

WHITEPAPER

Building a New *Botanical Glasshouse?*

Read Our 7 Dos and Don'ts



EDENPARKS
THE NEXT GENERATION GLASSHOUSES



When considering the functionality of your new botanical glasshouse, it is imperative to ensure that the structure performs accordingly and that its implementation can eventually exceed expectations. The purpose of this whitepaper is to help you think about what you want from your glasshouse in the years to come. What considerations need to be made and what you have to think about prior to the building thereof?

EdenParks Director, Jeroen Smiemans, departs decades of experience in custom-made glasshouses for botanical use or for exhibitions, commercial and daycare purposes. He offers various suggestions to assist you in making more informed decisions during the development and building of your botanical glasshouse. Learn how to keep the costs down yet at the same time make your project as innovative and technologically advanced as possible.

As with anything in life, thorough preparation is half the battle won. The time put into the preliminary phase of building your greenhouse is a great investment in its future use. Thus, we hope you find our whitepaper useful and that you will garner plenty of inspiration. That said, let's now learn how can you make sure your glasshouse stays in top-notch condition for years to come.

▶ 1. DO DEFINE THE FUNCTION OF YOUR BOTANICAL GLASSHOUSE

Botanical glasshouses have an increasingly public function and there is a demand for them to be attractive for different types of visitors. It is very important that you begin by listing the expectations you have of your glasshouse. Consider the function, form, look and feel, climate requirements, routing and other necessary facilities. What outcome do you want from your glasshouse and as such, what features does it require? Think about your current requirements in relation to your potential future requirements.



In addition to being able to provide an ideal climate for your flora, botanical glasshouses are all about interactivity and the complete experience. Even for gardens without public audiences and those targeted at the research community there are a myriad of uses to consider: glasshouses for research, lectures, assemblies and catering uses etc. These all influence the choice of light, temperature, installations and other features etc. and have an impact on the overall outcome and success of the glasshouse.

Consider your expectations:

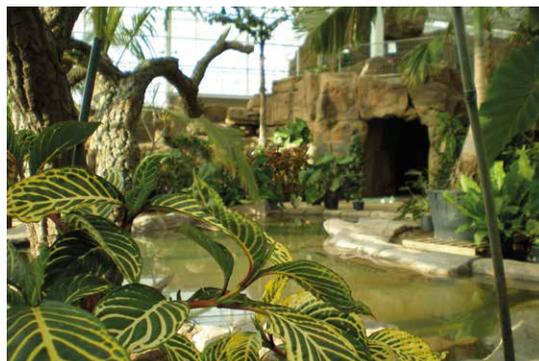
- ▶ Is your glasshouse geared towards a natural experience for the general public with 'do it yourself' elements?
- ▶ Is your glasshouse about specific show gardens, whether or not with different temperature zones?
- ▶ Is it your goal to receive and entertain audiences?
- ▶ Do you need catering facilities, and if so: how many?
- ▶ Lastly, do you want the space to be utilized for temporary installations or art exhibitions?

▶ 2. DO CONSIDER THE ADMITTANCE OF LIGHT

Once you have defined the required functions for your glasshouse, you can begin to consider your specific light requirements. A desert garden will need more light than a restaurant for example, where controlled light is key. In doing so, different temperature zones and thus installations and routing can be ideally aligned. Hence, an innovative division of temperatures within your glasshouse will ultimately mean higher energy savings and overall optimization of your glasshouse performance.

Techniques we use to achieve this are as follows:

- ▶ Glass use with extra light entry or light slowing effects as well as different types of foils
- ▶ Solar and/or insulating cloth systems that react to actual light
- ▶ Natural shadows created by plants
- ▶ The knowledge of our experts in terms of design and consultancy.
They are available to share various possibilities with you according to your requirements.



▶ 3. DON'T RE-INVENT THE WHEEL

How can you optimize the price-quality ratio of your new botanical glasshouse? How do you keep budget spend minimal yet at the same time ensure the project is durable and technologically advanced?

At EdenParks the practice of creating beautiful greenhouses for all uses is a priority. EdenParks considers the design and innovative building thereof but also importantly considers affordability. You may ask how this combination is in fact possible? EdenParks brings together elements developed by the company itself in order to create a unique design that suits every budget and design needs – be it graceful or robust, rugged or elegant, rectangular or asymmetrical etc.

