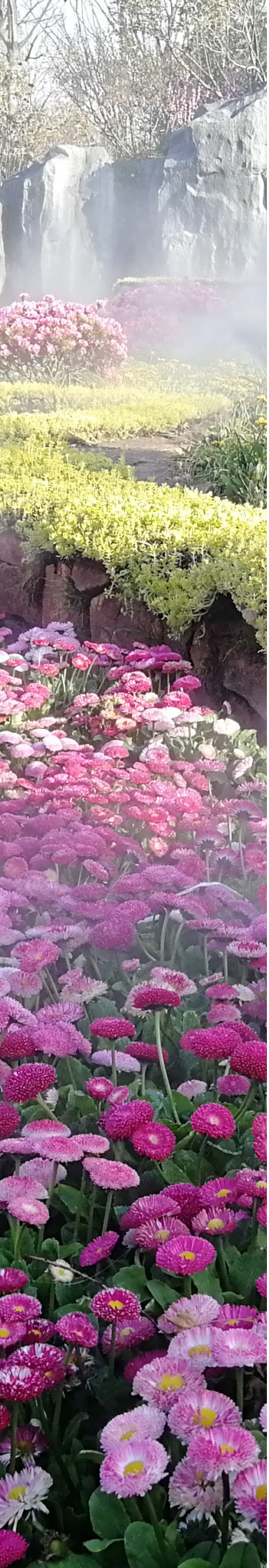
AIPH wishes you success in achieving an unforgettable mega event full of green and colourful nature to inspire your citizens and elevate your city globally through the support of this Expo Master Planning guide.



Yunlin Li
Intern from Beijing Forestery University, China

Content first published March 2023.
Editorial Design by Rachel Wakefield, AIPH Communications Executive.





About AIPH

International Association of Horticultural Producers - AIPH was established as an association in Switzerland in 1948, when a group of grower associations of Western Europe came together, united by a post-war ambition to mend relations between European horticulturists and to rebuild burnt bridges. Over the following decades, AIPH has grown into a global force for horticulture, uniting grower associations across the world and it is responsible for the world's finest horticultural Expos. AIPH became an international non-profit association, incorporated in Belgium in 2013.

AIPH members represent growers responsible for the majority of the global production of ornamental plants, flowers and trees. Our purpose is to reignite and uphold an appreciation of plants that we believe is a basic human instinct. As a community of plant-growing organisations, we strive for a world in which humanity, technology, and nature exist in a healthy and stable equilibrium.

AIPH is the approving body of Horticultural Expos: major international events lasting up to six months and covering park areas from 25 to 500 hectares. Expos create gardens, pavilions, events, and attractions that delight visitors. Expos in Europe typically attract 2-4 million visitors, and Expos in Asia, like Expo 2019 Beijing, can reach up to 10 million. AIPH is proud to have approved and supported more than 50 International Horticultural Exhibitions since 1960.

Our approved Expos are spectacular, public-facing events enjoyed by millions of visitors, and are highly effective at stimulating demand for flowers and plants and for raising the profile and status of the horticulture industry in the country that hosts them. For the host city, these events draw national and international focus whilst improving the city's environmental reputation and leaving a lasting green legacy.

About the authors

John Boon comes from a family of flower bulb growers. His great-grandfather and grandfather were board members of the Flora (Bovenkarspel, The Netherlands), the world's largest indoor flower bulb exhibition. His love for everything that blooms and grows was therefore instilled in him early on. John studied Landscape Architecture at the Academy of Architecture (Amsterdam University of the Arts).
In 2007 he was appointed chief designer of the World Horticultural Expo Floriade 2012 in Venlo, the Netherlands. Since then, he has been involved as an advisor in various horticultural exhibitions. John leads the Landscape Architecture and Urban Design team at Arcadis in The Netherlands.

John Boon
Director of Landscape Architecture and Urban Design, ARCADIS

Hans Smolenaers is a landscape architect and urban designer. He studied at Van Hall Larenstein University of Applied Sciences and the University of Technology in Delft. He assisted his teacher Michiel den Ruijter during his PhD research on World Expos and World Horticultural Expos.
Hans has become an expert in design philosophies for world exhibitions. His enthusiasm for this subject is also evident in his special drawings, books and objects collection. Hans is the team manager of the Urban Design team at Arcadis in The Netherlands.

Hans Smolenaers
Architect, ARCADIS

Bas Dijkhoff studied Urban Design at the Breda University of Applied Sciences and the Barlett School of Planning (University College London).
The collaboration with John and Hans also aroused his interest in World Exhibitions. Bas has collected the reference projects for this publication, produced the illustrations and carried out spatial analyses.

Bas Dijkhoff
Urban Designer, ARCADIS

Contents

Expo 2019 Beijing, China

1 Introduction

1.1 Reason, Goal and Reading Guide

The *Expo Master Planning* guide is for Expo Organisers, particularly those organising AIPH-approved A1 and B category International Horticultural Exhibitions. It provides an overview of all aspects related to the planning and realisation of such mega events.

This guide accompanies AIPH's *Organiser's Guide for International Horticultural Exhibitions.* It will address the concerns of Expo Organisers (and their design teams) who are searching for more guidance on Master Planning.
This guide shows you step-by-step how to make a Master Plan for your Expo and carefully consider your Expo's legacy.
In Chapter 2, we'll explain how to set up the Feasibility Study, analyse all the aspects that establish baseline information, and set the scene for your Strategic Framework, which we elaborate on in Chapter 3.
In Chapter 4, we give you an insight into the requirements for experience design that form all the aspects that come together in one integrated Master Plan which we comment more upon in Chapter 5.
And last but not least, in Chapter 6, we summarise the steps in the design process that Expo Organisers can take after the master planning phase.
In Chapter 7, we look at some Master Plan designs in practice.
Of course, no one Expo is the same, and we invite Expo organisers to provide their own experiences to AIPH to help continuously improve this guide for the benefit of future International Horticultural Expos.

Definition of an Expo Master Plan

The Expo Master Plan is a development vision in which the program of requirements for an International Horticultural Expo is further elaborated based on spatial concepts and is given an initial spatial elaboration.

The Master Plan shows the connection between the buildings, the Expo site's outdoor spaces, and surrounding environments. It is based on public input, surveys, planning initiatives, existing development, physical characteristics, and social and economic conditions.

What is not included in the Masterplan phase:

- Detailed Lay Out Of The Expo Site.
- Secondary And Tertiary Paths.
- Detailed Elaboration Of The Utilities
- Detailed Interpretation Of The Green And Water Structure
- Location Of Small Structures Such As Kiosks Etc.
- Detailed Elaboration Of Additional Transport (Such As Cable Car Or Road Train Stations).

What is involved in making an International Horticultural Expo Master Plan?

The Expo Master Plan guide aims to develop a global presentation of the project in such a way that it provides a good picture of the solutions on an urban planning and landscape scale and of the main form and main layout of the buildings.

First things first, the activities in this phase mainly include drawing up an urban development and landscape plan, the design of the main structure and the main layout of the buildings and the first ideas about the underground infrastructure. Please do this for both the Expo and its Legacy (yes, two separate plans!). Try to make as many parts as possible 'permanent' (both from investments and sustainability).
For the International Horticultural Expo, the Master Plan must show how the site will be opened up and how the public can be distributed evenly over the area. At this stage, also think about the walking distances. If these are very long, consider additional transport on site (cable car, road train, etc.). It is also important to indicate where the parking spaces are and how the site can be reached in other ways (such as public transport). Also, consider where the entries (international and national) will be placed. Finally, decide where the most important buildings (e.g., entrance buildings, restaurants, indoor exhibition buildings) will be located.

The legacy of the International Horticultural Expo is entirely dependent on the future functions of the area that the Master Plan shows. If a park is planned, the Master Plan will show the main access, the masses (for example, trees and buildings) and the spaces (for example, water features, lawns, and low plants). If the exhibition site transforms into a new residential area, the Master Plan will show the preliminary urban design (main access roads, building surfaces and open spaces). If the site is to have an agricultural function, the Master Plan must show the accessibility and the parcelling.
The Master Plan will also have to show, independently of the future function, how water management is organised spatially.
The Master Plan is not intended to provide a detailed representation of the design of the area. In a later phase, the Master Plan will be elaborated into a Preliminary Design and Final Design. During those two design phases, the level of detail of the plan continues to increase. So don't get too caught up in details too soon!

Checklist Master Plan for Horticultural Expo:

- ☐ Location Parking Spaces, Train Station, Bus Stop, And Taxi Rank.
- ☐ Entrance(s).
- ☐ Archaeology, Cultural-Historical Elements, And Existing Plantations To Be Preserved.
- ☐ Main Watercourses And/Or Water Surfaces
- ☐ Main Lay Out Of The Underground Infrastructure.
- ☐ Design Of The Primary Path Structure (Main Access Routes).
- ☐ Main Design Of The Logistics Routes.
- ☐ Main Lay Out Of Any Additional Transport, Such As A Cable Car Route Or A Road Train Route.
- ☐ Main Green Structure.
- ☐ Areas Where (Inter)National Entrants Will Be Given A Place (Including Rough Parcelling).
- ☐ Locations For Entertainment And/Or Cultural Events (E.g., An Open-Air Theatre).
- ☐ Location And Size Of The Most Important Buildings (Not Being Entrants' Pavilions).
- ☐ Land Ownership Situation

1.2 Legacy

From both sustainability and justification of investments, it is desirable to see the International Horticultural Expo as a fantastic, temporary event and a catalyst for area development. This approach is often referred to as the 'Expo Legacy'.

In practice, there will always be an interaction between the temporary (Expo) and permanent (Expo Legacy) layout of the site while planning. However, the permanent situation must always be leading in the Master Plan. By doing so, the Master Plan is a dynamic, long-term planning document that provides a conceptual layout to guide:

1. The area development (Expo Legacy - long term).
2. The International Horticultural Expo (as a temporary event that catalysis the area development).

Re-using the existing infrastructure of the Expo in the after-use is the most sustainable option. When first designing the Expo Legacy, this will generally be the case.

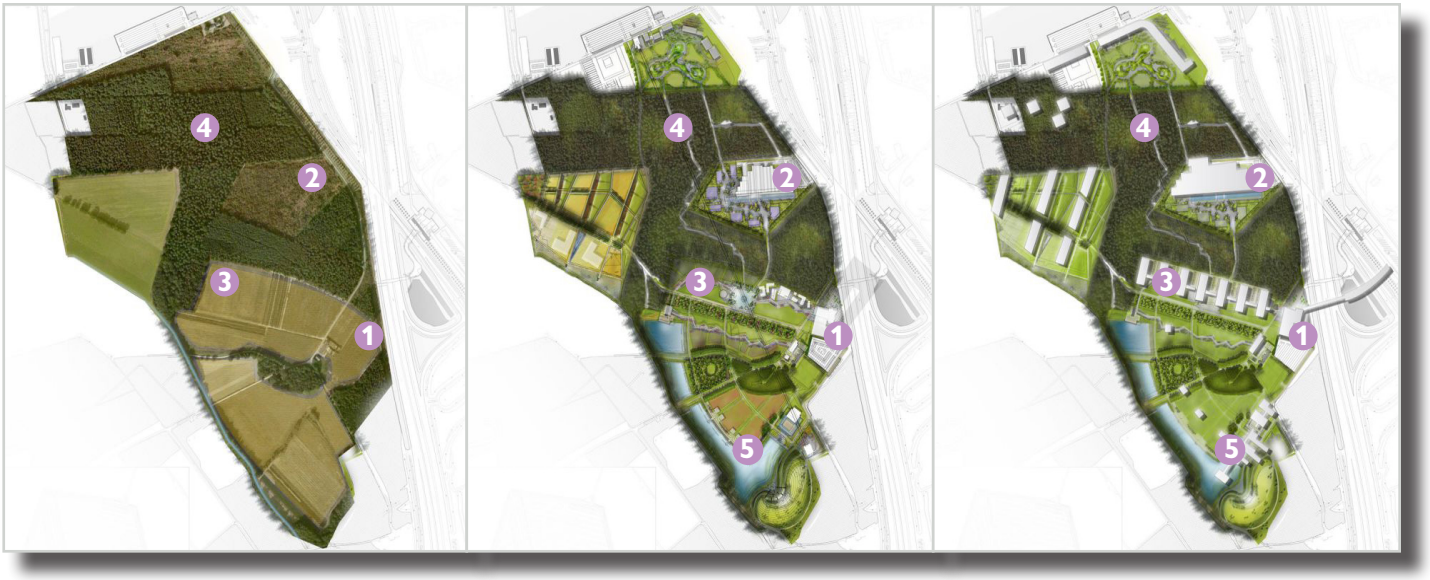
An International Horticultural Expo can accommodate various functions afterwards. The most common functions are:

- Park (with or without entrance fees).
- Event area (a dedicated place for festivals, outdoor fairs, etc.).
- Residential area (often very green, where part of the planting of the Expo Park is integrated into the urban layout).
- Business or office park
- Ornamental Horticultural production area

But, of course, the Legacy of an Expo site is not limited to these functions. Try to find a logical destination for the site in which the investments in the (temporary) Expo contribute to the quality of the final situation.

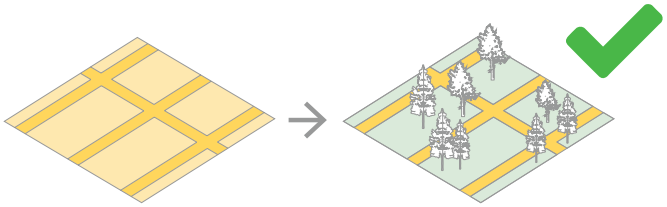
An Expo Area can be used strategically. For example, as a buffer between an urban area and a valuable nature reserve (a good example is the Expo 2013 Suncheonman International Garden Expo in South Korea).

