W.G. DIXON (Pty) Ltd

ELECTRICAL ENGINEERS AND CONTRACTORS

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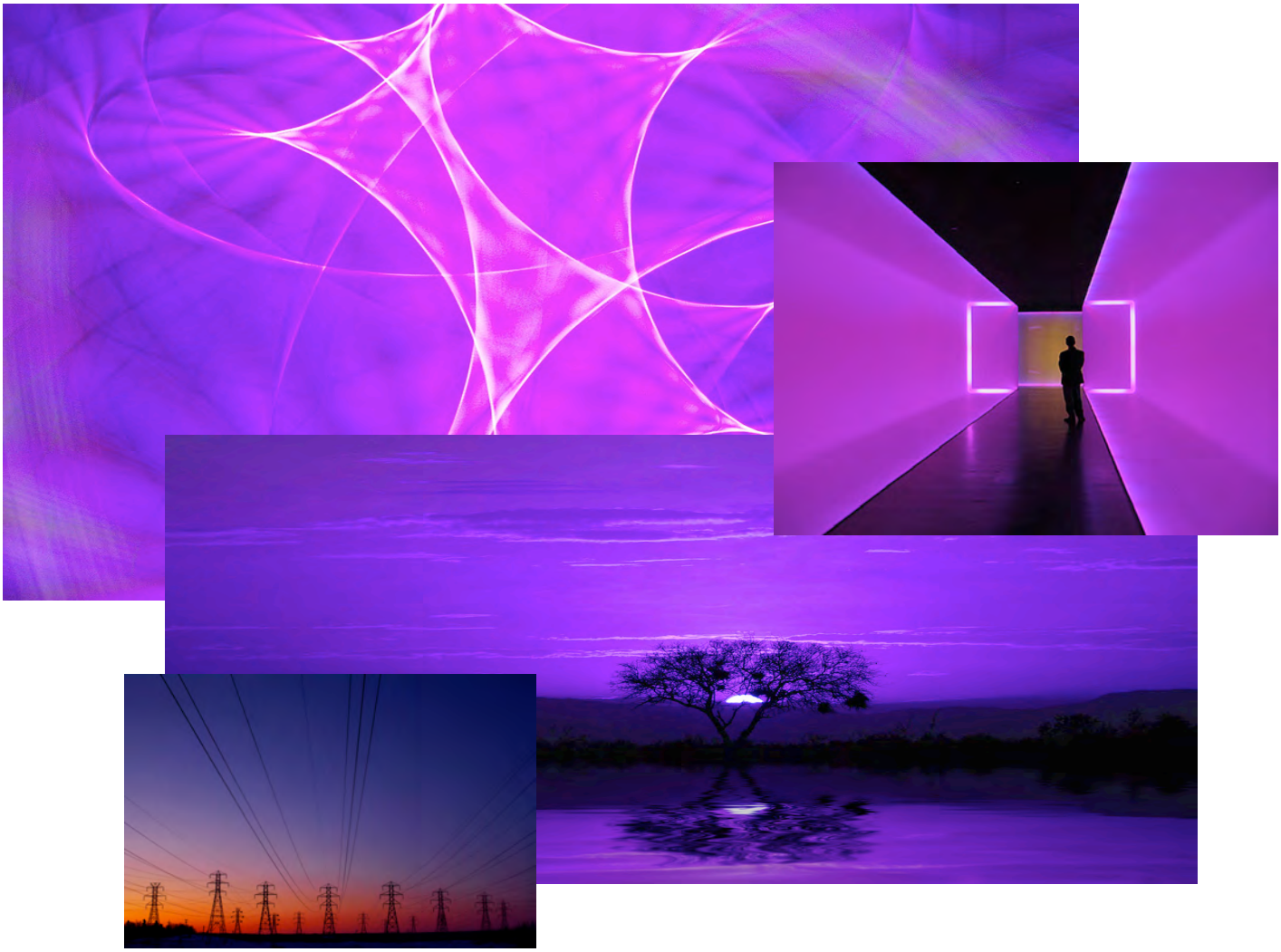
Est. 1952



POWER CONSERVATION & SUSTAINABILITY POLICY

2010

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"An age is called 'dark',
not because the light fails to shine,
but because people refuse to see it."
James Michener

WELCOME STATEMENT

The coming renaissance of electrical contracting

WG Dixon (Pty) Ltd strives to achieve economic and social development in ways that do not negatively impact the environment, as follows:

eco procurement, waste reduction, practising energy efficiency,
water conservation, by giving preference to environmental best practices,
supporting and promoting locally made goods,
focusing on community development and environmental sustainability
through poverty alleviation, thereby leaving a positive legacy.