Two examples of our combination of high-quality and innovative design are the RHS Wisley Garden in England as well as a greenhouse developed for the Goethe Institute at the University of Frankfurt.

▶ 4. DO CHOOSE THE RIGHT APPEARANCE

It is important to consider the use of blinds and screens, solid panels, roofing tiles, coatings and material finishes, types of glass as well as the level of reflection when it comes to selecting the appearance of your glasshouse. What is even more important is the effect these aesthetic aspects have on the indoor climate and atmosphere of the glasshouse. Ensure these aesthetic elements match their required function. Are plants housed inside meant to grow or are you aiming to merely control their growth?

The covering of the glasshouse is of great importance when determining the total experience, atmosphere and climate control of the glasshouse. Therefore, it is important to choose the right kind of insulation glass according to your requirements – be it single glass, foils, polycarbonate etc. There are various options to choose from, each with their own advantages.

Furthermore, it is important that you fully understand the advantages and disadvantages of the respective materials. Let our experts at EdenParks best advise you.

▶ 5. DO MAKE IT INTERESTING AND PLAY WITH HEIGHTS

After you have defined and consolidated your desired greenhouse requirements and selected the form and materials, it is time to consider the potential added value of relief elements. Take for example objects such as bridges, hills or caves as well as differences in height which make the experience of a greenhouse so much more attractive and exciting. Variations in height allow for more botanical diversity. Now visitors and researchers can experience plants and trees in a completely new way when standing on a bridge a good distance from the ground.



▶ 6. DON'T FORGET ABOUT THE YOUTH!

It is of course equally important to grow your own audience. The Royal Horticultural Society in England states, “Enthusiastic children are the gardeners of tomorrow, and gardeners make the world a better place”.

The message is no doubt clear. It is becoming more and more crucial to involve children in botanical garden projects so that they are equally tempted to discover the magic of nature, to have fun, play and learn. The learning experience is complete when they are able to feel, smell, taste and experience the world contained inside a greenhouse. For example, with water streams, the biggest leaves in the world, exotic butterflies... There are even greenhouses that now offer laboratories, microscopes and climbing walls especially for children. The Children's Adventure Garden, a New York Botanical Garden, is a great example of getting children actively involved in greenhouses. Children may be your current or future audience so involve them.

▶ 7. DO TRANSFORM ENERGY INTO FURTHER ENERGY FORMS

Greenhouses are highly innovative, 'green' buildings that have a minimal carbon footprint, both in terms of materials and the building process. There is virtually no waste during production and construction of a glasshouse. Furthermore, during the lifespan of the structure, glasshouses are flexible and adaptable and they can even be moved to a completely new location or even recycled.

In many cases, glasshouses produce energy and they become an energy source themselves since they often produce more energy than they consume. It is therefore our advice to make sure you are well informed about the many glasshouse technologies available. One such technology for example is geothermic energy which acts as an alternative source of energy by means of warm water storage underground and re-used for heating, cooling or other purposes within the greenhouse.

Would you like to know more about sustainable energy or the minimum carbon footprints of glasshouses? Our EdenParks specialists can help you out!



SPIRIT is our innovation team that keeps going when others give up. Our mission: to create new options, fine-tune and improve construction, technologies and practical applications of glasshouses that will ultimately increase the lifespan of your glasshouse, improve its performance and your reduce costs.



THIS WHITEPAPER HAS BEEN COMPILED BY EDENPARKS, THE NEXT GENERATION GLASSHOUSES.

Author, Jeroen Smiemans Director of EdenParks, has extensive knowledge of innovative, custom-made botanical glasshouses. EdenParks creations include the RHS Garden Wisley near London; the Amiri Garden, a botanical glasshouse with differing climate control for the Emir of Kuwait; exhibition pavilions for museums and care centers and much more. EdenParks translates your glasshouse requirements into exceptional, light and innovative structures that people enjoy and keep coming back to.

Sustainable, innovative and inspiring – these are EdenParks' next generation of glasshouses.

For more information on any of the above-mentioned topics please contact EdenParks by phone or e-mail at the following contact details:

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