

CERES Environmental Management Plan (EMP)

August 2014

1. Introduction

CERES is a robust community organisation working to change the world for the better by instilling values of economic, social and environmental sustainability.

CERES does this by:

- Delivering sustainability education and training programs
- Running social enterprises that sell environmentally preferred products
- Building urban organic community food systems
- Investing in sustainable design and green technology
- Hosting community celebrations and environmental art
- Building community through collaborative process and spiritual reflection
- Providing assistance to the community in reducing environmental impacts beyond CERES in households and businesses
- Communicating about Environmentally Preferred Behaviours (EPBs) via social media, website, collaboration and partnership activities
- Providing on-site options to encourage EPBs by visitors and staff
- Demonstrating leadership for staff and visitors by providing clear information about its own environmental management policies and activities.
- Maintaining the site for visitors as a venue which promotes environmentally preferred activities, products and service
- Endeavouring to be an exemplary organisation for environmental management
- The 2012 / 2013 CERES annual report indicates in that year, CERES had approximately 130 employees, 300 volunteers, and 400,000 general visitors.

2. CERES' Aspects and Environmental Impacts

In fulfilling its vital role in the community, CERES naturally consumes resources including electricity, natural gas, water and other material resources – and generates waste, and impacts biodiversity. However, CERES sees this as an opportunity to become an exemplary organisation in the ongoing management of its environmental impacts.

Definitions:

Environmental *aspects* and *impacts* relate to the ways that we interact with the environment.

Environmental aspects are the activities, products or services of the organisation that interact with the environment. This includes electricity and water usage and waste production.

Environmental impacts are changes in the environment, whether beneficial or detrimental, caused wholly or partly by the environmental aspects (activities, products or services). This may include greenhouse gas emissions, and reductions in air or water quality.

Environmental aspect	Description	Environmental impact
1. Energy use - building (Electricity, natural gas and firewood use)	<ul style="list-style-type: none"> • Buildings' heating ventilation and air conditioning (HVAC) and refrigeration • Lighting • Use of equipment, inc appliances, machinery and tools • Open fires and wood heating. 	Disturbance to environment from: <ul style="list-style-type: none"> • emissions from burning of fossil fuels • extraction of fossil fuels • depletion of non-renewable resources • emissions from extraction and refining • ecological impact from collection of firewood • transport of gas and firewood • local air quality reduction from burning of natural gas, LPG or firewood
2. Energy use - transport (cars, aircraft, car alternatives)	<ul style="list-style-type: none"> • Petrol/diesel/LPG combustion in cars buses and trains • Motor-bikes • Bicycles 	Disturbance to environment from: <ul style="list-style-type: none"> • emissions from vehicles: greenhouse and air quality effects. • emissions related to air travel & transport to& from airports • extraction of fossil fuels • depletion of resources • emissions from extraction and refining • emissions from transport of fuels • alienation of land for roadways, bike-paths, parking and bike storage.
3. Purchasing	Acquisition of: <ul style="list-style-type: none"> • Plant and equipment • Building materials • Consumables (eg paper) • Recycled vs virgin materials • Food 	Possible disturbance to environment from: <ul style="list-style-type: none"> • Consumption of scarce raw materials • Production of agricultural goods • Toxic or flammable materials • Hazardous materials
4. Use of water and generation of wastewater	<ul style="list-style-type: none"> • Water use in building: kitchen, bathrooms, and toilet. • Production of sewage and "grey water" from buildings • Use of water for gardens and plant nurseries 	Disturbance to environment from: <ul style="list-style-type: none"> • Water capture, storage and transport and associated catchment issues • waste water discharges to environment. • Risk to defined beneficial uses of Surface Waters of Victoria (eg ecosystem protection) from overflows, reduced environmental flows, leaks, etc.
5. Use of land & buildings ...including on- and off-site activities etc	<ul style="list-style-type: none"> • Construction, operation & maintenance of buildings • Use of paints, fillers, glues and other solvents • Mowing lawns • Gardening – including pesticide use, fertiliser use, etc • Activities at nearby locations 	Disturbance to environment from: <ul style="list-style-type: none"> • use of buildings at the leased site • pressure on utility systems: water supply systems, sewerage systems, energy supply, collection of recyclables waste removal etc. • nearby educational, recreational & sight-seeing activities • impacts on local biodiversity
6. Generation of waste (solid) and recyclables	<ul style="list-style-type: none"> • Garbage from CERES activities, cafes, festivals, staff kitchens, toilets, etc • External dumpers • Discarded packaging • Collection of recyclables 	Disturbance to environment from: <ul style="list-style-type: none"> • landfill use including emissions and discharges from land fill • energy use including emissions from activities of contractors to remove waste • collection and dealing with recyclables

3.0 The Environmental Management Plan (EMP)

CERES' goal is to minimise its environmental impacts, and to provide regular reports on its environmental management performance to stakeholders and the community. The purpose of the Environmental Management Plan (EMP) is to describe the means by which CERES plans to achieve this goal as set out in Section 1.0.

