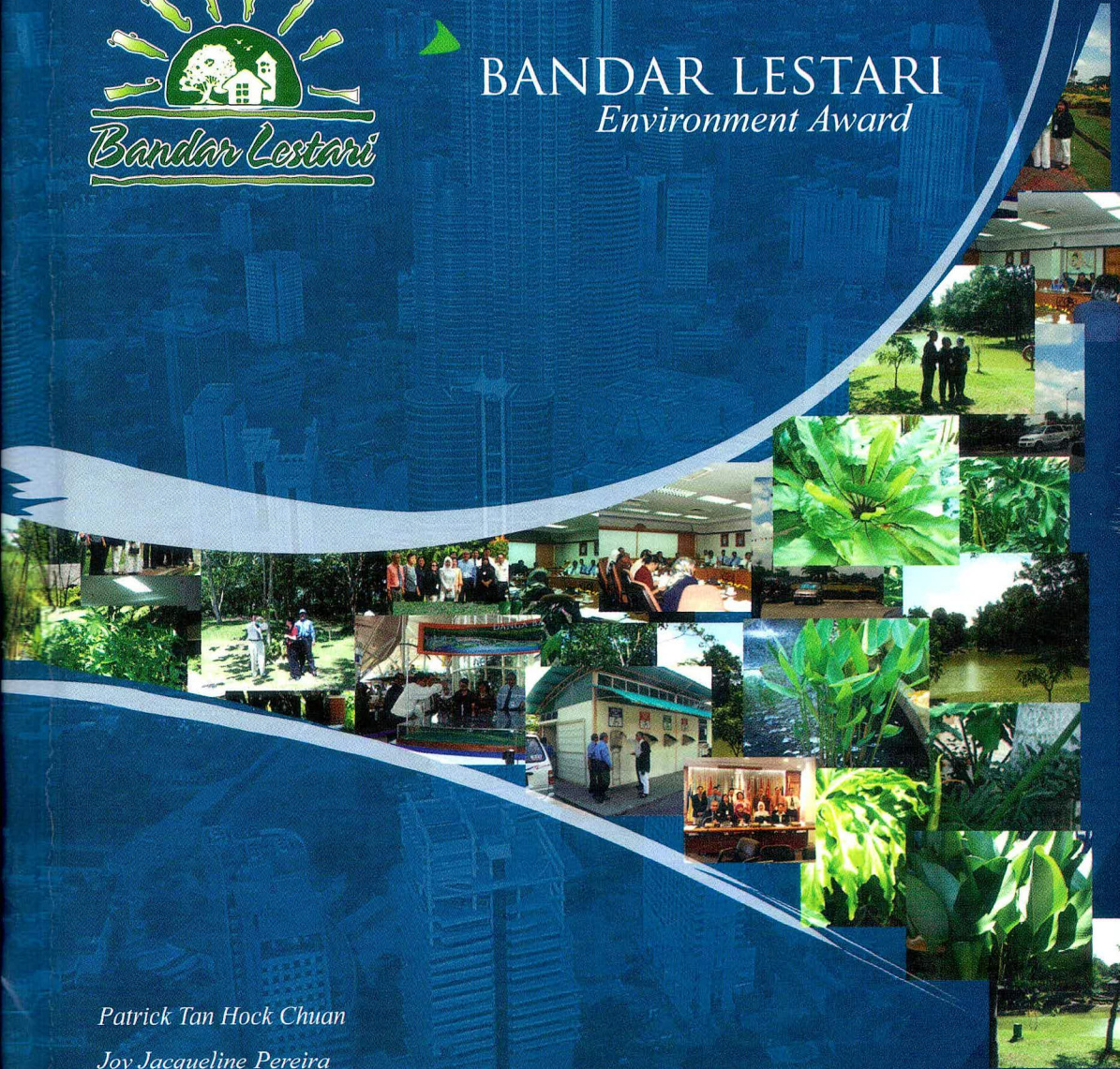


TRACKING SUSTAINABILITY



BANDAR LESTARI
Environment Award



Patrick Tan Hock Chuan

Joy Jacqueline Pereira

Shaharudin Idrus

Abdul Samad Hadi

TRACKING SUSTAINABILITY

Bandar Lestari – *Environment Award*

Patrick Tan Hock Chuan
Joy Jacqueline Pereira
Shaharudin Idrus
Abdul Samad Hadi

2006



Department of Local Government,
Ministry of Housing and Local Government

Message from the




DIRECTOR-GENERAL OF ENVIRONMENT

The Department of Environment is pleased to have successfully implemented the Bandar Lestari – Environment Award Programme, which culminated in the Award Ceremony that saw the Kuantan Municipal Council emerge as the recipient of the “Bandar Lestari – Environment Award” for 2003/2004. The Award Programme aims to recognise city administration for integrating sustainability elements in the planning and development of a city, particularly in aspects related to the physical environment, ecological initiatives, urban services, environmental governance as well as education and awareness.

Bandar Lestari is a dynamic concept, which encompasses continuous social, economic and physical development along with the incorporation of environmental sustainability in city development. Efforts to ensure sustainable development are challenging, requiring a cross-sectoral approach and the participation of all concerned parties. I believe this Award Programme will bring forth a positive influence on the initiatives of city and municipal councils as well as local authorities, in integrating the environmental dimension in their planning and operation. It will also be beneficial in promoting environmental awareness through dissemination of environmental information to the local community.

I would like to express my sincere gratitude to the Local Government Department, which provided support and cooperation in implementing the “Bandar Lestari – Environment Award” Programme. I also wish to acknowledge the Institute for Environment and Development of University Kebangsaan Malaysia, for providing technical support for the Programme.

Congratulations to Kuantan Municipal Council for their efforts in realising the concept of Bandar Lestari, and to all the cities that received Special Mentions, I hope this recognition will serve to spur other cities towards achieving excellence in environmental management in line with the spirit of Agenda 21.



DATO' HAJAH ROSNANI IBARAHIM

Message from the



DIRECTOR-GENERAL OF LOCAL GOVERNMENT DEPARTMENT

First and foremost I would like to congratulate the Kuantan Municipal Council, recipient of the Bandar Lestari – Environment Award 2003/2004 and all cities that received Special Mentions. I also congratulate the Department of Environment (DOE), Ministry of Natural Resources and Environment (NRE) for its initiative in conceptualising and implementing the Award Programme in Malaysia.

It seems that this Programme has given many advantages to all parties involved especially on matters related to environmental conservation in urban areas. The Award Programme also complements the Local Agenda 21 Programme (LA21) of the Ministry of Housing and Local Government (MHLG).

The Department of Local Government (DLG) is very supportive of attempts made by the Department of Environment, to introduce the Bandar Lestari – Environment Award to cities in Malaysia. Although the initial phase of the Award Programme was open to all state capitals, only six cities and municipal councils volunteered to participate. I hope that in the future, more cities and municipal councils will participate voluntarily. I also hope that the scope of the Programme could be further expanded, to include other cities in Local Authorities area including city councils, municipal councils, and even district councils.

Finally, I hope the cooperation between the Local Government Department, Ministry of Housing and Local Government and the Department of Environment, Ministry of Natural Resources and Environment will go on continuously to initiate all cities and Local Authorities to act on executing the 'Bandar Lestari' concept in managing the environment.

A handwritten signature in black ink, appearing to read 'Anwar B. Haji Abdul Rahman'. The signature is fluid and cursive.

DATU' HAJI ANWAR B. HAJI ABDUL RAHMAN

Message from the



DIRECTOR OF LESTARI, UNIVERSITI KEBANGSAAN MALAYSIA

First and foremost, I would like to congratulate the Department of Environment Malaysia (DoE) and the Department of Local Government of the Ministry of Housing and Local Government for being proactive and initiating the Bandar Lestari - Environment Award Programme. I would also like to thank the DoE for inviting the Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia to be part of this noble initiative.

LESTARI in Malay means sustainable. LESTARI, UKM was established on 1st October 1994 as a multidisciplinary institute to realise the goals of sustainable development through research and capacity building, as envisioned by the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil. LESTARI serves as a reference centre capable of dealing with environment and development issues, assisting governments in formulating policies based on research of a holistic and balanced kind. In this context, we are proud to have participated in the Bandar Lestari - Environment Award Programme as it fulfils our mandate.

Cities are complex entities and the task of ensuring sustainable development in a city seems impossible. However, if sustainable development is viewed as a process, efforts can be made to take actions, which ensure that a city progresses towards sustainability. Such efforts need to be assessed for its success through quantitative means and should be recognised accordingly. Thus, the development of criteria and indicators play a critical role in the assessment exercise. There are many indicator initiatives underway at municipal, state and national levels in Malaysia with LESTARI playing a prominent role in their development. LESTARI has had the privilege to draw on this experience to develop the criteria and indicators for the Bandar Lestari - Environment Award.

The Bandar Lestari - Environment Award Programme plays an important role in the implementation of the National Policy on the Environment. We look forward to a continuation of the synergetic partnership that has been developed with the DoE in the quest to achieve environmental sustainability.

A handwritten signature in black ink, appearing to read 'Mazlin Mokhtar'. The signature is fluid and cursive, written over a horizontal line that extends across the width of the signature.

PROFESSOR DR. MAZLIN MOKHTAR



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| PREFACE |

Tracking Sustainability is a new series introduced by the Institute for Environment and Development (LESTARI), to stimulate discussion on the design of systems for measuring sustainability. Bandar Lestari – Environment Award, the first book in the new series, documents the development and implementation process, including assessment criteria and indicators, for granting the award on environmental sustainability for cities in Malaysia.

Chapter 1 – Introduction attempts to define the term ‘sustainable city’ from the environmental, economic, social and cultural perspectives. It also provides an overview of the various recognition programmes and schemes at the international, regional and national levels.

Chapter 2 – Bandar Lestari - Environment Award Programme reports on the development process of the Award Programme, with respect to partnerships and consultation. The objectives and modus operandi of the Award Programme are outlined.

Chapter 3 – Evaluation Criteria and Indicators touches on the approach of the Award Programme. The five criteria and associated indicators are elaborated.

The approach, committees and procedures involved as well as scoring are discussed in Chapter 4 – Evaluation Process and Implementation. The implementation of the Award Programme, its inaugural recipient, special mention recipients and future steps are also briefly dealt with.

Chapter 5 – Good Practices focuses on the six capital cities that volunteered to participate in the “Bandar Lestari – Environment Award”. Good practices, which could be emulated by other local authorities in the country, are highlighted.

Patrick Tan Hock Chuan
Joy Jacqueline Pereira
Shaharudin Idrus
Abdul Samad Hadi

| ACKNOWLEDGEMENT |

Bandar Lestari - Environment Award 2003/2004

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CHAPTER 1:

INTRODUCTION

SUSTAINABLE CITIES

Cities have universally accepted characteristics. They are generally settlements with higher than normal population density where the residents are not involved in agricultural activities or in the primary economic sector. In addition, settlements provide services as regional centres for cultural, administrative and economic activities and have legally recognised administration systems. Urbanisation focuses on the process of urban growth, involving an increase both in number of population and size of areas of growth. It also brings about a process of change in the population and the settlement, with respect to life-style, economic activity, and way of thinking, among others.

Over the centuries, cities have become complex entities. They have varied political and institutional systems, cultural and value systems, economic and industrial components, social needs and market demands as well as spatial structures and patterns. In addition to this, the psychological needs, physical stocks and fabric, environmental carrying capacity and natural resource limits of cities tend to differ. The linkages between all these factors as well as other parameters make matters more intricate.

There is no agreed definition on the term sustainable cities (Satterthwaite 2001). However, there is much discussion on the issue of sustainability in cities (Haughton and Hunter 1994; Jenks et al. 1996; Rees 2001). The issues are complex, varied, multifaceted and interconnected. They include defining a practical optimum population density taking into account population size, population dynamics and environmental carrying capacity. Impacts of macroeconomic policies with respect to inequitable distribution of wealth and eradication of relative and hardcore poverty are important. Also important is equal access to basic services such as traffic and transportation systems, affordable housing and sanitation, among others. Social exclusion is increasingly emphasized, particularly strengthening community participation and ensuring the well being of marginalised communities. Environmental problems are major concerns with respect to deteriorating air quality, deteriorating water quality and quantity, land contamination, as well as cities

as heat islands contributing to climate change. Furthermore, the increasing vulnerability of the city population to natural and technological hazards is also of serious concern.

Given the complexity of cities and the issues therein, the task of ensuring sustainable development in a city seems impossible. However, if sustainable development is viewed as a process, efforts can be made to take actions, which ensure that a city progresses towards sustainability. Such efforts can then be assessed for its success and recognised accordingly. The process of balancing economic, social and environmental goals, which constitute the three pillars of sustainable development, then becomes critical. Achieving sustainability in cities would then encompass many types of processes (Ravetz 2000; Halimaton and Norliza 2006). In the economic domain, adjustment mechanisms would be sought for competitiveness, equity and non-monetary activity. In the social domain, processes such as social improvement, to enable greater cohesion, opportunity and social inclusion and cultural enhancement, to enable greater welfare with less material consumption, become important. Also important is spatial restructuring, for qualities such as accessibility, efficiency, viability, security and amenity. In the environmental domain, improvement is required in efficiency, risk reduction, enhancement of quality of air, water and land, reduction of emissions and waste discharge and biodiversity protection. Technological enhancement enables innovation and best practices in environmental efficiency. In governance, political adjustment, for effective rule and empowerment of communities as well as institutional adjustment, to enable better management, coordination and investment, are critical.

