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Switch on with



TEEAM Specialised Group – Engineering Construction & Services

by the Chairman, Ir Chew Shee Fuee.

AOTS Energy Efficiency Training in Japan 2010

The training in energy efficiency with AOTS was completed in November 2010. The feedback had been good and we are making an application for a similar course in 2011. If the AOTS approves the training course we will again hope to fill up the 25 available places.

CIDB Wiring Installer Course

Our CIDB Wiring Installer Course for 2011 has been approved and will be grateful for anyone who could assist to recruit the trainees.

Course of Tender Estimation

There has been no further progress on a Course of Tender Estimation. We will put it on hold for the time being.

Technical Visit to Iconic Buildings in Beijing

Although the Technical Visit to Iconic Buildings in Beijing was cancelled in 2010 we hope to schedule a new visit in 2011. It will again depend on getting sufficient participants for the visit. Your participation is very much requested.

Power Factor Improvement

We had organised a meeting with stakeholders on 6th January 2011, with good response from many organisations. We are now compiling the support letters from the various organisations. The next step is to forward the official proposal to the Minister of Energy, Green Technology and Water.

National Safety Conference

The Energy Commission (Suruhanjaya Tenaga, ST) intends to organise a National Safety Conference in conjunction with Asean Elenex in Kuala Lumpur Convention Centre from 20th to 23rd July 2011. The purpose is to promote electrical safety practice. Further details will only be known in the next few months.

Construction Industry Payment and Adjudication Act 2010

It appears that the above proposal could not be realised as we have marched into 2011 without it. The Kuala Lumpur Regional Centre for Arbitration (KLRCA) had proposed for amendments to the CIPAA Bill. Their proposal includes the following:

1. Limiting the scope of adjudication
2. Selection, qualification and fees of adjudicators
3. Review of adjudication decision
4. Security by way of payment bond and suspension of work
5. Freedom to contract out of the CIPAA Bill

TEEAM is in support with MBAM and others against the amendments proposed by KLRCA.

“Pekeliling Kawal Selia Keselamatan Elektrik Bil. 02/2010”

The above circular was published on 19th November 2010. Originally most relay test certificates are certified by Registered Services Engineers. The new circular will require the Registered Services Engineers to personally carry out the relay testing. We had organised a meeting among the Registered Services Contractors in TEEAM on 6th January 2011. After the meeting it was concluded that we should make our response to the new circular to the Chief Executive Officer (CEO) of ST. The meeting with ST was held on 28th January 2011. We expressed to the CEO of ST the mode of operation of the Registered Services Contractors on the matter of relay testing. We proposed that Registered Services Engineer will authorise those to carry out the relay testing. The authorised person must be a full-time employee of the Registered Services Contractor. We are pleased that the CEO of ST will look into this matter based on our feedback.



Ir Chew Shee Fuee



Advertisement Booking in TEEAM Members Directory 2011-2012

TEEAM is pleased to announce the publication of a new Members Directory for 2011-2012. The directory is a useful reference material to both overseas buyers and local electrical and electronics business community. It contains the following features:

- Members' business contacts
- Guide to Ministries, Government Departments, Statutory bodies & Utilities
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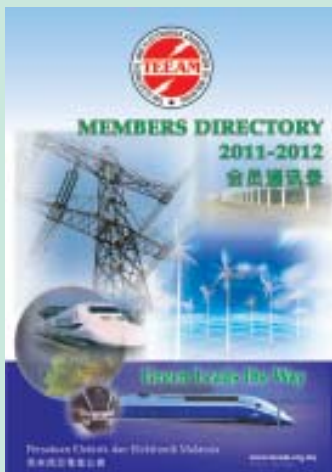
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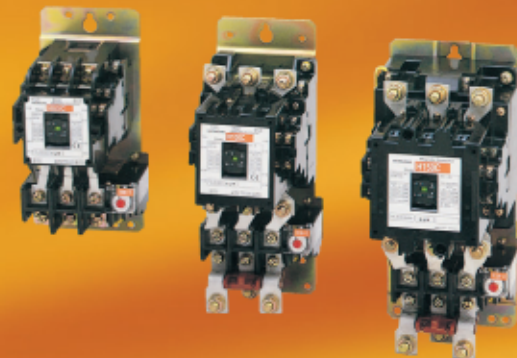


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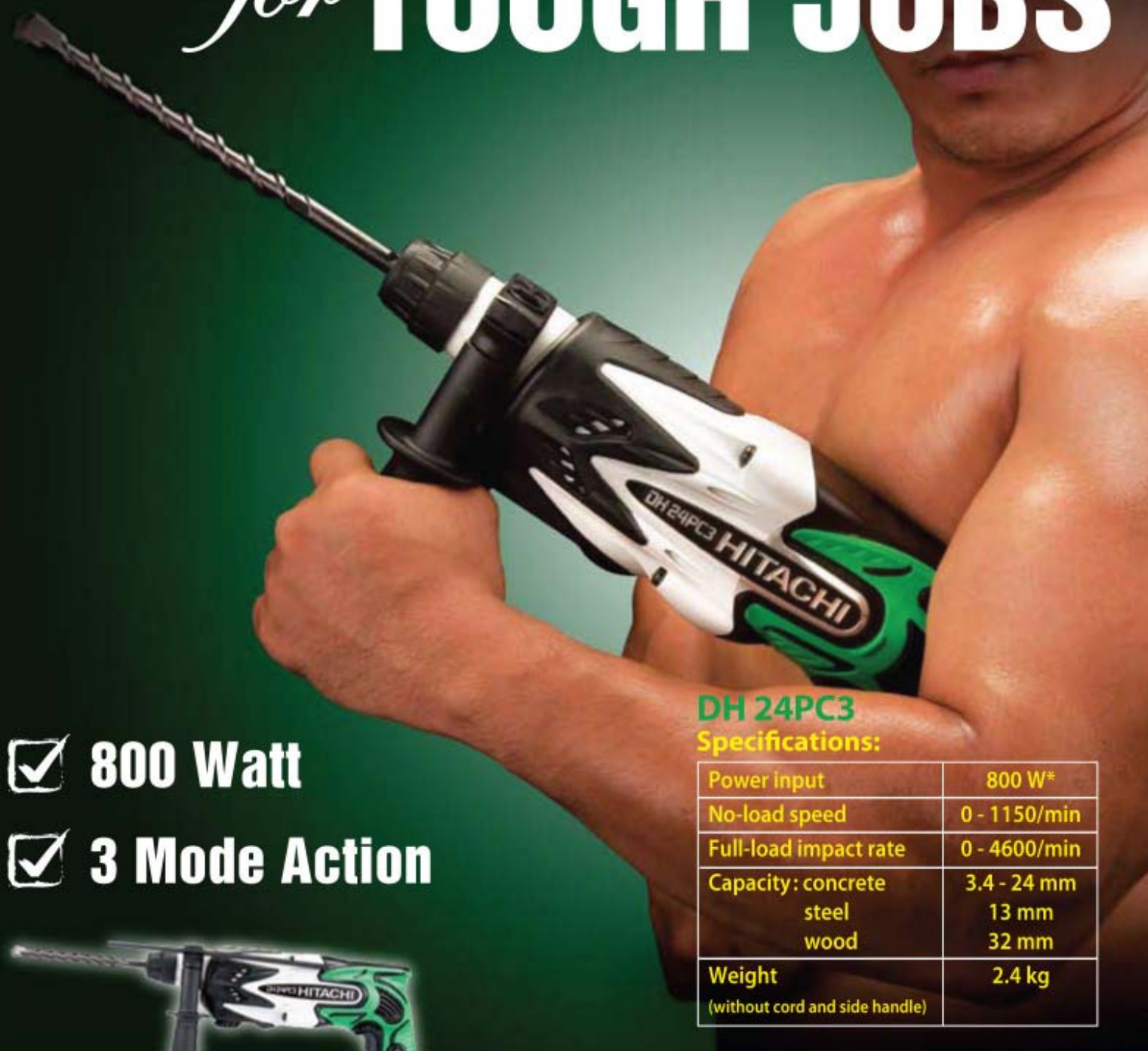
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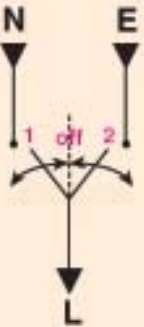
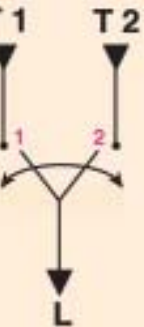
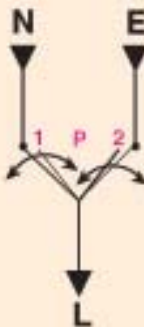
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TEEAM Specialised Group - Trading