Expo 2012 Floriade Venlo: existing situation, Expo Plan and after-use plan

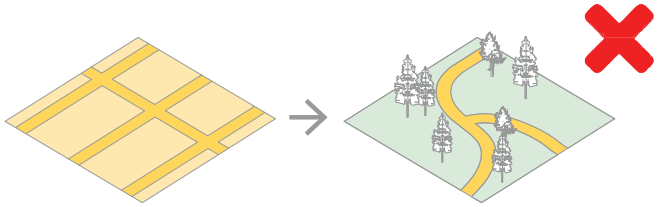


1. The Innovatower, an office tower, was built for the Expo and still serves that purpose long after the Expo has finished.
2. The Villa Flora was built as an indoor Exposition space; it now functions as an office space.
3. The green site in the centre of the Expo site was used as space for Pavilions during the Expo, and new office buildings were planned for it for the after-use.
4. Notably, the existing forest structures have been maintained in every phase.
5. The area with a large pond and open-air theatre was the green heart of the Expo and is still adding value to the office park today.

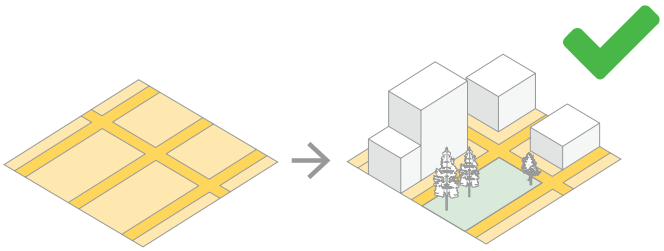
Dealing with the structure of the Expo site: maintaining structures is sustainable



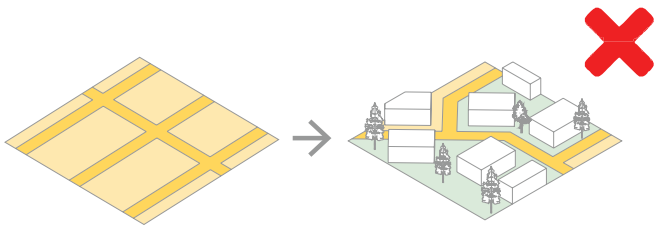
Park while maintaining existing structures



Park while introducing new structures



Urban development while maintaining existing structures



Urban development while introducing new structures

Expo To Residential Area

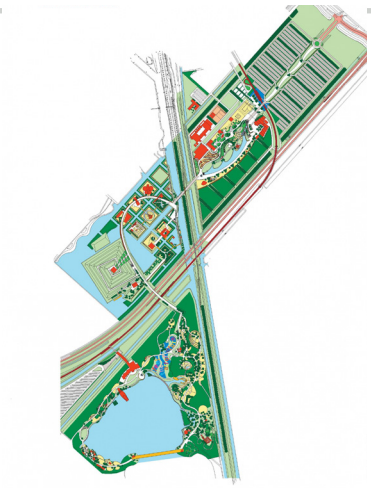
Floriade Zoetermeer (1992): Expo Plan and after-use Plan

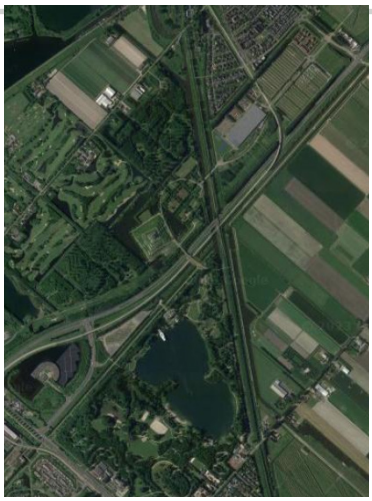
Expo To Park

Floriade Gaasperplas (1982): Expo Plan and after-use Plan

Expo To Event Area

Floriade Hoofddorp (2002): Expo Plan and after-use Plan





Expo To Business Area

Floriade Venlo (2012): Expo Plan and after-use Plan

Expo 2006 Chiang Mai, Thailand

2 Feasibility Study

2.1 The Master Plan Feasibility Study

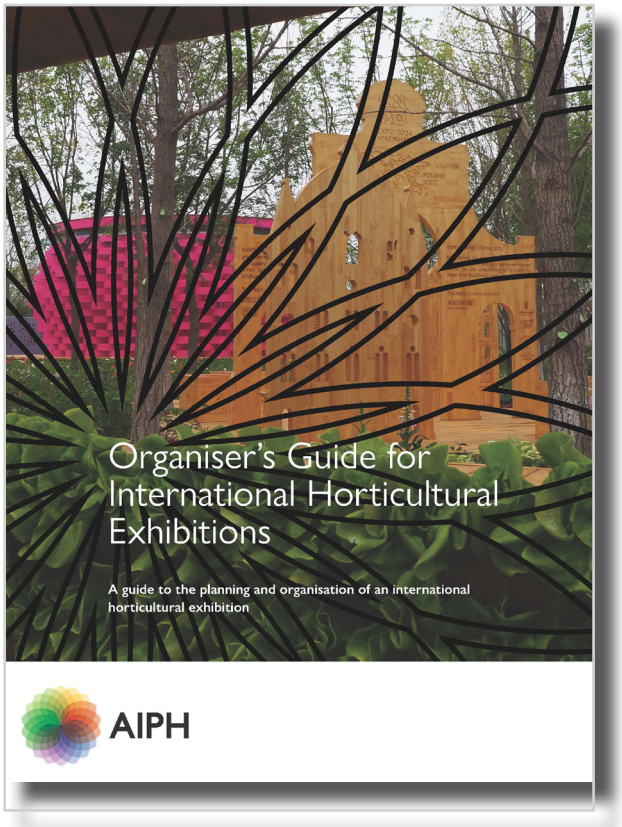
The Feasibility Study is an objective review of the available options for developing the site (both for the International Horticultural Expo and its Legacy). Expo Organisers can use this phase to compare different locations. However, sometimes complete Master Plans are made for multiple locations before comparing them (this could also be a competition).

2.2 Input — Quick Scan 'Environment'

The Expo Organiser should commission any background reports ('quick scans') deemed necessary (that is, hydrology, environment, cultural heritage, transport, and so on) at this stage to inform the master planning process.

Be aware that this study is also an important indication of the Legal Feasibility of your plans. Which permits are required? Is it realistic that these permits will be issued (on time)?
Also, the following matters must have been determined:

- Planning and Work Breakdown Structure (see chapter 4 and page 44 of the *Organiser's Guide for International Horticultural Exhibitions*).
- Theme Development (see chapter 5 of the *Organiser's Guide for International Horticultural Exhibitions*).
- Experience Concept (see chapter 6 of the *Organiser's Guide for International Horticultural Exhibitions*).
- Target Group(s) and Typical Visit (see chapter 7 of the *Organiser's Guide for International Horticultural Exhibitions*).
- Design Day (see chapter 8 of the *Organiser's Guide for International Horticultural Exhibitions*).
- Expected categories of participants (see chapter 10 of the *Organiser's Guide for International Horticultural Exhibitions*).
- The Event and Culture Program of the Expo (namely, the global idea of the spaces that are needed to accommodate this).
- The Objectives for the Legacy of the Expo.



Checklist Conditioning Studies:

- ☐ Archaeology and objects of Cultural Heritage.
- ☐ Soil and Geomorphology.
- ☐ Existing Water Structures.
- ☐ Ecology (protected flora and fauna).
- ☐ Existing Green Structure.
- ☐ Existing Infrastructure (underground and above ground).
- ☐ Transport (expected modal split, etc.).
- ☐ External Security (for example, risks from nearby highways).
- ☐ Environmental Studies (quality of air, water, sound, etc.).
- ☐ Transport (modal split, etc.).
- ☐ Zoning plans and other legal provisions relating to the site.

2.3 Output — Decision

The outcome of the Feasibility Study indicates the suitability of the area for an International Horticultural Expo and the intended function(s) for the period after it (Expo legacy).

Expo Organisers must consider the Financial, Social, and Environmental Aspects.
An International Horticultural Expo is an investment that (most of the time) increases the value of the site itself and the immediate surroundings.

Figure 13: Work Breakdown Structure Expo Park

Park (In this WBS we do not differentiate between temporary and permanent construction measures)						
Project Management	**Site Preparation**	**Landscape**	**Urban Infrastructure**	**Buildings & Facilities**	**Street Furnishing/ Public Design**	**Special Projects**
Project Management Architecture Landscape Architecture Planting Commission Experience Management Engineering Quality Management Construction Logistics Permits Participants Services	Site Preparation Site Restoration • dismantling • prep final park	Topography Lake Forest Trees Shrubbery Perennials Flower Bulbs Annuals Lawns Natural meadows Maintenance	Underground • Electricity • Gas • ICT • Water • Sewerage • Irrigation System **Inside** Roads Walkways Places **Outside the Park** Car Parking Camper parking Touring cars Public Transport Bikes	Ticketing Entrance(s) Restaurants Kiosks Expo Souvenirs Souvenirs intl participants Restrooms Visitor Information & Services Rental Services Lockers Warehouse VIP Lounge Media Convention Center Stages Backstage Areas Preview Center Employ Areas Security Area Facility Management Police Station Medical Services Bank Fence/Gates Indoor exhibition	Street Lighting Benches Street Signs Information System General Planting Garbage Furniture and furnishings • Indoor exhibition • Offices • Convention Center • Operations Center • Hospitality - …	Play Grounds Fountains / water elements Art Cable Car Viewing Tower

Figure 15: Invitation Process for the International Participants

Invitation and Realisation Process for the Official Participants	
• Organisation, Information & Network phase (2 years)	• Coordination of international information days
• Establish organisation	• Planning & contracting phase (1 year)
• Concept development	• Construction phase (6-9 months)
• Coordinate invitation process with the government	• Invitation to organize a National Day (by the government of the host country)
• Information material	• International Planning Meeting I
• Inform embassies	• Opening Ceremony
• Visit and inform embassies of countries to be invited	• Exhibition phase
• Official Invitation phase (2 years)	• International Planning Meeting II
• Verification that the invitation has arrived	• International Planning Meeting III
• Visit invited countries Coordination of international information days	• Closing Ceremony
• Visit invited countries	• Dismantling & Contract Closeout

Expo 2012 Venlo, Netherlands.

3 Strategic Framework

3.1 Introduction

The strategic framework establishes baseline information and sets the scene.

At least the following aspects must be analysed (as a further deepening of the 'quick scans' made during the Feasibility Study):

- Archaeology
- Soil & Geomorphology
- Water Structure
- Ecology
- Green Structure
- Infrastructure Network (under and above ground)
- Anthropogenic Development & Cultural History
- Sustainability (setting goals and ambitions)
- Current Zoning and relevant/applicable Planning Policies any particularly significant opportunities and constraints relevant to the site.

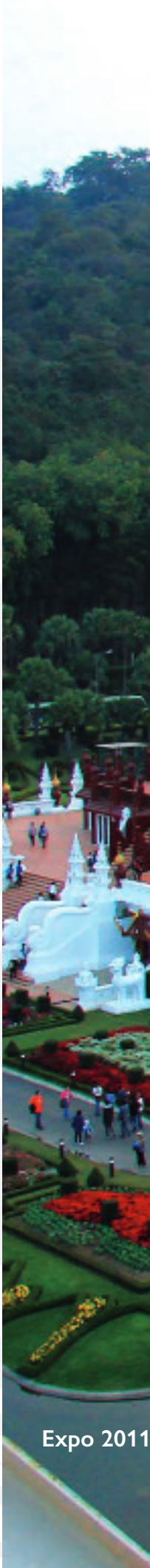
Be aware that these aspects also play an important role in gaining support from the stakeholders. Image damage often arises because these phases have not been carefully completed or because the results have yet to be shared transparently. Therefore, a stakeholder analysis is often part of this phase; based on that, a vision of stakeholder management. If you already find issues with certain aspects, devise mitigating and compensating measures at this stage. These can then be included in the Master Plan by adding them to your program of requirements.
During this phase, you also determine which core competencies are required to develop your Master Plan. For the horticultural exposition, you need at least a leading landscape architect. Depending on the foreseen after-use, an urban designer or planner is added to the team. Other required competencies can be transportation planning, economic development, cost planning/ surveying, cultural heritage, sustainability, ecology, and water management. Very often, the core of the Master Plan team is formed by the spatial designers (landscape architects, urban designers, architects) supported by a supportive ring of other required competencies.

Archaeology

All remains, objects and other traces of humankind from past times are elements of the archaeological heritage.

The archaeological heritage includes structures, constructions, groups of buildings, developed sites, moveable objects, and monuments of other kinds as well as their context, whether on land or underwater.
It is important to integrate the conservation and archaeological investigation of archaeological heritage in the planning policies of your expo site (and its heritage).
Establish cooperation and consultation processes between archaeologists and others; for example, but not limited to, the design team of your expo and project developers.

An important principle is that every investigation shall be as minimal as possible in its impact, and uncovered findings are conserved adequately during or after excavation.
Excavations must be under the control of qualified, specially authorised persons.
Also, map out which cultural-historical elements there are in the area.
These are landscape structures and components in an area that bear witness to a long, still recognisable development history.
Think of historic roads, walls, wooded banks, etcetera.


Expo 2011

Chiang Mai, Thailand.