Green Commitment

Our Green Code of Practice on waste and environment protection focuses on:

reducing waste and reusing materials at every opportunity,
aligning ourselves with green suppliers & partners,
minimising the quantity of printed materials,
making use of electronic mail whenever possible,
recycling and encouraging our staff to be responsible,
utilising energies & water sparingly,
considering environmental impacts in our purchasing,
endeavouring to work with partner organisations that share
our green values and utilising public transport wherever possible.

In Our Offices

WG Dixon intentionally operates in an environmentally friendly manner within our offices.

Staff members are actively encouraged to avoid wasteful printing,
waste paper is used on both sides before recycling,
we minimise use of paper-based marketing & registration,
all of the paper we use is recycled, we actively focus on email
and web-based communication, we limit our office energy usage,
we recycle our old computers, mobile phones and printer cartridges.
We have an established and well-informed ‘Green Team’.

Rudi Refae
CEO

OBJECTIVES

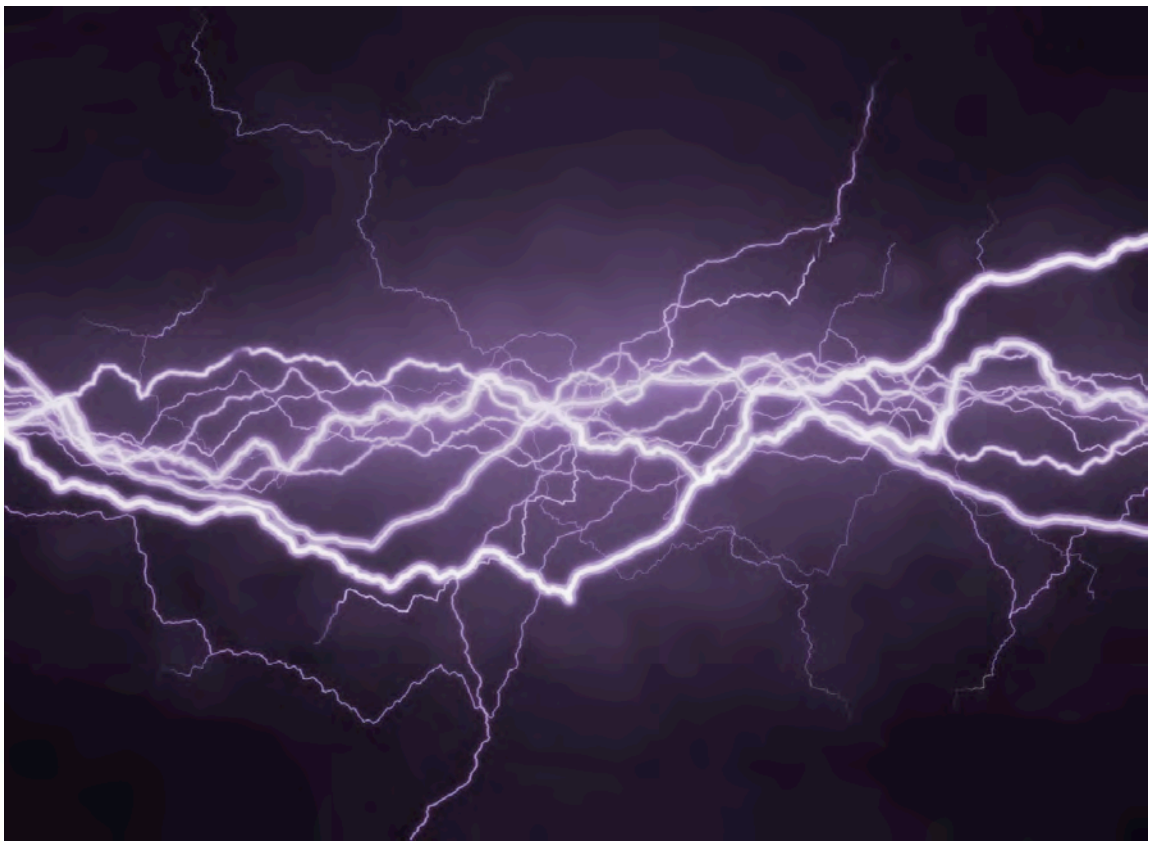
A Green Building is energy efficient, resource selective and environmentally responsible – and incorporates design, construction and operational practices that significantly reduce or eliminate the building's negative impact on the environment and its occupants.