RECOGNITION OF SUSTAINABLE CITIES

There are many dimensions to a sustainable city. In addition to the environmental dimension, economic growth, provision of shelter, accessibility, safety, good governance, transparency and public participation among others, are equally important. It is highly unlikely that any one city would excel in all aspects to be recognised as a "sustainable city". Measuring progress of sustainability in cities is complex because city systems are interconnected and continuously changing. Furthermore, the link between cause and effect is difficult to prove. Current sustainability measurement systems relate to tangible features (Peterson *et al.* 1999; Atkisson 2001; Meadows 2001; Anon 2002).

Based on such measurable features, there are several award programmes attempting to recognise cities that strive to achieve sustainability. Some of the award programmes are established, while others are just commencing. The

majority of the award programmes focus primarily on the environmental component, while in others the environmental elements are implicit. The awards are administered at international, regional and national levels. There are also awards administered at the city level, which recognise city-based organisations and individuals for their contributions to environmental sustainability. A brief overview of some awards is presented in the following sections.

INTERNATIONAL RECOGNITION

World Habitat Award

The World Habitat Award is an international award established in 1985 for both developed and developing countries (BSHF 2002). The Award recognises human settlement projects that provide practical and innovative solutions to current housing needs and problems. Needs and problems encompass provision of low-cost, affordable housing for the poor, restoration of dilapidated housing and environmental degradation, provision of sustainable life-styles, provision of energy and water efficient housing, among others.

Two winners are selected annually. They receive a cash award of £10,000 and a hand-crafted and individually designed silver trophy. The Award is presented to the winners at the United Nations World Habitat Day celebrations, under the auspices of United Nations Human Settlements Programme (UN-Habitat). The Building and Social Housing Foundation administers the Award programme, where a panel of international judges conducts the assessment. Any individual, organisation or government with an innovative practical solution to housing problems and needs can be considered for the Award.

There are several criteria for the Award. The project should demonstrate practical, innovative and sustainable solutions to current housing needs and problems, be financially self-funding with minimal reliance upon public funds, easily replicated, and view the term habitat from a broad perspective including environmental, economic and social elements. The evaluation process for the Award encompasses a two-stage entry of preliminary and final submissions. The preliminary submissions consist of a concise summary of all aspects of the project. An Assessment Committee then selects twelve projects for the final stage of competition. A Panel of international judges then selects the two winning projects based on the detailed final submissions. Where necessary, the projects are visited.

Dubai International Award for Best Practices to Improve The Living Environment

The Dubai International Award for Best Practices to Improve The Living Environment was established in 1996 (Dubai Municipality 2002). The Award was established in response to the call for Best Practices during the Second United Nations Conference on Human Settlements (Habitat II) as a means for identifying and sharing information as well as disseminating lessons learnt in improving living conditions on a sustainable basis. The aim of the Award is to recognise and enhance awareness of outstanding and sustainable achievements in improving the living environment as stated in the criteria established by Habitat II and the Dubai Declaration. Good and best practices from over 125 countries are now featured on the Best Practices database.

The Award recognises ten categories of Best Practices biennially on World Habitat Day. Categories include shelter and urban infrastructure, improved production, safe water supply and sanitation, improved urban environmental health, waste collection, recycling and reuse, effluent management, accountable and transparent governance, use of information in decision-making, experimental and innovative practices, among others. The winners share a total of US\$300,000 and each receive a specially designed trophy and a commemorative certificate. In addition, US\$100,000 is reserved for management expenses including travel and accommodation for up to two representatives from each award winning entry.

The Dubai Municipality administers and presents the Award to a new group of ten winners every two years on World Habitat Day. An independent international jury conducts the assessment for the Award. The Award is open to government organizations and agencies including bilateral aid agencies, National Habitat Committees or Focal Points, multilateral agencies, cities, local authorities or their associations, non-governmental organisations, community-based organisations, research and academic institutions, public or private foundations and individuals that submit a specific initiative or project fulfilling the Best Practice criteria.

There are three major criteria for a Best Practice and these are impact, partnership and sustainability. With respect to impact, for each category, the best practice should demonstrate a positive and tangible impact on the environment of people with respect to sustainable shelter and community development, sustainable urban and regional development and sustainable, efficient, accountable and transparent settlements' management. Partnerships should involve at least two or more stakeholder groups. Sustainability refers to lasting changes from the perspective of legislation and regulatory frameworks, social policies, institutional frameworks and decision-making processes or efficient, transparent and accountable management.

Additional criteria are used to differentiate between good, best and award winning practices. These include leadership and community empowerment, gender and social inclusion and innovation within the local context and transferability. The evaluation process for the Award commences with voluntary submissions of information on the initiative or project. The Technical Advisory Committee consisting of experts identifies the exemplary practices and prepares a shortlist. An international Panel of Jury then selects the winners from the shortlist provided by the Technical Advisory Committee.

Local Initiatives Award

The Local Initiatives Award is an international award established in 1995 at the Third International Municipal Leaders' Summit on Climate Change (ICLEI 2002). The Award recognises the efforts of local governments to protect and improve the environment. There are two primary aims. The first is to give international recognition to local government partnerships that have made exceptional efforts in sustainable development planning and have shown tangible results. The second is to maintain a database and disseminate case summaries of the outstanding work done by winners and finalists so that other local government partnerships can benefit from their experience.

There are five winners, one for each of the five award categories, namely Governance for Sustainable Development, Atmospheric Protection, Land Resources Management, Freshwater Management and Waste Management. The winning local government partnerships are presented with a certificate and a memento. In addition to the Award winners, three finalists in each category are also recognised. They will receive certificates and be acknowledged on the Local Initiatives Honour Roll. The International Council for Local Environmental Initiatives (ICLEI) administers the Award, with support and cooperation from Managing and Cooperating Partners. Recognised international experts conduct the assessment. The target recipients are local governments, in recognition for the work done in partnerships with the community.

The evaluation criteria for each category comprise two primary areas. The process criteria includes participation involving public education, community input and process transparency; partnership with a minimum of two stakeholders, systematic approach that addresses social, economic and ecological problems, in addition to high impact institutional arrangements; development within ecological limits; and sustainable long term planning and solutions. The results criteria encompass environmental benefits that are cost-effective, with short and long-term effects; mobilisation of resources that

develops or mobilises the capacity of the community; and scale of impact that relates local results to global concerns, results in new approaches or technologies that serves as a model for broad use.

The evaluation process involves an Award Secretariat, based at ICLEI, a Selection Committee consisting of independent experts and the Executive Committee of ICLEI. Applications are sent to the Award Secretariat, which is established to recruit, assemble and evaluate applications for the award. The Secretariat then identify applicants that best meet the criteria for outstanding achievement, validate their claims and prepare background summaries of their cases. The summaries of qualifying applications are then passed on to the Selection Committee. Members of the Selection committee will then review each applicant on their own, based on the defined criteria, and submit their recommendations for winners and finalists to the Award Secretariat. The preliminary results will be assembled and returned to the Selection Committee. The Committee then meets via Conference call to determine the final results. The final results will be presented to the Executive Committee of ICLEI for final approval. The Executive Committee assesses the selection process to ensure that it is transparent, objective, valid and fair, and grants final approval to the list of winners and finalists.

City Green Star Programme

The City Green Star Programme ensued from the Green Cities Declaration of the United Nations Environment Programme (UNEP). Fifty Mayors signed the Declaration on World Environment Day, on 5 June 2005 in San Francisco, USA. The Programme aims to recognise the progress of cities in implementing the Urban Environmental Accord, which resulted from the Declaration (UNEP 2005). The Accord focuses on seven themes. These are energy, waste reduction, urban design, urban nature, transportation, environmental health and water. Each issue has three actions with clear targets for improvement. The Accord contains a total of 21 actions.

Between now and 2012, cities shall work to implement as many of the 21 actions as possible. Success will be judged on the basis of actions taken through programmes and activities. The goal is for cities to pick three actions for adoption and implementation each year. At the end of seven years, a city that has implemented 19 to 21 Actions shall be recognised as a 4-star city. A city that has implemented 15-18 Actions shall be recognised as a 3-star city, 12-17 Actions shall be recognised as a 2-star city, and 8-11 Actions shall be recognised as a 1-star city.

REGIONAL RECOGNITION

European Sustainability Award

The European Sustainability Award aims to recognise the work of local authorities in Europe in the field of sustainable development (EUROCITIES Network 2003). The Award also aims to raise awareness at the local level and mobilise communities on sustainable development issues, highlight examples of good practices and encourage exchange of experiences and assess and disseminate innovative practices on efficient action. For the given year, a city that scores the highest points is granted the European Sustainability Award, while a Certificate of Distinction is granted for innovative approaches in three optional categories. In 2003, the three optional categories were sustainable waste and resource management, poverty and social equity and health. Since 1996, the Award has been granted every three years.

The Award targets cities, town and local authorities in European Union countries, Accession countries, Newly Independent States, Eastern European countries or others that have an Association agreement with the European Union. The Council of European Municipalities and Regions (CEMR), through its Campaign Network and Campaign Office administer the Award, with the support of the European Commission.

The assessment for the European Sustainability Award covers five major areas. These are Vision, Strategy and Political Commitment; Partnership and Participation; Action Planning and Implementation of Local Initiatives; Innovative Approaches in specified fields for the given year; and Assessment of Indicators. The indicators used include social indicators, health indicators, educational indicators, economic indicators and environmental indicators. The framework for Urban Environmental Sustainability Indicators has four essential elements. These are maintaining environmental systems, reducing environmental pressures, reducing vulnerability, and improving response strategies. Participation is through an application in the form of a questionnaire, verified by the Mayor or Council Chairman. The Campaign Network and Campaign Office conduct the initial assessment, to prepare an initial shortlist of candidates. A panel of independent experts conducts the final assessment.

ASEAN Environmentally Sustainable City Award

The 8th Informal ASEAN Ministerial Meeting on Environment (IAMME), held on 13 October 2004 in Singapore, supported the proposal for an ASEAN Environmentally Sustainable City Award for cities as an incentive to promote environmentally sustainable practices. Such an Award would also serve to monitor and evaluate progress towards environmental sustainability in cities,

while promoting education and awareness of communities in ASEAN, on the importance of integrating environmental objectives into the social and economic development agenda of cities (Anon 2005). Several workshops were hosted by the National Environment Agency of Singapore and the details were finalised at the Jakarta Workshop on 6-8 December 2005.

The award indicators are based on clean air, land and water. It was recommended that more than one award should be considered for each category (AWGESC 2005). In this respect, a 'Certificate of Recognition' or 'Special Mention' has been proposed. Thus, the proposed award categories would include Best Overall City and Best Progress based on criteria such as air quality and management, water quality and management, land (water management and green areas), health and sanitation, public participation, partnership with NGOs and the private sector as well as education and awareness. In addition, an award has also been proposed for Good Governance. The first criteria for this award is institutional mechanisms encompassing aspects such as incorporation of environmental policy into landuse planning, administrative guidelines and by-laws, existence of an officer in charge of environmental matters, and ongoing capacity building programmes for staff on environmental activities. The second criteria is on monitoring and enforcement mechanisms to address public complaints. The third is financial allocation for environmental activities such as pollution abatement, training and education, campaigns as well as financial support for activities of NGO. The fourth criteria relates to stakeholder participation including the number and types of activities involving the public and NGOs and information dissemination via websites, newsletters, bulletins and information kiosks, among others.

A self-nomination process has been proposed, where any city can apply to their respective Federal Governments to volunteer their participation. The Federal Government would then form a Nomination Committee, comprising representatives from the government, universities, NGOs, the private sector and other stakeholders. The Committee decides on the nomination and the results are submitted to a Review Panel appointed by the ASEAN Working Group on Environmentally Sustainable Cities (WGESC). The final results will have to be endorsed by the ASEAN Senior Officials Meeting on the Environment (ASOEN) and approved at the Asean Ministerial Meeting on the Environment.

NATIONAL RECOGNITION

National Environmental Model City, China

The National Environmental Model Cities of China is a programme to recognise cities for environmental performance (SEPA 2001). The aim is to create a group of model cities where the economy, society and environment are well coordinated, with good environmental quality, complete urban infrastructure and beautiful, clean landscapes. Ultimately, the programme will contribute in guiding cities towards sustainable development. National Environmental Model Cities are identified based on the urban environmental quality examination system (UEQES). The UEQES is a target-based method of promoting environmental protection that relies on local leadership for its implementation, in conjunction with government agencies at various levels as well as other stakeholders in cities. The programme, which initially commenced with 30 cities, currently involves over 600 cities. Indicators used in the UEQES reflect representation, comparability, feasibility, reliability and divisibility. These include 26 indicators, of which 7 are for ambient environmental quality, 8 for pollution control, 6 for environmental infrastructure and 5 for environmental management.

Cities that meet the set standards will be given the title "National Environmental Model City". The city will then be re-examined every three years. If the city does not meet the minimum standard, a deadline will be given for improvement. Should the city fail to meet the minimum standards after the improvement period, the title is revoked. The State Environmental Protection Administration of the People's Republic of China (SEPA) manages the programme while assessment is conducted through a panel review. The SEPA Board of Ministers examines the final results prior to its publication.

