

Eco-sensors, primary schools and the changing visitor profile

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The National Botanic Gardens of Ireland, is situated close to the centre of Dublin. It is 19.5 hectares in size and was first opened to the public in 1800. As is the case with many botanic gardens based in capital cities, an analysis of the visitor profile shows a complex and diverse audience. Visitor numbers have increased from an estimated 125,000 in 1990 to 400,000 in 2006. These greatly increased numbers and thus expanding visitor profile, present a unique opportunity in Ireland to promote not only the National Botanic Gardens but also our mission to enhance an understanding of plants and their importance in our lives, as well as a recognition that plant conservation is an essential part of environmental sustainability. A considerably extended educational programme has been developed at the Gardens to achieve this potential including exhibitions, lectures, courses, workshops and a wide variety of other events including theatre and performance art. As with any major botanic garden it is important to maintain a balance in our activities (horticulture, conservation, education, science and amenity) so that we meet the diverse needs of our visitors and other users.

Education, Events, Exhibitions.

The key to the increase in attendance has many contributory factors, investment in the infra structure of the gardens and major restoration projects combined with the excellent work of the horticultural team has made the gardens an extremely pleasurable place to visit. The role of the education department has played a key role in increasing visitor numbers. Education, events and exhibitions have promoted the profile of the gardens encouraging new visitors and providing stimulus to our regular visitors.

As part of our education strategy, the visitor profile was assessed in order to understand the current audience, and to identify target audiences in order to increase the visitor numbers. In order to make the gardens as accessible to the public as possible our policy of free admission was continued but a small charge for parking was introduced. A schedule of events and exhibitions was developed to appeal to as broad a section of the general public as possible while safeguarding the ethos of the gardens as a scientific institution. From the outset, most of our events were held free of charge, with free lecture series, free educational programmes for schools and free tours at weekends with a minimal charge for pre-booked group guided tours. This policy has continued except in the case of night classes or certain workshops.

The opening of the lecture theatre in 2000 presented the opportunity to develop our very successful lecture series. Initially we ran a monthly afternoon lecture, which would appeal to interested members of the public and keen gardeners alike. As with other aspects of education there was no budget available for speakers so we used in-house expertise and invited friends of the gardens who, out of loyalty to the institution, gave lectures free of charge. In turn this meant that we could continue our policy of not charging for educational events. The response in terms of audience has been extremely successful, attendances can range from anything from sixty to one hundred and fifty; it has also shown that there is a niche there for encouraging people into the gardens as we have continued to maintain audience numbers and we are currently planning our eighth lecture season. We also encourage horticultural societies to use the facilities at the gardens and have hosted their lectures also. This led to improved relations with the varying societies and promoted the gardens as the epicentre for horticulture in Ireland.

Education for school groups

The schools programme has been evolving since 1997. We place a major emphasis on our work with schools, both first and second level. In the absence of a dedicated education space, the kind of programmes we are able to present are themed tours with a cross-curricular emphasis.

In response to the ongoing media coverage and general awareness raising campaigns by the Irish government on the topic of sustainability, we decided to explore the role that botanic gardens can play in highlighting and explaining this highly relevant and important issue. In 2006 *Sustainability Week* was held at the National Botanic Gardens. During the week of events, lectures and demonstrations were given on composting, sustainability workshops were held for school groups, and one of the glasshouses was transformed into a 'Sustainability House.' There were displays of living plants outlining the environmental cost of major crop plants such as cotton bananas, coffee, tea and sugar. Exhibitions of biological control and information on how the gardens are reducing their use of chemicals in horticulture, managing glasshouse pests in an environmentally friendly way and cutting back on energy consumption and reducing reliance on peat, a dwindling natural resource.

There was also a display of the various types of composting bins and demonstrations of environmentally friendly ways of encouraging wildlife into gardens and approaches to sustainable gardening. Large panels were installed in which school groups creatively expressed their thoughts having taken part the workshops. A sustainability 'tree' was erected where children could hang their sustainability 'wishes', this proved quite thought provoking as it gave the children an outlet for their fears as well as their hopes for the future.

In evaluating the programme offered to schools we decided that the format was successful and it has been expanded and is now offered to secondary schools. *Sustainability Week* will be developed and continue as an annual event.

Ecsosensor Web.

An exciting new collaboration project between the National Botanic Gardens, Glasnevin and the National Centre for Sensory Research at Dublin City University was launched in 2006. This innovative project is a new web based initiative for primary science education. Based in the Great Palm House range of glasshouses, the project uses a specially developed wireless sensor network which act like mini weather stations to measure, light, heat, humidity and temperature. These data are transmitted live to the website, where they are represented in an accessible user-friendly manner. The site not only contains dynamic graphing and information on environmental conditions within the glasshouses but also exciting botanical information. Children can learn fascinating and fun facts about the plants growing in the houses and take a themed tour through the glasshouses to learn how people use plants, how different plants have adapted to where they live and what is being done to protect and conserve threatened plant populations. This programme is attractive to teachers as a multi faceted approach can be taken to the programme.

In its present format it can be rolled out in the following ways.

- If a school is within the Dublin area it can use a series of workshops presented to them in their own classroom exploring the eco sensor technology and learning how to use the website, this then culminates in a tour of the glasshouses to experience the plants in-situ. The outreach aspect is managed by DCU and the visit to the gardens by the education staff at the botanic gardens.
- Independently, a teacher can access the website taking a virtual themed tour of the glasshouses, following up with a real visit and tour.

For those who cannot access the botanic gardens, the website offers the opportunity of taking a virtual tour of the glasshouses. This means that we can reach a wider rural audience than previously.

Interaction with art

We have run many successful solo and group art exhibitions since the opening of the education and visitor centre in 2000. The brief for exhibitions is that the content must have a botanical, environmental or horticultural base, these exhibitions are very well attended and have brought a new dimension to the visitor profile, attracting artists, art lovers, collectors and students of art to the gardens. One collaboration, which has been an outstanding success, is the annual '*Sculpture In Context*' exhibition held throughout the gardens, glasshouses and education and visitor centre. Not only do experienced, well-known sculptors participate but newer artists are also given an opportunity to submit. Pieces from over ninety artists were displayed as part

of *Sculpture In Context* in 2006. An award has been established for the best interpretative work in an attempt to develop an innovative approach to the interpretation of the collections at the gardens. This exhibition is the biggest sculpture exhibition in the country and has grown into a high profile national event in the Irish arts world; it has had the added advantage of turning September and October into two of the busiest months of the year in the gardens in terms of visitor numbers.

Challenges for the Future

Equally, whereas the attendance figures have increased dramatically and an audience has been developed for lectures and demonstrations, the challenge is to sustain that interest while continuing to develop new audiences. As part of the management plan for future developments of the gardens a new children's glasshouse and education centre for school groups is being developed. This will provide a dedicated space for workshops and practical sessions in an informal environment and provide the opportunity to develop more hands on programmes.

Conclusion

In conclusion although we have travelled a long way in terms of education and improving accessibility to the gardens through our public education programmes there are still many challenges left to face. However, the groundwork has been firmly established and we look forward with optimism to the future.

Author

Felicity Gaffney has been developing education at the National Botanic Gardens of Ireland since 1997. She is Head of Education and Visitor Services and has over all responsibility for events, exhibitions and education.