Soil & Geomorphology

Geomorphological research studies the processes that play or have played a role in the formation of the landscape. This research provides insight into the site's suitability or making it suitable for buildings and planting. The soil investigation must, in any case, provide insight into the nutritional value of the soil, such as Nitrogen, phosphorus, potassium, calcium ions and Magnesium oxide, the organic matter content and the pH (acidity). It is also important to know the moisture balance of the soil.

Water System

In the water system study, the most important surface waters (water quality and size) must be mapped out. In addition, any flood risks are inventoried. Groundwater can also be important (e.g., as a planting source or a construction limiting factor).

Ecology

Visualise the existing ecological qualities of the site (both flora and fauna). Do not only look at the occurrence of certain species but also the importance of the site as a biotope or the foraging area of certain species.

Green structure

Map out the existing green structure. Determine which elements are important to keep and where supplementation is desirable.

Infrastructure Network (under and above ground)

Map out the existing infrastructure. The existing underground infrastructure is often a precondition for (above-ground) development. If there are pipes or cables that must be moved, then there must be enough money and time to do so (check if this is the case!). Also, check what role the existing above-ground infrastructure (roads, paths, etc.) can play during the Expo and the period afterwards.

Anthropogenic Development

Research which elements have been introduced by man in the plan area and which can play a role in the development of the Expo (and its heritage). Consider, for example, the (re)use of existing buildings. If expropriation of people is necessary, it must be done legally and humanely (also if settlements are considered illegal).

Sustainability (setting goals and ambitions)

This is discussed in section 3.4. Take note of AIPH's Sustainability Policy and Sustainability Strategy to set your goals and ambitions.

Research and investigate current zoning and relevant/ applicable planning policies, any particularly significant opportunities and constraints relevant to the site.

Zoning and planning policies vary from country to country. Ensure you have an up-to-date overview of your Expo site's prevailing zoning and planning policies. Make an inventory of which needs to be adjusted for the Expo (and its heritage) and which permits are required.

3.2 Case study: Expo 2012 Floriade Venlo

Examples of all the elements analysed in the preparations for the Floriade 2012 terrain

Floriade Venlo 2012: Historical Map 1838

In the Expo site area, this 19th Century Map shows several existing roads dated from this period.

Floriade Venlo 2012: Historical Landscape Structures 1894

Fifty six years onwards, the landscape is evolving. (1) The fields near St. Jan are clearly recognisable. (2) The old wooded bank that was supposed to keep the cattle out of the fields is located on the north side of the fields. (3) The heath has become less important for delimitation. Forests are growing. The city of Mierbeek is also visible.

Floriade Venlo 2012: Historically Significant Elements

The old St. Jan farm with the draw-well, the chapel, the wooded bank and the cattle corral in the woods are indicated in purple. In pink is the current farm St. Jan, including buildings, and in orange, the burial mounds that are still present. These elements together symbolize 5,000 years of horticulture on this site.

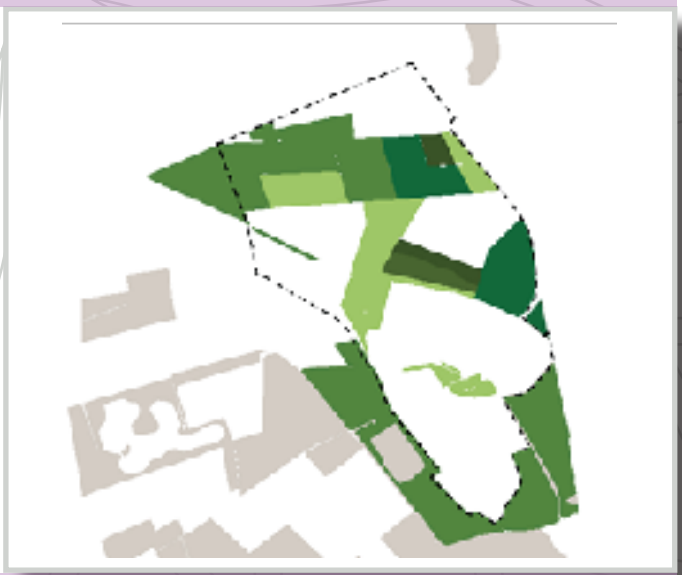
Floriade Venlo 2012: Relief

The higher parts are indicated in a lighter shade than the lower parts. The maximum height difference on the terrain is three metres. (1) The Southwest side along the Mierbeek is the lowest area.

Floriade Venlo 2012: Mass Space

The forests form the masses. These forests enclose many spaces. Some of these spaces are entirely surrounded by woods. Other spaces have a visual relationship with the larger open area on the West and North sides of the terrain.

Floriade Venlo 2012: Green and Blue Framework



Floriade Venlo 2012: Green Structures

This map shows the variation between trees and open spaces. The forests consist primarily of coniferous wood and several deciduous forests.

Floriade Venlo 2012: Infrastructure

The paved roads are indicated in pink, the unpaved roads in orange and the forest paths in purple. The site is easily accessible through Highways A67 (1) and A73 (2). A large number of these roads have historical connections, as shown on the 1838 map.

Floriade Venlo 2012: Total Plan Area

The site is a terrain showing the variety between forests and open spaces. The subsoil consists of sand. The site is well-enclosed from the outside. Within the borders are mainly unpaved roads and forest footpaths.

Floriade Venlo 2012: Environment

The Floriade terrain (1) is located North of the city of Venlo in the 'armpit' of the A67 and the A73.

Expo 2016 Tangshan, China

3.3 SWOT-Analysis

Expo Organisers should conduct a SWOT analysis to get a grip on the potential of the Expo site.

Strengths and weaknesses that are inherent to the site must be identified and will influence the International Horticultural Expo and the after-use plan.

Opportunities and threats are primarily external factors that might affect the success of the Expo and its after-use.

Strengths (on-site)

Strengths for an International Horticultural Expo are elements located on the Expo site, and that will positively affect the success of both the Expo and the after-use plan. Examples of strengths are:

- The site consists of good soil for construction.
- The presence of bodies of water.
- The presence of culturally historic significant architecture.
- The presence of good public transport connections.

Weaknesses (on-site)

Weaknesses for an International Horticultural Expo are elements located on the Expo site, which will negatively affect the success of both the expo and the after-use plan. Examples of weaknesses are:

- The site consists of bad soil type for construction or vegetation.
- Poor accessibility by public transport.
- Topographic elements that make for poor accessibility on the Expo terrain.

Opportunities (off-site)

Not necessarily on the International Horticultural Expo site, but often in the vicinity, opportunities are elements that might happen or positively affect the Expo and the after-use concept. Examples of opportunities are:

- The preservation of a beautiful landscape or built environment located next to the Expo site can be viewed from the Expo site and add to the experience.
- A new public transport connection might be opening near the site, improving its accessibility.
- An event is organised that forms an impulse for local tourism that will also bring more visitors to the Expo.

Threats (off-site)

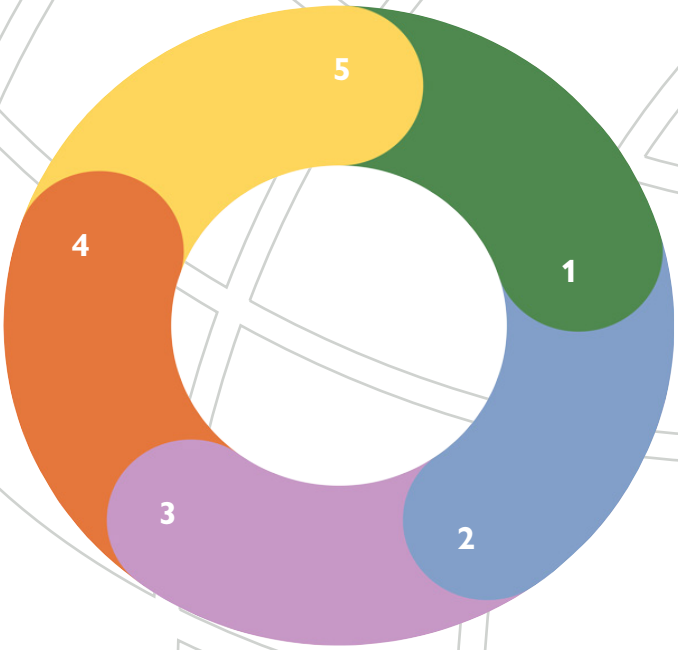
Mainly off the International Horticultural Expo site, but often in the vicinity, threats might happen or negatively affect the Expo and the after-use concept. Examples of threats are:

- The surrounding area of the Expo site will be given a function that negatively affects the Expo site, such as a waste plant or heavy industry.
- A nearby transport connection might disappear, causing issues in accessibility.
- Socio-political events that might cause a dip in visitors.

3.4 AIPH Sustainability Strategy

As the world's champion for the power of plants, one of AIPH's missions is to protect and promote the interests of the ornamental horticulture industry.

Sustainability is fundamental to building a balanced and prosperous future for all, sustaining the planet for this generation and the next. This focus has been central to our purpose for many years, and the AIPH Sustainability Strategy 2022 formalises our commitment. For Expo Organisers, it is a vital document to consider when making the Master Plan for an International Horticultural Expo.
The five main themes (climate action, biodiversity conservation, sustainable sourcing and resource management, equity & inclusion and education and awareness raising) are the key elements that reflect AIPH's view on sustainability.



1 Climate Action
Using plants and green spaces to support climate adaptation and resilience programmes in urban environments..

2. Biodiversity Conservation
Promoting nature in cities and sustainable horticultural practices worldwide.

3. Sustainable Sourcing and Resource Management
Adopting circular economy principles, reducing plastic waste and other forms of pollution, supporting efficient pproduction and ethicly supply chain management.

4. Equity and Inclusion
Promoting plants and green spaces for all, upholding fair and equitable practices across the horticultural value chain, diversity and human rights.

5. Education and Awareness Raising
Emgaging, informing and inspiring people to appreciate the importance of plants and the places where they grow, and to take action to protect and enhance their local environment through plant growing.

Sustainability Implementation Plans for Expo Organisers

Building on the Sustainability Strategy, Expo Organisers are required to establish specific sustainability implementation plans that set out a clear programme of actions, along with resource needs, issues and risks, and a system for tracking, evaluating, and reporting progress. These plans will provide the detailed elements for delivering the objectives defined in the Sustainability Strategy and should be developed in coordination with Host Country Authorities and other delivery partners.

We expect these implementation plans to be developed locally and then submitted to the AIPH for review and approval.
We will provide guidance and technical support as necessary to ensure organisers are able to produce plans of sufficiently high quality.
The aim is for the implementation plans to cover the three principal stages of the event lifecycle:

1. Construction and fit out
   - Permanent infrastructure
   - Temporary structures, signage and décor
   - Landscaping and ecological management
2. Event operations
   - Transport and mobility (including accessibility)
   - Energy and water management
   - Catering
   - Waste management
   - Retail
   - Ceremonies, shows and promotions
3. Decommissioning and legacy transition
   - Reeuse and repurposing of structures and other assets
   - Landscape restoration

Expo 2022 Floriade Almere, Netherlands

Expo 2021 Yangzhou, China

4 Local Design Traditions

4.1 Local Design Traditions

There is no single design philosophy for a successful International Horticultural Expo.

We wholeheartedly embrace the specific design traditions of organising countries, regions or even cities and appreciate the diversity that this brings. Local identity and culture are a strong base upon building your Expo.
Design and culture have always influenced each other. Because of globalisation, divides between cultures become more obscured. Because visitors appreciate authenticity, it is good to think about the role (design) traditions can play during the master planning phase. These traditions can manifest in forms and shapes (for example, geometric or organic) and styles. But cultural traditions also find their base in conceptual ideas. 'Feng Sui' and 'Chi' play a role in Chinese design traditions. The concept 'form follows function', launched by American architect Louis Sullivan, is an integral part of the design tradition of the modernists. Finally, Expo Organisers can find design traditions in the use of materials and construction technologies. This does not imply that the Master Plan of your Expo must show a traditional design; it might be a contemporary interpretation within your specific design tradition.

Expo 2016 Antalya, Türkiye

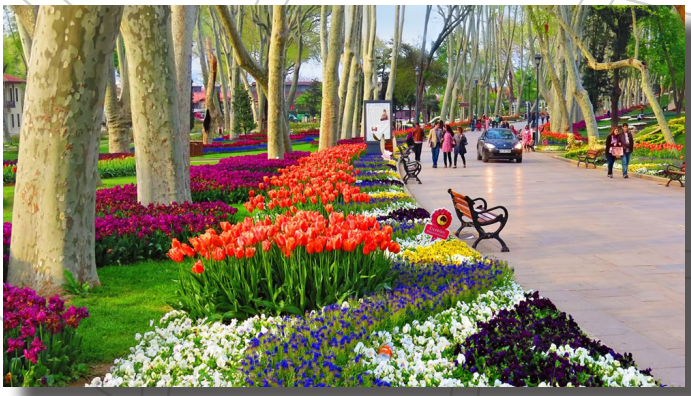
4.2 Examples Of Local Design Traditions

Traditional Thai architecture on display at the Royal Flora Expo in Chang Mai, Thailand.

Traditional Japanese architecture and design principles at the Kōraku-en garden in Okayama, Japan.

Traditional Japanese design principles at a Rock Garden, Japan.

Alhambra, Patio de los Leones, with the canals as a symbol of the four rivers in paradise, Spain, Granada.



Tulip spring gardens as an export product and symbol of Türkiye.

