

REPORT

International Perspectives on Best Practice in the Development of Urban Environmental Education, and Education for Sustainability Programs

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This paper reports on the international practices I observed as part of a study tour I undertook as a 2005 NSW Premier's Visy Industries Environmental Education Scholarship holder. Interest in urban environmental education (EE) and education for sustainability (EFS) is increasing as rapid urbanisation emerges as one of the greatest challenges facing the world today. The urbanisation processes, fueled by globalisation, environmental degradation, rural unemployment and technological change, are forcing a global exodus from rural areas to urban ones. For developed countries like Australia, urbanisation has resulted in localised environmental and social problems in our cities. These issues include urban design; land clearing and urban sprawl; transport and infrastructure planning; disposal of solid waste; water, noise and air pollution; preservation of biodiversity and heritage; water scarcity; social isolation; loss of social capital and socio economic inequality. The impact of the developed world's largely urban population on the all eco-systems, has focused critical world attention on urban places as the sources of widespread environmental degradation.

The 3rd World Environmental Education conference in Turin focused delegate's attention on growing ecological footprints, and the urgency of addressing the world's environmental problems through environmental education for sustainability. Presenters explained that most global eco-systems are at risk and it is critical that the concept of sustainability, and the understanding of the interconnectedness of global ecosystems, forms a key component of urban EE. Our very future may depend on our students knowledge of, and positive action towards sustainable resource use and environmental management. Conference delegates mentioned a number of challenges we face as educators:

1. to teach our students about the effects of western urban lifestyles on global environments, and to offer positive solutions and alternatives which focus on the changes we can make by living more sustainably without compromising our standard of living;
2. to change teaching and learning techniques into action outcomes;
3. to ensure curriculums are flexible enough for the integrative nature of EFS; and
4. to link environmental rights with human rights.

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In reducing our ecological footprints on earth, most urban planners agree that there are some basic guidelines (listed below) that should be considered which promote greater sustainability. These ten guidelines also form the foundations of many urban EE and EFS programs worldwide. Many of the centres I visited have received critical acclaim (in their respective countries and internationally) as demonstrating world's best practice in urban environmental education. Their activities encapsulate the following guidelines:

Mandating a Compact Urban Design

This guideline safeguards rural hinterlands and decreases urban sprawl. Sprawling cities create social, environmental and economic costs for city governments. Chicago is addressing this issue with a successful incentive scheme for developers, who utilise brownfield rather than greenfield sites for new developments. One example, the Green Technology Center, became the first in the USA to achieve the highest LEED rating (Leadership in Energy and Environmental design). This centre showcases world's best practice in environmental building design, and is an inspiring example of how a strong and environmentally committed city government can take a lead in promoting urban consolidation strategies and simultaneously encourage and promote sustainable environmental design.

In London, the Greater London Planning Authority has established many schemes to encourage consolidation such as the London Docklands Development. A docklands fieldtrip demonstrated the massive transformation of this once depressed region, now rivalling the CBD as the financial capitol of London. A vital component is the inclusion of a fast and efficient public transport system, linking the docklands to the rest of London. This area was a model for similar dockland redevelopments worldwide, including those in Australia. This once derelict area close to the city centre is an example of how government planning, in tandem with business, can stimulate urban consolidation and decrease the social, environmental and economic costs of sprawling cities.

Creating Livable Communities Through High Quality Design

"Livable communities" describes the way new and existing buildings affect the character and quality of an area to create well-proportioned buildings and attractive spaces. It also refers to facilities and services that meet residents basic needs and build community cohesion through open space, community gardens or leisure facilities. The urban environment, has aesthetic, social, cultural and sustainability characteristics, which contribute to its overall design. Many urban EE centres actively engage students in understanding these characteristics and in clarifying students' values toward their own urban environments. By doing so, students are better able to make informed decisions about the future of the communities in which they live, and be better able to contribute to their overall design.

The Commission for Architecture and the Built Environment (CABE) is a UK organisation I visited, which promotes the inclusion of children in architecture and planning. Through various seminars, events, publications and organisations supported by CABE, children (K-12) are taught urban planning and architectural design concepts, with the aim of raising their awareness of built environment issues. The Commission coordinates several institutions such as The Building Exploratory in Hackney London. This hands-on exhibition space encourages students to explore their local environment through models, maps, dioramas and urban planning activities. The centre encourages exploration of elementary design, promotes critical thinking about the use of spaces in local communities, and helps clarify values about the use and aesthetic qualities of architecture and urban spaces.