Cities participating in the UEQES programme or its regional equivalent for a period of at least two years can be nominated for the award. The assessment is based on five categories and 27 items. These are basic conditions, social and economic development, environmental quality, environmental construction and environmental management. Basic conditions include requirements that cities must meet the minimum standards of the UEQES programme and have an index of environmental investment that exceeds 1.5% of its total budget. The social and economic development category consists of 5 indicators, environmental quality 3 indicators, environmental construction 9 indicators while environmental management consists of 4 indicators. Minimum standards are set for each of the indicators.

Cities that meet the minimum requirements to participate based on the UEQES programme are invited to participate for the "National Environmental

Model City" title. The application is presented to SEPA, which will then organise a panel review and conduct a survey on public satisfaction with environmental quality. The results are then assembled and after review by the SEPA Ministerial Board, the top ten cities are publicised and awarded the "National Environmental Model City" title.

Adipura Award Programme, Indonesia

The Adipura Award Programme of Indonesia was introduced in 1986 to encourage local governments to strengthen their capacity in good governance and good environmental management (MoEI 2005). This is in line with the mandate of the Ministry of Environment of Indonesia. The main focus is on clean and green cities through public participation (Anon 2005). The President of Indonesia presents the Award on an annual basis, in conjunction with World Environment Day. The Adipura Award is granted to cities with a high rank and scores above the passing grade. The Adipura Certificate is granted to cities that are good enough, and have scores close to the passing grade.

In the Award Programme, cities are divided into several categories based on population. These are the metropolitan (more than 1 million people), large city (between 500,000 and 1 million people), medium city (between 100,000 and 500,000 people) and small city (with less than 100,000 people). The criteria include both physical and non-physical parameters. Physical parameters encompass indicators that describe the physical state. Examples include housing, city facilities, condition of open waters and beaches. Non-physical indicators describe urban environmental management including the responsiveness of institutions. Physical indicators are evaluated by conducting field monitoring in participating cities of the Bangun Praja Programme. Non-physical indicators are evaluated by assessing the City Form submitted by the Mayors of participating cities. Currently, there are more physical indicators compared to non-physical ones.

A team from the Ministry of Environment, coordinated by Deputy II Environment, conducts monitoring and evaluation on a regular basis, at a minimum of three times in a year. Monitoring periods are 4 days for the metropolitan, 3 days for a large city, and 2 days for medium and small cities. With respect to the physical criteria, a score of 30-45 is considered very bad, 46-60 bad, 61-70 average, 71-85 good and 86 and above is very good.

Future plans for the Award Programme include evaluating all cities with more than 20,000 habitants, continuously disseminating the evaluation results, creating new mechanisms to determine the Adipura Award recipient, and announcing in phases, the urban environmental quality index (MoEI 2005) Cooperation between the province, NGOs, university and the media

will also be enhanced. Training, technical assistance and international exchange will focus on enhancing local capacity on urban environmental management and assist small, medium and large cities to create a clean and green city. A national level campaign of Adipura Indonesia is also being developed.

RECOGNITION PROGRAMMES IN CITIES

There are several awards administered by city administrators to recognise local organisations and individuals for their contributions to environmental sustainability within cities. The City of Vista and City of Port Moody of the USA conduct two such programmes, which focus on environmental sustainability.

The City of Vista through its Environmental Quality Commission recognises individuals and organisations on a quarterly basis or as qualified projects are presented (City of Vista 2003). The Award Programme aims to recognise property and business owners for significant environmental improvements. Applications are in the form of introductory letters containing detailed explanation of the increased environmental benefit to the city. The applications are submitted to the Commission either by a City staff or a private citizen. The Commission assesses the submissions and makes its recommendation to the City Council. Recipient categories are commercial, industrial, institutional, individuals, groups and clubs. The areas for Awards are awareness and education, recycling, alternative fuels, clean-up project, air quality, new technology, transportation and product development and usage.

The City of Port Moody grants two awards annually i.e. City of Port Moody Environmental Award and Naturescape Award (City of Port Moody 2003). The target recipients may be individuals, organisations, schools or corporations with completed projects. The City of Port Moody Environmental Committee will assess the voluntary submissions and make its recommendations to the City Council for final approval. The City of Port Moody Environmental Award is for ecological initiatives, habitat enhancement, adherence to the Port Moody Naturescape Policy as well as educational and volunteer components. The Naturescape Award recognises adherence to the principles of maintenance, caring and improvement of the living environment.

CHAPTER 2:

BANDAR LESTARI - ENVIRONMENT AWARD PROGRAMME

BACKGROUND

There are several key challenges that face cities in Malaysia (Mazlan Othman *et al.* 1998; Sham Sani 1999; Pereira & Komoo 2004; Abdul Samad Hadi 2005; Abdul Samad Hadi *et al.* 2006) The impact of population growth, human activities, resource development and industrialisation on the environment, in the form of pollution is a major challenge. The critical importance of maintaining the quality of the environment to meet the needs of the population (e.g. water) and the need to maintain a healthy environment for human habitation (e.g. air) are also challenges confronting us. Other challenges include the need to preserve the unique and diverse natural heritage that contribute to the quality of life (e.g. green areas) and the interdependence of social, cultural, economic, biological and physical factors. Many policies, laws and regulations have been formulated to address these challenges. At the federal level, the most holistic principles with respect to environmental sustainability are embodied in the National Policy on the Environment.

The National Policy on the Environment was approved by the government on 2 October 2002 and was launched by the Minister of Science, Technology and the Environment on 14 November 2002 (Rosnani Ibarahim 2002). The focus is on continued economic progress, social development and cultural enhancement of all Malaysians based on environmental sustainability. There are eight principles in the National Policy and these are stewardship of the environment, conservation of nature's vitality and diversity, continuous improvement in the quality of the environment, sustainable use of natural resources, integrated decision making, role of the private sector, commitment and accountability and active participation in the international community.

In line with the National Policy on the Environment, the Department of Environment Malaysia (DoE), in conjunction with the Department of Local Government of the Ministry of Housing and Local Government and with technical support from the Institute for Environment and Development (LESTARI) of Universiti Kebangsaan Malaysia, initiated the Bandar Lestari - Environment Award Programme. The Award Programme is an initiative to

recognise local authorities that have incorporated the environmental dimension in planning, administration and implementation of their programmes, projects and activities, in line with the National Policy on the Environment.

The Minister of Science, Technology and Environment launched the Bandar Lestari – Environment Award in conjunction with World Environment Day on 5 June 2003 in Putrajaya. At the launching ceremony, a representative from the Ministry of Housing and Local Government received application forms and brochures describing the Award Programme, for distribution to local authorities. This gesture symbolised the spirit of partnership between the two Ministries in promoting environmental sustainability in cities and towns in Malaysia.

OBJECTIVES

The Bandar Lestari – Environment Award aims to recognise and award the progress made by Malaysian urban centres towards environmental sustainability. The objectives are to:

- Recognise the work carried out by the administrators of local authorities with regard to environmental sustainability.
- Raise awareness regarding environmental sustainability at the local level and mobilise support within communities.
- Disseminate innovative approaches and examples of good practices towards environmental sustainability.

PARTNERSHIPS

The Department of Environment (DoE) is the lead agency for the Award Programme in collaboration with the Local Government Department of the Ministry of Housing and Local Government. DOE also hosts the Award Secretariat. Technical support for the Award Programme is provided by the Institute for Environment and Development (LESTARI) of Universiti Kebangsaan Malaysia (UKM).

The Award Programme also has enthusiastic support of various stakeholders such as administrators of cities, towns and local authorities as well as federal and state agencies and academia, non-government organisations, community-based organisations and the private sector. Representatives from all categories were involved in the development process and implementation of the Award Programme. The Steering Committee and the Independent Assessment Panel for the Award comprised representatives from all sectors.

CONSULTATION

Various consultative meetings were held to develop the concept and prepare guidelines and criteria for the Award. The initial consultation process included a Round Table Dialogue to obtain feedback on the Award proposal, followed by a workshop to consolidate the criteria and indicators.

A Roundtable Dialogue entitled Sustainable Cities - An Award Programme was held on 5 March 2003 at UKM, Bangi. The aim of the dialogue was to discuss the concept and criteria of sustainable cities in the Malaysian context, and relevant elements that could be recognised with the presentation of an award. Representatives from key organisations dealing with urban issues and other stakeholders attended the Dialogue (Table 2.1).

The participants of the Dialogue unanimously supported the initiative to give recognition to local authorities for their efforts towards environmental sustainability. It was also noted that a sustainable city is more than an environmentally friendly entity and encompasses other dimensions including social, economic, security, good governance and stakeholder participation, the assessment of which requires the involvement and cooperation of more than one Ministry. It was recommended that the Economic Planning Unit in the Prime Minister's Department be the appropriate agency to coordinate such an award. In addition, multiple awards for various aspects of sustainability were proposed. Notwithstanding this multidimensional aspects of sustainability, the Department of Environment was tasked to develop and implement an environmental sustainability award, taking into account the Ministry of Housing and Local Government's existing programme for clean and beautiful cities, towns and local authorities (Mohd Ali 2003), and the Ministry of Health programme for Healthy Cities in Malaysia (Doraisingam 2003). These other two programmes were recommended to continue to strengthen the basis of fulfilling the criteria of a sustainable city. Other issues highlighted at the Dialogue were:

- The need for a clear and transparent methodology and process of recognition
- Indicators should be drawn from a combination of monitoring data and survey of the population. In addition they should take into account the difference between urban centres with respect to its income and other resources.
- Efforts in planning and sharing among urban centres must be recognised in the award criteria.

- The award should take into account urban centres of all sizes including small towns (pekan).
- Local best practices (and worst practices) must be documented and disseminated nation-wide.
- The importance of continuation and ownership by the relevant parties in maintaining the award through appropriate institutional arrangements.

Table 2.1: Participants of the Roundtable Dialogue on the Bandar Lestari Award Programme held on 5 March 2003.

CHAIRMAN
Y.Bhg. Tan Sri Dato' Lee Lam Thye National Institute of Occupational Safety and Health (NIOSH)
RESOURCE PERSONS
Mr. Patrick Tan Hock Chuan (DoE Putrajaya) Y.Bhg. Prof. Dato' Dr. Abdul Samad Hadi (LESTARI, UKM) Y.Bhg. Dr. P. Doraisingam (Ministry of Health) Mr. Mohd Ali Othman (Ministry of Housing and Local Department) Mr. Chang Yii Tan (DANIDA-EPU Programme)
PARTICIPANTS
Y.Bhg. Datin Paduka Dr. Halimatun Saadiah Hashim (Malaysian Institute of Planners, MIP) Y.Bhg. Datin Sushelia McCoy (Environmental Protection Society Malaysia) Y.Bhg. Dato' Ghazali Dato' Yusof (Business Council for Sustainable Development Malaysia) Y.Bhg. Dato' Lakhbir Singh Chahl (Regional Network For Local Authorities) Y.Bhg. Prof. Dato' Dr. Sham Sani (Emeritus Professor UKM) Y.Bhg. Prof. Dr. Ibrahim Komoo (LESTARI, UKM) Y.Bhg. Prof. Dr. Alias Abdullah (MIP) Y.Bhg. Prof. Dr. Tan Poo Chang (Universiti Malaya) Y.Bhg. Prof. Dr. Nordin Hj. Hassan (ENSEARCH) Y.Bhg. Dr. Junaida Lee Bt. Abdullah (Ministry of Tourism) Y.Bhg. Dr. Dolbani Bin Mijan (Town and Country Planning Department) Ms. Sri Husnaini Sofjan (TUGI, UNDP) Ms. Elizabeth Cardosa (Badan Warisan Malaysia) Ms. Leela Panikkar (TREES) Assoc. Prof. Hamzah Jusoh (UKM) Mr. Abdul Rahman Bin Kassim (ASMA) Mr. Jalaluddin Ismail (DoE) Ms. Muhibbah Bt. Selamat (DoE) Mr. Zarmadi Mohamed (DoE) Mr. Wan Asrizu W. Abd. Rashid (DoE) Prof. Dr. Mohd. Raihan Taha (LESTARI, UKM) Assoc. Prof. Dr. Joy Jacqueline Pereira (LESTARI, UKM) Mr. Shaharudin Idrus (LESTARI, UKM) Mr. Ahmad Fariz Mohamed (LESTARI, UKM)

A follow-up Workshop on Bandar Lestari Environment Award – Criteria & Indicators was held on 22 April 2003 at Shangri la Hotel, Putrajaya to refine the criteria and identify indicators for assessing environmental sustainability of urban centres. Experts in urban environmental management as well as other stakeholders attended the meeting (Table 2.2). The main suggestion was that urban services should focus on waste management and transportation, as these were the principle sources of pollution in cities. Other aspects highlighted include the need to recognise the role and participation of communities in city management as well as open and transparent administration. The excellent inputs provided at the meeting were taken into account in designing the Award Programme.

Table 2.2: Participants of the Workshop on Bandar Lestari Environment Award – Criteria & Indicators held on 22 April 2003.