by the Chairman, Engr Leong Kam Seng.

Kaizen Children's Home, Semenyih

We paid our 4th visit to Kaizen Children's Home in Semenyih in the morning of 13th November 2010. The centre now houses seven children ranging from five years to twelve years old. With the help of Ir Chang Yew Cheong and his wife, we managed more donation this time. Food items were also given to the centre before we departed at noon. It is hoped that more members can come forward to help the less fortunate children. Members who are keen to donate cash or kind can contact Mr Charles Lee at 012-2084518.

5th Trading Committee Meeting for the Year 2009-2011

We held our 5th meeting on 25th October 2010. Major subjects discussed were GST and Market Surveillance on Regulated Products.

Goods and Services Tax (GST)

We wish to inform members that the Parliament has passed the Price Control and Anti Profiteering Bill during the Nov/Dec 2010 sitting. Passing this Bill is the prior condition for the implementation of GST. Therefore, we anticipate the government will implement the GST in the very near future.

As GST affects all aspects of our business transactions, we will continuously update members on its development. However, members need not worry too much as the

Ministry of Finance has mentioned in its statement on 14th October 2010 that the Ministry will engage with all segments of society to establish a clear and credible roadmap prior to the implementation of GST.

Regulated Products

There are all together 31 categories of controlled/regulated products. The controlled items are plug top (plugs), switches and dimmers, socket outlet 15A and below (with or without elcb/rcd), lampholders, ceiling roses, bayonet caps and multiway adapters, fluorescent lamps fittings excluding tubes if imported separately, capacitors for fluorescent lamps, ballast for fluorescent lamps, circuit breakers including AC current operated earth leakage circuit breakers and miniature circuit breakers, instantaneous water heaters including heater elements if imported separately, hand operated hair dryer, table lamps having accessible metal parts, electric kettle including heating elements if imported separately, electric smoothing irons, electric shavers (excluding battery operated), food mixers / blenders, immersion water heater, hi fi sets, mosquito mat vapourisers, toasters, table fans, televisions, vacuum cleaners, video players, washing machines, refrigerators, rice cookers, christmas light and running light, domestic power tools, and wires/cables/cords (non armoured) of cross sectional area 0.5 sq mm to 35 sq mm.

The Electricity Regulations require electrical equipment to be approved by Suruhanjaya Tenaga (ST) and such equipment to be labeled with a valid SIRIM label. In accordance to

the Electricity Supply Act Section 37 (1) (Act 447), any person who manufactures or imports or sells or displays or advertises any equipment so as to cause or to be likely to cause danger to human life or limb or other property shall be guilty of an offence and for each such offence shall, on conviction be liable to a fine not exceeding RM 100,000 or imprisonment for a term not exceeding five years or both.

We wish to highlight to members that for regulated products that are without SIRIM label, ST will confiscate these products and send for testing. If these products pass the safety requirement, Regulation 122 of the Electricity Regulations will be applied. Offender upon conviction will be liable to a fine not exceeding RM 5,000 or imprisonment for a term not exceeding twelve months or both. If these products fail the safety requirement, offender upon conviction be liable to a fine not exceeding RM 100,000 or imprisonment for a term not exceeding five years or both.

We strongly appeal to members not to buy or sell such products. Members should feedback to TEEAM if they encounter such cases so that we can channel to the relevant authorities for necessary actions. In doing so only can we maintain a healthy and sustainable industry.



Engr Leong Kam Seng



ELECRAMA 2012

18th to 22nd January 2012, Mumbai, India

ELECRAMA is the world's largest electrical and industrial electronics exhibition and the exclusive forum for the electrical and electronics industry in India. Each year the exhibition attracts many professional customers' extensive concern. ELECRAMA 2012 is the 10th edition and the scale will be larger than ever before. The forthcoming exhibition will include more professional subject discussion for electrical and electronics industries related to the manufacturers in the Middle East market.

It is a grand show on power transmission and distribution to be held at Bombay Exhibition Centre, Mumbai, India. The exhibitors profile includes equipment for railway electrification signaling and communication; equipment for generation, transmission, distribution, protection and utilisation of electrical power; computer hardware and software, data information and processing systems.

Visitors will have the right platform to explore current innovations and applications in the above industry and opportunity to meet traders, manufacturers and all business people concerned in the industry.

ELECRAMA 2012 is organised by the Indian Electrical and Electronics Manufacturers Association (IEEMA). TEEAM intends to organise a trade delegation to visit the exhibition. Members who are interested to join the delegation may contact the TEEAM Secretariat for details. Tel: +603-9221 4417 E-mail: teeam@streamyx.com Website: www.teeam.org.my





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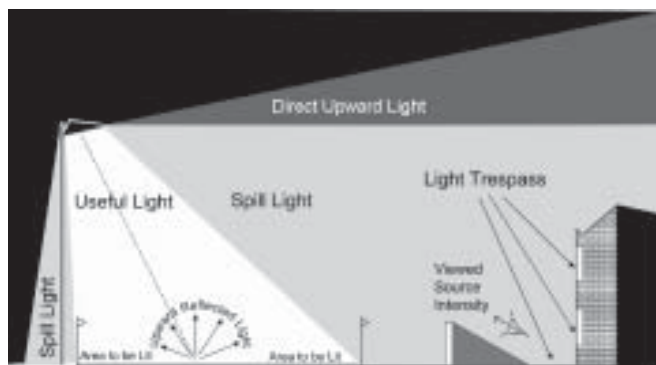
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Guidance Notes for the Reduction of Obtrusive Light

All living things adjust their behaviour according to natural light. Man's invention of artificial light has done much to enhance our night-time environment but, if not properly controlled, obtrusive light (commonly referred to as light pollution) can present serious physiological and ecological problems.

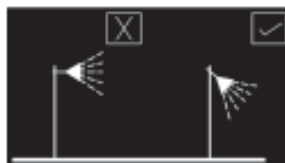
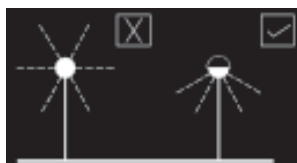
Obtrusive Light, whether it keeps you awake through a bedroom window or impedes your view of the night sky, is a form of pollution and can be substantially reduced without detriment to the lighting task.