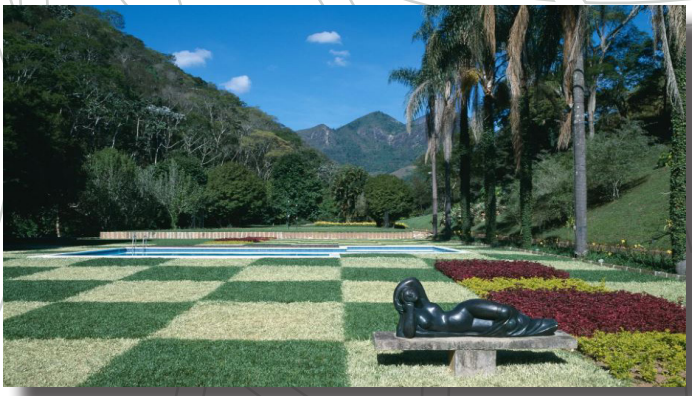
The Al-Wasl Dome at the Dubai Expo 2020 is based on a 4,000-year old bronze ring recently unearthed in the Emirates..

The Efteling is a theme park in the Netherlands with historical Dutch architectural styles by Anton Pieck.

Italian Baroque style, Isola Bella, Iago Maggiore.

The English Landscape Garden with different scenes during a narrative walk (Stourhead, Landscape Architect: Henry Hoare).

A formal designed French garden (Vaux le Vicomte, Garden Architect: André Le Nôtre).



Garden in geometric style. Brazil (Landscape Architect: Burle Marx).

Brutalism / Structuralism Building and gardens, Montreal Expo 1967 (Architect: Moshe Safdie).

Expo 2021 Hatay, Türkiye

5 Experience Design

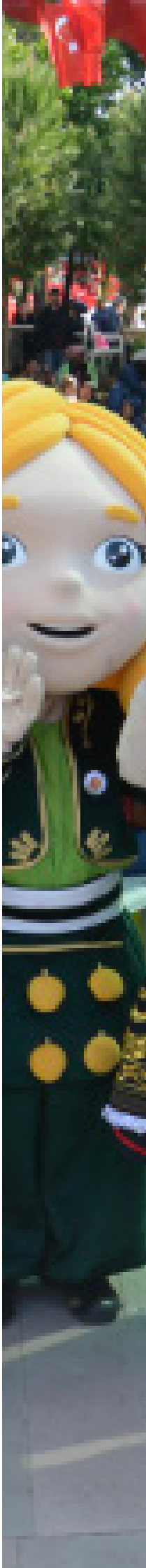
5.1 Experience Design

The International Horticultural Expo is one of the few educational and entertaining events able to attract world leaders, decision-makers, and millions of visitors; it is a unique opportunity to strengthen the international image and position of the host city and country.

The International Horticultural **Expo** focuses on the economic, social, and cultural development objectives of a city or region on a fixed milestone.
An International Horticultural **Expo** create parks and new, attractive public spaces of recreational value for citizens and tourists.
These **Expo**s can create lasting results that forge new identities for cities and set apart a whole region in the eyes of the world.
An International Horticultural **Expo** is a unique catalyst for urban development and stimulates private and public investment.
Education and entertainment are two of the four domains of an 'experience' (besides aesthetics and escaping everyday life). It is therefore not surprising that Expos focus less and less on presenting products and more and more on experience.
According to Pine and Gilmore, experiences are events that engage the individual in a personal way (*The Experience Economy*, Harvard Business Press, 1999).

An International Horticultural **Expo** is not about commodities, products, or services; it offers people an experience.
Visitors not only pay the entrance fee to get inspired and gain new ideas, but they also 'buy' a memorable moment (see also chapter 6 of the *Organiser's Guide for International Horticultural Exhibitions*).
This 'experience' places demands on the design process. Although many things are like designing products, designing experiences requires a slightly different approach.
Think of the Expo as a 'theatre' with an entrance, foyer, grandstands, stage and backstage. As a visitor to that theatre, you expect a hospitable welcome at the entrance. You want to be able to see what is staged (pavilions, gardens, etc.) but not be confronted with what is happening backstage (deliveries, storage, logistics, etc.).
In this chapter, we will highlight some aspects that will contribute to the experiences at the Expo.

This chapter gives a brief introduction to experience design. For a deeper understanding of this topic, we recommend the book 'Sustainable Costumer Experience Design' by Bert Smit and Frans Melissen.
(Routledge, 2018. ISBN: 978-1-138-65854-7)



Expo 2016 Antalya, Türkiye

5.2 Experience Design In 6 Steps

1 Clarifying Objectives

From the point of view of Experience Design, first, the following question must be answered:
What is the purpose of the Expo and its heritage and who are their visitors?

1. The answer to this question should be a detailed description of 'personas' (a fictional character that communicates the primary characteristics of a group of visitors or staff members). Do not be exhaustive but limit yourself to the most important groups. For example, identifying these groups can be based on demographics (e.g. seniors/young families or domestic guests/foreign visitors). Another option is to use so-called lifestyles (e.g., by using the axes cross with individualism/collectivism on the x-axis and passive/active on the y-axis). For your staff members, there might be a difference between people working outside the Expo Park and those working in the office buildings.

Give each persona a fictional name. Try to paint a picture of the personality behind the name as much as possible (think about age, gender, education, level of thinking, profession, stage of career, income, marital status, children, hobbies, interests, and technical knowledge).

Say something about demographics (e.g. travel distance and modes of travel). Also, describe each persona's wishes, goals, concerns, and annoyances. End your description with a quote from your persona, such as ***I'm going to the Expo to get ideas for my backyard.***

2. A clear description of what the experience should do or be for these personas. While doing this, make sure that you focus on objectives instead of solutions. The following questions may help the construction of your answers:

Persona X will remember … after visiting the Expo.
Persona X will feel … after visiting the Expo.
If Persona X is asked about … he/she will think of our Expo.
Persona X will tell his/her friends about our Expo in terms like …
Persona X understands … better after visiting our Expo.
Persona X will change … after leaving our Expo.

3. A clear description of what this experience should do or be for yourself as the organiser. Answering the following questions will guide you:

Our Expo should help visitors understand…
Our Expo has to be remembered for…
Our Expo creates opportunities for…
Our Expo should change the visitors' view with respect to …

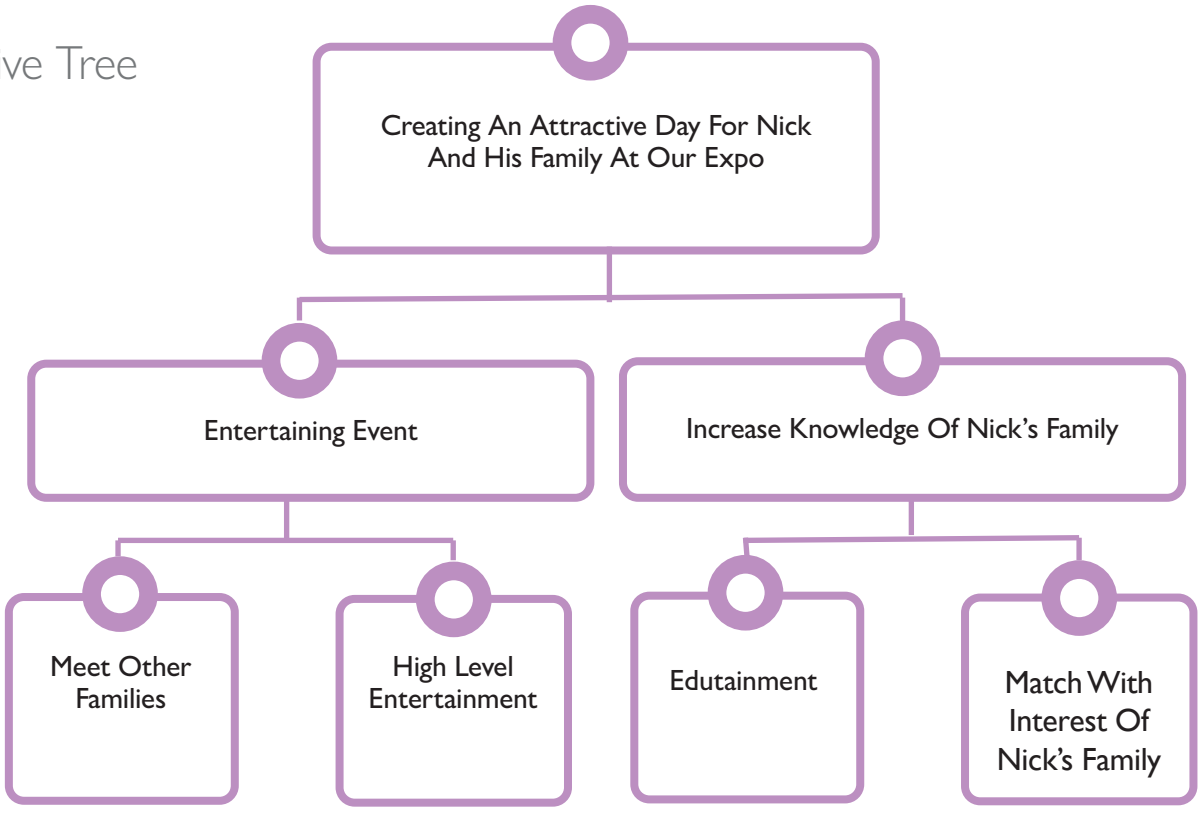
Nick and his imaginary family who we plan to welcome to our imaginary Expo.

An Imaginary International Horticultural Expo

Imaginary Theme:
Healing Landscapes - Discover How Green Contributes To Your Mental And Physical Health

Imaginary persona
Nick is an entrepreneur, married and has two children. Nick likes healthy food and green environments to relax. His ideal day out should be fun, educational and appeal to the whole family. He depends on weekends or school holidays to go out. Nick has an average income and usually travels by public transport. He often checks reviews on social media before going somewhere.

Objective Tree



Example Question

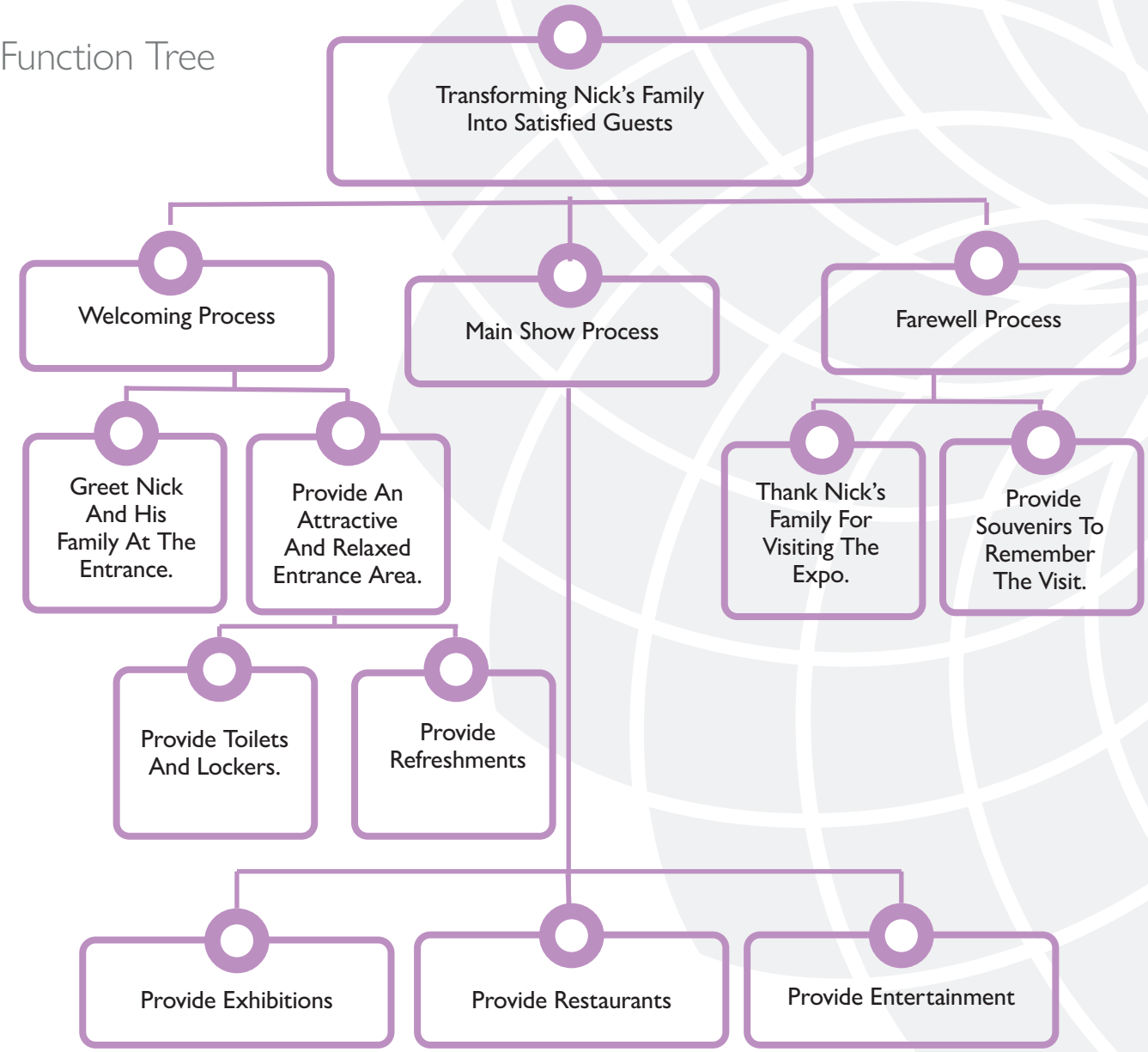
- Nick will remember that vegetables are very healthy after visiting us.
- Nick will feel relaxed after visiting us.
- If Nick is asked about a healthy environment, he will think about our Expo.
- Nick will tell his friends about our experience in terms of entertainment and education.
- Nick understands horticulture's contribution to healthy living better after being with us.
- Nick will change his eating habits and garden after leaving us.
- Our experience should help customers understand that horticulture contributes a lot to health.
- Our experience provides memories of flowers and delicious healthy food.
- Our experience creates opportunities for the whole horticultural society.
- Our experience should change customers' points of view concerning health and the role of horticulture in society.