The Hammersmith and Fulham Urban Studies Centre (another CABA organisation) encourages active student enquiry into local communities, often with support of local councils and other funding bodies. Their “*Collaborative Care Centre*” project highlights the importance of children’s participation in urban design. The project involved developers consulting local students about the redevelopment of a site into a *Collaborative Care Centre*. Students are encouraged to understand the processes involved in redeveloping the site, and their design ideas are taken into consideration as part of the redevelopment process. Another project entitled, “*Safer Routes to Schools*”, requires students to explore problems of access to school. Pedestrianisation is a design strategy to achieve a more liveable, sustainable urban environment, and many cities are adopting this strategy. In Glasgow, a highly pedestrianised city, The Lighthouse Centre encourages students to explore architecture and design concepts. An exhibition, “*Remodelling the Clyde*”, displays students design ideas, modelled in clay, on a large-scale map of their city. Another Lighthouse initiative, “*Design for Learning 21st Century Schools*”, involves pupils working with architects, designers, education officers and teachers, to design their future learning environments.

Encouraging Sustainable Building Design and Sustainable Housing

Sustainable building design refers to the materials used and the operations involved in running built structures. The most successful strategies in sustainable building design have been the development of green buildings, the preservation and adaptive reuse of existing buildings and the supply of different forms of housing including alternative modes of accommodation. An example of world’s best practice in sustainable building design is The Beddington Zero Energy Development (BEDZED) in Beddington, London. This housing project for 100 residents was designed around a number of sustainability principles including: zero carbon emissions, zero waste emissions, sustainable transport use, use of local and sustainable materials, sustainable water use, protection and provision of natural habitats and wildlife, protection of local culture and heritage, promotion of equity and fair trade and an emphasis on health and happiness. The scale of the operation and its viability for future housing design is very impressive.

In Bristol UK, the Create Centre consists of a sustainable home and information centre established by Bristol City Council. Students visit this centre with the Bristol Architecture Centre, (a CABA organisation). Students learn about green building design by visiting the sustainable home and information centre as well as touring with the developers new green office spaces.

Provision of Sustainable Transport and Mobility Infrastructure

Reducing car dependency, encouraging multi-modal integrated public transport systems, increasing green transport (e.g. electric trams or bicycles) and encouraging safe walking, are features of sustainable cities. Sustainable compact cities rely on inexpensive and integrated public transport systems. Planners are realising that the provision of pedestrian and cycle infrastructure promotes prosperity and a healthier population. These concepts were emphasised during a meeting with Professor Hugh Barton, Executive Director of the WHO Collaborating Center for Healthy Cities and Urban Policy. Professor Barton emphasised that one method to promote sustainable cities was to focus on the public health benefits of planning for sustainability such as provision of bike lanes to combat obesity or provision of useable parklands to counteract youth boredom. Trips to and from school by private vehicles constitute a growing proportion of road usage and many urban EE programs are involved in devising strategies to reduce this trend. Accordingly, the Brooklyn Children’s Museum contained a computer simulation exhibition entitled “*Together in the city*”. This fun

interactive exhibit encouraged the use of public transport to explore community events such as the St Patrick's Day parade.

Greening Cities

This guideline involves protecting and promoting urban green space through parks, gardens, city farms, ecological parks, urban wildlife reserves and corridors. It includes greening built structures such as rooftops, walls, streets and schools. Most cities have set aside tracts of land for a variety of uses including recreation, conservation, biodiversity habitats or future expansion. Also, much of the built environment has the capacity to be further greened through innovative design strategies such as "green rooftops".

These green "oases" within urban areas provide ideal settings where the interface of the built environment with more natural ecosystems can be explored. The Crissy Field Studies Centre in San Francisco, USA, conducts a number of urban ecology programs on the site of a former rubbish dump. The centre is on a recreated tidal marsh and conducts programs on wetland flora and fauna, urban runoff, waste reduction, environmental justice, national parks, land regeneration and environmental stewardship.