Sky Glow, the brightening of the night sky above our towns, cities and countryside, Glare, the uncomfortable brightness of a light source when viewed against a dark background, and Light Trespass, the spilling of light beyond the boundary of the property or area being lit, are all forms of obtrusive light which may cause nuisance to others, waste money and electricity and result in the unnecessary emissions of greenhouse gases. Think before you light. Is it necessary? What effect will it have on others? Will it cause a nuisance? How can I minimise the problem?



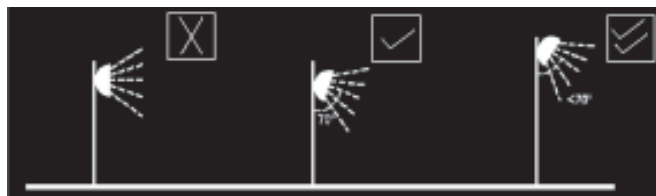
Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light. Organisations from which full details of these standards can be obtained are given in this article.

Dim or switch off lights when the task is finished. Generally a lower level of lighting will suffice to enhance the night time scene than that required for safety and security.



Use specifically designed lighting equipment that minimises the upward spread of light near to and above the horizontal. Care should be taken when selecting luminaires to ensure that appropriate units are chosen and that their location will reduce spill light and glare to a minimum. Remember that lamp light output in LUMENS is not the same as lamp wattage and that it is the former that is important in combating the problems of obtrusive light.

Keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is not more than 70°. Higher mounting heights allow lower main beam angles, which can assist in reducing glare. In areas with low ambient lighting levels, glare can be very obtrusive and extra care should be taken when positioning and aiming lighting equipment. With regard to domestic security lighting the ILE produces an information leaflet GN02 that is freely available from its website.



The UK Government will be providing an annex to PPS23 Planning and Pollution Control, specifically on obtrusive light. However many Local Planning Authorities (LPA's) have already produced, or are producing, policies that within the new planning system will become part of the local development framework. For new developments there is an opportunity for LPA's to impose planning conditions related to external lighting, including curfew hours.



For sports lighting installations (see also design standards listed in this article) the use of luminaires with double-asymmetric beams designed so that the front glazing is kept at or near parallel to the surface being lit should, if correctly aimed, ensure minimum obtrusive light. In most cases it will also be beneficial to use as high a mounting height as possible, giving due regard to the daytime appearance of the installation. The requirements to control glare for the safety of road users are given in Table 2.



When lighting vertical structures such as advertising signs direct light downwards, wherever possible. If there is no alternative to up-lighting, as with much decorative lighting of buildings, then the use of shields, baffles and louvres will help reduce spill light around and over the structure to a minimum.

For road and amenity lighting installations (see also design standards listed in this article), light near to and above the horizontal should normally be minimised to reduce glare and sky glow (Note ULRs in Table 1). In sensitive rural areas the use of full horizontal cut off luminaires installed at 0° uplift will, in addition to reducing sky glow, also help to minimise visual intrusion within the open landscape. However in many urban locations, luminaires fitted with a more decorative bowl and good optical control of light should be acceptable and may be more appropriate.

Environmental Zones

It is recommended that Local Planning Authorities specify the following environmental zones for exterior lighting control within their Development Plans.

Category	Examples
E1:	Intrinsically dark landscapes
E2:	Low district brightness areas
E3:	Medium district brightness areas
E4:	High district brightness areas
	National Parks, Areas of Outstanding Natural Beauty, etc
	Rural, small village, or relatively dark urban locations
	Small town centres or urban locations
	Town/city centres with high levels of night-time activity

Where an area to be lit lies on the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone.



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Design Guidance

The following limitations may be supplemented or replaced by a LPA's own planning guidance for exterior lighting installations. As lighting design is not as simple as it may seem, you are advised to consult and/or work with a professional lighting designer before installing any exterior lighting.

Table 1 – Obtrusive Light Limitations for Exterior Lighting Installations						
Environmental Zone	Sky Glow ULR [Max %] ⁽¹⁾	Light Trespass (into Windows) Ev [Lux] ⁽²⁾		Source Intensity I [kcd] ⁽³⁾		Building Luminance Pre-curfew ⁽⁴⁾
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Average, L [cd/m ²]
E1	0	2	1*	2.5	0	0
E2	2.5	5	1	7.5	0.5	5
E3	5.0	10	2	10	1.0	10
E4	15.0	25	5	25	2.5	25

ULR = Upward Light Ratio of the Installation is the maximum permitted percentage of luminaire flux for the total installation that goes directly into the sky.

Ev = Vertical Illuminance in Lux and is measured flat on the glazing at the centre of the window.

I = Light Intensity in Cd

L = Luminance in Cd/m²

Curfew = The time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of use of lighting applied by the local planning authority. If not otherwise stated-23.00hrs is suggested.

* = From Public road lighting installations only.

(1) Upward Light Ratio – Some lighting schemes will require the deliberate and careful use of upward light – eg ground recessed luminaires, ground mounted floodlights, festive lighting – to which these limits cannot apply. However, care should always be taken to minimise any upward waste light by the proper application of suitably directional luminaires and light controlling attachments.

(2) Light Trespass (into Windows) – These values are suggested maxima and need to take account of existing light trespass at the point of measurement. In the case of road lighting on public highways where building facades are adjacent to the lit highway, these levels may not be obtainable. In such cases where a specific complaint has been received, the Highway Authority should endeavour to reduce the light trespass into the window down to the after curfew value by fitting a shield, replacing the luminaire, or by varying the lighting level.

(3) Source Intensity – This applies to each source in the potentially obtrusive direction, outside of the area being lit. The figures given are for general guidance only and for some sports lighting applications with limited mounting heights, may be difficult to achieve.

(4) Building Luminance – This should be limited to avoid over lighting, and related to the general district brightness. In this reference building luminance is applicable to buildings directly illuminated as a night-time feature as against the illumination of a building caused by spill light from adjacent luminaires or luminaires fixed to the building but used to light an adjacent area.

Table 2 – Maximum Values of Threshold Increment from Non-Road Lighting Installations				
Light Technical Parameter TI	Road Classification ⁽⁵⁾			
	No road lighting	ME5	ME4/ ME3	ME2 / ME1
	15% based on adaptation luminance of 0.1 cd/m ²	15% based on adaptation luminance of 1 cd/m ²	15% based on adaptation luminance of 2 cd/m ²	15% based on adaptation luminance of 5 cd/m ²

TI = Threshold Increment is a measure of the loss of visibility caused by the disability glare from the obtrusive light installation.

(5) Road Classifications as given in BS EN 13201-2: 2003 Road lighting performance requirements. Limits apply where users of transport systems are subject to a reduction in the ability to see essential information. Values given are for relevant positions and for viewing directions in path of travel. See CIE Publication 150:2003, Section 5.4 for methods of determination. For a more detailed description and methods for calculating and measuring the above parameters see CIE Publication 150:2003.