Example Requirements

Take one of the described functions (for example, provide an attractive entrance area) and describe the requirements (on the level of a Master Plan) in a SMART way:

"Create an attractive entrance area which immediately evokes the image of a horticultural exhibition. The waiting time when checking entrance tickets may not exceed 10 minutes (at a design day). The costs may not exceed €250/m². The design must be ready on 12-12-2030".

Function Tree

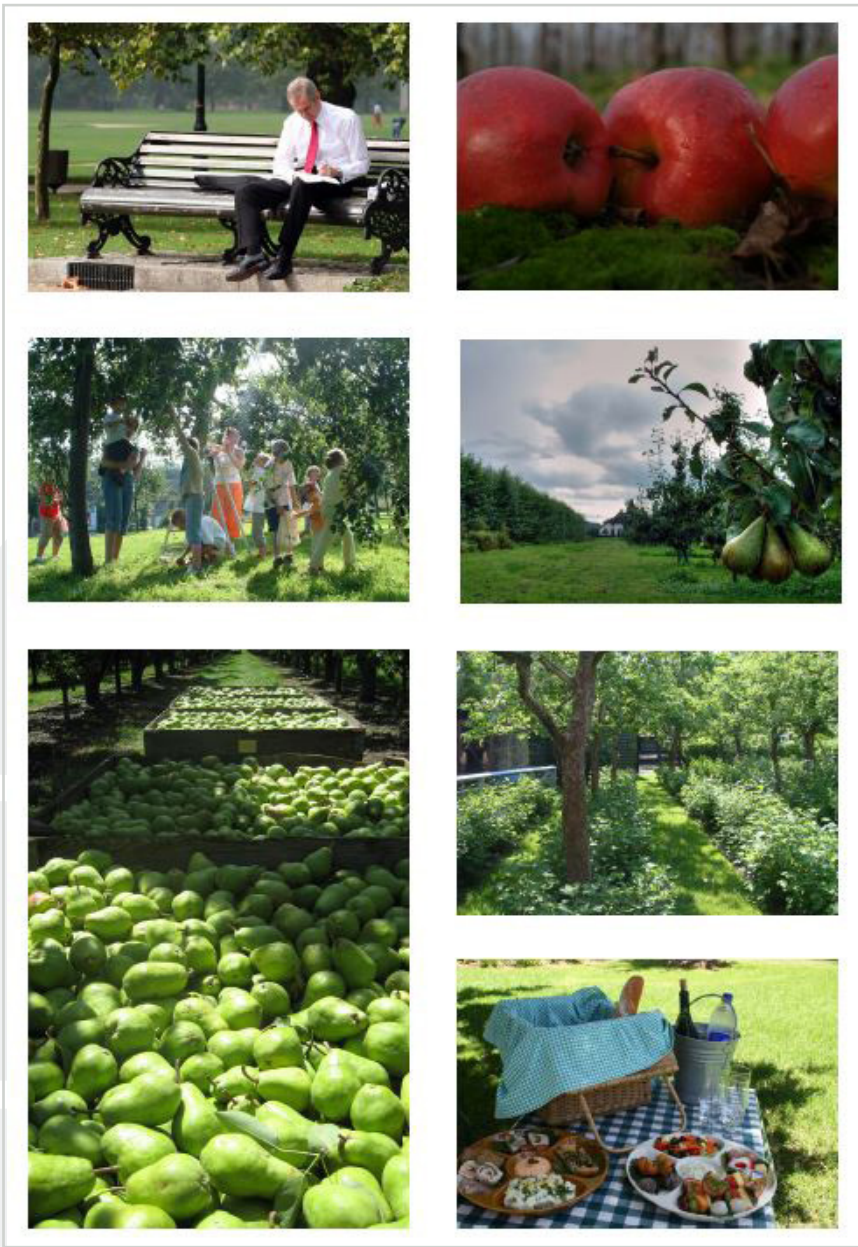


2 Establishing Functions

Now that you have a clear idea about what the theme and the legacy of the International Horticultural Expo (and its heritage) should do and be for all relevant stakeholders, it is time to define what functions are needed to achieve the objectives. Describe for each purpose which procedures or functions are required. Expo Organiser can easily see this by creating a 'function tree' (see example on page 39). Looking at the functions established at other (successful) Expos might also provide a rich resource of ideas.

3 Setting Requirements

If you want to deliver the right experience to your visitors, it is important to postpone the invention of solutions a little longer. Although the established functions might already give you some ideas, often skipping the requirements setting leads to suboptimal solutions. These requirements must be as well set from the perspective of the user as from the technical and the managerial/ organisational point of view.
Try to describe the requirements as S.M.A.R.T. as possible (see also page 25 of the Organiser's Guide for International Horticultural Exhibitions). The requirements must be suitable for Master Planning, so do not get into the details too much. You can make requirements more specific at the start of each next design phase.



Moodboard for the 'Fruit Forest' for the Venlo Floriade of 2012.

4 Determining Characteristics

After clarifying the objectives, establishing functions and setting requirements, your design team has a clear view of the required solutions. All the gathered information is therefore translated into the characteristics of design alternatives. This phase needs iteration because while determining characteristics, you may feel the need to add objectives, functions, or requirements or to make them more specific. Do not hesitate to do so. A good tool for this phase is the use of mood boards.

5 Generating Alternatives

Now it is time to really start designing alternative solutions. Again, this is often an iterative process in which you go back and forwards through the described steps. Creating from an experience point of view means you pay extra attention to the following:

- The touch points (e.g. the guests' first impression at the parking place or ticket control).
- Crowd management (prevents everyone from visiting the same place and makes paths sufficiently broad.
- The wayfinding (how can the visitors orientate themselves on your Expo site, and what will motivate them to explore it)
- The logical combination of functions (e.g., restaurants, terraces, playgrounds, and toilet blocks).
- Supporting the theme of your Expo through the site (and the possibly related storyline).
- The tension (visitors need variety between highlights and places where they can clear their heads).

See also the next chapter, 6, for the different aspects of the Master Plan.

6 Generating Alternatives

Now that you have generated alternative designs, it is time to evaluate them and make choices. Which alternative will give your audience and your staff members the best experience? Most of the time, you will perform a multi-criteria analysis from now.

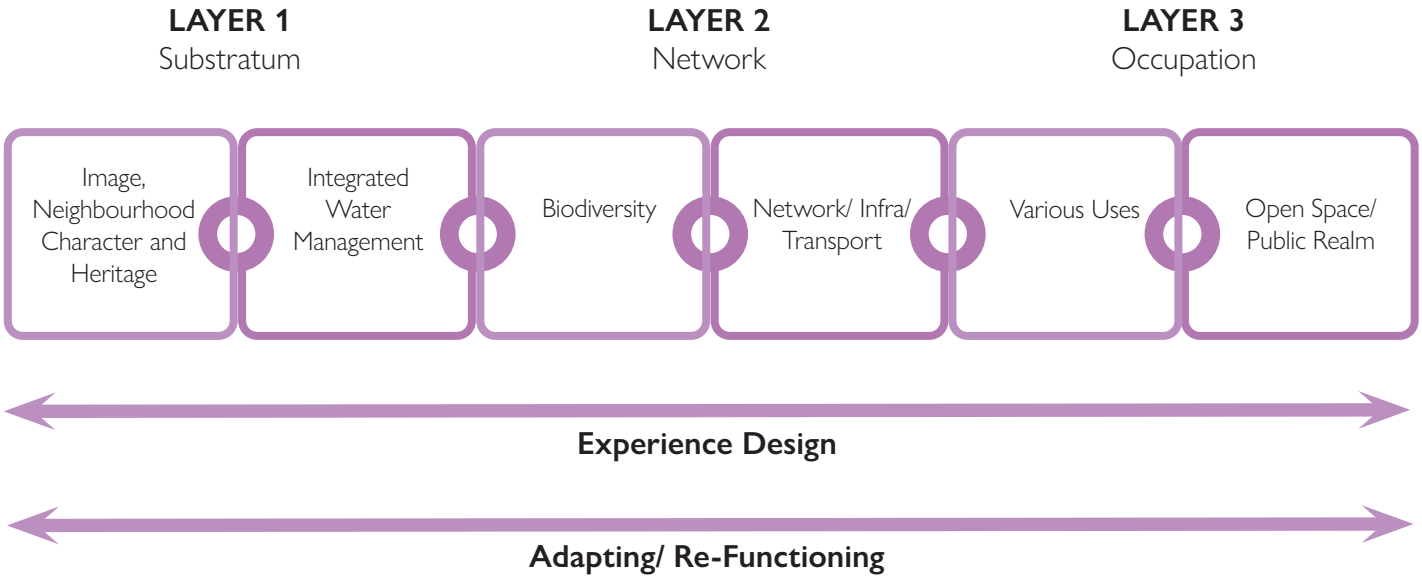
Expo 2022 Floriade Almere, Netherlands

6 The Master Plan

6.1 Master Plan

Naturally, from the point of view of financial resources and Sustainability, Expo Organisers should include as many possible elements of the International Horticultural Expo to find their place in the final layout of the site (Expo Heritage).

Think, for example, of the pavements, trees, plants, and buildings. Nevertheless, part of the furnishing will be explicitly required for the Expo. The same applies to the furnishing after the Expo. In the last verse, see if applying these elements can also occur after the Expo. Consider, for example, postponing the placing of traffic signs or the construction of wider roads than necessary for the Expo. These elements usually do not contribute to the desired experience of the horticultural exhibition. The outdoor spaces' management level may also be different after the Expo than during the Expo. Also, please take this into account by, for example, designing a permanent green structure so that it can be maintained for a long time.



Structure of Master Planning an International horticultural Expo.

6.2 Image, Neighbourhood Character and Heritage

The Master Plan must show the integration of contextual features.

The Expo Organiser must incorporate into the Master Plan, where possible, the surrounding topography, water, and distinctive landscape and heritage features. These elements immensely impact the character of the International Horticultural Expo area and its future destination. Working in harmony with these elements will contribute significantly to the 'genius loci', a place's prevailing character or atmosphere.

St. Jan's Chapel and Historic farm at Floriade Venlo (2012) and La Cartuja Monastery at EXPO Sevilla (1992)

Expo 2021 Yangzhou, China

6.3 Integrated Water Management

The Master Plan must, as much as possible, be based on the existing water system.

Therefore make careful decisions to preserve existing wetlands and catchment areas. Also, make use of the existing topography. Higher areas are, for example, drier and more suitable for buildings, while lower (wet) areas are probably more suitable for wetland vegetation or water storage.
Make a flood risk analysis and take measures to prevent flooding. On the other hand, come up with solutions for periods of drought. Preferably, irrigation occurs from water storage on or near the site without affecting natural wetlands.

Also, start planning the underground space needed for utilities early.
The infrastructure for water (drinking water and irrigation), electricity, gas, sewage, and telecommunications might need quite some landscape.
Often these underground facilities limit the use of the ground above. Please take this into account and designate cable and pipeline strips in places where they do not or hardly restrict the layout of the ground level (and are still accessible for management and maintenance).

6.4 Biodiversity

The Master Plan must show the integration of contextual features.

AIPH is promoting nature in cities and sustainable horticultural practices worldwide. International Horticultural Expos should be exemplary projects when talking about biodiversity. Therefore, the Master Plan should show the location of significant biodiversity values and whether and how these incorporate into the development of the site. However, the Master Plan must not only show how the existing biodiversity is respected and protected, but it should also show how biodiversity will increase in the (near) future. For example, adding (permanent) nature green to the site is part of the Expo Legacy.

Expo 2022 Floriade Almere: the forest (and fauna) in the site's northeast was maintained during the Expo.

Access from Expo 2013 to existing wetlands at the Suncheonman Horticultural Expo.

6.5 Network / Infra / Transport

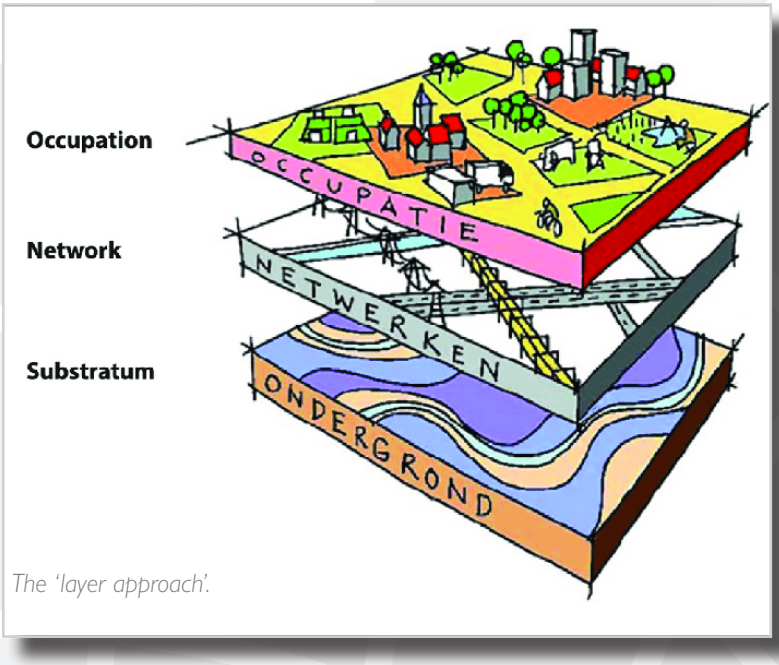
6.5.1 Transport

Different needs for transportation needs to be considered when Master Planning for an International Horticultural Expo. There is the infrastructure traffic going to, from and around the Expo Park, the onsite Expo traffic, and transport needs after the Expo has finished. It is important to harmonise all situations on the Master Plan.