CERES' environmental commitment is to practice exemplary environmental management practices in all of its activities, and in particular to engage in:

- waste reduction
- energy conservation and efficiency
- minimal water usage
- enhancing biodiversity at CERES
- encouragement of community practice in sustainability

This EMP nominates objectives, targets and Environmental Improvement Plans (EIPs) for the significant environmental aspects of CERES activities.

This EMP has been developed with reference to the Australian and International standard for environmental management systems AS/NZS ISO 14001:2004 'Environmental Management Systems', and the generic Schools Environmental Management Plan (SEMP) developed by CERES for use by Victorian schools.

CERES intends that the EMP will operate on a continually improving basis, and to that effect the Green Technology/Site Team will annually review the performance of the EMP. The review will take into account changes in CERES business activities, climate and opportunities arising from relevant grants and partnerships.

Each year CERES will nominate a suitable person to review and check the operation of the EMP during the previous year. Ideally the reviewer will be a professional volunteer, not involved in CERES operations.

Implementation of this EMP is not an imposition of new processes and activities on top of existing CERES activities. Rather, it reflects existing practises, with some adjustments to ensure that CERES' environmental management performance can be monitored and documented.

4.0 Tables of Environmental Objectives and Targets, Strategies and Actions, Reporting and Responsibilities

Water Management

Objectives and Targets	Strategies and Actions	Reporting	Responsibility
<p>To prompt actions that will reduce water usage;</p> <p>To appreciate water as a precious natural resource;</p> <p>To plant well adapted trees that are consistent with urban food production and our rainfall patterns;</p> <p>To educate the whole CERES community about ways to reduce water usage both indoors and outdoors.</p>	<p>Conduct a water audit and maintain records of water consumption.</p> <p>Implement a plan to practice water efficiency at CERES, and harvest as much water as possible for on-site use consistent with a healthy discharge of storm water from the site.</p>	<p>Yearly report for Annual Report</p> <p>Additional quarterly reports on water use.</p> <p>CERES has documented water and records for the years 2011 and 2012. These provide a basis for comparisons in the current and future years, to estimate whether CERES has managed to make environmental improvements or not.</p> <p>Records for the current year are plotted on graphs against the historical annualised records of at least the last two years, to allow estimation of possible current and future progress in making reductions.</p> <p><i>Water is measured in Kilotres with acknowledgement of associated environmental impacts on Melbourne's water catchments.</i></p>	<p>Site Manager working with Area Managers and Green Tech Steering Committee</p> <p>This plan and will be communicated to all staff and every person will be made aware of:</p> <ul style="list-style-type: none"> • CERES' goal and objectives for reducing its environmental impacts; • How to personally minimise any contribution as a CERES worker, made to CERES environmental impacts; • How well the EMP is progressing, on a regular basis; • How to make suggestions for improvements.

Energy Management

Objectives and Targets	Strategies and Actions	Reporting	Responsibility
<p>To manage electricity and natural gas use at CERES so that impacts on the environment, and financial costs are minimised.</p> <p>To educate students, staff and whole community about the best practice for use of energy consuming equipment and services.</p> <p>To conduct energy audits and maintain records of energy consumption.</p> <p>To be a demonstration of operating and effective renewable energy generation and to maximize on site electricity generation.</p> <p>To become a carbon sink.</p>	<p>Electricity used at CERES is a mix of that generated onsite (photo-voltaic and wind) and from the grid. Electricity purchased from Momentum Energy is renewably generated by an equivalent amount of hydroelectricity imported from Tasmania.</p> <p>All buildings will be constructed with ESD principles.</p> <p>Transport Travel for work is recorded and efficiencies encouraged. CERES participates in Green fleet staff travel surveys.</p> <p>Electricity offsets Renewable energy is generated on site by wind power and photo-voltaic panels. This electricity is used on site as part of the mix of electricity used on site. It is very low greenhouse gas intensive power, and its use reduces the demand on Victoria's electricity grid.</p>	<p>Yearly report for Annual Report</p> <p>Electricity use: Monthly reports on electricity consumption at the CERES site. Kilowatt-hours and dollars.</p> <p>Natural gas use: Every two months - reports on natural gas use: Megajoules and dollars</p> <p>Travel: Logged in Kms by relevant CERES Enterprises</p> <p>CERES has documented energy, records for the years 2011 and 2012. These provide a basis for comparisons in the current and future years, to estimate whether CERES has managed to make environmental improvements or not.</p> <p>Records for the current year are plotted on graphs against the historical annualised records of at least the last two years, to allow estimation of possible current and future progress in making reductions.</p> <p><i>Electricity is measured in kilowatt-hours with acknowledgement of associated greenhouse gas emissions.</i></p>	<p>Site Manager working with Area Managers and Green Tech Steering Committee</p> <p>This plan and will be communicated to all staff and every person will be made aware of:</p> <ul style="list-style-type: none"> • CERES' goal and objectives for reducing its environmental impacts; • How to personally minimise any contribution as a CERES worker, made to CERES environmental impacts; • How well the EMP is progressing, on a regular basis; • How to make suggestions for improvements.