Relevant Publications and Standards

British Standards: BS 5489-1: 2003 Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas
BS EN 13201-2:2003 Road lighting – Part 2: Performance requirements
BS EN 13201-3:2003 Road lighting – Part 3: Calculation of performance
BS EN 13201-4:2003 Road lighting – Part 4: Methods of measuring lighting performance
BS EN 12193: 2003 Light and lighting – Sports lighting

Countryside Lighting in the Countryside: Towards good practice (1997) (Out of Print)
Commission/DOE
www.odpm.gov.uk

CIBSE/SLL CoL Code for Lighting (2002)
Publications: LG1 The Industrial Environment (1989)
www.cibse.org LG4 Sports (1990+Addendum 2000)
LG6 The Exterior Environment (1992)
FF7 Environmental Considerations for Exterior Lighting (2003)

CIE Publications: 01 Guidelines for minimising Urban Sky Glow near Astronomical Observatories (1980)
www.cie.co.at 83 Guide for the lighting of sports events for colour television and film systems (1989)
92 Guide for floodlighting (1992)
115 Recommendations for the lighting of roads for motor and pedestrian traffic (1995)
126 Guidelines for minimising Sky glow (1997)
129 Guide for lighting exterior work areas (1998)
136 Guide to the lighting of urban areas (2000)
150 Guide on the limitations of the effect of obtrusive light from outdoor lighting installations (2003)
154 The Maintenance of outdoor lighting systems (2003)

Department of Transport Road Lighting and the Environment (1993) (Out of Print)
www.defra.gov.uk

ILE Publications: TR 5 Brightness of Illuminated Advertisements (2001)
www.ile.org TR24 A Practical Guide to the Development of a Public Lighting Policy for Local Authorities (1999)
GN02 Domestic Security Lighting, Friend or Foe

ILE/CIBSE Joint Publications Lighting the Environment–A guide to good urban lighting (1995)
Seasonal Decorations – Code of Practice (2005)

ILE/CSS Joint Publications

Campaign for Dark Skies (CfDS)
www.dark-skies.org

NB: These notes are intended as guidance only and the application of the values given in Tables 1 & 2 should be given due consideration along with all other factors in the lighting design. Lighting is a complex subject with both objective and subjective criteria to be considered. The notes are therefore no substitute for professionally assessed and designed lighting, where the various and maybe conflicting visual requirements need to be balanced.

Source : The Institution of Lighting Engineers
www.ile.org.uk



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Green Initiatives of Electrical Engineering in Hong Kong

by Ir Dr F C Chan and Ir P H Ho
The Hong Kong Electrical Contractors' Association

This paper examines various green initiatives that are currently adopted in electrical engineering industry in Hong Kong. Two major technical areas are explored, namely electricity production and utilisation. The HKSAR government is also active in promoting various approach for fostering a sustainable environment in Hong Kong. A total of 14 green initiatives are described in this paper. It will definitely contribute toward a low carbon economy for a better Hong Kong.

Introduction

It is recognised that the threat of climate change and diminishing energy resources has a significant impact to our world. We all have a role to play in fostering a more sustainable world. In the coming decades, energy production using fossil fuel, emissions of green house gases are still unavoidable. Although methods to capture and then store such gases are still under development, majority of these processes are energy intensive. In the world of limited energy resources, we are facing the challenges to develop more renewable energy, maximise the energy production efficiency, minimise the fossil fuel emissions and maximise efficiency in our energy usage. Hence, we must view holistically from a total life cycle approach and where appropriate, we need to change our life style. In the energy production process, for example electricity generation, transmission and distribution, it is essential that we need to develop method and approach to reduce emissions, to maximise efficiency from design, operation, maintenance and repair. From the user point of view, we need to start from preservation, to avoid the use of energy so that we do not waste energy when that energy is not required. When energy is being utilised, we need to find the most efficient appliance to suit our intended purpose. In case of residue energy left, we need to find a way to further utilise. Of course, we need to regularly review our energy consumption and hence to develop the life style to efficiently using such energy.

Electricity Production

Initiative 1: Low Carbon Power Generation

Due to the low carbon of natural gas and high efficiency (55% at base load) of the combined cycle gas turbine (CCTG) generating plant, roughly half of the CO₂ is emitted when compared with conventional coal generating unit. Such practice is adopted and implemented in generating stations in Hong Kong. Of course, additional benefits are the extra reduction in SO₂, NO_x and particulates (including respirable suspended particulates).

In addition, the method to utilise the waste heat from the gas turbine exhaust to increase the overall thermal efficiency of the combined cycle gas turbine is also adopted. Such recovery of waste heat for reuse can further improve the generator efficiency.

Initiative 2: Emission Control

In Hong Kong, coal fire power plants are still in use. For the past few years, Flue Gas Desulphurisation (FGD) and Low Nitrogen Oxides Burner systems for pulverised coal fired units are installed to reduce and effectively remove emissions. It is basically the corporate responsibilities of utilities in Hong Kong to upgrade its plants with the latest available technology to reduce emission.

Initiative 3: Use of Renewable Energy

Recognising the importance of renewable energy for a sustainable developing, utilities in Hong Kong are actively seeking opportunities to the use of wind and solar energy. For example, a 800kW wind turbine was in operation since Feb 2006 and over the past 4 years, the windmill has generated 3.7 million kWh of electricity. Another example is the use of solar photovoltaic on the building roof at power station. Such solar system has a capacity of 550 kW comprising 5,500 amorphous silicon thin-film photovoltaic modules.

Initiative 4: Adopt a Green Protocol for Substation

Major transmission substations, when newly to be built, are designed using Environmental Design Guidelines covering design, construction, operation to demolition and disposal. A Life Cycle Analysis (LCA) model is adopted in designing the substation from cradle-to-grave. Under this analysis, the impacts of the substation development incurred by consuming natural resources and generating emissions can be expressed by a set of impact indicators, each addressing an aspect of environmental problems. Each impact indicator can be converted to an equivalent energy unit for comparison purpose. A typical substation is checked to be of a score of 205.4×10^{12} , a very low LCA score.

The carbon footprint of that substation can also be evaluated by assessing the environmental performance of the substation project as well as to explore opportunities to further reduce negative environmental impact. Such approach can follow the international standard ISO 14064.

Initiative 5: Substation Design Optimisation

Generally, a substation project involves many different functional teams and stakeholders. It is essential to have an interactive integration approach combining Civil, Electrical

engineering to achieve a better optimisation. Where appropriate, the use of 3D model to show both plant, cable, building services and civil all together. 3D tools enable the design process to produce new ideas and possibilities which are beyond the current capability of manual or 2D techniques. Through such process, the use of space in a substation can be further optimised. Such model also enables better understanding by users and operators.

Initiative 6: Green Roof and Vertical Green

Adding greeneries to built-up areas has been advocated as an important part of urban development in light of the environmental, aesthetical and ecological benefits. In the urban area of Hong Kong, the scope for green space provision at the ground level is rather limited. Buildings that prevail in densely developed areas contain plenty of vertical and rooftop surfaces, which could offer a new dimension and vast opportunities for urban greening. The main benefits of covering the building envelope with living vegetation include air-quality improvement, storm water management in terms of both quantity and quality, alternative and additional urban green spaces, and indoor and outdoor cooling effect and associated reduction in energy consumption and cost. Reductions of building temperature, air temperature under the tree crowns as well as water consumption were measured to justify this new initiative.

Initiative 7: Low Loss and Low Noise Transformers and Natural Ventilation

Most of the heavy equipments, such as transformers and reactors inside the substation are air-cooled type. Enhancing the natural ventilation can result in saving energy spent on forced-ventilation. A roof wind catcher is designed by applying Computational Fluid Dynamics (CFD) modeling technique so that the large ventilation fans and hence the associated noise abatement installation can be minimised. The adequate ventilation also removes heat generated from the transformer thus providing a better working environment for our operational staff and lengthening the life span of the transformers. With such an approach, the noise level of a typical 50 MVA transformer can be reduced to 52 dBA.

Electricity Utilisation

The energy consumption by the end users in Hong Kong in 2007 was 294,107 Terajoule or 81,696 GWh equivalent and electricity usage accounted for half of such energy. The distribution of electricity usages are classified into 4 sectors, namely Commercial, Residential, Industrial and Transport. They are shared in the following proportion 64%, 25%,

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..... Continue Green Initiatives of Electrical Engineering in Hong Kong

9% and 2% respectively. The following initiatives were adopted by the HKSAR government to promote conservation and efficient use of electrical energy.