Both during the Expo and afterwards, two different approaches to transport are important:

- The transport to the site
- The transport on the site.

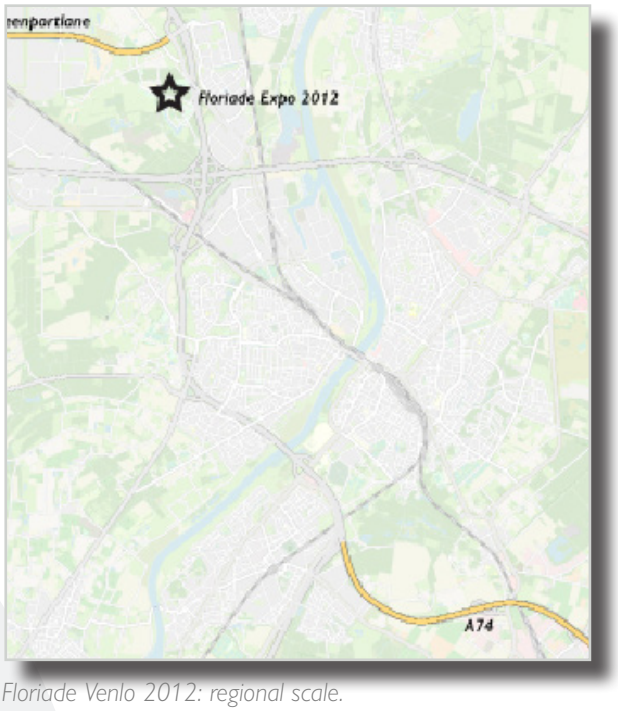
First, investigate in the Master Plan how to reach the site from the outside. From a Sustainability point of view, it is beneficial if an International Horticultural Expo site is close to a city. Because that will make it possible for visitors to reach the Expo site on foot or by bicycle, the slow-traffic routes to the Expo site must be safe, direct, comfortable, and attractive.
National and International visitors will travel by public transport (airport, train, bus, metro, tram) to the site. For these travellers, the journey must also be made as pleasant, safe, and comfortable as possible to entice them over and to leave the car at home.
'Mobility as a service' can also be stimulated by reserving several parking spaces for shared cars and making taxi stands close to the entrance.
Finally, private cars must, of course, be considered. However, large parking spaces are often required for International Horticultural Expos; reserving a site further away from the Expo park may be necessary for this purpose.
The visitors who come to the Expo by car are then shuttled from the parking lot to the entrance (most of the time by bus/coach, but sometimes also with a people mover, a cable car or something similar).
Ensure that the parking facility is as close as possible to an exit of the main road system to prevent additional traffic congestion on the underlying local road system. Also, make sure that any traffic jams at the barrier of the parking space do not lead to congestion on the Host Cities main road network.



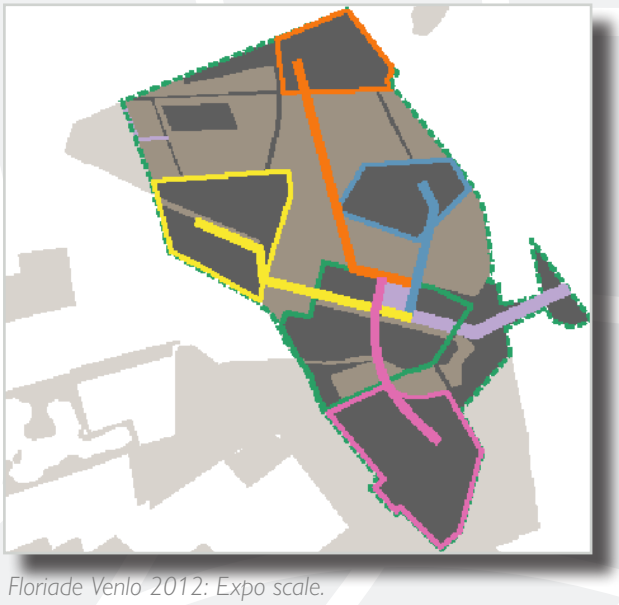
The 'layer approach'.

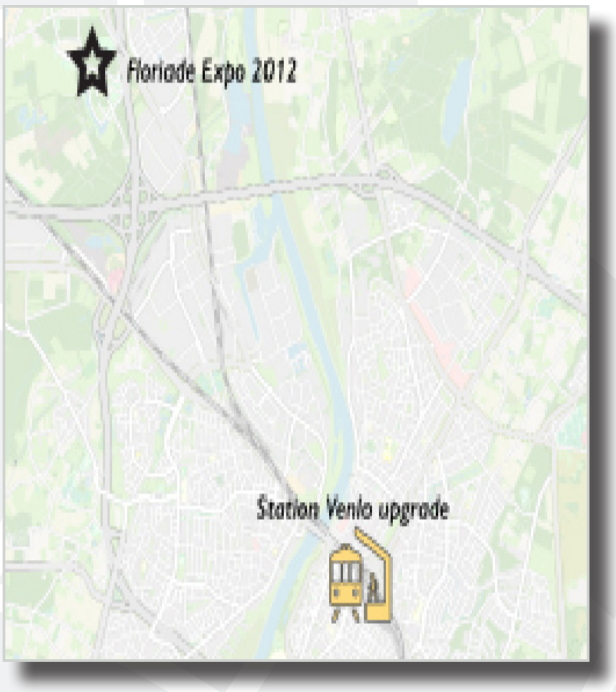
Design the parking lot so that motorists find a free space as quickly as possible and can walk safely to the entrance or departure point of the additional transport to and from the Expo site.
Expo Organisers need to investigate the criteria and add transport possibilities on the site in the Master Plan. Again, designing from the perspective of the pedestrian is essential both for the visitor experience, safety, and the point of view of sustainability.
During the Expo, an additional (Sustainable) means of transport can be added to cover longer distances. Think of an electric road train or a cable car.
Also, consider the logistical supplies for the restaurants and shops on the Expo site.
Prevent the supply traffic from mixing with the pedestrians on the site by organising deliveries outside opening hours as much as possible

because these so-called ‘backstage’ activities can disrupt the desired experience.
Consider adequate storage space (including for waste) when designing restaurants and shops. Visitors also experience supplies with cargo bikes as less disturbing, especially when they are equipped with plants or are themed differently. The paths must be wide enough to allow the safe movement of the cargo bikes among the public.
The importance of cyclists will come after the pedestrian for future transport on the site. Public transportation is suitable for journeys over longer distances. Only in the last place should the choice fall on mobility as a service (for example, shared cars) or private cars.
An International Horticultural Expo is the perfect opportunity to design a future site that will also be car-free. Grab this opportunity!
The Master Plan should show the hierarchy of streets, pedestrian and cycle paths, and public transport and freight routes. It should also outline how arterial roads, connector streets, and local access streets will work to cater to multiple transport modes, land uses, and the environment.



Floriade Venlo 2012: regional scale.


Floriade Venlo 2012: Expo scale.

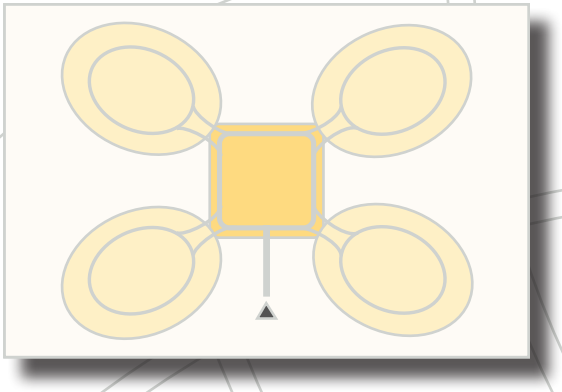


Floriade Venlo 2012: city scale.

6.5.2 The Expo Site: Eight Models

We identify eight different models in which the Master Plan map of the Expo site can be arranged, with examples of successful Expo sites from the past. You can view more on the AIPH website at www.aiph.org/expos/history/

Model 1: **The Flower**



Pros:

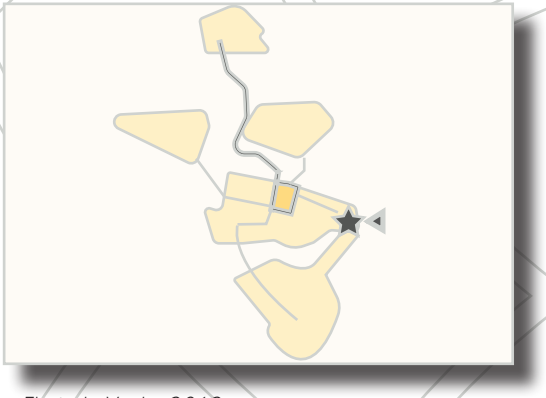
- Visitors follow loops and are guided along all pavillions.
- One clear entrance.
- Wayfinding.

Cons:

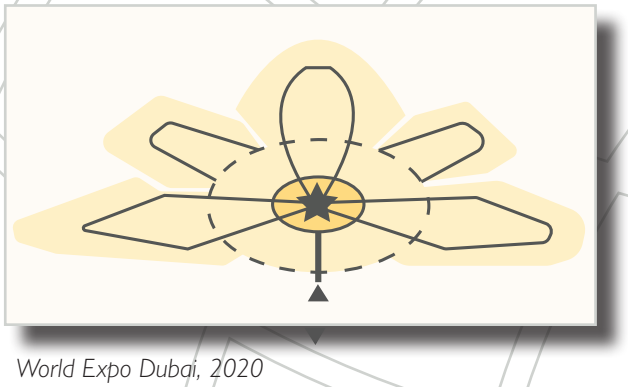
- Lack of shortcuts. Pay attention to solutions, such as informal paths between loops or different modes that connect the loops.