FACILITATORS
Mr. Patrick Tan Hock Chuan (DoE Putrajaya) Y.Bhg. Prof. Dato' Dr. Abdul Samad Hadi (LESTARI, UKM) Assoc. Prof. Dr. Joy Jacqueline Pereira (LESTARI, UKM)
PARTICIPANTS
Dr. Junaida Lee Bt. Abdullah (Ministry of Tourism) Mr. Bishan Singh (Sustainable Development Network, SUSDEN) Mr. Roland Haas (GTZ-DoE Programme on Air Pollution) Mr. Mohd Yunos Rais (DoE) Mr. Shaharudin Idrus (LESTARI, UKM) Ms. Sarah Aziz Bt. Abdul Ghani Aziz (LESTARI, UKM) Mr. Ahmad Fariz (LESTARI, UKM) Mr. Azmi Khamis (DoE) Mr. Mohd Norli Abdullah (DoE) Ms. Halimah Hashim (DoE) Mr. Lee Choong Meng (DoE) Ms. Siti Zaleha Ibrahim (DoE) Ms. Dalilah Dali (DoE)

MODUS OPERANDI

It is logistically challenging for a single agency or organisation to assess all aspects of sustainability for all cities and towns in Malaysia in any one year. Notwithstanding this, some form of recognition is critical to motivate cities and towns in Malaysia onto the path of sustainability. This will help to highlight the importance of environmental sustainability in cities and towns, as issues related to the environment are generally subsumed under the socio-economic development agenda.

The Department of Environment (DoE), therefore, initiated a partnership with the Department of Local Government of the Ministry of Housing and Local Government to implement the Award Programme. The Institute for Environment and Development (LESTARI) of Universiti Kebangsaan Malaysia would provide technical support to the Award Secretariat. An independent panel of assessors, representing various stakeholder groups to conduct the assessment would be established. To ensure a transparent and open process, the criteria and selection method would be widely disseminated prior to the assessment process.

The recognition will be in the form of an award, based on voluntary participation. The award will be granted every two years. State capitals were identified as the target group for the initial phase of implementation. To ensure fair assessment of cities for their commitment and efforts towards environmental sustainability, the state capitals will be separated into two groups based on the criteria identified by the Ministry of Housing and Local Government for City Councils and Municipal Councils (MHLG 2000). The criteria include population, income generation and function, among others.

The assessment process will culminate in the presentation of the Bandar Lestari – Environment Award. Special mention will be made of good environmental practices identified during the assessment process. These will be documented and disseminated, so that other cities in the country can emulate them, where appropriate.

CHAPTER 3:

EVALUATION CRITERIA AND INDICATORS

APPROACH

The evaluation criteria of the Bandar Lestari - Environment Award is geared towards bringing together the participation of various sectors, departments and stakeholders, with the objectives of unifying social, economic and environmental benefits through quantifiable improvements for environmental sustainability. The assessment will be based on several factors which include improvement in physical environmental conditions, evidence of ecological initiatives and innovative practices for urban environmental management, means of dealing with community complaints related to the environment, description of efforts to improve environmental awareness in the local community, and evidence of long-term commitment to environmental sustainability.

Potential cities for the Award will be assessed for their accomplishments in five environment-related categories of equal importance. The categories are Physical Environment, Ecological Initiatives, Urban Services, Environmental Governance and Education and Awareness. There are data limitations at the city level but based on its availability and appropriateness, indicators and proxy indicators have been identified for each category. Only indicators that reflect representation, comparability, feasibility, reliability and divisibility will be used (Peterson *et al.* 1999; Sham Sani 2000; Anon 2002; Pereira & Mohd Nordin 2004).

To ensure a fair and equitable assessment process, there are several approaches when comparing the achievement of cities, depending on the category and type of data. The first step is to make a direct comparison between cities by ensuring that the information is collected under similar conditions, eg. noise levels in cities. The second is to make a direct comparison between cities of similar income level. The third is to make a comparison between the current and previous year for each city, and then comparing the changes between cities within the similar income levels. The second and third approach is particularly important for budget-based programmes, projects and activities. The fourth approach pertains to ambient air and water quality levels. The rate of change within each city between the current and a selected baseline year will be compared.

PHYSICAL ENVIRONMENT

Elements that relate to this category are the extent to which cities and towns lead the way in improving the surrounding physical environmental conditions for improved urban health. For example, increasing green areas and having appropriate building facades can mitigate urban heat conditions. Regular drainage maintenance can reduce flash flood occurrences in cities during the rainy monsoon seasons. Initiatives to improve and maintain the physical environment, by themselves, or collectively contribute to improved environmental performance as demonstrated by means such as improved quality of air, improved quality of water and reduction of noise levels.

Indicators proposed for air quality are carbon monoxide (CO) and nitrogen oxides (NO_x) levels (Table 3.1). Annual averages CO and NO_x serve as indicators as they are mainly from mobile sources that are influenced locally (traffic management, public transport promotion etc.). The Air Pollution Index (API) could be affected by transboundary emission influences and the main source of sulphur dioxide (SO₂) may mostly be located outside the city boundaries and are therefore not 'sensitive' to local government initiatives. Air monitoring stations are located in residential areas in all of the 14 state capitals. The Water Quality Index of rivers flowing through the cities will be used to assess the state of rivers. Suitable stations will be used for this purpose. Conditions in residential areas will also be used to reflect noise levels in cities. The noise levels will be measured under standard settings (i.e. time of day, weather conditions) and compared appropriately i.e. in low, medium and high cost areas. Data for air, water and noise indicators will be obtained from DoE. Depending on the data, comparison will be done between the current and a selected baseline year for each city, to determine the rate of change within each city. The comparison between cities will be based on the rates of change over the set period. Another parameter for comparison, particularly for air and water quality is the number of days where conditions exceed the Malaysian standards for a selected year.

Other indicators to assess physical environmental conditions are percentage area of green cover and number of flash flood occurrences. This information will be obtained from the record of the cities. Comparison between cities will be on the basis of rates of change over a set period. Visual inspection and assessment will also be conducted through field visits to assess the physical environment. These would include inspection of rivers for colour, floating debris and odour, assessment on the condition of silt traps as well as the state of landscaping. During the field visits, direct comparison will be made between cities.

Table 3.1: Indicators proposed for the category of Physical Environment.

Category	Indicators [Source of Data]	Remarks
Physical Environment Improved environmental performance as demonstrated by means such as improved air quality, water quality or reduction of noise levels, among others.	CO and NO _x levels [DoE]	Comparison between current and selected baseline year. Number of days exceeding standard for selected year.
	Water Quality Index [DoE]	Comparison between current and selected baseline year. Number of days exceeding standard for selected year.
	Noise Level in Residential Areas e.g. low and medium and high cost areas [DoE]	Comparison between cities. Comparison with standard.
	Percentage Area of Green Cover [State Capital]	Comparison between cities.
	Number of flash flood occurrences [State Capital]	
	Visual Inspection of Rivers e.g. colour, floating debris, odour, condition of silt traps [Field visit]	
	State of landscaping [Field visit]	

ECOLOGICAL INITIATIVES

There are four elements that relate to this category, which focus on the programmes and projects undertaken or practices adopted by cities, which results in environmental benefits. These are Protection of the Natural Environment, Environmentally Friendly Design, Innovative Practices and New Technology and Experimental Practices.

Protection of the Natural Environment encompasses biodiversity-related or habitat enhancement initiatives conducted by cities. Environmentally Friendly Design consists of initiatives undertaken to improve the built environment, as demonstrated by buildings designed for energy savings, efficiency and reduction of heat islands in the built environment, among others. Innovative Practices relates primarily to management within cities, resulting in environmental benefits, as demonstrated by improved efficiency or energy savings, for example the use of solar street lamps and telephones. New Technology and Experimental Practices include the use of alternative fuels or other environmentally friendly products that are new to the country or still in development stage.

The assessment of Ecological Initiatives undertaken by cities will be based on the type, number, duration, frequency and impacts of the programme, projects or practices on the environment (Table 3.2). An additional indicator for this category is the percentage of area within the city that is gazetted for conservation as an environmentally sensitive area. Information obtained would be verified through field visits. Comparisons will be between the current and previous years for each city and between cities of similar income level.

URBAN SERVICES

This category focuses on environmental issues relating to two major urban services i.e. waste and transportation management. The emphasis is on inculcation of practices that promote good transport management and initiatives for reducing, reusing and recycling of solid, liquid and gaseous wastes that are either inert or toxic. Elements that relate to this category are water and materials efficiency, clean-up projects, sanitation and effluent management, and improvement of public transportation, among others.

With respect to waste management, the assessment will be made based on parameters such as existence and implementation of a policy on reducing, reusing and recycling, separation of toxic and hazardous waste as well as the percentage of annual allocation for waste management. Other indicators are related to waste generation and recycling rates and the number of recycling centres. In addition to this, initiatives on waste management will also be assessed. The assessment will also focus on the type, number, duration, frequency and impacts of projects for reducing, reusing and recycling of waste. Information obtained from the cities would be verified through field visits. In addition, the state of cleanliness and maintenance of waste disposal facilities such as landfills and dustbins will also be assessed during the field visit.

Table 3.2: Indicators proposed for the category of Ecological Initiatives

Category	Indicators [Source of Data]	Remarks
<p>Ecological Initiatives Elements that relate to this category are:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Protection of the Natural Environment: Biodiversity-related or habitat enhancement initiatives. <input type="checkbox"/> Environmentally Friendly Design: As demonstrated by buildings designed for energy saving, efficiency and reduction of heat islands in the built environment, among others. <input type="checkbox"/> Innovative Practices: As demonstrated by improved efficiency or energy saving e.g. solar street lamps and telephones, among others <input type="checkbox"/> New Technology and Experimental Practices: Alternative fuels or other environmentally friendly product development and usage. 	<p>Type, Number, Duration, Frequency and Impacts of Projects for the environment. [State Capital and Field Visit]</p> <hr/> <p>Percentage area gazetted for conservation. [State Capital]</p>	<p>Comparison between current and previous year.</p> <p>Comparison between cities of similar income level.</p>

With respect to transportation, parameters to be assessed include the existence and implementation of a public transport policy and percentage of annual allocation for public transport related matters (Table 3.3). Other indicators include number of accidents, shared and non-shared modes of transportation as well as number of bus stops per square kilometre for the city. The assessment will also focus on initiatives undertaken with respect to public transportation. This will include the type, number, duration, frequency and impacts of programmes, projects and practices undertaken for improving public transport and traffic management. In addition, during the field visit, assessment will be made on the state of pedestrian sidewalks, bus-stops, bicycle lanes, crossings for the disabled as well as passenger density of public transport during peak hours.

Table 3.3: Indicators proposed for the category of Urban Services

Category	Indicators [Source of Data]	Remarks
<p>Urban Services This category focuses on environmental issues related to two major urban services i.e. waste and transportation management. The emphasis is on inculcation of practices that promote good transport management and initiatives for reducing, reusing and recycling of solid, liquid and gaseous wastes that are either inert or toxic. Elements that relate to this category are water and materials efficiency, clean-up projects, sanitation and effluent management, and improvement of public transportation, among others.</p>	Existence of policy on reducing, reusing and recycling, separation of toxic and hazardous waste, and annual allocation for waste management [State Capital]	Comparison between current and previous year.
	Type, Number, Duration, Frequency and Impacts of Projects for reducing, reusing and recycling of waste. [State Capital and Field Visit]	Comparison between cities of similar income level.
	Generation of domestic waste per capita. [State Capital]	
	Generation of toxic and hazardous waste per capita. [State Capital]	
	Number of recycling centres and rates of recycling. [State Capital]	
	Existence of public transport policy and annual allocation for public transport [State Capital]	
	Type, Number, Duration, Frequency and Impacts of Projects for improving public transport and traffic management [State Capital and Field Visit]	
	Number of accidents, shared and non-shared modes of transportation. [State Capital]	
	Number of bus stops per kilometer. [State Capital]	

	State of cleanliness, waste disposal facilities (landfills and dustbins etc.) [Field visit]	Comparison between cities of similar income level.
	State of pedestrian sidewalks, bicycle lanes, crossings for the disabled, bus-stops, and passenger density of public transport during peak hours [Field visit]	

ENVIRONMENTAL GOVERNANCE

This category recognises leadership in environmental sustainability within local authorities of cities and towns. There are four elements that relate to this category. The first relates to translation of environmental policies at national, state and local levels. The second is incorporation of practices and procedures that promote accountable and transparent governance, including human resources capacity building for environmental management. The third emphasises two-way communication with the community, including the extent to which public complaints and transparency to the media are addressed. The final and fourth element focuses on inculcation of stakeholder and community support.

Aspects that will be assessed include translation of the National Policy on the Environment into structure plans, administrative guidelines and by-laws, existence of an Organisational Environmental Policy, Unit or Officer for the environment, existence and effectiveness of systems to handle public complaints, the media, emergencies or disasters and the implementation of the Environmental Impact Assessment process for approval of development projects in the city (Table 3.4). Other indicators include percentage of annual allocation for enforcement, human resource training, percentage of housing estates that have Residents' Associations, and type and number of stakeholder groups represented in the Council. In addition, the number and type of collaboration in training, public-related and stakeholder specific activities will also be assessed.

Table 3.4: Indicators proposed for the category of Environmental Governance

Category	Indicators [Source of Data]	Remarks
<p>Environmental Governance This category recognises leadership in environmental sustainability of cities and towns. Elements that relate to this category are:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Translation of Environmental Policies at national, state and local levels. <input type="checkbox"/> Incorporation of practices and procedures that promote accountable and transparent governance, including human resources capacity building for environmental management <input type="checkbox"/> Two-way communication with the community; including the extent to which public complaints and transparency to the media are addressed. <input type="checkbox"/> Inculcation of stakeholder and community support. 	<p>Translation of the National Policy on the Environment into structure plans, administrative guidelines and by-laws [State Capital]</p>	<p>Comparison between cities</p>
	<p>Existence of Organisational Environmental Policy, Unit or Officer for the environment [State Capital]</p>	
	<p>Percentage of annual allocation for enforcement, human resource training and public participation activities [State Capital]</p>	
	<p>Number and type of collaboration in training and public participation/ stakeholder specific activities [State Capital]</p>	
	<p>Existence and effectiveness of system to handle public complaints, the media, emergencies/ disasters and the EIA process [State Capital]</p>	
	<p>Percentage of housing estates that have Residents Associations</p>	
	<p>Type and number of stakeholder groups represented in the Council [State Capital]</p>	

EDUCATION AND AWARENESS

This category encompasses the area of education or communication that contributes to increasing public awareness and understanding of environmental issues and innovations. Elements that relate to this category include the relevance and impacts of communication, size of target audiences, and the effectiveness of chosen mechanisms i.e. via media coverage or specially designed programmes, whether individually or in collaboration with DoE or other organisations.