Initiative 8: Mandatory Energy Efficiency Labelling Scheme

Significant energy saving could be achieved by using more energy efficient appliances which helps reduce the emission of greenhouse gases and other air pollutants from power plants. To facilitate the public in choosing energy efficient appliances and raise public awareness on energy saving, the Government of HKSAR has introduced a Mandatory Energy Efficiency Labelling Scheme (MEELS). Under the MEELS, energy labels are required to be shown on the prescribed products for supply in Hong Kong to inform consumers of their energy efficiency performance.

Under the Ordinance, a prescribed product being supplied by a manufacturer or importer shall be a listed model having a reference number assigned in his name by the Electrical & Mechanical Services Department of HKSAR and bear an energy label that complies with the specified requirement. The initial phase of the MEELS covers three types of products, namely room air conditioners, refrigerating appliances and compact fluorescent lamps, and has been fully implemented since 9th November 2009. The second phase of the MEELS extends the coverage to two more electrical appliances, namely washing machines and dehumidifiers, and commenced on 19th March 2010 with an 18-month grace period for the trades to make necessary preparations.

Initiative 9: Mandatory Building Energy Code

Buildings account for about 89% of the total electricity consumption in Hong Kong. To reduce carbon emission, it is imperative to improve energy efficiency in buildings. Since 1998, the HKSAR government has published a series of Building Energy Codes (BECs) and has also launched the voluntary Hong Kong Energy Efficiency Registration Scheme for Buildings to promote compliance with these BECs in order to improve the energy efficiency in buildings. These BECs stipulate the minimum energy efficiency requirements for building services installations such as lighting, electrical and air-conditioning system, as well as lift & escalator. These four types of building services installations have accounted for around 80% of the total electricity consumption of a modern office building.

In Hong Kong, mandatory implementation is being proposed and the new ordinance will require specified types of new buildings to comply with the BECs. For existing buildings, all major retro-fitting works should comply with the relevant building energy efficiency standards. In economic terms, the biggest opportunity is to couple measures for energy efficiency performance with retro-fitting works. Typical examples of major retro-fitting works include replacement of major components of installations covered by the BECs or retro-fitting works being carried out

for more than 50% of the gross floor area of the building or the communal areas in the case of residential and industrial buildings. Building owners and the property management companies will arrange energy audits by recognised professionals for commercial buildings once every 10 years and make available the audit results to occupants or potential occupants.

Initiative 10: Promotion of Energy Efficiency Technologies

In term of technologies applications, the HKSAR government promotes energy efficiency technologies through various occasions like seminars, conferences, websites, newsletters to encourage end users to adopt and to replace old less efficient equipment or appliance. These technologies include water-cooled air-conditioning system, variable speed drive, service-on-demand escalator, high efficiency motor, LED exit signs, and lighting retrofit. Most recently emerged technologies include static pressure reset control for variable air volume (VAV) system, brushless DC motor for fan coil unit (FCU), predictive system curve control for secondary chilled water pumps, variable flow condensing water pump control, and high temperature heat pump water heater.

Initiative 11: Electrical Vehicles Charging Station and Infrastructure

The availability of convenient charging facilities will be a key enabler for popular adoption of Electric Vehicles (EVs). Hong Kong's unique urbanisation requires a unique solution for the EV charging infrastructure. In Hong Kong, there are minimal personal garages and limited curbside parking space thus majority of cars is parked inside car parks which are normally operated by property management companies. Currently, EV can be charged through 220V, 13A socket outlet. Pilot charging stations in these car parks have been set up so that the infrastructure for future charging stations can be further developed allowing energy storage in EVs can be connected back to the power grid, for example for peak shaving.

Behavioural Change

Behavioural change on individual is essential in order to successfully combat the climate change. We must encourage the general public to have behavioural change and to adopt a low-carbon life style for a sustainable low-carbon economy. Such public engagement is important in order to path the culture for change.

Initiative 12: Climate Change Consultation

The HKSAR government recently issued a consultation paper 'Hong Kong's Climate change Strategy and Action Agenda' for people to comment. There were some suggested GHG reduction measures like maximising energy efficiency, greening road transportation, turning waste to energy. Eight sectors are also identified that are vulnerable to climate change impacts, namely biodiversity and nature conservation, built environment and infrastructure, business and industry, energy supply, financial services, food resources, human health and water resources. Such

approach to collect views from the public is a basic step to allow people to buy in and perhaps change their behaviour.

Initiative 13: Environment and Conservation Funding

In 2009, the government set up an Environment and Conservation Fund to partially subsidise building owners to conduct comprehensive energy and carbon audits and subsequent energy efficiency improvement projects. Such funding is further expanded to encourage more organisations to undertake conservation research and technology demonstration. The government also encourages two power supply utilities to promotion energy conservation and energy audits under the Scheme of Control.

For example, a "Clean Energy Fund" was established to support the study and development of renewable energy applications in local schools. It also helps to stimulate innovative ideas from the academia on unique renewable energy applications.

Initiative 14: Community Programmes

Promotion to younger generation is essential for the success of green future, secondary schools project competitions like "Energy Innovation Project Competition" were also organised yearly to promote effective utilisation of energy. Other education activities like 'Smart Power Campaign', 'Green Partner' and 'Tree Recycling Education Program' have been running successfully for a number of years. They were tailor-made for primary and secondary school children to drive home messages on energy saving, care for the environment and a sustainable low carbon lifestyle. Enhancing public awareness of energy conservation is essential for our younger generations for a better future.