Examples: Floriade Venlo 2012, World Expo Dubai 2020, EuroDisney

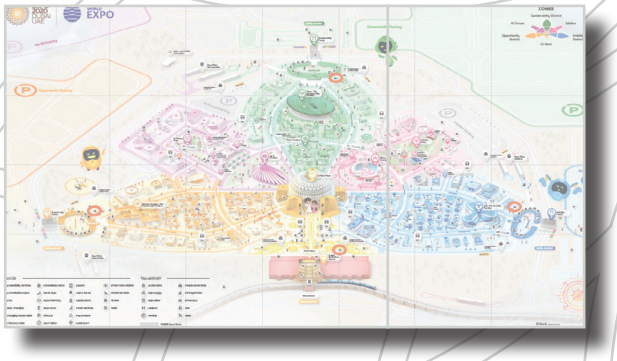
Model 1: **The Flower Site Examples**

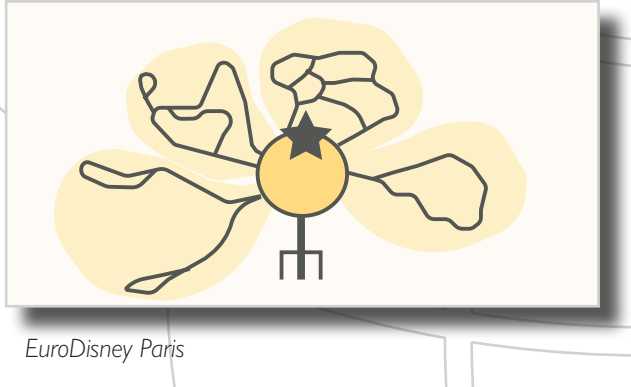


Floriade Venlo, 2012

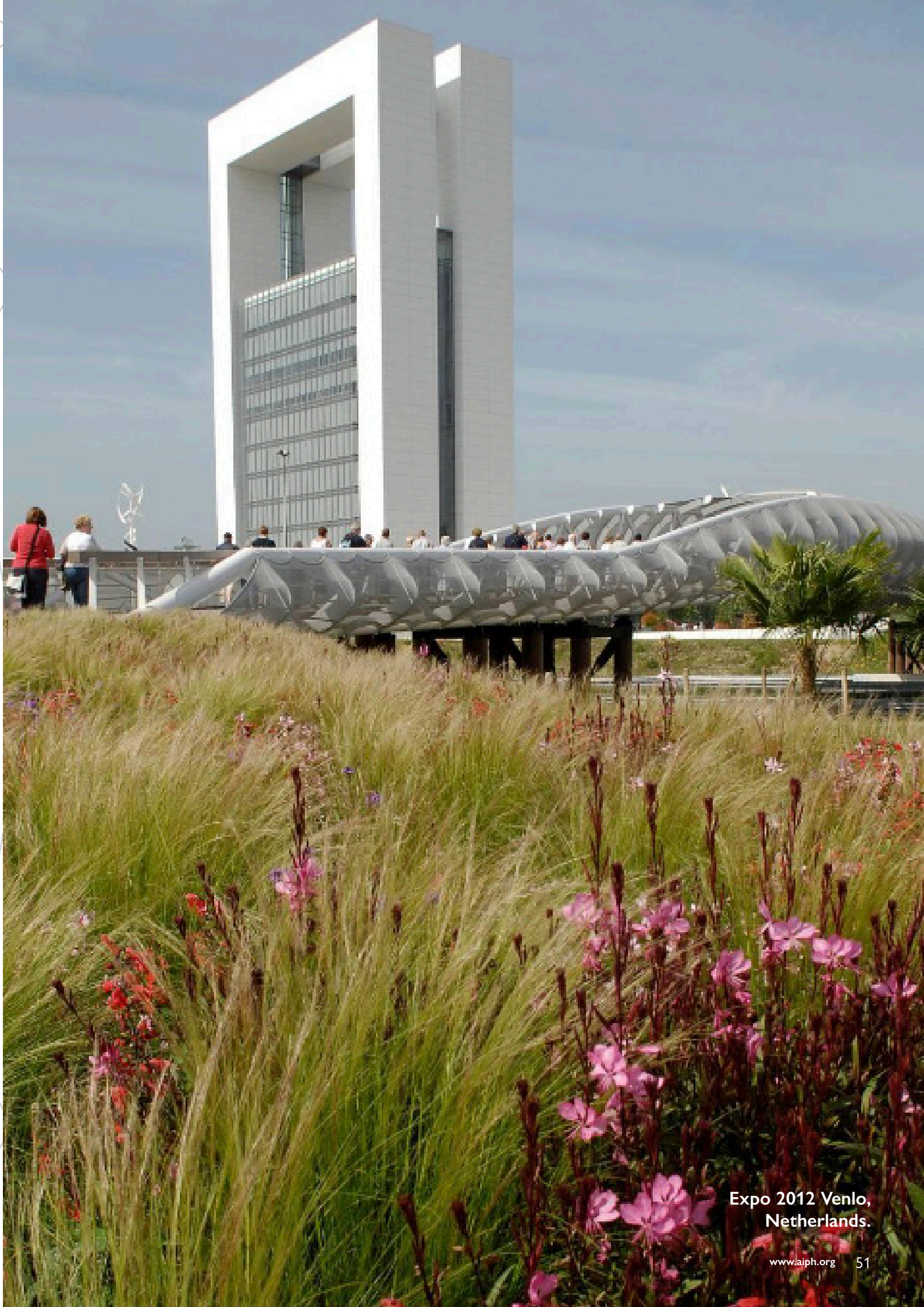


World Expo Dubai, 2020





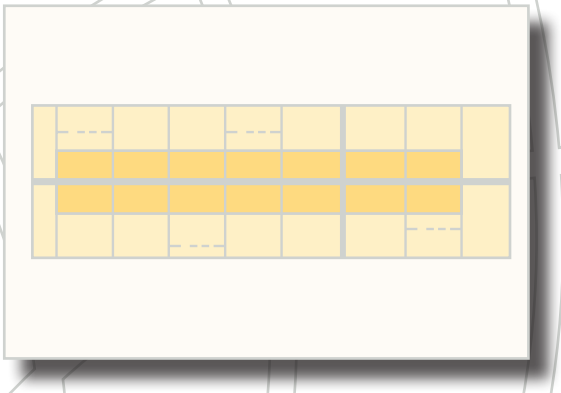
EuroDisney Paris



Expo 2012 Venlo, Netherlands.

Expo 2016 Antalya, Türkiye

Model 2: **The Barcode**



Pros:

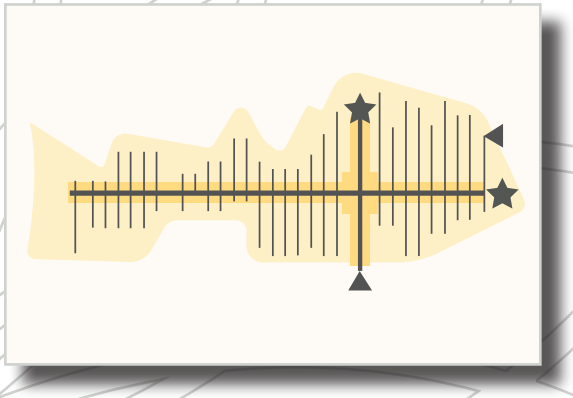
• Dominant structure that serves as main axis, easy for wayfinding.

Cons:

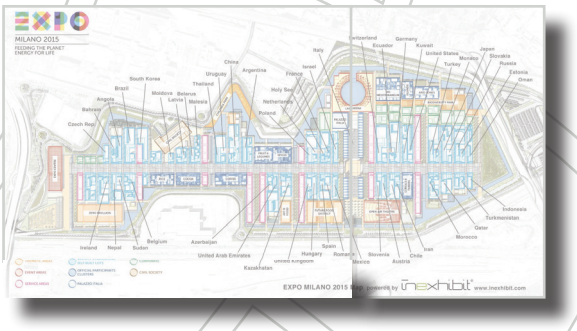
• The further away from the main axis, the least amount of visitor circulation.

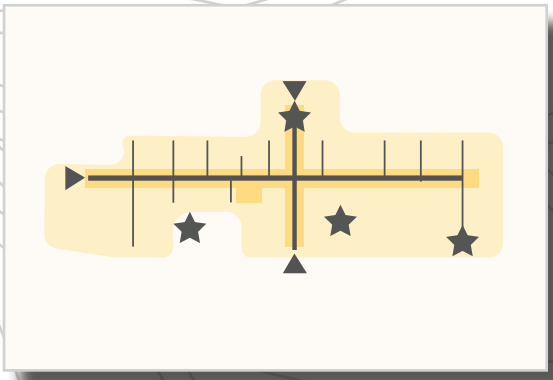
Examples: World Expo Milan 2015, World Expo Paris 1900, World Expo Lisbon 1998.

Model 2: **The Barcode Site Examples**

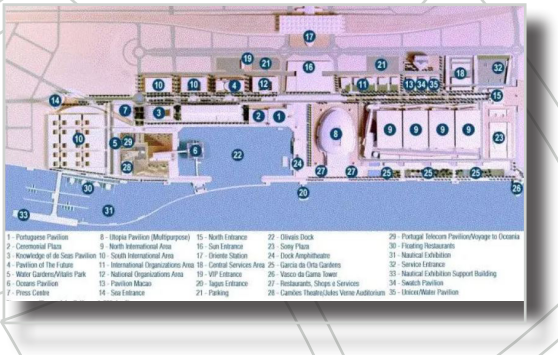


World Expo Milan, 2015





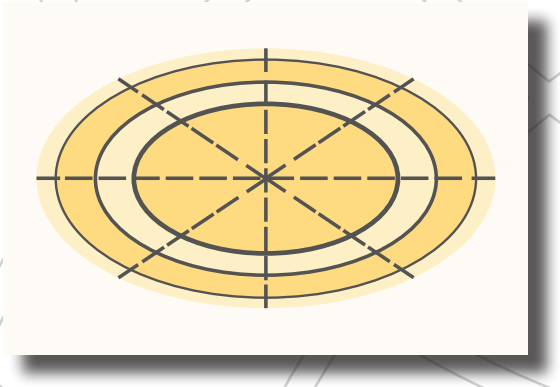
World Expo Lisbon, 1998



World Expo Paris, 1900

Expo 2019 Beijing, China

Model 3: **The Spiderweb**



Pros:

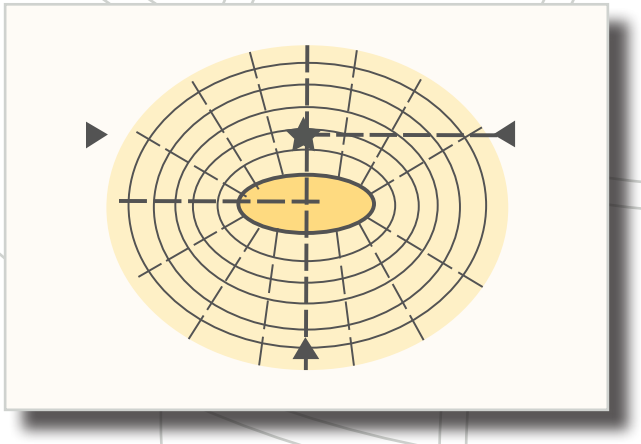
- Easy routing and wayfinding.
- Clear shortcuts.

Cons:

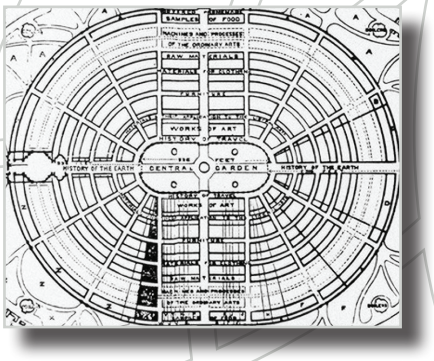
- Layout can be challenging to realise on certain sites.

Examples: World Expo Paris 1867

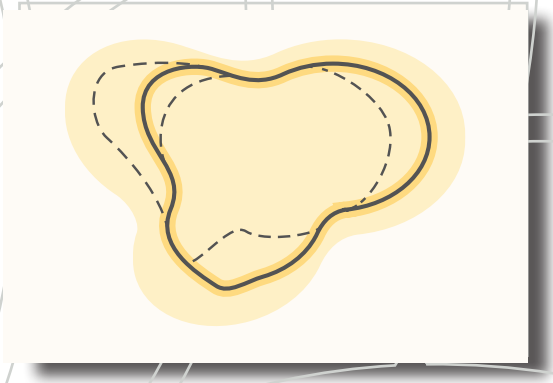
Model 3: **The Spiderweb Site Example**



Expo Paris, 1867



Model 4: **The Scenic Walk**



Pros:

- One clear route to follow.
- Easily adaptable to the site layout.

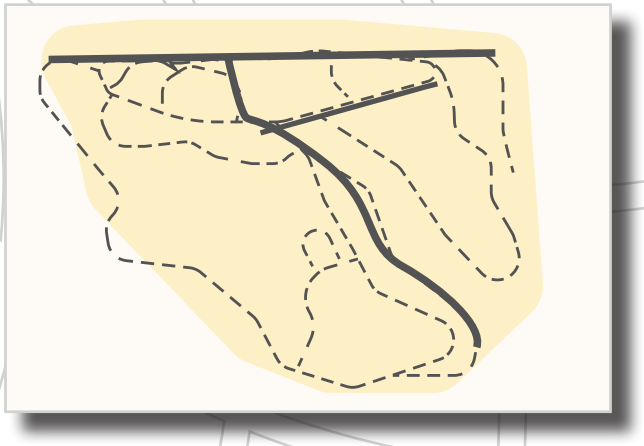
Cons:

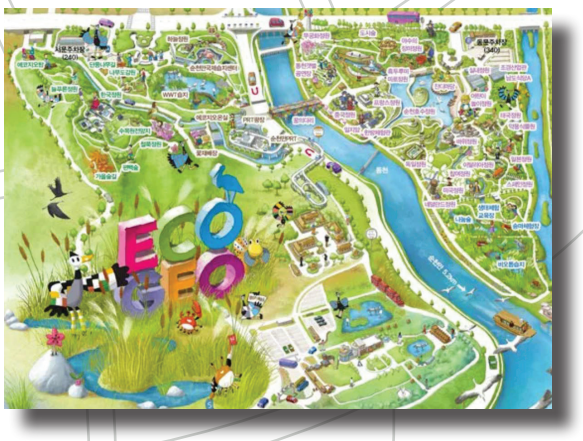
- Lack of hierarchy in paths.
- Crowd management can be difficult.

Examples: Suncheonman 2013, Floriade Rotterdam 1960, Floriade Amsterdam 1972, Floriade Gaasperplas 1982, IGA Munich 1983, Osaka 1990

Model 4: **The Scenic Walk Site Examples**

Floriade Gaasperplas, 1982

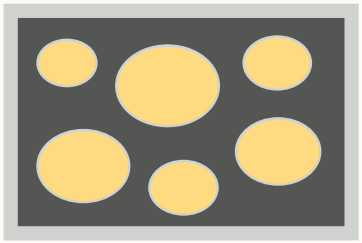




Garden Expo Suncheonman, 2013

Expo 2022 Floriade Almere, Netherlands

Model 5: **The Islands**



Pros:

- Pavillions are equal in importance.
- Conceptually strong and in unity.

Cons:

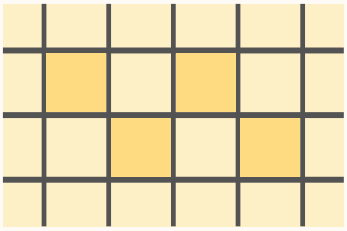
- No clear routes.
- Poor wayfinding.
- Vast open spaces.

Example: Yverdon-Les-Bains 2002

Model 5: **The Islands Site Example**

Expo Yverdon-les-Bains, 2002

Model 6: **The Grid**



Pros:

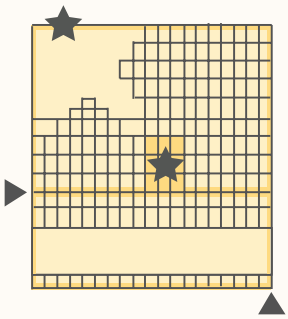
- Permeable expo site; everything is easy to reach.

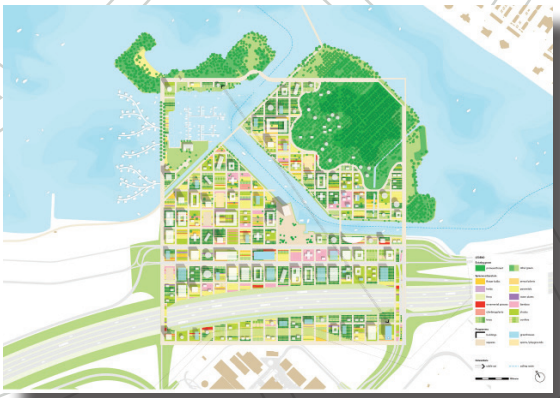
Cons:

- No hierarchy in routing.
- No clear route to follow, hard to view all pavillions.