Building Green is an opportunity to use all possible resources efficiently and to address climate change, while creating healthier and more productive environments for people to live and work in.

Our commitment is to develop the acknowledgement & sensitivity of all clients, associated professionals, co-contractors and acquaintances in the industry, in an ongoing manner in order to achieve power savings, so that it becomes "a way of life".

We offer our willingness and our co-operation to associated trades & installations irrespective of the financial gain, or involvement, in order to spread the "Green Evolution". Our aim is to promote integrated collaborative thinking – resulting in fresh ideas and a co-ordinated design approach.

Our objective is to provide a comprehensive turnkey solution to multifaceted problems. There is no quick fix to being sustainable. It is our aim to have a profound impact on the return on the investment - not limited to the immediate power saving (electricity costs), but also present and possible future parastatal rebates on the results of the Carbon footprint and demand-control reduction.



IMPLEMENTATION

In practice this includes careful design and innovative application of materials and technology to reduce the waste of energy and natural resource consumption resulting in improved human and natural environments.

Our contribution, however minor, strives toward holistic and affordable solutions embracing green attributes towards reversing the destructive potential of our civilisations' progress.

Although new technologies are constantly being developed to complement current practices in creating greener structures and to prevent climate change, the common objective is that green buildings are designed to reduce the overall impact of the ongoing depletion of the environment.

Specific green building measures include careful building design to reduce heat loads; maximising the use of, and harvesting of, natural light; the conversion and application of energy-efficient lighting; the use of environmentally friendly non-toxic materials; the reduction of waste, pollutants, environment degradation and the use of recycled materials; water-efficient plumbing design and natural water harvesting; the use of renewable electrical energy sources and sensitivity with regard to the impact of the development on the environment.

Ultimate on-site renewable energy generation can be implemented by means of the following systems:-

Solar heat gain for hot water, heat exchanger systems, etc.

Photovoltaic cells with battery storage systems,

Wind turbine generators,

Hydropower systems,

Biomass application utilizing organic waste to produce power.

The above-mentioned power generation methods are generally the most expensive features to add to a building.

Other more economical measures of sustainable power savings are:-

1. Electric lighting that consumes up to 20 to 30% of an average building's energy budget can be reduced by applying Compact Fluorescent Lights (CFL).
2. Light Emitting Diode (LED) lamps that have revolutionized energy-efficient lighting.
3. Applying high efficiency Fluorescent or Induction lighting, task orientated instead of overall high discharge lamp applications.
4. Promoting illuminated signage, new or existing, to be fitted with LEDs and not Fluorescent, Neon or floodlights.
5. Harvesting sunlight for general interior illumination in conjunction with light coloured walls, where possible.
6. Specialized metering applications to manage problematic loads, limiting the maximum demand to normal and below normal levels, thereby reducing the ever-increasing National Power Grid crisis.

CFL's are simply miniature versions of full-sized fluorescents. These lamps are retrofitted into standard lamp sockets, or other electronic ballast conversions are applied, and they exceed or equal the light output of the common incandescent lamp. Different versions of CFL lamps are applied in the commercial and industrial market with extreme success.

LED's come in a wide variety of designs and colours and are small, solid light sources that are extremely energy-efficient. New LED lamps are single units - or grouped in clusters with diffuser lenses - that have broadened the applications for LED use in industry and the home.

