



Magnet Case Studies

**For fast,
skilled support,
choose Magnet.**



**ELECTRICAL
LIGHTING
WATER
SOLAR**

Dear Valued Customer,

We are proud to present to you a collection of our projects in this Case Study document.

In here you can expect to find a range of projects completed within the fields of lighting, water and solar.

Magnet has a team of professionals dedicated to the provision of services and solutions across these disciplines.

For more information on these and our electrical solutions, do not hesitate to contact us.

Brian Howarth
MD - Magnet

INDEX

01 - 13

LIGHTING

Boxer
Eskom
ABinBEV
Toyota Boshoku
Jaguar
Transnet
Unilever
LG
Consol
Q'Dos
ABSA
Growthpoint
Archidio Architects

14

SOLAR

Grid Group

15 - 17

WATER

Church of Latter Day Saints
Toyota SA Motors Hino Plant
Toyota SA Motors Prospecton

LIGHTING



CASE STUDY 1

M



Energy Efficient Lighting

Boxer



Over 50% energy saving and increased lux levels

SCOPE

- Design and supply Energy Efficient LED lighting at 16 000m² distribution centre
- Save more than 50% energy whilst increasing lux levels
- Comply to OSH Act requirements

SUCCESS

- This site was the 100th lighting upgrade Magnet has done for Boxer
- Tool free installation which reduced project time
- 460 luminaires installed in under 3 weeks
- Increased lux levels provided a safer working environment for workers

"It's a pleasure working with Magnet, they simplify the process of lighting design and provide not only quick and efficient service, but also great after-sales service, to ensure that right product for the right environment."

Boxer
Project Manager

CASE STUDY 2

M



Energy Efficient Lighting Project (DSM)

Eskom Buildings



45% energy saving

SCOPE

- Eskom called on Magnet to investigate potential savings that could be achieved in all of their KZN buildings
- After a comprehensive study Magnet revealed a possible savings in electricity capacity by 0.433MW
- The project objective was to reduce the lighting load at the over 100 sites in Eskom's Eastern region
- Replace existing light fittings with equivalents of higher energy efficiency
- Retrofit existing fittings with new control gear e.g. magnetic ballasts were replaced with electronic control gear
- Re-lamping existing fittings with more efficient lamps
- Leave existing fittings as is, where necessary

SUCCESS

- 11 000 light fittings were installed
- The project saved 45% of the initial load, with an accumulative saving of 440kW (savings were verified by the the University of North West)

CASE STUDY 3

M



Energy Efficient Lighting

ABInBev



60% reduction in energy saving

SCOPE

- Upgrade outdated lighting systems at 16 ABInBev depots
- Advanced energy-efficient LED systems
- Project design, supply, installation and commissioning
- Project's financial funding was through Magnet Capital
- 4173 luminaires and sensors were installed within a 2-month period

SUCCESS

- Automatic occupancy sensors prevent lights from being left on unnecessarily
- 60% reduction in energy consumption
- Improved quality of illuminance levels
- Enhanced working conditions for workers

“Special thanks to the Magnet team for the excellent and professional manner in which you handled this project and also taking our feedback into account - job well done.”

ABInBev
Logistics Manager

CASE STUDY 4



Energy Efficient Lighting Project (DSM)

Toyota Boshoku



60% total average energy saving

SCOPE

- Toyota required a lighting upgrade
- Magnet proposed an energy efficient design, encompassing the management of lux levels and the measurement of power usage

SUCCESS

- Increased lux levels improved the visual effect within the work place, which improved the overall working environment for employees
- A definite decrease in power consumption from approximately 420 Watts to approximately 260 watts
- Overall, the project was a huge success with all anticipated savings being achieved according to predictions related to the scope of the project

CASE STUDY 5

M



ENERGY EFFICIENT LIGHTING

Jaguar - Umhlanga



Client Request

- Reach internationally standardised Jaguar Land Rover lux levels
- Supply a cosmetically appealing suspended linear LED to highlight each car in 3000K colour temperature
- Supply a bespoke recessed linear LED to meet architectural design requirements in a U Shape in 4000k colour temperature
- Provide a Colour Rendering Index (CRI) of 80 or more to bring out the varying unique colours of the vehicles
- Make use of an Energy saving LED solution
- Provide a low maintenance product to ensure the sales floor is always looking immaculate and well kept

Success

- Lux requirements were met and exceeded
- The Mars Led Rail 4000 has an unobtrusive suspension kit, a low glare diffuser and an interlocking structure for continues suspended linear lighting
- The same product in a recessed version was sized and cut to meet requested U Shape dimensions.
- The Mars range has a standardised CRI of 85 (CRI 92 available on request). The CRI 85 brought out the true colours of the vehicles and highlight the unique colour codes that are used by Jaguar and Land Rover
- The Mars Led Rail 4000 uses on average 60% less energy than the conventional fluorescent lighting.
- The Mars Led Rail 4000 has a life span of 6 – 8 years, but comes with a standard 5 year warranty. The longevity of the product reduces maintenance and replacement costs. These replacement costs combined with the energy efficiency mentioned above, ensure a project of this nature has a payback period of under 2 years.