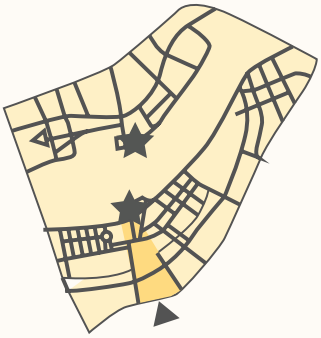
Examples: Floriade Almere 2022, Paris Expo 1989, Hannover Expo 2000, Shanghai Expo 2010

Model 6: **The Grid Site Examples**





Floriade Almere, 2022



World Expo Shanghai, 2010

Model 7: **The Goose Foot**

Pros:

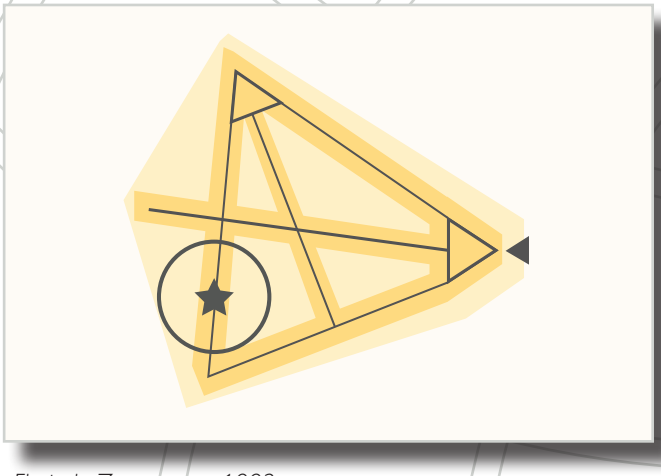
- One clear entrance and exit point.

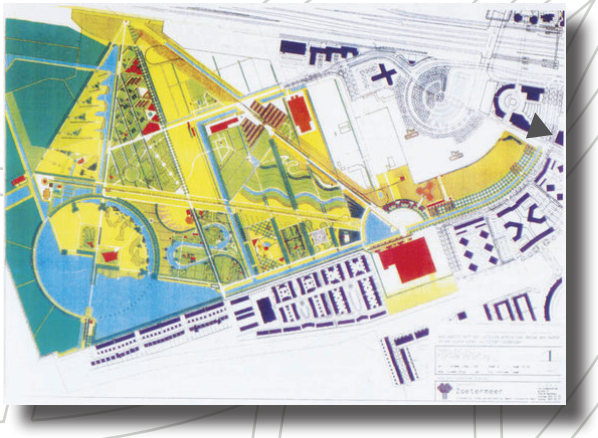
Cons:

- Dead-ends (or diamonds)
- Lack of shortcuts.

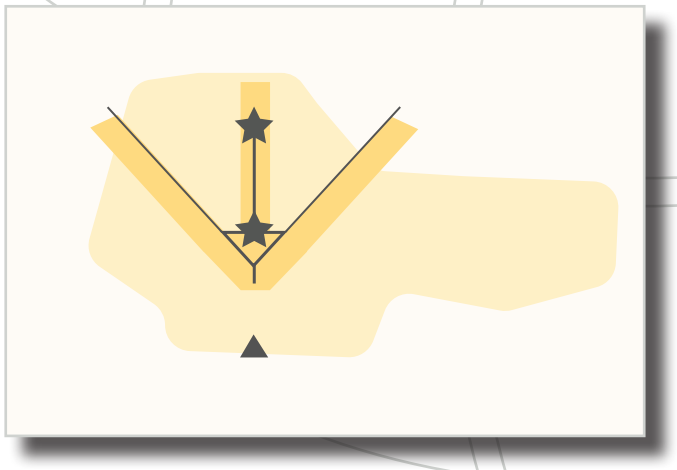
Examples:
Floriade Zoetermeer 1992, Expo New York 1939, Expo Antwerp 1894, Expo Brussels 1935

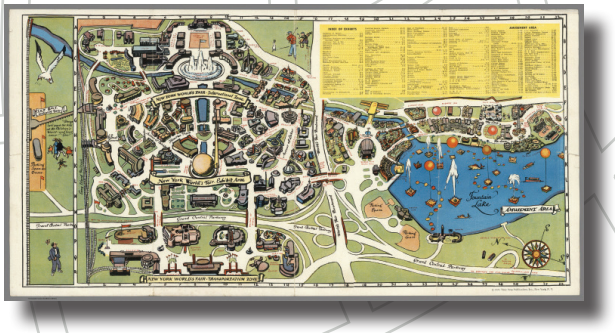
Model 7: **The Goose Foot Examples**





Floriade Zoetermeer, 1992



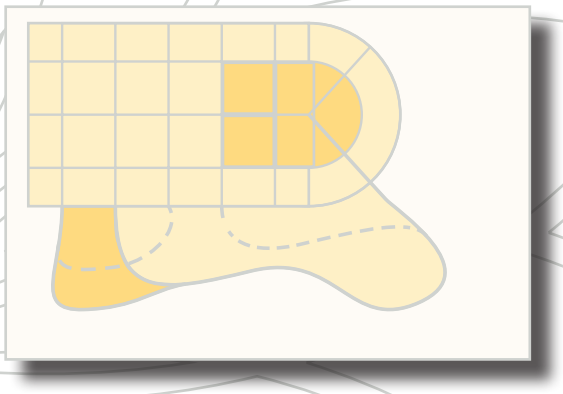


Expo New York, 1939

Expo 2021 Yangzhou, China

Expo 2021 Hatay, Türkiye

Model 8: **The Hybrid Model**



Pros:

- Adaptable to site-specific characteristics.

Cons:

- Lack of clear hierarchy or routing.

Examples:
Expo Antalya 2016, Expo Rostock 2003, Expo Ratchaphruek 2006

Model 8: **The Hybrid Examples**

Royal Flora Chiang Mai, 2006

Expo Antalya, 2016

6.6 Various Uses

The Master Plan should include where various services and uses will be located on the site during and after the International Horticultural Expo. For the International Horticultural Expo, these uses include (but are not limited to):

- ☐ Landscape (base park)
- ☐ Urban Infrastructure
- ☐ Underground Infrastructure (electricity, sewerage, etc.)
- ☐ Buildings and Facilities
- ☐ Special Projects
- ☐ International Gardens
- ☐ National Gardens
- ☐ Central Administration and Support Office
- ☐ Protocol and VIP Services
- ☐ Cultural Programme (open-air theatre)
- ☐ Educational Programme
- ☐ B2B Programme
- ☐ Events Services
- ☐ Visitor Services
- ☐ Admission and Gates
- ☐ Facility Management
- ☐ Food & Beverage/ Retail
- ☐ Media Services
- ☐ First Aid
- ☐ Emergency Accessibility

Make the same list for the site's intended use after the Expo. This list could be more manageable if the benefits of the International Horticultural Expo align or accommodate its permanent layout afterwards. For example, at the Floriade 2012 in Venlo, Netherlands, a future office building was used as an entrance building and restaurant during the Expo.

Expo 2010 Taipei,
Chinese Taipei

6.7 Open Space / Public Realm

Check the open space prescriptions of your specific site. The Master Plan should show the location of open green spaces, including their function, size, and scale.

The urban density will likely increase if the site is further developed into a housing area after the International Horticultural Expo. Take this into account, for example, by placing permanent greenery in those places that will remain open (without buildings) in the future. During the International Horticultural Expo, more temporary green (such as flower beds with annuals) can be situated where construction will occur after the Expo.

6.8 Re-Functioning and Adapting

Thinking about the future of a site is an integral part of creating a Master Plan. The layout of a design, the zoning of pavilions, and the flexible design are part of this.

Sometimes viewpoints or structures define an Expo.
For example, the Eiffel Tower was built as a temporary structure for Paris Expo 1889.
It is now the most visited attraction in the world (and it is still there). It, therefore, forms an important starting point in various Master Plans.
In other cases, pavilions are relocated elsewhere, for example the The Czechoslovak pavilion of Expo Brussels 1958 was built back in Prague.
The Brussels Expo of 1935, 1958 and nowadays: the 'Eeuwfeestpaleis' was re-used in 1958 and received a temporary facade during Expo 1958.
The adaptive character of buildings is also becoming increasingly important.
The 2012 London Olympics is an excellent example of this. The stadium's capacity would decrease in attendance after the games. The London Games organisers had already prepared its future in the design.
As a result, a grandstand was removed after the Olympic games.
These are sustainable solutions that fit within the theme of circularity and adaptivity.

Stadiums in London were reduced in size after the Olympic Games (2012)

Czechoslovak pavilion of Expo Brussels 1958 was built back in Prague

Hatay Metropolitan Municipality, organisers of the Expo 2021 Hatay, Türkiye. The Guinness World Record recognises a centrepiece created for the Expo as the World's largest marble stone mosaic.
The mosaic's theme is peace, and its name is 'Co-Existence'. The single-piece floor mosaic measures 1,600 square metres and has a diameter of 45 metres. It is made up of 16,000,000 single natural marble stones.

Brussels Expo of 1935, 1958 and nowadays: the 'Eeuwfeestpaleis' was re-used in 1958 and received a temporary facade during the Expo in 1958.

The Eiffel tower and its context during the Paris Expo of 1889, 1900 and 1937.

The Desert Nest is a 12.1-metre and 56 tonnes replica of a traditional Qatari pigeon tower which took centre stage at Expo Floriade 2022, Netherlands. The Guinness World Records recognises it as 'the world's tallest freestanding 3D printed concrete tower'. At the end of Floriade's Expo, the Desert Nest will now be a permanent legacy fixture at Expo Doha Qatar 2023.

Expo 2016 Tangshan, China

7 The Next Steps

7.1 Next Steps

The design process by no means ends after the Master Planning phase. The Master Plan only shows the rough outlines of the design. The next stages (both for the Expo and the Expo heritage) will be the following:.

1 **Preliminary Designs**

During the preliminary design stage, you are developing a global representation of the Expo and its Legacy in such a way that it provides a good picture of the location, the functional and spatial structure, destinations, user facilities, architectural appearance, and the integration of structural and technical installation aspects.

2 **Final Design**

During the final design stage, you are developing a detailed representation of the Expo/Expo Legacy in such a way that it provides a good picture of the appearance, the internal and external structure, the use of materials, the finishing and detailing, the constructive structure and the nature and capacity of the installations.

3 **Technical Design**

During the technical design stage, you are developing and specifying the construction work in all its facets in such a way – in a technical sense – that final pricing for the execution can take place on the basis of this.

The Programme of Requirements is tightened at the start of each new design stage.

Expo 2016 Antalya, Türkiye

Image Source

Expo 2021 Hatay, Türkiye 34
Sustainable Customer Experience Design (L. Smit and Frans Melisse) 36
Expo 2016 Antalya, Türkiye 37
Adobe Stock 38
Moodboard Venlo Floriade 2012 (ARCADIS 2009) 40
Expo 2022 Floriade Almere, Netherlands 42
St. Jan's kapel - Paul Tiellemans 2012 (https://www.kerkgebouwen-in-limburg.nl/kerken/grubbenvorst/sint-janskapel-floriadeterrein) 45
St. Janshoeve - Ifthenisnow 2012 (https://ifthenisnow.eu/nl/pointsofinterest/stjanshoeve-venlo)
Monasterio de la Cartuja Sevilla - Wikipedia 2023 (https://en.wikipedia.org/wiki/Monastery_of_Santa_Maria_de_las_Cuevas#/media/File:Monasterio_de_la_Cartuja,_Sevilla.jpg)
Expo 2021 Yangzhou, China 46
Floriade Almere 2022 (Google Earth 2023) 47
Suncheonman wetlands - Koreabyme 2023 (https://koreabyme.com/trip-to-suncheon-bay-garden/)
The layer approach (De Hoog et al., 1998; Rijksplanologische Dienst, 2001) 48
Floriade Venlo regional scale, city scale, expo scale (ARCADIS) 49
Expo models (ARCADIS) 50-61
Expo 2012 Venlo, Netherlands 51
Expo 2016 Antalya, Türkiye 52
Expo 2019 Beijing, China 54
Expo 2022 Floriade Almere, Netherlands 56
Expo 2021 Yangzhou, China 59
Expo 2021 Hatay, Türkiye 60
Expo 2010 Taipei, Chinese Taipei 63
Stadium London during and after - Pyramid Builders 2021 (https://pyramidbuildersltd.co.uk/olympic-stadium2012/)
Czechoslovak pavilion Brussels 1958 - Expo2015 (https://www.pavilon-expo2015.cz/en/historie/expo-1958-brusel)
Czechoslovak pavilion Prague today - Living Prague 2023 (https://livingprague.com/architecture-design/prague-expo-58/)
Guinness World Records - Expo 2021 Hatay
Brussels Expo 1935 - Wikipedia 2023 (https://upload.wikimedia.org/wikipedia/commons/2/27/EXPO_Bruxelles_1935-B.jpg) 65
Brussels Expo 1958 - Getty Images 2023
Brussels Expo today - Klaas Vermaas 2004
Eiffel Tower 1889 - Collection Tour Eiffel
Eiffel Tower 1900 - Wikipedia 2023 (https://commons.wikimedia.org/wiki/File:Eiffel_Tower_7.jpg)
Eiffel Tower 1937 - Arthur Chandler (Expanded and revised from World's Fair magazine, Volume VIII, Number 1,1988) (http://www.arthurchandler.com/paris-1937-exposition)
Guinness World Records - Doha Qatar at Expo 2022 Floriade.
Expo 2016 Tangshan, China 66
Expo 2016 Antalya, Türkiye 69

Rachel Wakefield
Communications Executive, AIPH