BENEFITS

Fluorescents and CFL's last 5 to 10 times longer than conventional incandescent or tungsten lamps. A power plant will, for instance, emit 10mg of mercury to produce the electricity to run an incandescent lamp compared to only 2.4mg of mercury to run a CFL for the same duration. The benefit of using the more energy efficient lamp is huge and this is especially true if the mercury in the fluorescent lamps and CFL's is kept out of the waste stream when the lamps are disposed of.

Fluorescents and CFL's have a small Mercury content. This is a toxic metal associated with contamination of water, fish and food supplies. This can lead to adverse health affects. A CFL generally contains an average of 5 mg of mercury (about one-fifth of that found in the average watch battery and less than 1/100th of the mercury content found in an amalgam dental filling).

LED lamps last up to 10 times longer than compact fluorescents and hence far longer than typical incandescent lights. No toxic material is used for the manufacture of LED's and hence the waste after 15 to 30 years of use is negligible due to the recycling of the components.

LED lamps do not cause heat build-up and since LED's produce 3.4 btu's/hour, compared to 85 btu's for incandescent lamps, this also reduces air conditioning costs.

Although LED's are expensive, the cost saving both in lamp replacement and electricity consumption charges is recouped over time.

No mercury is used in the manufacturing of LED's.

The use of electronic control gear in conjunction with CFL and fluorescent lamps can save a substantial percentage of the electricity consumed, and extend the lamp life and increase the light output.

Supplemental lighting control elements such as movement sensors and intelligent ambient light monitoring applied in buildings can ensure that further energy is conserved during periods of low occupancy and high ambient light, respectively.

Buildings with centralised air conditioning plants will also benefit substantially if the concept of energy efficient lighting is applied - due to the lower heat load - thus energy is saved by the lower electrical consumption of the cooling equipment.

SYNOPSIS

Our lighting specialists optimise the design and location of light fittings, are cost-effective and provide a multitude of other benefits. It is therefore wise to make use of our lighting engineers when choosing lighting systems and applications.

There are regulations to abide by when implementing certain automatic lighting controls and there is a fine balance between the allowable areas of these applications, both on the safety, when switching off, and the intensity of the lighting levels.

Intricate decisions need to be made when having to apply the light source (LED, CFL, normal fluorescents or other higher output lamp sources) in the correct light fitting and for the correct tasks and applications at hand.

A new dimension has evolved in the building industry where every conceivable option of power saving needs to be explored and applied to make a sustainable contribution to saving this world of ours.

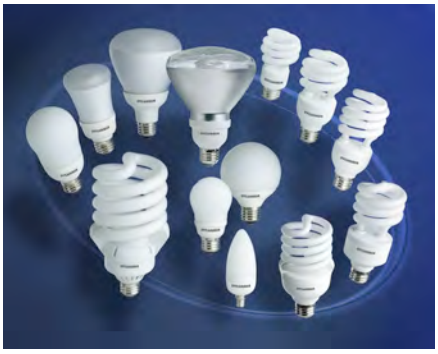
The coming renaissance…

Adding value beyond measure.

EXAMPLES OF LIGHT SOURCES

General Lighting Service Lamps
100W – 150W

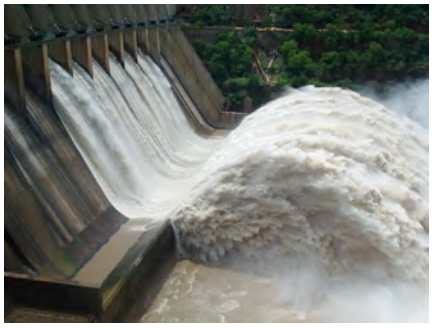
Tungsten Halogen Lamps
20W – 500W



Compact Fluorescent Lamps
13W – 40W

LED Lamps
0.1W – 30W

EXAMPLES OF ALTERNATE ENERGY SOURCES



Hydro Electricity

Solar Panels

Wind Turbines

Motion Sensor

EXAMPLES OF ECO-FRIENDLY HOUSEHOLD DEVICES

Eco Kettle

Water Efficient Showerhead

Intelligent Power Lead

Air Conditioner Controller

EXAMPLES OF GREEN SYMBOLS

GREEN BUILDING COUNCIL SA

MEMBER ORGANISATION