CASE STUDY 6

M



Energy Efficient Lighting Project (DSM)

Transnet Rail



93% targeted savings achieved

SCOPE

- Implementation of energy-efficient lighting and control systems to Transnet's rail house
- Phase 1 took place at the Durban premises and entailed the replacement of existing fittings, retrofitting where necessary, and re-lamping
- Occupancy sensors were also installed to control the lighting and contribute to its overall energy efficiency
- Phase 2 involved the rollout of energy efficient lighting and sensors to 15 sites on a national basis

SUCCESS

- There was no shut down during this project, so the team worked safely and successfully around production with continuous overhead crane activity
- The project was a resounding success with the total value being R 16.5million and a 93% target savings achieved

CASE STUDY 7



Energy Efficient Lighting

Unilever



63% reduction in energy consumption

SCOPE

- Full LED turnkey conversion of a 45 000m² distribution centre
- Design, supply and installation of a new lighting system
- 4 week project
- Replacement of existing T-bay fittings and fluorescent tubes, with Philips HighBay LED luminaires
- Support service included site audits, where performance of luminaires was monitored

SUCCESS

- Improved lighting levels
- Enhanced working conditions for workers
- 63% reduction in energy consumption
- Magnet's custom-made lighting design utilized approximately 170 fewer light fittings than the previous system

"The LED lights used to run the warehouse have assisted us in decreasing power consumption from the grid and CO₂ emissions. We are pleased to contribute to the progress of the sustainable growth of business, by reducing the company's environmental footprint and making the world a better place."

CASE STUDY 8



Energy Efficient Lighting

LG TV Production Plant - Cornubia



SCOPE

- Full lighting supply for LG's new TV production plant
- LG required lighting with high lux levels and anti-glare for production and assembly lines
- 23 000 m2 of lighting
- 895 fittings supplied
- Brands supplied: MARS, Robus, Philips and Aurora

SUCCESS

- Lighting levels were achieved and superseded
- Lighting project value came under allocated budget
- The client has a full lighting solution with a 5 year warranty designed to deliver the required lux levels at the end of the warranty

CASE STUDY 9



Decorative Lighting Project

Consol Glass, Umhlanga

Consol.

SCOPE

- Design and supply for a new build (retail outlet and warehouse)
- Aesthetics for a glass retail outlet
- Adjustable lighting to accommodate a dynamic showroom floor
- Functionality for multiple applications

SUCCESS

- Colour temperature of 3000 Kelvin to display glass products with a less offensive glare
- To accommodate adjustability, a tailor-made spot and track system was mounted
- High Colour Rendering Index of over 85
- Warehouse lighting has a 50 000 hour guarantee, ensuring no maintenance for the first 5 years
- Ability to deliver on all of our client's specific requests

CASE STUDY 10



Store Ambience and Energy Efficient Lighting

Q'Dos Gateway



Scope

- The design objectives required special lighting to create an enchanting ambience in store, and to accentuate the distinct styles, textures and colours of the exclusive Q'Dos clothing collection

Success

- Desired ambience was created using a selection of 4 types of light fittings, with high luminous flux
- Fittings included downlights, recessed and surface ceiling lights, as well as strip lights
- Installed lighting creates a more appealing and enjoyable shopping experience for customers

CASE STUDY 11



Decorative Lighting Project

Absa, Umhlanga



SCOPE

- Parkade, Office, Stair Case, Feature and External Lighting
- Lighting for quadruple volume building atrium
- 4-Star Green Building rating for the installation

SUCCESS

- Achieved a 4-Star Green Building rating
- A minimum energy saving of 50%
- Reduction in carbon emissions and financial benefits for the client
- Bold, statement lighting feature in the quadruple volume building atrium

“I have had great pleasure working with Magnet on this prestigious project. This project did come with various challenges and Magnet met them head on from design to implementation as well as in assisting times during the commissioning process. All building lighting requirements have thus far met the criteria to be 4-Star rated in terms of green buildings. I have had great exposure to new lighting technologies as well as reputable lighting brands. The project has been completed for over 8 months now and the after-sales service received from Magnet is exceptional.”