Aspects that will be assessed include types, number, target group and size, impact and sustainability of initiatives and projects (Table 3.5). Other indicators include number and types of collaborative projects as well as percentage allocation for environmental education and awareness. Comparisons will be made between the current and previous year, for each city as well as between cities of similar income categories.

Table 3.5: Indicators proposed for the category of Education and Awareness

Category	Indicators [Source of Data]	Remarks
Education and Awareness This category encompasses the area of education or communication that contributes to rising of public awareness and understanding of environmental issues and innovations. Elements that relate to this category include the relevance and impacts of communication, size of target audiences, and the effectiveness of chosen mechanisms i.e. via media coverage or specially designed programmes, whether individually or in collaboration with DoE/other volunteers.	Type, Number, Target Group and Size, Impacts of Projects.	Comparison between current and previous year
	Information Packages: Type, Number, Quality of Content, Impacts	Comparison between cities of similar income categories
	Number and Types of Collaborative Projects	
	Sustainability of Projects	
	Percentage Allocation for environmental education and awareness	

CHAPTER 4:

EVALUATION PROCESS AND IMPLEMENTATION

APPROACH

There was much emphasis to ensure that the evaluation process is transparent and all cities understand precisely how the recognition is awarded. Information on criteria and evaluation process was announced and brochures were disseminated at the launch on 5 June 2003 to enable cities to understand and prepare for the assessment. Subsequent to this, the evaluation process for the Award commenced with voluntary submissions of information from invited cities. For the inaugural Bandar Lestari – Environment Award Programme, invitations to participate were sent to all the State capitals in Malaysia.

COMMITTEES

While the DoE serves as the principal managing agency, several other committees were established with support from an Award Secretariat. These include the Ministerial Selection Panel, a Steering Committee and three Assessment Panels.

The Minister of Natural Resources and Environment chairs the Ministerial Selection Panel, which consists of senior representatives from the Ministry. Recommendations of the Steering Committee were presented to the Ministerial Panel for endorsement.

The Director-General of DoE and the Director-General of the Department of Local Government of the Ministry of Housing and Local Government, jointly chair the Steering Committee. The Committee includes representatives from government agencies, non-government organisations, academia and the private sector. Collectively, the members have expertise in areas related to the criteria used in the assessment process. The Steering Committee shall determine the final results based on the recommendation of the Assessment Panels. The Committee also oversees the Assessment Panels and the Secretariat to ensure transparency and fairness of the assessment and selection process.

The Assessment Panels include an Independent Assessment Panel, a Public Opinion Survey Panel and a Physical Parameters Assessment Panel. Each Panel consists of a minimum of three people with recognised expertise related to the basic criteria used in the assessment process. There should be at least two members with technical experience in environmental issues. Members should also have practical experience in urban environmental planning. The Independent Assessment Panel is not identified publicly until after the Award is granted.

The Award Secretariat is based in the DoE. The Institute for Environment and Development (LESTARI) of Universiti Kebangsaan Malaysia (UKM) provides technical support to the Secretariat. The Award Secretariat coordinates all activities pertaining to the assessment and selection processes as well as the presentation ceremony.

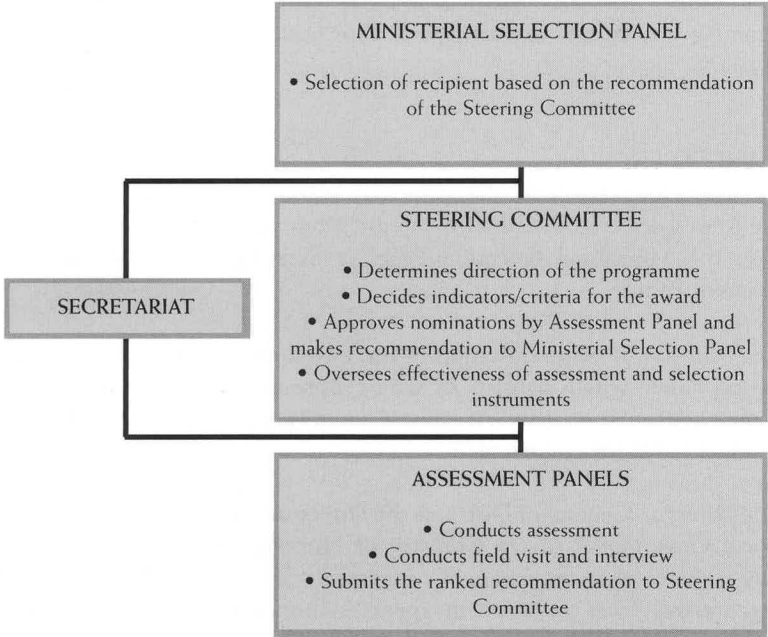


Figure 4.1: Organisational Chart for the Award Programme

PROCEDURE

The Award Secretariat invites and obtains the consent of state capitals to participate in this initiative through the submission of a Participation Form. Subsequently, the Secretariat shall send the participating state capitals an Information Requisition Form to be completed and returned to the DoE within a specified timeframe (Table 4.1). Upon receipt of the information, the Award Secretariat prepares background summaries including performance indicators based on secondary information obtained from participating cities. This is referred to as the City Brief.

Table 4.1: The Information Requisition Form contains 40 questions and was the basis for preparing the City Brief for each participating state capital.

BANDAR LESTARI - ANUGERAH ALAM SEKITAR **BORANG PEROLEHAN MAKLUMAT/ INFORMATION REQUISITION FORM**

Sila jawab semua soalan. Kegagalan menjawab akan mempengaruhi markah anda / Please answer all the questions, failure to do so will prejudice your marks.

SOALAN / QUESTIONS

- 1 *Berapakah bilangan penduduk dalam kawasan di bawah bidang kuasa anda? / What is the population of the area under your jurisdiction?*
Jawapan/ Answer:
- 2 *Berapakah jumlah belanjawan tahunan bagi kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003 (dalam RM)? / What was the total annual budget for the area under your jurisdiction in 2002 and 2003 (in RM)?*
Jawapan/ Answer: RM
- 3 *Berapakah jumlah kawasan di bawah bidang kuasa anda? / What is the total area under your jurisdiction?*
Jawapan/ Answer:
- 4 *Berapakah jumlah kawasan hijau e.g. padang, taman dll. di bawah bidang kuasa anda? / What is the total area of green cover i.e. fields, parks etc. under your jurisdiction?*
Jawapan/ Answer:
- 5 *Berapakah jumlah kawasan hijau semulajadi yang telah diwartakan bagi tujuan pemuliharaan di bawah bidang kuasa anda? / What is the total area of natural green cover that has been gazetted for conservation in the area under your jurisdiction?*
Jawapan/ Answer:

- 6 Berapa kalikah banjir kilat berlaku dalam kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003? / How many times did flash floods occur in the area under your jurisdiction in 2002 and 2003?
Jawapan/ Answer:
- 7 Sila senaraikan semua projek dan aktiviti berhubung alam sekitar yang dijalankan pada tahun 2002 dan 2003 (termasuk yang dirancang untuk tahun 2003). Nyatakan maklumat projek secara terperinci/ Please list all the environment related projects and activities conducted in 2002 and 2003 (including those planned for 2003). Provide the following details for each project/activity:
- Tajuk projek atau aktiviti/ Project or Activity Title;
 - Status (selesai, sedang maju atau dalam perancangan)/ Status (Completed, Ongoing or Planned);
 - Jangkamasa (bulan/ minggu/ hari)/ Duration (in months/weeks/days);
 - Kekerapan (jika diulang tabunan)/ Frequency (if repeated annually);
 - Kumpulan sasaran/ Target Group
 - Rakan usahasama (jika ada)/ Collaborators (if any)
- (Gunakan lampiran berasingan/ Use separate sheet)
- 8 Daripada senarai di atas, sila nyatakan satu kawasan yang telah anda jalankan inisiatif pemuliharaan alam sekitar ke atasnya pada tahun 2002 dan jawab soalan di bawah (Gunakan lampiran berasingan dan hadkan jawapan kepada 1 mukasurat) / Please nominate one area from the above-mentioned list in 2002 where you have conducted an initiative on environmental conservation and answer the following questions (Use separate sheet and limit your answer to 1 page)
- Mengapa anda memilih kawasan itu? / Why did you select this area?
 - Bagaimana projek itu dijalankan? / How was the project executed?
 - Siapa yang terlibat? / Who was involved?
 - Berapa kos yang digunakan (dalam RM)? / How much was the cost (in RM)?
 - Apakah hasil dan impaknya? / What were the results and impacts?
- 9 Adakah terdapat dasar untuk pengurangan, penggunaan semula dan kitar semula bahan buangan perbandaran dalam kawasan di bawah bidang kuasa anda? / Is there a policy on reducing, reusing and recycling of municipal waste in the area under your jurisdiction?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 10 Adakah terdapat dasar untuk pengasingan bahan buangan toksik dan merbahaya dalam kawasan di bawah bidang kuasa anda? / Is there a policy on separation of toxic and hazardous waste in the area under your jurisdiction?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 11 Berapakah jumlah/ amaun yang diperuntukkan bagi pengurusan bahan buangan pada tahun 2002 dan 2003 (dalam RM)? / What was the total amount allocated for waste management in 2002 and 2003 (in RM)?
Jawapan/ Answer: RM

- 12 Berapakah jumlah/ amaun bahan buangan domestik yang dijana dalam kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003 (selepas 31 Jun)? / What was the total amount of domestic waste generated in the area under your jurisdiction in the year 2002 and 2003 (up to 31 June)?
Jawapan/ Answer: _____ (dalam ton/ in tonnes)
- 13 Berapakah jumlah/amaun bahan buangan toksik dan merbahaya yang dijana dalam kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003 (selepas 31 June)?/ What was the total amount of toxic and hazardous waste generated in the area under your jurisdiction in the year 2002 and 2003 (up to 31 June)?
Jawapan/ Answer: _____ (dalam ton/ in tonnes)
- 14 Berapakah jumlah pusat kitar semula yang terdapat dalam kawasan di bawah bidang kuasa anda? / How many recycling centers are there in the area under your jurisdiction?
Jawapan/ Answer:
- 15 Berapakah jumlah/amaun bahan buangan domestik yang telah dikitar semula dalam kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003 (selepas 31 June)? / What was the total amount of domestic waste that has been recycled in the area under your jurisdiction in the year 2002 and 2003 (up to 31 June)?
Jawapan/ Answer: _____ (dalam ton/ in tonnes)
- 16 Sila senaraikan semua projek dan aktiviti berhubung dengan pengurangan, penggunaan semula dan kitar semula bahan buangan, yang dijalankan pada tahun 2002 dan 2003 (termasuk yang dirancang untuk tahun 2003) (jangan ulang aktiviti yang tersenarai di no 7). Nyatakan maklumat projek secara terperinci/ Please list all the projects and activities related to reducing, reusing and recycling of waste, conducted in 2002 and 2003 (including those planned for 2003) (Do not repeat the activities listed in 7). Provide the following details for each project/ activity:
- Tajuk projek atau aktiviti/ Project or Activity Title;
 - Status (selesai, sedang maju atau dalam perancangan)/ Status (Completed, Ongoing or Planned);
 - Jangkamasa (bulan/ minggu/ hari)/ Duration (in months/weeks/days);
 - Kekekapan (jika diulang tabunan)/ Frequency (if repeated annually);
 - Kumpulan sasaran/ Target Group
 - Rakan usahasama (jika ada)/ Collaborators (if any)
- (Gunakan lampiran berasingan/ Use separate sheet)
- 17 Adakah terdapat dasar pengangkutan awam bagi kawasan di bawah bidang kuasa anda? / Is there a public transport policy for the area under your jurisdiction?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 18 Berapakah jumlah/amaun yang diperuntukkan bagi pengangkutan awam pada tahun 2002 dan 2003 (dalam RM)? / What was the total amount allocated for public transport in 2002 and 2003 (in RM)?
Jawapan/ Answer:

- 19 Sila senaraikan semua projek yang dijalankan untuk meningkatkan pengangkutan awam, mengurangkan kenderaan perseorangan atau mengurangkan jumlah kemalangan pada tahun 2002 dan 2003 (termasuk aktiviti yang dirancang untuk 2003). (Jangan ulang aktiviti yang tersenarai di 7 dan 16). Nyatakan maklumat projek secara terperinci/ Please list all the projects that have been conducted to improve public transport, reduce single occupancy vehicles or reduce the number of accidents in 2002 and 2003 (including those planned for 2003) (Do not repeat the activities listed in 7 and 16). Provide the following details for each project:
- Tajuk projek atau aktiviti/ Project or Activity Title;
 - Status (selesai, sedang maju atau dalam perancangan)/ Status (Completed, Ongoing or Planned);
 - Jangkamasa (bulan/ minggu/ hari)/ Duration (in months/weeks/days);
 - Kekerapan (jika diulang tahunan)/ Frequency (if repeated annually);
 - Kumpulan sasaran/ Target Group
 - Rakan usahasama (jika ada)/ Collaborators (if any)
- (Gunakan lampiran berasingan/ Use separate sheet)
- 20 Berapakah jumlah kemalangan jalanraya yang berlaku dalam kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003 (selepas 31 June)? / How many road accidents occurred in the area under your jurisdiction in 2002 and 2003 (up to 31 June)?
Jawapan/ Answer:
- 21 Berapakah jumlah bas dan kereta yang menggunakan jalanraya setiap hari sepanjang waktu pejabat dalam kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003 (selepas 31 June)? / How many cars and busses utilized the roads daily during office hours in the area under your jurisdiction in 2002 and 2003 (up to 31 June)?
Jawapan/ Answer:
- 22 Berapakah jumlah perhentian bas dalam kawasan di bawah bidang kuasa anda pada tahun 2002 dan 2003 (selepas 31 June)? / How many bus-stops are there in the area under your jurisdiction in 2002 and 2003 (up to 31 June)?
Jawapan/ Answer:
- 23 Adakah pihak pentadbiran anda tahu tentang Dasar Kebangsaan terhadap Alam Sekitar? / Does your administration know about the National Policy on the Environment?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 24 Adakah pihak pentadbiran anda melaksanakan sebarang aspek Dasar Kebangsaan terhadap Alam Sekitar ke atas Plan Struktur dan Plan Tempatan, panduan pentadbiran atau secara undang-undang? / Has your administration implemented any aspects of the National Policy on the Environment into Structure Plans and Local Plans, administrative guidelines or by-laws?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No

- 25 Adakah pihak pentadbiran anda mempunyai Dasar Alam Sekitar untuk organisasi? / Does your administration have an Organizational Environmental Policy?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 26 Adakah pihak pentadbiran anda mempunyai Unit khas yang bertanggungjawab terhadap alam sekitar? / Does your administration have a Unit specifically responsible for the environment?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 27 Adakah pihak pentadbiran anda mempunyai Pegawai khas yang bertanggungjawab terhadap alam sekitar? / Does your administration have an Officer specifically responsible for the environment?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 28 Berapakah jumlah/ amaun yang diperuntukkan bagi tujuan penguatkuasaan pada tahun 2002 dan 2003 (dalam RM)? / What was the total amount allocated for enforcement in 2002 and 2003 (in RM)?
Jawapan/ Answer:RM
- 29 Berapakah jumlah/ amaun yang diperuntukkan bagi latihan sumber manusia pada tahun 2002 dan 2003 (dalam RM)? / What was the total amount allocated for human resource training in 2002 and 2003 (in RM)?
Jawapan/ Answer:RM
- 30 Berapakah jumlah/ amaun yang diperuntukkan untuk penyertaan orang awam dalam aktiviti pada tahun 2002 dan 2003 (dalam RM)? / What was the total amount allocated for public participation activities in 2002 and 2003 (in RM)?
Jawapan/ Answer:RM
- 31 Sila senaraikan semua organisasi yang bekerjasama dengan pihak pentadbiran bagi tujuan latihan dan penyertaan orang awam dan aktiviti kumpulan berkepentingan pada tahun 2002 dan 2003 (termasuk aktiviti yang dirancang untuk 2003)/ Please list all the organizations that have collaborated with your administration for training and public participation and stakeholder specific activities your administration in 2002 and 2003 (including activities planned for 2003) (Gunakan lampiran berasingan/ Use separate sheet)
- 32 Adakah pihak pentadbiran anda mempunyai Unit atau Pegawai khas yang bertanggungjawab terhadap media? / Does your administration have a Unit or an Officer specifically responsible for the media?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 33 Adakah pihak pentadbiran anda mempunyai Unit atau Pegawai khas yang bertanggungjawab menangani aduan orang awam? / Does your administration have a Unit or an Officer specifically responsible for handling public complaints?
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No

- 34 *Berapa banyakkah taman perumahan yang terdapat dalam kawasan di bawah bidang kuasa anda? / How many housing estates are there in the area under your jurisdiction?*
Jawapan/ Answer:
- 35 *Adakah pihak pentadbiran anda mendaftar Persatuan Penduduk dalam kawasan di bawah bidang kuasa anda? / Does your administration register Residents Associations in the area under your jurisdiction?*
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No
- 36 *Berapa banyakkah taman perumahan dalam kawasan di bawah bidang kuasa anda yang mempunyai Kesatuan Penduduk? / How many housing estates in the area under your jurisdiction have Residents Associations?*
Jawapan/ Answer:
- 37 *Sila senaraikan nama dan perwakilan terkini bagi semua Ahli Majlis dalam kawasan di bawah bidang kuasa anda/ Please list the name and the affiliation of all the current Council Members in the area under your jurisdiction.*
(Gunakan lampiran berasingan/ Use separate sheet)
- 38 *Apakah jumlah/ amaun yang diperuntukkan bagi pendidikan dan kesedaran terhadap alam sekitar pada tahun 2002 dan 2003 (dalam RM)? / What was the total amount allocated for environmental education and awareness in 2002 and 2003 (in RM)?*
Jawapan/ Answer:RM
- 39 *Sila nyatakan semua aktiviti yang dijalankan untuk meningkatkan kesedaran dan kefahaman orang awam terhadap isu alam sekitar pada tahun 2002 dan 2003 (termasuk yang dirancang untuk tahun 2003) (Jangan ulang aktiviti yang tersenarai di 7, 16 dan 19). Nyatakan maklumat projek secara terperinci/ Please list all the activities conducted to raise public awareness and understanding of environmental issues in 2002 and 2003 (including those planned for 2003) (Do not repeat the activities listed in 7, 16 and 19). Provide the following details for each project/activity:*
- Tajuk projek atau aktiviti/ Project or Activity Title;*
 - Status (selesai, sedang maju atau dalam perancangan)/ Status (Completed, Ongoing or Planned);*
 - Jangkamasa (bulan/ minggu/ hari)/ Duration (in months/weeks/days);*
 - Kekerapan (jika diulang tahunan)/ Frequency (if repeated annually);*
 - Kumpulan sasaran/ Target Group*
 - Rakan usahasama (jika ada)/ Collaborators (if any)*
 - Kaedah (liputan media/ bengkel dsb.)/ Mechanism (media coverage/workshop etc.)*
- (Gunakan lampiran berasingan/ Use separate sheet)*

40 Adakah pihak pentadbiran anda menghasilkan sebarang bahan bacaan seperti buku panduan dan risalah dalam 2 tahun kebelakangan ini untuk meningkatkan kesedaran dan kefahaman orang awam terhadap isu alam sekitar dalam kawasan di bawah bidang kuasa anda? Jika ya, sila lampirkan bahan bersama/ Has your administration produced any material such as brochures and pamphlets in the past two years to raise public awareness and understanding of environmental issues in the area under your jurisdiction? If yes, please enclose this material.
Jawapan/ Answer: Sila tanda/Please circle Ya/Yes Tidak/No

The assessment procedure to select the recipient for the Bandar Lestari-Environment Award involves four distinct activities. These are the City Brief Assessment, Field Assessment, Physical Parameters Assessment and Public Opinion Survey. Guided by the defined list of criteria and indicators, the Independent Assessment Panel conducts the City Brief and Field Assessments. The Physical Parameters Assessment and Public Opinion Survey Panels, consisting of DoE Officers, conduct the Physical Parameters Assessment and Public Opinion Survey. The Award Secretariat compiles the results.

The City Brief and Field Assessments are sequential in nature. A Panel of independent experts, invited by the DoE, conducts the assessments. The Panel Members consists of representatives from government, academia, non-government organisations and the private sector. In the City Brief Assessment, each Panel Member evaluates the City Brief and the original submissions. The Panel Members are provided with a briefing, guidelines and a score sheet for this purpose. The briefing is conducted in a workshop setting without any open discussion on any submission. Panel Members conduct the assessment individually and the Award Secretariat collects the results at the end of the workshop. The Award Secretariat then assembles the results, which are not revealed to the Assessment Panel. In the Field Assessment, the same Panel Members visit each city to verify the information and assess the field conditions. Panel Members are provided with guidelines and a form to conduct the assessments (Table 4.2). At each city, they receive a briefing by the participating city and are taken on a tour based on the submitted information. Each member of the Panel conducts the assessment individually and submits their results to the Award Secretariat. The total scores are not revealed to the Assessment Panel.

The Public Opinion Survey is an independent activity conducted during the assessment period with the consent of participating cities. The aim is to solicit the view of the community on matters related to each of the five

Table 4.2: Guidelines used by the independent Assessment Panel when conducting the field evaluation at participating state capitals.

A City Representative will brief the Panel at each capital city.

Each Panel member will be provided with a folder containing the city brief and the original submission of each city, field assessment guidelines and field evaluation score sheet. The folder and completed score sheet will be collected at the end of the assessment.

Depending on the item to be assessed, scoring will be conducted at the appropriate departments of the capital city councils and/or while visiting various section of the city.

The Panel will be required to generate questions for each item to be scored. The Chairman of the Panel is responsible for ensuring standard assessment criteria among members.

I) Physical Environment

- 1 Visual inspection of river: The City Representative will take the Panel to a few rivers/channels to be evaluated.
- 2 State of landscaping: The Panel will be driven around the city to conduct the assessment.

II) Ecological Initiatives

- 1 A nominated project will be requested from each city.
- 2 A briefing by the City Representative will be required from each city.
- 3 A City Representative will take the Panel to the nominated project.

III) Urban Services

- 1 Existence of policies will be verified at the appropriate departments of the Capital City Councils.
- 2 The City Representative will take the Panel to a landfill as well as commercial and residential areas to assess waste disposal facilities for the purpose of scoring for items related to waste management.

IV) Environmental Governance

- 1 A briefing by the City Representative will be required on systems, implementation and success of handling public complaints, the media, emergencies, disasters and the EIA process.
- 2 Scoring for this section will be done at the appropriate departments of the Capital City Councils

V) Education and Awareness

- 1 A briefing by the City Representative related to education and awareness programmes will be required.
- 2 Scoring for this section will be done at the appropriate departments of the Capital City Councils.

criteria for the award. A high score would indicate a high level of satisfaction among its residents on issues covered in the interviews. A committee of DoE Officers conducts the survey. Prior training would be provided to conduct the survey. Respondents are interviewed at each location based on the stratified random sampling method to collect information (Table 4.3). Target groups include resident teachers, professionals, civil servants and traders, representing the local community.

Table 4.3: Respondents were asked 17 questions in the Public Opinion Survey at participating state capitals.

1. What do you think of the air quality in your city?
2. What do you think of the river water quality in your city?
3. What do you think of the level of noise in residential areas within your city?
4. What do you think of the parks and green areas provided for recreation in your city?
5. What do you think of the public toilets in your city?
6. What do you think of the quality of landscaping in your city?
7. Are you happy with the rubbish collection services in your city?
8. What do you think of the cleanliness level of streets and drains in your city?
9. What do you think of the condition of traffic jam in your city? [How would you rate the traffic management ?]
10. What do you think of the public transport services (bus services) in your city?
11. What do you think of the state of facilities provided to pedestrians in your city?
12. What do you think of the quality of services provided by the City Council staffs?
13. What do you think of the way in which your City Council handles public complaints?
14. What do you think of the level of enforcement by the City Council?
15. What do you think of the quality of environmental related activities organised by the City Council for its population?
16. How would you rate the overall state of environment in your city?
17. Are you happy to live in your city?

The Physical Parameters Assessment is an independent activity conducted during the assessment period upon receipt of consent from participating cities. The Physical Environment Assessment is conducted by a committee of DoE Officers. The assessment is based on data obtained from monitoring stations in each city. Parameters taken into account are water quality, air quality and noise levels.

The Independent Assessment Panel is presented with the assembled results, on completion of the City Brief Assessment, Field Assessment, Physical Parameters Assessment and Public Opinion Survey. The Independent

Assessment Panel then review the results collectively and submits the ranked recommendation to the Steering Committee. The Steering Committee meets to review the process and approve the final results. The results are then submitted to the Ministerial Selection Panel for endorsement. Decision made by the Ministerial Panel is final and the results are made public during the Award Presentation Ceremony.

SCORING

Each of the five categories of criteria is equally weighted when calculating the score for the City Brief Assessment, Field Assessment and Public Opinion Survey. The City Brief Assessment yields 30% of the total score, while the Field Assessment yields 45% and the Public Opinion Survey 15% of the total score, respectively. The Physical Parameters Assessment contributes 10% of the total score. Thus, the Panel of Independent Assessors determines 75% of the total score while the local community determines 15%. The remaining 10% is determined by objectively measuring physical environmental conditions.

IMPLEMENTATION

The development process for the Bandar Lestari – Environment Award, which commenced in early 2003, was completed in June 2003. The Minister of Science, Environment and Technology launched the Bandar Lestari – Environment Award on 5th June 2003, in conjunction with World Environment Day 2003. At the launching ceremony, the Minister unveiled the logo for the Bandar Lestari – Environment Award and presented a senior representative from the Ministry of Housing and Local Government with forms and brochures describing the criteria and evaluation process for dissemination to all local authorities in the country. The audience were also given brochures. During the ceremony, there was a multi-media presentation on the rationale of the logo of the Bandar Lestari – Environment Award and the need for such a programme in view of the environmental issues and challenges facing Malaysian cities in the context of sustainability.

