

Building a new garden today: A non-conventional way to communicate about plants

Philippe Richard

Bordeaux Botanical Garden, France

Introduction

After one and a half centuries as a ‘classic’ botanical garden, with displays put in place in 1857, at a time when the natural sciences were all the rage and European travellers returned with an abundance of new plants collected in remote countries, here in Bordeaux we wished to make a botanical garden of a new type. It was 1997.

Up until then the garden consisted of a systematic collection and an arboretum. The garden was in a large park for recreational purposes. Greenhouses demonstrated the growing interest at the time for exotic plants. For the general public, learning about the plant world was prompted by curiosity in the unknown or classes which showed flower beds filled with plants classified by family.

Little by little, in the twentieth century, the appeal for these sorts of gardens decreased, and in Europe, botanical gardens gradually lost their charm for the general public, and worse, universities stopped teaching the natural sciences.

We had the good fortune to be able to undertake the project of a new garden during an unfavourable period in France, but thanks to the political drive of the Mayor of Bordeaux, who was very keen on the idea, we went ahead. The intention was to make an altogether different garden. We have achieved our ambition thanks to the landscape designer *Catherine Mosbach* and the architect *Françoise-Hélène Jourda*.

This complex consists of a contemporary garden and buildings whose architecture is inspired by sustainable development or more exactly the principles stemming from Agenda 21.

The project found its place in a district of Bordeaux under renovation, originally planned for an urban park which was lacking a theme. The Botanical garden was thus in a strategic position for tourism and for visitors from the nearby city centre.

The main principles

Three concepts influenced the process for achieving the whole:

To explain biodiversity

A concept often misunderstood by the general public, in particular the need to protect it, as it is vital for the global equilibrium of life on earth.

To show the dynamic of landscapes and the natural environment

Man often has a creationist conception of nature, caused in particular by the image projected through gardens.

The rational use of natural resources

The greatest problem of our time : showing that whatever the human activity of consumption, we have to think about saving resources, if they come from the wild, and to use recycled materials to a maximum. A minimum of energy must be used for construction purposes, and in the use of the site.

The garden

It groups together four main zones of only 5.4 hectares (approx. 13 acres). It is an urban garden, near the city centre, and as the district was in complete renovation, a place was put aside for a park (see Figure 1).

1st zone: the water garden

This consists of a large pond which includes plant collections grouped together following ethno-botanical themes: edible water plants, depurators, ornamental plants, seasoning; in order for the public to identify each plant according to its use.

2nd zone: the landscape gallery

This represents a series of eleven regional environments.. It was necessary to install successively:

- the various layers representing the geological periods
- the soil with its various horizons
- plants respecting the composition of the natural environment represented

3rd zone: the field under cultivation

This is an area of 44 flower beds dedicated to different cultures from all around the world, to show how and what man cultivates. For example, in pharmacopoeia, the plants used for treating the heart, industrial plants for producing material, plants for alcoholic drinks, etc. In this area the irrigation of each bed is done from a tank which spreads the water along furrows in order to decrease the evaporation and avoid waste.

4th zone: the community garden

This is an area of garden cultivated in common by the people from the community, producing vegetables and flowers, and where they share their action with the public and organize sessions of initiation or information to explain their work. This work is done with an association, *Les Jardins d'Aujourd'hui*, which is run by amateur gardeners. The garden includes other displays, such as, for example, a collection of climbing plants, but most importantly, a surrounding fence, made of wood from trees which fell during the big storm of 1999.

The buildings and the greenhouse

We were particularly careful, with our architect, Françoise-Hélène Jourda, to build according to the principles of sustainable development. Buildings include: a reception area for the public, permanent and temporary

showrooms, a shop, a restaurant, an educational zone intended more specifically for children, offices, a library, a herbarium, and a greenhouse, an original creation of our architect.

The buildings are faced with cladding to increase insulation, while looking very aesthetic. Openings are relatively small, for the same reasons, and the building is not equipped with air conditioning which is very energy consuming (see Figure 1).

The greenhouse has a wooden frame, which is original, and the roof is equipped with glass panels consisting of photovoltaic cells. These panels allow the light to pass through, but produce electricity at the same time, enough for our needs to be covered, and more. The production is about 22000 kWh per year for a production capacity of 37 kW crest. In order to use less tap water, we built 275 m³ of reservoirs to collect rainwater to water our collections, not only in the greenhouse, but also the most sensitive outdoors plants (see Figure 3).

The collections in the greenhouse are for the main part from of the Mediterranean regions of the northern or southern hemisphere, to introduce plants that are less well known in Europe. Furthermore, the interest of these plants is to be thrifty with water and for the region of Bordeaux a compromise which means we do not need to warm the greenhouse in winter.

Finance

The global cost of the operation was € 10,5 million. Financial aid came from: the European Community (EEC) - 30 % and regional and local authorities - 15 % with the main part of the financing coming from the City of Bordeaux. The Botanical garden is a Municipal Service.

The Botanical garden of Bordeaux answers the demand from the general public in France to be better informed about the natural world. But the public often just to relax in their leisure time and have a walk through the garden. At present, our challenge is to work to improve the garden as much as possible. A place that appeals to the public does not always serve the interests of botany. The future of our natural environment depends on this.



Figure 1. View of garden



Figure 2. Public building in the garden



Figure 3. Internal view of greenhouse