Conclusion

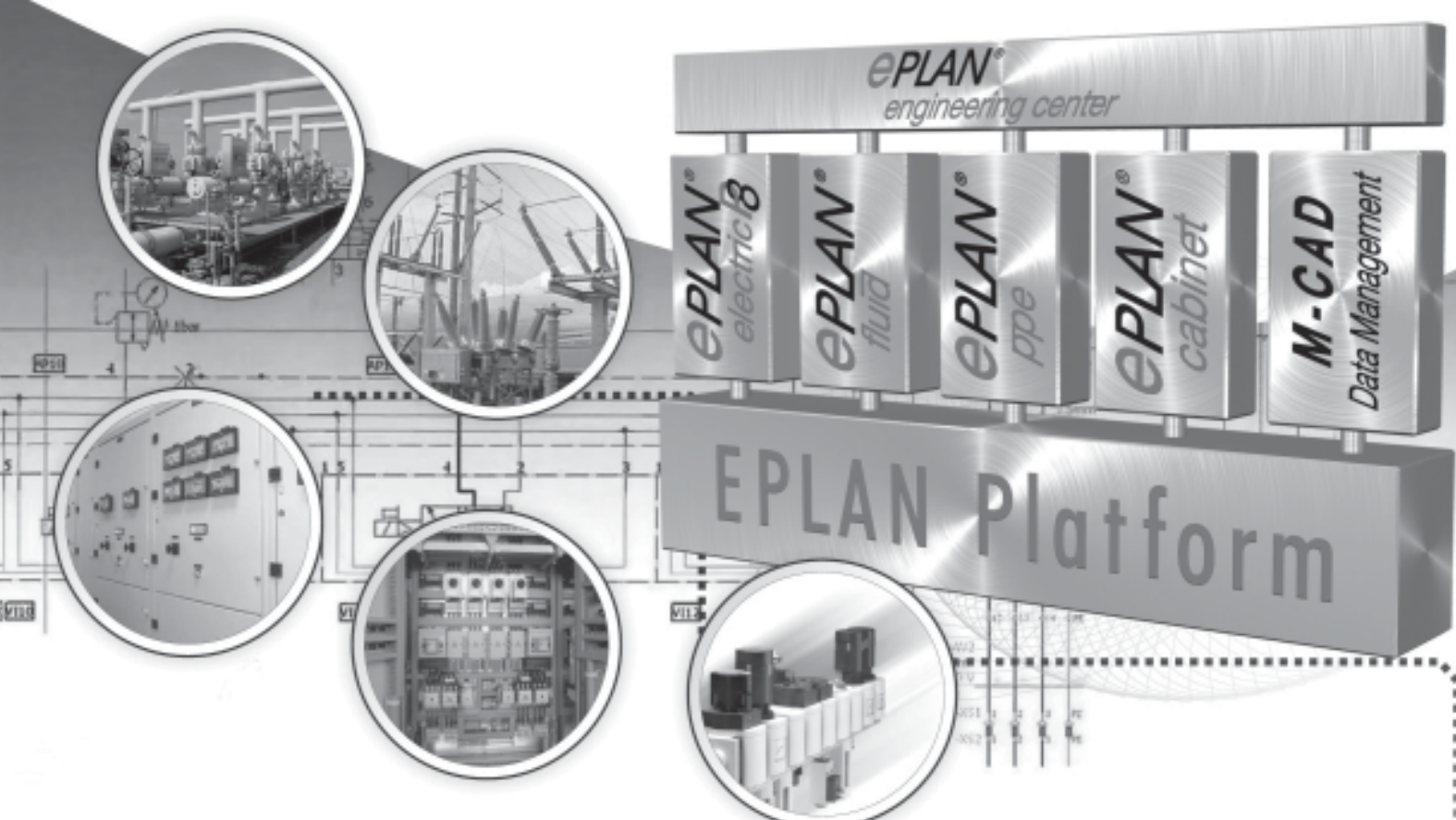
In Hong Kong, there is rising public awareness in sustainable development and environmental issues. This paper reports a number of green initiatives that are adopted in electrical engineering industry in Hong Kong covering from electricity generation, transmission, distribution to consumption by end users. Various promotion and legislation by the HKSAR government will definitely enhance the development of low carbon and sustainable city in Hong Kong. After all, it is our responsibilities to care for our planet earth.

Ir Dr F C Chan received his education in both Hong Kong and United Kingdom. He is currently the General Manager of CLP Engineering Limited. He has extensive experiences in power systems specialising in power system protection, distribution automation, lighting applications and energy services. Ir Dr Chan is active in various learned society activities in Hong Kong. He is currently the Hon Treasurer of the Hong Kong Electrical Contractors' Association.

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Ir P H Ho has been working with the Hong Kong Government for a long time on the design and installation of E&M installations for buildings such as airport, hospitals, market complexes, office buildings, railway stations, etc. Currently he is the Vice President of Hong Kong Electrical Contractors Association.

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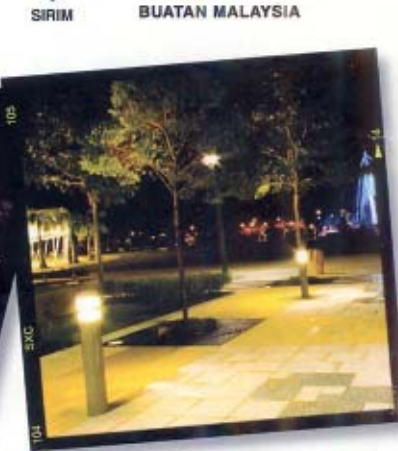
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The Year of the Golden Rabbit

This article is extracted with courtesy of "Coverage 2011 January" magazine published by The China Press Berhad.

The Rabbit represents the fourth year in the 12-year cycle of the Chinese zodiac, a system based on the Solunar system, which is an intelligent astronomic derivative of the solar and lunar movements devised for the primary purpose of agricultural planning in ancient China. This year 2011, is also associated with the metal element which is often equated to Gold, hence the Year of the Golden Rabbit.

When a Westerner gazes at the Moon, he may joke that it is a ball of cheese or tell a child the story of the Man on the Moon. However, when a traditional Chinese looks at the Moon, he or she tends to see the Moon in a more romantic setting, with the lonely Lady Chang Er strolling in the Moon, accompanied by a white Rabbit standing near a rock under a tree, busily preparing herbal medicines which will be distributed to the needy poor. In the ancient days, the Rabbit is in fact the emblem of purity and longevity represented by the forever forgiving and enchanting Moon.

During the Chinese mid-Autumn or Lantern festival when the Moon is supposed to be at its brightest and loveliest, ancient Chinese children would carry lighted lanterns made in the image of a Rabbit and walk in the openness to observe the Moon and admire the folklore images depicted on the full moon. One of the ancient rituals of the night was to pray for health formulas from Rabbit Grandpa for better health and longevity.

Culture And Literature

Rabbits are often used as a symbol of fertility, and have long been associated with Easter as the Easter Bunny in the West. Its role as a prey animal also lends itself as a symbol of innocence, another Easter connotation.

Additionally, rabbits are also used as symbols of playful sexuality, which also relates to the human perception of innocence, as well as its reputation as a prolific breeder. The popular Playboy Bunny, however, is another story.

In spite of its popularity in ancient China, there are not many common Chinese folklores nor proverbs associated with the Rabbit. One of the famous stories that comes to mind is 'the race between the rabbit and the tortoise', which is all too well-known among us. The rabbit is alert and fast moving, which lends itself to several proverbs with that connotation. For instance, a sneaky fellow who is well prepared for immediate escape with several contingency plans is depicted as 'A cunning rabbit which has three exits in its lair'. 'Release the dog (or eagle)



Rabbit symbolises graciousness, good manners, sound counsel kindness and sensitivity to beauty.

when you see a rabbit' means to act immediately when the opportunity arises before it is too late. The saying 'Waiting below a tree for the rabbit to come along' derived from a popular childhood fable, talks about lazy and naive people who wait for windfalls which never come.

General Predictions

The year of the Rabbit is traditionally associated with home and family, artistic pursuits, diplomacy, and keeping of peace. Therefore, 2011 is very likely to be a relatively calmer one than 2010 both on the world scene, as well as on a personal level.

Rabbit people who thrive on delicate business dealings are best suited to navigating the year ahead. Those compatible with the Rabbit, the Sheep, Dog and Boar in particular, may also find 2011's circumstances inspiring them to greater personal happiness and professional success.

According to world-renowned fortune-teller Master Shu Ming Feng, who recently gave a talk during the 12th World of Chinese Book Fair organized jointly every year-end by China Press and Nanyang Siang Pau, the world economy is expected to improve progressively along with peaceful negotiations among the conflicting nations in the Year of the Golden Rabbit.

Natural disasters are inevitable, according to Master Shu. His calculation indicates possible happenings in Southern China, India

and Western Europe. Meanwhile, widespread diseases could also occur in coastal China, Korea, Japan, the US and Canada. Major industrial instability is expected from the southeast sector, which includes Guangdong province, Hong Kong, Southeast Asia, Australia, New Zealand, etc.

Based on the Five Elements Analysis, the coming year is made up of 'metal rabbit' year, 'metal tiger' month, 'metal tiger' day and 'water horse' hour, which should favour the elements of water, wood and fire but not earth and metal, as well as the businesses and industries associated with the respective elements.

The Rabbit Personality

A person born in the year of the Rabbit possesses one of the most fortunate of the twelve zodiac signs. In Chinese mythology, the Rabbit is the emblem of longevity and is said to derive his essence from the full moon, which is also a symbol of romanticism.

