

**UFI SUSTAINABLE DEVELOPMENT AWARD  
BEST INNOVATIVE ENVIRONMENTAL INITIATIVE  
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## CTICC introduction

The CTICC business strategy places a priority on progressively and innovatively implementing best practice environmental sustainable initiatives in terms of energy efficiency, waste and water minimisation. The CTICC believes that any business that is serious about its long-term success must be prepared to build that success on sustainability. Therefore the CTICC strives to place economic, social and environmental considerations at the core of its operations. Sustainability is what drives the centre to be innovative and create opportunities for its stakeholders and create memorable experiences for its clients.

In early 2009, the CTICC gained the distinction of being the first convention centre in Africa, and the second convention centre in the world, to obtain three management system certifications simultaneously. Following an extensive process of transforming the centre's work processes to internationally recognised systems standards, the CTICC was awarded the following certifications:

- ISO 9001 – Quality Management
- ISO 14001 – Environmental Management
- OHSAS 18001 – Occupational Health and Safety
- HACCP (Hazard Analysis and Critical Control Points) Food Safety

During the past year, the CTICC submitted its first dedicated Sustainability Report to the United Nations Global Compact (UNGC) for acceptance and verification. The report was also submitted to the Global Reporting Initiative (GRI), which undertook a full evaluation of the document and confirmed that it fulfils the requirements for a GRI Level B status. This makes the CTICC the first convention centre in the world to have had its sustainable initiatives aligned to the GRI framework. GRI is a global network-based organisation that produces a comprehensive international sustainability reporting framework for leading organisations.

## **INNOVATIVE ENVIRONMENTAL INITIATIVES**

The CTICC follows a multi-pronged approach to environmental sustainability. The Centre's efforts in this regard are aimed at reducing any negative impact that its operations may have on the environment, while at the same time actively helping to conserve the planet and preserve it for future generations.

### **ENERGY EFFICIENCY**

#### **LED Lighting and Sub-metering**

With sustainability being at the core of the Centre's operations, the CTICC embarked on an efficient management approach to energy efficiency. The Centre's normal down lights of 50watts were replaced with LED 7watts lights. Two different LED lights were procured, 450 high level ceiling lights and 950 low level ceiling lights. With the replacement of normal down lights to more energy efficient LED lights, an approximate 5% energy saving was calculated.

Training and staff development is one of the CTICC's core mandates, with this being said after attending energy saving initiatives and greening training, the centre's operations and maintenance team investigated the improvement of the Centre's sub-metering. The Centre built a sub-metering model around the existing metering in the building. It was noted that by implementing efficient energy management approaches and tasks, an approximate saving of 10% was noted on monthly kWh usage. 40 metres are currently measured, and due to the resounding savings forecasted another 75 sub-meters are in the process of been installed. This initiative is utilized as an educational tool to gain a better understanding of the buildings energy usage and therefore results are being realised. The improvement of the Centre's sub-metering is seen as an energy saving tool. It is the aim of the Centre to meter the main energy supply to the building thereafter sub-sectioning all the venues. Information will be captured into a central database so that event specific energy consumption information can be tallied. This tool allows the Centre to inform clients of their energy usage and provide them with year on year comparisons if they are repeat events and allow for a collaborative partnership to improve energy consumption. Clients will also be given the option of live energy consumption viewing where energy consumption for events can be screened for the duration of the events.

### **Chiller Plant Room**

The Centre relooked the operations of its chiller plant room and venue air conditioning. On a hot summer's day, the automated procedure would see the heaters coming on and off to maintain a moderate temperature throughout the building. After research and efficient management the chillers are now operated at an offset. This means that when smaller events are hosted by the Centre, all five chillers are not operated; only a small amount of the chillers are operated to ensure that venue remains moderately temperate. Managing the chiller plant room more efficiently has further assisted the centre in energy saving. In an average month, the Centre's KVA peak was 22 000 and this was brought down to an average of 20 000 KVA in a month.

### **Hot-water cylinders**

During the fiscal year 2011-2012, two large hot-water cylinders were replaced with smaller units. The initial hot-water cylinders of 5 000 litres each were replaced with cylinders with a capacity of 4 600 litres each.