Aecom

CASE STUDY 12

M



Building Beautification

Growthpoint Woodlands Office Park, Sandton

GROWTHPOINT
PROPERTIES



SCOPE

- New installation
- Beautification of Boulevard
- Project involved design, supply, installation and commissioning

SUCCESS

- Improvement of security and safety for pedestrians and motorists
- Creation of more inviting and comfortable environment for tenants and users
- Use of LED luminaires for energy efficiency

CASE STUDY 13



Architectural Lighting

Archidio Architects



SCOPE

- Aesthetically appealing design for office exterior
- Energy efficient lighting for office interior

SUCCESS

- The design included elegant light fittings from SLV's range of German-engineered lighting
- The interior was fitted with Philips LED fittings from the SmartBright range
- The result was a well-lit and modern feel to the offices, visually appealing to customers and ergonomical for employees

PHILIPS

SOLAR



CASE STUDY 14



Grid Tied Solar System

Grid Group



SCOPE

- To meter and size a grid tied solar system to subsidise the grid's electricity usage, ensuring optimised production (i.e.: not oversized)
- Design a system that would not impact the aesthetics of the existing building
- Deliver power according to the guaranteed solar system production
- Deliver a 4 year or less payback through electricity savings (on an over 20 - 25 year asset)
- Mitigate financial risk

SUCCESS

- Magnet installed a 260kWp grid tied system that will reduce the sites' utility consumption by up to 35%
- Due to exceeding power production and high increases in electricity costs, the actual payback was estimated to be shorter than originally anticipated
- The system is seamless and the tenants do not notice any change between solar and utility supplied power
- The inverter app/website allows for live system and per-panel performance monitoring
- Monthly reporting with quarterly site inspections and panel cleaning allow the owner to rest assured his investment is bringing in the financial returns as promised
- The solar panels have a linear output warranty for 25 years, and the inverters come with a 20 year warranty

WATER



CASE STUDY 15



M



Hot Water Project

The Church of Latter Day Saints - iZinga, Umhlanga



60 – 70% Electricity savings compared to traditional heating elements

SCOPE

- Project commenced in May 2018 and was completed in March 2019
- Project involved the design and installation of 2 x energy efficient hot water plants and 2 x pump sets
- The 2 hot water plants each comprise 2 industrial geysers, one with a 1000L capacity, and the other 2000L
- One hot water plant system is heated by a 20kW heat pump, and the other by a 38 kW heat pump
- Elements in the industrial geysers of both these hot water plants are left switched off for redundancy and back-up purposes
- Both hot water plants are controlled by custom-built control panels, designed and manufactured by Magnet
- The installation also consists of a storm water pump system and a sewer pit pump system
- These pump systems both comprise 2 x Wilo submersible pumps, which run duty stand by
- These pump systems are automated by custom-built control panels, designed and manufactured by Magnet

SUCCESS

- Magnet's equipment is robust, economical and manufactured to high standards
- Installation of the entire system will see the Church saving between 60-70% on electricity, compared to the use of traditional electrical heating elements

CASE STUDY 16



Energy efficient Hot Water System

Toyota SA Motors Hino Plant



SCOPE

- Upgrade to the ablution hot water system with the installation of an efficient hot water plant
- The upgraded hot water plant consists of 2 x 1000L industrial geysers
- This system is heated by a 20kW Magnet heat pump
- Elements in the industrial geysers are left switched off for redundancy and back-up purposes
- The equipment installed is robust, economical and manufactured to the highest quality standards
- Workmanship was highly commended

Success

- There will be 60-70% savings on electricity as a result of the heat pumps, compared to utilising electrical elements
- The installation also allowed for an increase in hot water storage volume, from 1000L to 2000L, in order to better meet demand

CASE STUDY 17



Hot Water System Upgrade

Toyota SA Motors Prospecton



Client Request

- Upgrade to existing hot water system previously installed by Magnet
- Replaced 38kW Industrial Heat pump with 42kW Industrial Heat Pump
- Advanced upgrade in design and efficiencies compared to the older model

Success

- The customer still experiences 60-70% in energy savings
- The pump system installed has a longer life span resulting in a further saving in maintenance costs



www.magnetgroup.co.za | hello@magnetgroup.co.za