The Rabbit symbolises graciousness, good manners, sound counsel kindness and sensitivity to beauty. His soft speech and graceful and nimble ways embody all the desirable traits of a successful diplomat or seasoned politician.

Likewise, a person born under this sign will lead a tranquil life, enjoying peace, quiet and a congenial environment. He is reserved and artistic and possesses good judgment. His thoroughness will also make him a good

In Memory of the Late Engr Edward L Mendoza



We in TEEAM extend our deepest sympathies and condolences to the family of the late Engr Edward L Mendoza who passed away on 11th February 2011. Edward gave so much contribution and support to AFEEC (Asean Federation of Electrical Engineering Contractors) and FAPECA (Federation of Asian Pacific Electrical Contractors Associations) particularly during his term as AFEEC President for the year 2004-2007.

Edward took very keen interest in the activities of AFEEC and FAPECA. He led a delegation to call on the ASEAN Secretary General in March 2006 in Jakarta to propose an AFEEC initiated MRA (Mutual Recognition Agreement) for electrical engineering works. He also led a delegation to participate in Elenex Vietnam in September 2006. We pay respect for his great effort.

Edward was friendly, kind and cheerful. We will never forget his great voice as he always entertained us with songs at every AFEEC/FAPECA farewell event. Edward's absence will be deeply felt by everyone who knows him. His contribution will always remain close to our hearts.



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scholar. He will shine in the fields of law, politics and government.

A Shrewd Strategist

The Rabbit is lucky in business and monetary transactions. Astute at striking bargains, he can always pop up with a suitable proposal or alternative to benefit himself. His sharp business acumen, coupled with his knack for negotiation, will ensure him a fast rise in any career.

Although the Rabbit may assume an outer air of indifference to the opinions of others, he actually withers under criticism. His “rather switch than fight” technique can be deceiving and he can be diabolically cunning when he puts his mind to it. So while the Rabbit person is tender and obliging to his loved ones, he can be superficial and even ruthless in his dealings with outsiders.

Suave and self-indulgent, he enjoys his creature comforts and likes to put his own wishes first. It irks him terribly to be inconvenienced for he is a considerate, modest and thoughtful person and he would like others to be the same. He sincerely believes it costs people nothing to be nice to each other and he will always make an effort to be civil, even to his worst enemy. He abhors brawling and any sort of overt animosity.

For all his quiet and misleadingly docile nature, a Rabbit person possesses a strong will and an almost infallible self-assurance. He pursues his objectives with methodical precision but always in an unobtrusive manner. If there is anything he isn’t going to be accused of, it is that he is an obvious or thick-skinned person. He won’t make waves. The special trait that makes the Rabbit person a formidable negotiator is his inscrutability. It is difficult ever to assess his thoughts correctly.

The Rabbit usually has impeccable manners. He seldom uses harsh words and will never resort to foul language or vulgarisms to bring home a point. There is little need to anyway, as he has his own techniques. The Rabbit could hide under this cloak of decency to undermine his opponents. His credentials are usually flawless or at least in good order. He will wine and dine you in the best places and cater to your every whim when he is after something. Then, when you have eaten your fill and are puffing away contentedly at that expensive cigar, he will pull out the contract for you to sign. Before you know it, he has cut you off at the knees. He was so deft, you didn’t even feel any pain. It was all over with the stroke of a pen. Now you know why Bugs Bunny always gets his carrots in all those cartoon strips?

Lady Rabbits

The demure Lady Rabbit is very considerate and understanding with her friends: a great

gal to work with, shop with or just tell stories with. She is delightfully warm and witty and her company is always relaxing. She has a lot of energy for the things she likes to do and can tirelessly track down antique shops or plan a friend’s wedding to the last detail. But when she feels she has had enough of all that rigmarole, well, you can expect her to drop whatever she is doing, prop up her dainty feet and go all limp. That is the philosophical part of the Rabbit. Do you know why she can keep so serene with all that frantic action going on? The secret is to know when your batteries need recharging, and no one has better knowledge or timing on this than the Rabbit.

You can always rely on the Rabbit to be in control of herself. She will notice the license number of the getaway car or remember that the driver was wearing camel-colored trousers or elevator shoes. And while you are at the police station filing that report, she will calmly recall all the details and help you answer all those irritating questions.

Wholesome Living

All in all, the Rabbit is one who really knows how to live. Not a spoilsport or disciplinarian with an ever-watchful eye, the Rabbit knows when to refrain from criticism. He never likes to embarrass anyone in public. He is adept at the art of saving face, both yours and his, and if there is any way he can spare your feelings, he will.

Have no doubt - he makes mental notes of your mistakes or progress. But if things are not serious or beyond redemption, he will goodheartedly let you pass. For this trait, he is well-liked and popular. An advantage of this philosophy is that the Rabbit makes few enemies and thus rarely gets into trouble. People respond by being generous to him and letting him pass, too.

No one has a more sympathetic ear to lend you than the Rabbit. But while he is an excellent soother and compassionate listener, he will only take the role of a passive advisor. He is, above all, an intellectual, a realist and a pacifist. Do not expect him to go out with all colors flying and do battle for you. That would be asking too much of him.

When given the choice, the Rabbit will vote for the easy and good life every time. He or she will wear loose comfortable clothing of superb cut and fabric. Cashmere sweaters, pure silk blouses and durable linens and tweeds. A mink or chinchilla carelessly thrown over the shoulder in a calculated air of nonchalance could also identify the elegant Rabbit native. Flashy, geometric or shocking designs offend the Rabbit’s sense of conformity and balance.

While gracious to friends and coworkers, the Rabbit person may be somewhat distant from his own family or simply bored by domestic



routine and duties. He or she hates too close associations; he will shake off an encroachment on his privacy or clinging parasitic friends with no regret. He can be bureaucratic and hedgy over difficult issues. As he is one who hates binding commitments or over-involvement, he can also be an expert at passing the buck.

Mr Rabbit is singularly debonair. He moves with grace, charm and gentlemanliness, in spite of the fact that while he was singing your praises, he was also drinking all your best wine. Yes, the Rabbit gravitates toward the cream of society and gentlemanly leisure. On second thought, the cream of high society could well be made up of poised and genial Hares.

At his best, the Rabbit is admired for his suaveness and intelligence and sought after for his sensible advice. At his worst, he is too imaginative, oversensitive or just acidly indifferent. He avoids coming into contact with human suffering or misery, as though it were some highly contagious disease.

Smart Rabbits

The Rabbit is not at all easy to trap. He can also become very repressive in his predilection for secrecy or privacy. When the Rabbit person feels threatened, his subtle brooding or concealed antagonism could be expressed by the use of subversive tactics. Joseph Stalin and Fidel Castro and South Africa’s Johannes Vorster are Rabbits. So are Albert Einstein, David Beckham and Tiger Woods. It is also worth noting that Thailand’s King Bhumibol, admired and well-loved by his subjects for his exemplary life and devotion to music, art and domestic harmony, was born in the year of the Rabbit. So were King Olav V of Norway, Queen Victoria, David Rockefeller and David Frost.

For all his positive qualities, a native of this sign will still value himself above all else. When pushed too far, he will discard anything or anyone who dares upset the calm of his existence. His beliefs are known to be flexible and he has the knack of playing both sides for insurance. Security could be an obsession to the weaker types of this specimen; you rarely find a Rabbit in areas of high risk.