Immediately after the launch, official invitation was extended to all State capitals to participate in the Award Programme. Initially, eight State capitals responded positively. However, only six completed and submitted the Information Requisition Form to the DoE. The State capitals that volunteered to participate were Johor Bahru City Council, Kuantan Municipal Council, Malacca Historical City Council, Penang Municipal Council, Shah Alam City Council and South Kuching City Council.

Upon receipt of the Information Requisition Form, the Award Secretariat prepared the City Brief for each participating State capital. The DoE also identified and invited members of the Independent Assessment Panel to conduct the City Brief and Field Assessments and identified DoE Officers to conduct the Physical Parameters Assessment and Public Opinion Survey.

The DoE Officers conducting the Public Opinion Survey attended a two-day training workshop on conducting interviews for surveys. Experts from DOE, LESTARI, UKM and the Statistics Department of Malaysia conducted the workshop, held on 26 - 27 September 2003 at Bagan Lalang, Sepang. The Public Opinion Survey was conducted in the participating cities over a period of two months. A committee of DoE Officers also conducted the Physical Parameters Assessment. The Award Secretariat compiled the results of the Public Opinion Survey and Physical Parameters Assessment, which were normalised to represent 15% and 10%, respectively of the total score for the Bandar Lestari - Environment Award.

The Independent Assessment Panel met for the first time at the Briefing & Workshop for Assessment Panel held on 15 April 2004 at Palm Garden Hotel, Putrajaya. The City Brief Assessment was conducted on that day and the results were assembled by the Award Secretariat and normalised to represent 30% of the total score for the Bandar Lestari - Environment Award. The Field Assessment was staggered over a period of about 3 months. Each city was allocated a one-day tour as specified in the guidelines (Table 4.2). The Award Secretariat assembled the results from the Field Assessment and normalised them to represent 45% of the total score for the Bandar Lestari - Environment Award.

The Independent Assessment Panel held a meeting to collectively review the results of the City Brief Assessment, Field Assessment, Physical Parameters Assessment and Public Opinion Survey on 18 October 2004. After this meeting, the results and ranked recommendation was submitted to the Steering Committee, which met on 21 October 2004. The Ministerial Selection Panel subsequently endorsed the results. The winners were announced at the Bandar Lestari - Environment Award Ceremony held on 7 July 2005.

About 250 participants from all over the country attended the Award Ceremony, representing government agencies, local authorities, NGOs, CBOs and the private sector. The Ceremony was followed by a seminar the following day, to allow the participants to share their experiences and examples of good practices with one another.

AWARD RECIPIENTS

The Kuantan Municipal Council was the inaugural recipient of the Bandar Lestari – Environment Award 2003/2004. The Deputy Prime Minister of Malaysia presented the Kuantan Municipal Council with a specially designed trophy and a certificate for its achievements in environmental sustainability.

Other participating cities received Special Mention Awards for selected initiatives, which were considered good practices that could be emulated by other cities in Malaysia. They also received a specially designed trophy and a certificate. Special Mention Awards were for the Ecology Initiative (Urban Forest) of the Johor Bahru City Council; Centralised Transportation Initiative of the Malacca Historical City Council; Environmental Education and Awareness Initiative of the Penang Municipal Council; Physical Environment Initiative (Innovative Planning – Balanced Quality Living) of the Shah Alam City Council; and Physical Environment Initiative (Landscape) of the South Kuching City Council.

NEXT STEP

The Bandar Lestari – Environment Award has generated much interest on environmental sustainability of cities. Having successfully completed the first phase of assessment, the challenge is in keeping the momentum to ensure continuity. Clearly, there is a need for continuous assessment. In this context, the DoE is taking into consideration the possibility of establishing an environmental rating system, based completely on physical environmental parameters that come under its jurisdiction. Such a rating system can serve to strengthen the environmental improvement component of the Award, with respect to physical environmental parameters, in addition to the broader criteria involving ecological initiatives, urban services, environmental governance and education and awareness.

There is also a need for consolidation of criteria and indicators for the Award. In this respect, various ongoing initiatives that could yield continuous information should be looked into, as possible one-stop data sources for the Award. One such example is the Murninet Initiative by the Ministry of Housing and Local Government, which is now operational (Kamalruddin 2005). The MURNInet Initiative has many indicators related to urban environmental conditions that would be useful to the Award Programme. In addition, the performance of Local Agenda 21 initiatives, anchored by the Ministry of Housing and Local Government could also be taken into account as a factor in the assessment for the Award.

There are many award programmes commencing or currently ongoing, which focus on cities. One important award programme that will commence

soon is the regional ASEAN Sustainable City programme (Anon 2005; AWGESC 2005). Efforts should be made to harmonise the criteria of the Bandar Lestari – Environment Award Programme to this regional programme and also several other prestigious international award programmes for cities. This will create an opportunity for cities in Malaysia to compete for international awards, based on their achievements at the national level.

Cities are increasingly vulnerable to human losses caused by natural and technological environmental hazards (Casale and Margottini 2004). The most recent natural hazard to threaten cities and human settlements in the country was the tsunami of 26 December 2004 (Komoo 2005). The vulnerability of a community to environmental hazards requires adaptive measures on the part of city administrators, government agencies and the local community including the private sector. City administrators in the country need to become aware of the important role that they play in ensuring planning responses to reduce the vulnerability of the local community to environmental hazards and coordinating local action after the occurrence of a disaster. Perhaps, the awareness of their important role could be created through the expansion of the criteria for the Bandar Lestari – Environment Award Programme, to include aspects of vulnerability reduction actions.

CHAPTER 5:

GOOD PRACTICES

Six capital cities volunteered to participate in the “Bandar Lestari – Environment Award”. These were Johor Bahru City Council, Kuantan Municipal Council, Malacca Historical City Council, Penang Municipal Council, Shah Alam City Council and South Kuching City Council. The first recipient of the Award was the Kuantan Municipal Council. The Kuantan Municipal Council received a specially designed trophy and a certificate presented by the Deputy Prime Minister. Other participating cities received Special Mention for selected initiatives, which were considered good practices that could be emulated by other local authorities in Malaysia and the region, where appropriate. They also received a specially designed trophy and a certificate. Special Mention awards were for the Ecology Initiative (Urban Forest) of the Johor Bahru City Council, Centralised Transportation Initiative of the Malacca Historical City Council, Environmental Education and Awareness Initiative of the Penang Municipal Council, Physical Environment Initiative (Innovative Planning – Balanced Quality Living) of the Shah Alam City Council, Physical Environment Initiative (Landscape) of the South Kuching City Council.

KUANTAN MUNICIPAL COUNCIL

The Kuantan Municipal Council was the recipient of the Bandar Lestari – Environment Award 2003/04. Five aspects of the Kuantan City Council are highlighted below, which could be emulated.

Physical Environment

The Kuantan City Council is committed to providing a comfortable, clean and safe environment to its citizens (Muhammad Safian 2005). The indexes on air, water and noise pollution have been maintained at minimal and controlled levels. Between 2002 and 2004, complaints received by the City Council totalled to 56 cases on noise, 134 cases on air pollution and none on water pollution. Methods adopted to control pollution include:

- Provision of advice to and raising of awareness among the public
- Regular inspection and investigation of emission sources
- Enforcement of laws

- Locating factories and industries away from rivers and residential areas
- Creation of buffer zones in industrial areas with planting of trees and
- Control on discharge of wastewater.

Ecological Initiatives

The mangrove swamps along Sungai Kuantan, which covers a total area of 339 hectares, has been in existence for more than 500 years. The mangrove areas contain a variety of wildlife species that have become attraction to visitors. Capitalising on this natural asset, the Council has initiated and maintained efforts in conserving the mangrove swamps as a recreational area. In addition to serving as a key tourist spot, the mangrove also serves to enhance environmental education and awareness to visitors.

The waterfront along Sungai Kuantan, located adjacent to Taman Esplande, headquarters of Kuantan Municipal Council, and Hospital Tengku Ampuan Afzan (HTAA), was upgraded and beautified. A total RM 4 million was spent for upgrading the 1.3 km long riverbank. It is now one of the popular recreational areas for Kuantan residents as well as for tourists from outside Kuantan.

The Kuantan Municipal Council has been implementing regular tree-planting programmes in the city centre, not merely for landscaping purposes, but also for alleviating the urban heat effects within the city. The road dividers and pedestrian paths are planted with appropriate grass, trees and flowers for aesthetics and environmental reasons.

With technical assistance from the private sector, the Council is currently in the process of implementing an integrated electricity saving programme. The programme, initiated in September 2005, is expected to generate an annual savings of RM 200,000 to RM400,000. The programme will be carried out with minimal impact to its inhabitants.

Urban Services

The progressive growth of Kuantan has caused traffic congestion within the city. In addition, the increasing number of vehicles has resulted in lack of parking spaces. The Council and relevant agencies are highly conscious of this problem. Mitigating measures taken include:

- Enlargement of roads towards the city centre
- Construction of slip roads at roadsides
- Introduction of 'timing' traffic light system;
- Construction of new road networks towards the city centre
- Re-organisation of traffic flow
- Relocation of government offices away from the city centre and
- Provision of a pedestrian mall at Lorong Tun Ismail.

In the long term, transportation and traffic problems will be further alleviated through continuous upgrading of existing roads, construction of appropriate road networks and multiple level intersections, provision of multiple floor parking facility, upgrading and encouraging the use of public transport systems, and separation of pedestrian and motorcycle paths within the city centre.

Environmental Governance

A special entity was established within the Council for handling environment-related issues i.e. the Committee on City Beautification and Environment. The National Environment Policy has been adapted to the local level and the use of guideline documents is routine. Examples include the Standard for Island Planning and Physical Development, Standard for Golf Course Planning and Development, Guidelines for Planning of Toxic and Solid Waste Disposal Site, Guidelines for Planning of Natural Topography Conservation, Standards for Planning of Open and Recreational Spaces, and Guidelines and Standard for Planning and Development of Lakes.

The Council adopted the concept of accountability in response to public complaints. All complaints from clients and stakeholders will be prioritised and promptly attended to. Channels for public complaints include newspapers, emails, an interactive website, letters, telephone, radio, personal approach, 'Hari Mesra Rakyat' and during internal and external meetings. The performance on the management of public complaints is reported at the City Council meetings.

Education and Awareness

The City Council raises awareness and educates the public on environmental issues through seminars, courses, talks, 'gotong-royong' and other activities. In particular, through the hardwork and serious effort of the Kuantan Municipal Council and Alam Flora, with support and cooperation of its citizen, the 3R Programme (Reduce, Reuse, Recycle) has been successfully implemented in schools, housing areas and commercial offices. The rate of recycling has increased substantially from 0.4% in 2001 to nearly 37% in 2004. This already exceeds the target set by the Federal Government in the 3R Programme for year 2005, i.e. 25%.

JOHOR BAHRU CITY COUNCIL

The Johor Bahru City Council received a Special Mention for its Ecological Initiative on Urban Forest. This is a good practice that could be emulated by other cities in Malaysia.

The Urban Forest Project was developed by the Johor Bahru City Council to provide recreational facility for physical, learning and education activities, as well as for the development of family spirit of adjacent communities (MBJB 2005). Planning commenced in 1987 but the actual implementation was in 1992. The project, which occupies an area of 20 hectares, was developed in 5 phases and the total cost was approximately RM 19 million.

The Urban Forest was developed based on the concept of environmental conservation. The creation of the recreational park served to green the environment and enhance its aesthetic value. The Urban Forest aims to maintain the 'green lung', providing ecological balance within the rapidly progressing Johor Bahru city. The development maintained the original ground appearance and minimised the felling of trees. The factors of accessibility, water elements, existing trees, activities and visual quality were considered and appropriately integrated in the development.

Local traditional and tropical elements form part of its design concept. It has its own identity and designed image that suits its functionality. The environmental aspect has been given specific attention to ensure interaction between buildings and externality in order to create a harmonious, comfortable and conducive environment to users and visitors.

MALACCA HISTORICAL CITY COUNCIL

The Malacca Historical City Council received a Special Mention for its Centralised Transportation Initiative. This is a good practice that could be emulated by other cities in Malaysia.

The design concept for the public transportation system of Melaka Sentral took into account the enhancement of several crucial factors, i.e. environmental quality, the safety and comfort of its users, park beautification and accessibility for the disabled group (Zaini Md. Nor 2005). Several problems faced in the previous bus station included:

- Safety of users, particularly the children
- Uncomfortable passenger waiting area and exposure to smoke pollution
- Unorganised space and open drainage system
- Small and unsafe ticketing counters
- Improper taxi station.

The Melaka Sentral Complex was built in 2001 with a total area of 46.61 acres. Total cost for the whole project was RM 58 million. The Complex consists of three main components i.e. the main terminal, market and plaza.

With the construction of Melaka Sentral, the state transportation system was improved and upgraded. Several key features of Melaka Sentral are as follows:

- A total 48 ticketing counters within safe and comfortable premises
- Comfortable air-conditioned waiting area
- Provision of pedestrian bridge
- Spacious and comfortable commercial areas
- Information counter for providing assistance to users
- A counter for arrangement of accommodation or budget hotel
- Provision of facilities for the disabled group
- Beautiful landscape
- Provision of 225 waiting boxes for state and domestic taxis.

PENANG MUNICIPAL COUNCIL

The Penang Municipal Council received a Special Mention for its Environmental Education and Awareness Initiative. This is a good practice that could be emulated by other cities in Malaysia.