The initial two hot-water cylinders had elements of 81 KW each, which would have required about 648kWh per day, based on four-hour work cycles. These new hot-water cylinders have 60-kWh elements and would require an estimated 480kWh per day. This is a calculated saving of 168kWh per day or 5 208kWh per month. Savings are based on a total of 11 months, because the first placements were done in October 2011 and the second, in May 2012. Calculations were done for the period August 2011 to end June 2012. Based on the calculation of 5 208kWh per month and an 11 month saving, it is estimated that 57 288MWh of electricity was saved, which related to a saving of 5636 tons of CO<sup>2</sup> E during this period.

### **CTICC on-going energy efficiency initiatives**

- Energy saving devices are used extensively throughout the centre and 75% of lighting fixtures are fluorescent.
- Escalators are fitted with sensors that ensure they only work when delegates step on them. They are switched off in those parts of the building which are not in use.
- Light sensors are installed in the meeting suites and parking bay 1 to minimise energy wastage.
- Advanced central monitoring systems that minimises unnecessary use of air-conditioning systems and lights.

- Low voltage bulbs are used and dimmers are standard in meeting rooms and auditoria.
- Air conditioning systems are adjusted to suit seasonal conditions. Areas requiring air-conditioning are selected on a daily basis with no use in unoccupied venues, resulting in meaningful savings in energy. The primary circuit is a closed circuit which means that water required by the air-conditioning machinery is re-used continuously. Power Factor Correction equipment is installed on the major air-conditioning plant to ensure that power losses are kept to a minimum
- The building's design harnesses natural light in all public areas and thus reduces energy consumption. The CTICC won the Best of Cape Town award in the category "best architectural design" for its environmentally friendly design.
- The external building envelope is well insulated to reduce energy loss and assist in off peak cooling/ heating/ and or natural flush cooling of the facility at night.
- The fitting of variable speed drives on HVAC pumps and fan motor to enable control over settings and associated electricity usage during periods of lower occupancy;
- Automated control of the building operations through a central BMS
- Enhancement of existing design to achieve a more electrically efficient building by employing multiple initiatives to reduce consumption and costs
- Staggered start-up times of equipment to reduce KVA
- Lights being set to 50% during build-up and strike, with only ventilation, instead of full air conditioning
- The inclusion of stipulations on energy efficiency in procurement specifications

When considering the abovementioned energy saving initiatives a total 467 864kWh was saved. In 2011/2012 over a period of six months, 5 359 280 kWh of energy was consumed along with 5305687.2 of CO<sup>2</sup>. This decreased in 2012/2013, where over a period of six months, 4891416kWh of energy was consumed along with 4842501.84 of CO<sup>2</sup>.

## **WATER CONSERVATION**

The Centre encourages its clients and staff to save water through the provision of efficient taps and on-going awareness. Below please find more information regarding the two new water conservation initiatives implemented and the Centre's on-going initiatives to preserve water consumption.

### **Vivraeu**

The Centre has partnered with Vivraeu and installed an on-site bottling plant. This innovative environmental initiative is a purified drinking water system which dispenses both

still and sparkling water at 5 degrees celsius at all times. CTICC clients are now guaranteed purified chilled water bottled in a beautiful glass water bottle which positively assists with reducing the Centre's carbon footprint and plastic bottle waste consumption. Below please find additional benefits of the CTICC Vivreau bottling plant.

- Dispenses unlimited quantities of purified chilled still and sparkling water
- Saves the environment by eliminating regular deliveries as well as the disposal of empty bottles and packaging
- High performance ice bank refrigeration system capable of delivering very high volumes of chilled water at low temperatures, particularly at peak demand times
- Power saving options to reduce electricity consumption
- Eliminates any storage issues
- Removable dispense nozzles for hygiene purposes
- Anti-flood detection
- Substantially reduces costs of purchasing pre-bottled mineral waters

### **Coil Cleaners**

As an industry leader in sustainable initiatives the (CTICC) is committed to becoming a leading environmentally sustainable convention centre and have therefore adopted new methods in order to ensure the Centre have a state of the art world class sustainable air-conditioning system. As a result of the implementing the latest technology in coil cleaners, the centre has reduced its water consumption, by cleaning the air-conditioning system and increased the centres air flow into the air conditioning system. The powerful, new generation technology is a chemical and acid coil cleaner that is specifically designed to remove contamination caused by general dust; lint, grime and sea salt and ensure that the centre operates in a clean environment.