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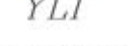
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Company	Page	Company	Page
Absolute Engineering Sdn Bhd	48	Multi-B Sdn Bhd	50
Advanced Network Solutions Sdn Bhd	88	Nanyang Electric Co (M) Sdn Bhd	46
Brass Copper & Alloy (I) Ltd	16	Novabrite Lighting Sdn Bhd	105
Chi-Tak Electrical (Sel) Sdn Bhd	OBC	Oon Brothers Electrical Trading Co Sdn Bhd	2
Controls Handling Engineering Sdn Bhd	90, 92	PCO Lite Electrical Sdn Bhd	22
Conway Terminals Manufacturer Sdn Bhd	103	Pentapower (M) Sdn Bhd	74, 75
Davis Malaysia Sdn Bhd	26	Pierlite Malaysia Sdn Bhd	66
Décor Poles Sdn Bhd	8	Power Plug Busduct Sdn Bhd	98
Devi Impex Sdn Bhd	6	Powerwell Sdn Bhd	111
dpstar Thermo Control Electric Sdn Bhd	12, 28, 44, 94, 100	Samajaya Electrical Trading Sdn Bhd	110
dpstar Thermo Electric Sdn Bhd	42	Schneider Electric Industries (M) Sdn Bhd	60
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EITA Technologies (M) Sdn Bhd	1	Stantric Sdn Bhd	68
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EPLAN Competence Centre S E A	102	Striker Electric Sdn Bhd	58
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Fulban Sdn Bhd	56	Sumber Engineering Trading (M) Sdn Bhd	84, 85
Fuseline Electric & Engineering Sdn Bhd	62	Sun Power Automation Sdn Bhd	IFC , 78, 79
Industrial Automation (M) Sdn Bhd	80, 81	Syarikat See Wide Letrik Sdn Bhd	54
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Maxguard Switchgear Sdn Bhd	112, 113	Utama Switchgear Sdn Bhd	32
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Megalux Lightings Sdn Bhd	89	Wong Electrical & Teak Wood Sdn Bhd	52
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..... continue The Year of the Golden Rabbit

The Rabbit year is said to bring peace or at least a respite from conflict or war. Likewise, its native will do everything in his power to restore harmony or he will leave the scene.

The Rabbit person makes a good entertainer and is a wonderful host. A pleasant and warm company, he has a good word to say of everyone. But don't let that fool you. He knows more than he will say and you can easily recognize him by his finesse. He will be the best of friends so long as you take care not to ask too much of him.

One of the most cautious signs in the Chinese zodiac, the Rabbits are the chess players who take their sweet time before making a move.

Yet, they are also the ones most likely to win any intricate game of strategy!

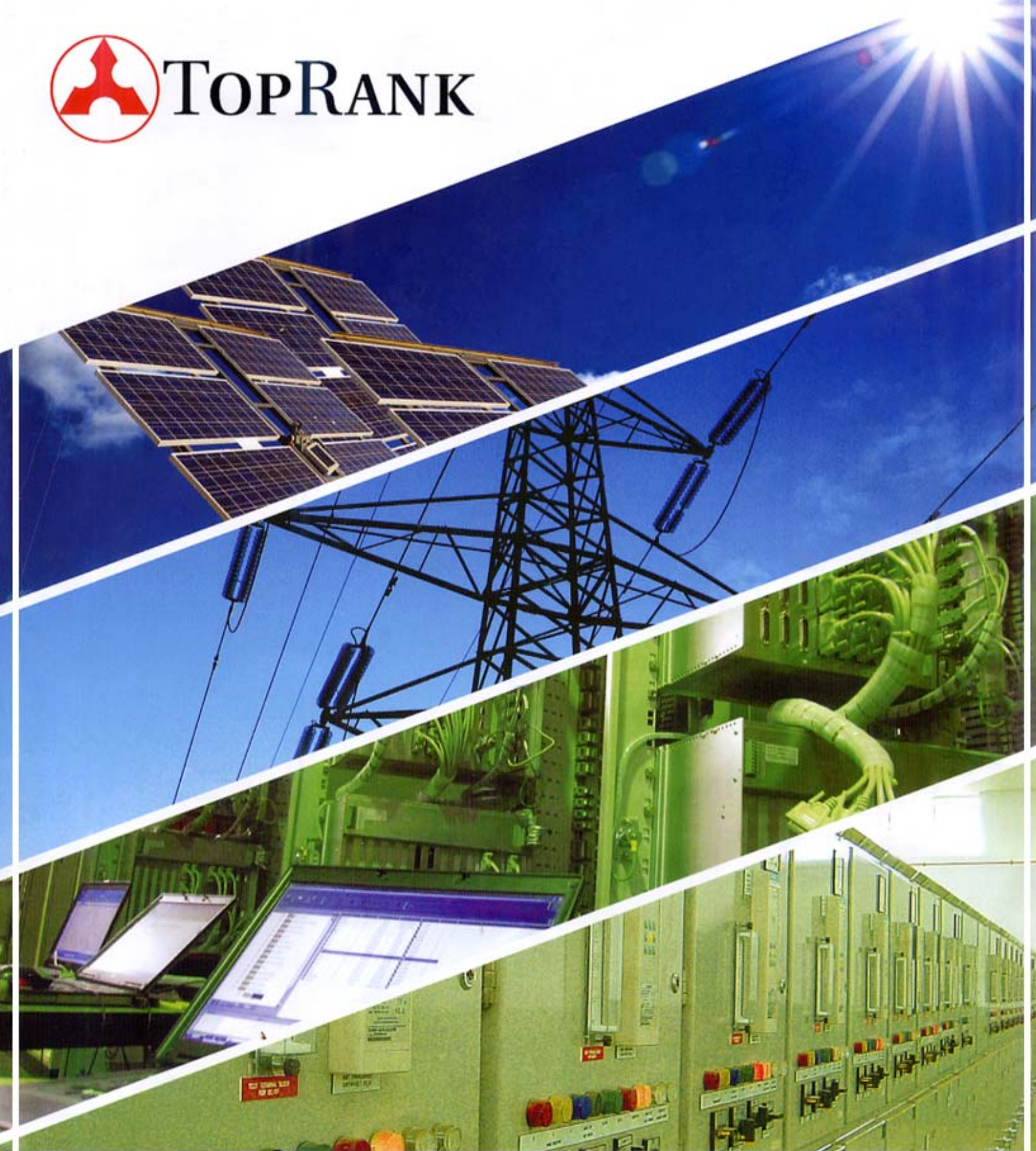
This most obvious of rabbit personality traits also spills into their romantic dealings, and rabbits will not commit to any one person right away. Once they are settled down in a domestic relationship, however, no truer or sweeter spouse is likely to be found.

Summary

To sum it up, the Hare simply leaps over obstacles in his path and recovers from calamities with remarkable resilience. No matter how he is tossed, he lands on his feet. He may not be close to his family but

will make every effort to provide them with the best of everything. His soft, vulnerable-looking exterior is protected by an armor of cautiousness and sagacity. In life, the Rabbit will avoid being drawn into conflict at any cost, unless, of course, it affects him directly, at which time he will take the appropriate measures to protect his interests.

There is no great inner struggle in the Rabbit's heart between the forces of good and evil. He believes in his own ability to survive, relies on his own judgment and is at peace with himself. His is the sign most apt to find happiness and contentment.



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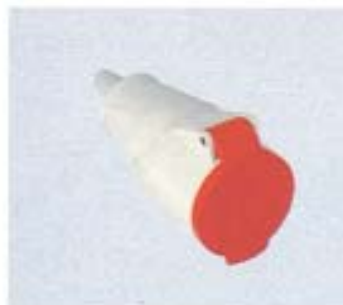
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