Materials Management

Objectives and Targets	Strategies and Actions	Reporting	Responsibility
<p>To develop a waste reduction ethic and practice within the CERES community which aims to:</p> <p>Minimise the on-site production of waste and litter;</p> <p>Maximise the capture of recyclables from the waste stream;</p> <p>Observe the waste management hierarchy</p> <p>Achieve continual reduction of waste, year to year;</p> <p>Maintain a zero litter site;</p> <p>Maintain a healthy and aesthetically pleasing working and learning environment.</p>	<p>The Waste Hierarchy provides a framework for setting strategic directions for resource efficiency. CERES looks to favour actions at the top end of the waste hierarchy which aim to gain the best value from resources by:</p> <ul style="list-style-type: none"> Avoiding the need for consumption and waste in the first place; Increasing the reuse and recycling of materials. <p>Purchasing by CERES Purchasing policies are in place and being implemented by relevant sections of CERES.</p> <p>Environmental impacts and aspects criteria to be included and valued as part of purchasing decisions for goods and services, along with the usual criteria of performance and cost.</p> <p>Members of the general public, including school groups who access CERES' sites, should be able to readily comply with CERES environmental policies and practices.</p> <p>Well labelled and convenient waste and recycling bins etc</p>	<p>Yearly report for Annual Report</p> <p>CERES has documented waste records for the years 2011 and 2012. These provide a basis for comparisons in the current and future years, to estimate whether CERES has managed to make environmental improvements or not.</p> <p>Records for the current year are plotted on graphs against the historical annualised records of at least the last two years, to allow estimation of possible current and future progress in making reductions.</p> <p><i>Waste is measured in cubic metres with acknowledged associated pressure on resources and landfill.</i></p> <p><i>Waste to land-fill wheelie bins are picked up and emptied by Council contractors. However no invoices are received for this, so quantities of waste to landfill are estimated by CERES staff as the number of bins emptied each week.</i></p>	<p>Site Manager working with Area Managers and Green Tech Steering Committee</p> <p>This plan and will be communicated to all staff and every person will be made aware of:</p> <ul style="list-style-type: none"> CERES' goal and objectives for reducing its environmental impacts; How to personally minimise any contribution as a CERES worker, made to CERES environmental impacts; How well the EMP is progressing, on a regular basis; How to make suggestions for improvements.

Biodiversity Management

Objectives and Targets	Strategies and Actions	Reporting	Responsibility
<p>To improve the CERES outdoor natural environment by:</p> <p>Ongoing planting of a variety of well adapted plants;</p> <p>Upgrading the play areas and making them environmentally friendly.</p> <p>To use natural materials that minimise impact on the environment;</p> <p>To educate the CERES community about incorporating biodiversity in every-day life.</p>	<p>Site management at CERES is about managing buildings and surrounding spaces so that CERES can deliver on its purpose.</p> <p>CERES plans to do this at the same time as maximising the ecological productivity of this site, and promoting:</p> <ul style="list-style-type: none"> • Indigenous flora and fauna where possible; • Organic gardens for onsite food production; • Removal of weed and pest species from the site. 	<p>Yearly report for Annual Report.</p> <p>Biodiversity at the CERES site is measured in the number of plants planted per annum.</p> <p>Biodiversity estimates are made by CERES staff. Other relevant measures related to biodiversity can be used, for example:</p> <ul style="list-style-type: none"> • The number of indigenous seedlings planted each year. • Number of indigenous seedlings sold at the Nursery or given to schools / students / public as part of education programs (ie offsets) • Number, height and identification of significant trees. <p>CERES periodically carries out a simple survey using a Near Map or Google earth image to work out the proportions of land use and vegetation cover.</p>	<p>Site Manager working with Area Managers and Green Tech Steering Committee</p> <p>This plan and will be communicated to all staff and every person will be made aware of:</p> <ul style="list-style-type: none"> • CERES' goal and objectives for reducing its environmental impacts; • How to personally minimise any contribution as a CERES worker, made to CERES environmental impacts; • How well the EMP is progressing, on a regular basis; • How to make suggestions for improvements.