Similarly, the Brooklyn Center for the Urban Environment, located in Prospect Park Brooklyn, New York, conducts urban fieldwork divided into two streams, urban ecology and urban design. Most of the ecology programs are located in Prospect Park, and are designed to foster a sense of stewardship and environmental awareness amongst students. Urban design programs occur in various locations and are designed to help students develop awareness and appreciation of the built environment through hands-on programs, experiential learning and inquiry-based methodologies.

Restructuring Urban Ecosystems to Reduce a City's Ecological Footprint

"Most cities have linear metabolisms, taking resources and discarding waste without much concern about environmental impacts" (Giradet, 2004). Instead, sustainable cities need to mimic the circular metabolism of natural systems. For students, the understanding of their own ecological footprint is a key component in understanding how their city functions as an urban ecosystem. This concept was demonstrated at the Notebaert Nature Museum in Chicago USA, where an exhibition entitled "*Climate Chaos*" taught in a fun and interesting way how we all contribute to global warming. Also located at this museum was the "*Extreme Greenhouse*", where students learnt, through hands on activities, how we are all connected to global environments. The Brooklyn Center for the Urban Environment also ran an in-school program entitled *how big is your footprint*, whilst the CREATE Centre in Bristol focused on the problems of waste generation.

Encouraging Sustainable Energy Use

This involves reducing our dependence on fossil fuels by decentralising energy production, achieving greater energy efficiency e.g. through passive solar design or conservation, and promoting renewable energy. The Chicago Center for Green Technology showcased solar technology, whilst the BEDZED promoted biomass use.

Maintaining and Preserving Built and Cultural Heritage

Urban planners place a high priority on maintaining built cultural heritage in our urban environments, often through preservation, adaptive reuse or sympathetic infill. Many Centres promote heritage appreciation as part of their education programs. The National Trust for Scotland maintains many culturally important properties throughout Scotland. Their education officer for Western Scotland emphasised the role of linking into the national curriculum, managing risk assessment, providing accessible transport

options, and developing strategies which make the properties “come alive” for students. At Pollok House, for example, various historical periods of the house (est. 1742) were demonstrated by staff dressed as costumed servants. These staff entertained their “guests” with amusing stories of their daily life and that of their masters.

Promoting Positive Urban Processes to Create Livable Environments

Some urban processes such as urban renewal, urban consolidation, counter urbanisation and gentrification, enhance the livability and sustainability of urban environments. At the Barcelona Field Studies Centre, students conduct fieldwork into the effects of urban regeneration. Students use an index of residential quality to measure decreasing levels of gentrification.

Providing Responsible City Governance

This guideline involves publishing sustainability indicators and guidelines, leading by example, allocating environmental budgets, enforcing local Agenda 21 principles and conducting public environmental awareness campaigns. Many city governments are aware of the need to lead by example when it comes to mandating environmental sustainability practices and to showcase best practice amongst their citizens. The Greater London Authority’s new City Hall is a model of sustainability, whilst the Mayor’s initiatives on traffic congestion and improving public spaces show the Authority’s commitment to environmental improvement. Schools too can provide responsible governance in environmental matters by taking the initiative and leading by example. This includes providing budgets for environmental initiatives, celebrating environmental days and achievements, having in place a working School Environmental Management Plan and Committee and modeling to students, best practice in environmental management.

Conclusion

The urban environmental education programs I visited focussed on the major principles and planning guidelines of sustainable cities and used a variety of methodologies to teach them. These include urban fieldwork, in-school programs, exhibition centres containing interactive displays and games, seminars, purpose built housing and city models. The challenge for environmental educators is to translate the principles of sustainable cities into activities that engage students in understanding urban environments and promote skills in solving environmental problems. Our greatest challenge is to empower students to translate the lessons they have learnt into positive, sustainable changes in their own lifestyles.

Acknowledgements

I would like to thank all staff from the organisations visited, and the organisers and sponsors of the NSW Premiers Teacher Scholarship program, for supporting me in undertaking this study.

Keywords: environmental education; urban planning; schools.

Reference

Giradet, H. (2004). *Cities People Planets*. Chichester, England: John Wiley and Sons Ltd.

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