### **CTICC on-going water conservation initiatives**

Water consumption at the CTICC is relatively low, and water is predominantly used in the kitchens and restrooms. The on-going management and maintenance plan aims to ensure that any leaks are detected and fixed as soon as possible. The two high capacity conveyor-driven dishwashers in the kitchens save time, water and energy while the main hot water pipes are insulated to reduce the loss of heat.

Proximity sensor taps were installed in the public restrooms, as part of the continuous improvement programme. The toilets in public areas all have dual flush systems and

several urinals are waterless. The showers in the staff restrooms will be replaced with water-efficient showerheads. A cleaning service contractor is appointed to provide in-house cleaning services for back of house and the public areas. No laundry facilities are present on site; staff uniforms and table linen are collected and laundered by an outsourced contractor. Material Safety Data Sheets (MSDS) are clearly posted on the walls where the cleaning products are stored. The landscaping team endeavours to promote or replace certain plant species with more water-wise vegetation. Much of the vegetation currently on site is not water wise, because the current plant palette is being maintained. However, when there are new requests for new plants or trees, whether indoors, outdoors or potted, only water -wise plants are recommended and selected. Only organic pesticides, fungicides and fertilisers are used for both indoor and outdoor plants.

The CTICC proactively encourages water conservation for business operations. These initiatives include more efficient water consumption through reduced water usage, and a rainwater-harvesting initiative, which is presently under investigation. Through these initiatives, the CTICC strives to minimise the risk of any future water constraints and realises the commercial benefits of effective and efficient water usage.

## **WASTE REDUCTION**

The CTICC is committed to the effective use of resources and the reduction of waste. The first step is to reduce waste generation by the application of best practice in the form of eco-procurement. Preference is given to reusable and recyclable products rather than disposable items. On-site recycling is a critical aspect of the waste management process at the CTICC, with separation into different recyclables for plastic, paper, cardboard, glass, metals and other recyclable items and waste to landfill. This waste was measured, prior to being collected and the service provider provides the Centre with a weigh bill. The recyclable items are sold to appropriate recyclers, while the waste to landfill is delivered to a municipally approved and operation landfill site.

The CTICC endeavours to have comprehensive systems and processes in place for the disposal of hazardous waste. Below please find a list of initiatives that assists with the reduction of hazardous waste:

- Grease traps are regularly serviced, while residual grease (totalling 4 506 litres) has been treated as hazardous waste
- A fluorescent lamp crusher is used on-site to crush and store spent fluorescent lamps, prior to safe disposal as hazardous waste, while controlling the release of

hazardous waste mercury vapour emissions. A total of 476 litres of crushed fluorescent tubes were disposed of as hazardous waste,

- Hazardous chemicals substances are stored, as stipulated in the MSDS. The respective MSDS requirements are strictly adhered to in the handling and disposal of these substances. A series of universal spill kits are provided for oil, water, coolants and solvents. Waste-management and cleaning staff have been trained in the deployment of these kits.
- Electronic waste, including computers, LCD/CRT screens, office equipment, mobile phones and printer cartridges, are segregated from normal waste stream and safely disposed of as hazardous waste. Disposal procedures for assets such as computers are complicated, due to compulsory compliance with regulations for disposal of government assets.

As a steadfast commitment to upliftment of the communities surrounding the Centre, surplus food that can still be consumed is either sent to the staff kitchen or collected by Foodbank South Africa for redistribution to those in need. The CTICC strives to entrench efficient waste management systems into its business operations as a standard policy and also forms part of all service level agreements, to ensure compliance by contracted service providers.

Sustainability is embedded in every area and operations of the business- from facilities designs, management and maintenance, to performance contributions, employment development, social upliftment and green event offerings. This business strategy was navigated and implemented by the Chief Executive Office in collaboration with all staff to transform the CTICC into the leading sustainable convention centre by 2020.