The Penang Municipal Council (MPPP) emphasises on public participation. The focus is on the community as a target group in its public plans, in order to ensure their effectiveness and sustainability. The participation of the community, however, would necessitate education and awareness raising efforts to enhance greater understanding, better skills and higher commitment.

MPPP's recycling programmes are implemented within its departments, schools, factories and residential areas, with special focus on environmental education and awareness (Ong 2005). In addition, MPPP also works hand-in-hand with community-based organisations (CBOs), local non-governmental organisations (NGOs) and other international organisations in promoting solid waste management and recycling programmes. In these programmes, MPPP often cooperates with the Penang Environment Working Group (PEWOG), which is a government body on Local Agenda 21 consisting of government, community and private sector representatives.

In 2001, MPPP and PEWOG initiated a project to provide training to community leaders and to raise public awareness on recycling. The message delivered was to protect the environment via the 3R practice. The Community Recycling Programme, officially launched in October 2002, was implemented in 5 phases. These include Training and Motivation Workshop; Community Awareness Campaign; Launching Ceremony; Monthly Community Recycling Day; and Evaluation and Motivation Workshop. The capacity of community leaders, government officers and representatives from

the private sector was enhanced through workshops, seminars and visits to recycling facilities. In addition, the public was provided with awareness materials such as booklets and guidelines. The achievement of the community in Penang between 2000 and 2004 is summarised in Table 5.1 .

Table 5.1: The Penang Community Recycling Programme (2000–2004). Source: Ong 2005.

Year	Stage of Programme	Collection of Recyclables (tonne)	Total Waste (tonne)	Rate of Recycling (%)
2000	Before the programme	57.54	199,242.54	0.03%
2001	Pilot project	319.63	200,197.63	0.16%
2002	Launching	3,844.74	241,827.74	1.59%
2003	Promotion	22,669.29	274,884.29	8.25%
2004	Promotion	44,093.17	283,335.17	15.56%

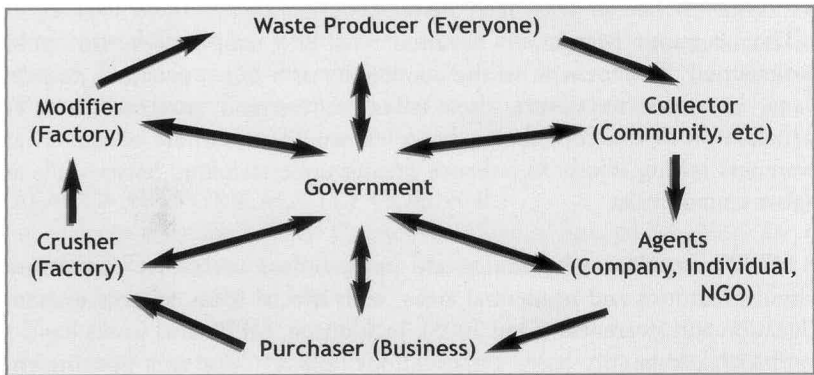


Figure 5.1: Stakeholders involved in the Penang Waste Minimisation Initiative. Source: Ong 2005.

SHAH ALAM CITY COUNCIL

The Shah Alam City Council received a Special Mention for its Physical Environment Initiative on Innovative Planning for Balanced Quality Living. This is a good practice that could be emulated by other cities in Malaysia.

The Kota Kemuning Wetland is a case study where a wetland was created and rehabilitated within a new township development project (MBSA 2005). Given the existing site conditions with earth drains and inundated areas, one main challenge to the development was to review the proposal for its

northern drainage reserve and assess how the existing derelict land within the reserves could be visually enhanced. The original proposed drainage pattern and solution was 'doubling-up' drainage. This was considered functionally unnecessary and likely to result in an unattractive township. Instead, a more natural and environmentally sensitive solution was used to accommodate the functional requirements of water containment and hydrology within an aesthetically natural and pleasing environment.

The project implemented a frontage Wetland, which combined the amenity value and enhanced the existing 'understated' entry into Kota Kemuning. The design created a series of 'framed' views as the first visual introduction to the town. This is based on the belief that a lasting impression of a development project is created by the first thing seen upon arrival and the last thing seen upon departure.

SOUTH KUCHING CITY COUNCIL

The South Kuching City Council received a Special Mention for its Physical Environment Initiative on Landscape. This is a good practice that could be emulated by other cities in Malaysia.

Within the City Council, the Building and Landscaping Division with a total of 152 employees, handle landscaping activities (MBKS 2005). The annual expenditure on landscaping is approximately RM 5.6 million. Landscaping efforts in Kuching South are guided by several principles:

- Health and comfort – a disease free environment, which is determined by fresh air, sunlight and non-crowded conditions
- Safety and peace of mind – provision for a clear network of transport and communication together with well-arranged, safe infrastructure and services
- Sustain a tolerant society – provide for social stability and create various opportunities and environment where multi-cultural interaction can take place
- Economically vibrant – various businesses that cater for different categories of city dwellers
- Offers quality of life – adequate range of educational, entertainment and recreational opportunities
- Physically attractive with a sense of identity – emphasis on conservation of heritage buildings and sustainable environment, with related features that strongly identifies the city.

Key activities in the city's landscaping efforts include the following:

- Ensuring landscape areas are always well maintained, where roundabouts, road dividers and road islands are beautified with colourful flowering ornamental plants
- Upgrading of open spaces to recreational parks in order to promote healthy living. This involves provision of footpaths, benches, garden lighting and children's playground equipments as well as planting of trees to provide shades to the park user
- Establishment of the Council's own nurseries and tree banks to provide sufficient plants and trees for Council's own beautification work
- Greening efforts such as tree planting activities carried out annually where a total of 25000 trees have been planted (1980s until now), encouraging participation from NGOs, the private sector and school children to help the Council to green the City, and activities organised to inculcate love for the environment among the community and to maintain Kuching as a clean, healthy and garden City.

Among the Council's landscaping policies include planting trees or palm trees on road verges and dividers with width of more than 1 meter, discouraging chopping down of trees by the public, and requirement for private developers to submit landscaping plans to the Council before the implementation of any development or housing projects. The Council also encourages private sector adoption or sponsorship for development of open spaces and parks. Examples include the Hokkien Garden co-sponsored by the Council and the Kuching Hokkien Association and the Malaysia-China Friendship Park or Taman Sahabat.

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Bandar Lestari

- Bandar Lestari Logo
Logo Bandar Lestari

The logo design uses visual of sunshine to describe the beginning of a living with a new way of life. The hand-sketched graphic effect represents a comfortable, flexible and organic lifestyle. The tree and birds beside the house are the main factors that represent an ideal living. The green colour shows the element of sustainable living and development.

Rekabentuk logo ini menggunakan visual matahari terbit yang memberi maksud permulaan kepada kehidupan dengan cara hidup yang baru. Kesan grafik hasil lakaran tangan mewakili gaya kehidupan yang selesa, fleksible dan organik. Pokok dan burung di tepi rumah merupakan faktor utama yang mewakili kehidupan yang ideal. Warna hijau memberi maksud elemen kehidupan dan pembangunan lestari.

- Bandar Lestari Trophy
Trofi Bandar Lestari

The trophy of Bandar Lestari – Environment Award, specially designed by Industrial Design Department, Universiti Teknologi MARA, is 30 cm tall, made of environmental friendly materials – recycled copper. The base of trophy, using recycled wood elements, is a firm foundation that symbolises fundamental understanding on environment among workforce in the Local Authority as a strong asset to balance development and environmental protection in its administration.



Three pieces of leaves that surround a building represents green development or development emphasising environmental elements, or in other words, conceptualising “City within Park”. It also shows that the environmental components (water, land and air) form the basis of living to present and future generations. The five-storey building with five angles, along with its pentagon base, symbolises the five assessment criteria of Bandar Lestari award, i.e. physical environment, ecological initiatives, urban services, environmental governance and environmental education and awareness.

The top and side parts of the building that resemble mirrors correspond to transparent and proactive environmental governance and management by the Local Authority in its efforts to upgrade levels of efficiency and professionalism towards sustainable development.

Trofi Anugerah Bandar Lestari – Anugerah Alam Sekitar yang direka khas oleh Jabatan Rekabentuk Perindustrian, Universiti Teknologi MARA bertinggian 30 cm, diperbuat dari bahan mesra alam – bahan tembaga yang dikitar semula. Tapak trofi menggunakan elemen kayu kitar semula merupakan bahan asas (foundation) yang kuat, melambangkan pengetahuan asas mengenai alam sekitar di kalangan warga kerja Pihak Berkuasa Tempatan sebagai satu aset kukuh bagi menyeimbangkan pembangunan dan penjagaan alam sekitar dalam pentadbirannya.

Tiga helai daun yang mengelilingi sebuah bangunan melambangkan pembangunan yang dikelilingi kehijauan atau menitikberatkan elemen alam sekitar, atau dalam erti kata lain berkonsepkan “Bandar dalam Taman”. Tanya juga membawa pengertian unsur-unsur alam sekitar (air, tanah dan udara) yang menjadi teras kehidupan manusia masa kini dan akan datang. Bangunan lima tingkat yang mempunyai lima penjuru serta bahagian dasar trofi berbentuk segi lima yang melambangkan lima kriteria penilaian penganugerahan Bandar Lestari iaitu persekitaran fizikal, inisiatif ekologi, perkhidmatan perbandaran, pentadbiran alam sekitar dan pendidikan dan kesedaran alam sekitar.

Bahagian atas dan tepi bangunan yang seakan cermin melambangkan pentadbiran dan pengurusan alam sekitar yang diamalkan pentadbiran dan pengurusan alam sekitar yang diamalkan Pihak Berkuasa Tempatan adalah telus dan proaktif dalam usaha memperbaiki tahap kecekapan dan profesionalisme ke arah pembangunan lestari.



- Launching of Bandar Lestari – Environment Award by the Minister of Science, Technology And Environment on 5 June 2003
Pelancaran Bandar Lestari – Anugerah Alam Sekitar oleh Menteri Sains, Teknologi Dan Alam Sekitar pada 5 Jun 2003



- Field visit by the Independent Assessment Panel
Lawatan ke lapangan oleh Panel Penilai Bebas



- Award Presentation Ceremony for Bandar Lestari – Environment Award 2003/2004 on 7 July 2005
Majlis Penganugerahan Bandar Lestari – Anugerah Alam Sekitar 2003/2004 pada 7 Julai 2005

• KUANTAN MUNICIPAL COUNCIL



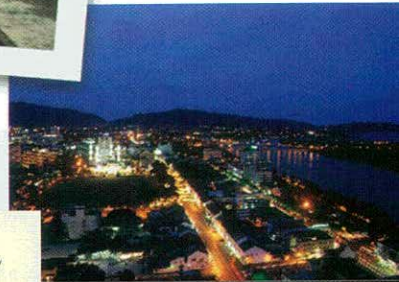
- Conservation of the diversity of the physical environment in Kuantan City
Kepelbagaian persekitaran fizikal dalam Bandar Kuantan

- Conservation of Sungai Kuantan mangrove areas
Pemeliharaan hutan paya bakau Sungai Kuantan



- Improvement of transportation and traffic system
Peningkatan taraf sistem pengangkutan dan lalu-lintas

- A programme to save electricity in Kuantan City
Program penjimatan tenaga elektrik dalam Bandar Kuantan



- Environmental education and awareness programmes
Program pendidikan dan kesedaran alam sekitar



• JOHOR BAHRU CITY COUNCIL

- Development plan of Johor Bahru Urban Forest Project
Pelan pembangunan Projek Hutan Bandar Johor Bahru



- Elements of the Urban Forest
Elemen-elemen Hutan Bandar



• MALACCA HISTORICAL CITY COUNCIL



- Condition of the bus station prior to the centralised transportation initiatives
Keadaan hentian bas sebelum inisiatif pengangkutan berpusat



- Melaka Sentral after development
Keadaan Melaka Sentral selepas pembangunan



• SHAH ALAM CITY COUNCIL



- The project site before and after development
Keadaan tapak projek sebelum dan selepas pembangunan



Before



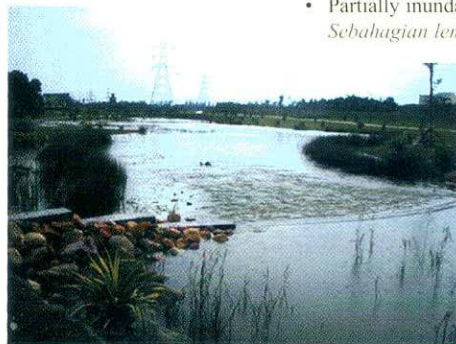
After



- Canal garden housing
Perumahan taman terusan



- Partially inundated basin
Sebahagian lembangan yang dibanjirkan



• SOUTH KUCHING CITY COUNCIL

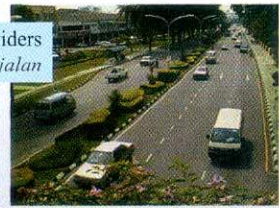


• Landscaping at Jalan Marikan Salleh Roundabout
Landskap di Bulatan Jalan Marikan Salleh



Hokkien Park – a private sector sponsored development
Taman Hokkien – pembangunan yang ditaja oleh pihak swasta

• Planting at road dividers
Penanaman di pembahagi jalan



• Recreational parks in South Kuching City Council
Taman rekreasi di Majlis Bandaraya Kuching Selatan



• Tree planting activities
Aktiviti penanaman pokok



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