

The Voice of Ontario's ELECTRICAL CONTRACTING INDUSTRY

The Ontario **ELECTRICAL** **ECAO** **CONTRACTOR** ELECTRICAL CONTRACTORS ASSOCIATION OF ONTARIO

Volume 44 • Number 2 • Spring 2006



Ontario's Transition to Provincial Licensing

Determining What the Client Really Wants

Establishing Standards for Electrical Construction

Edwards

Part of GE
Security



performance plus

Canada's life safety leader

Our product line has the depth to fit just about any application. We offer a complete range of fire detection systems, from conventional initiating and signaling products to the most advanced intelligent fire detection control equipment in the world.

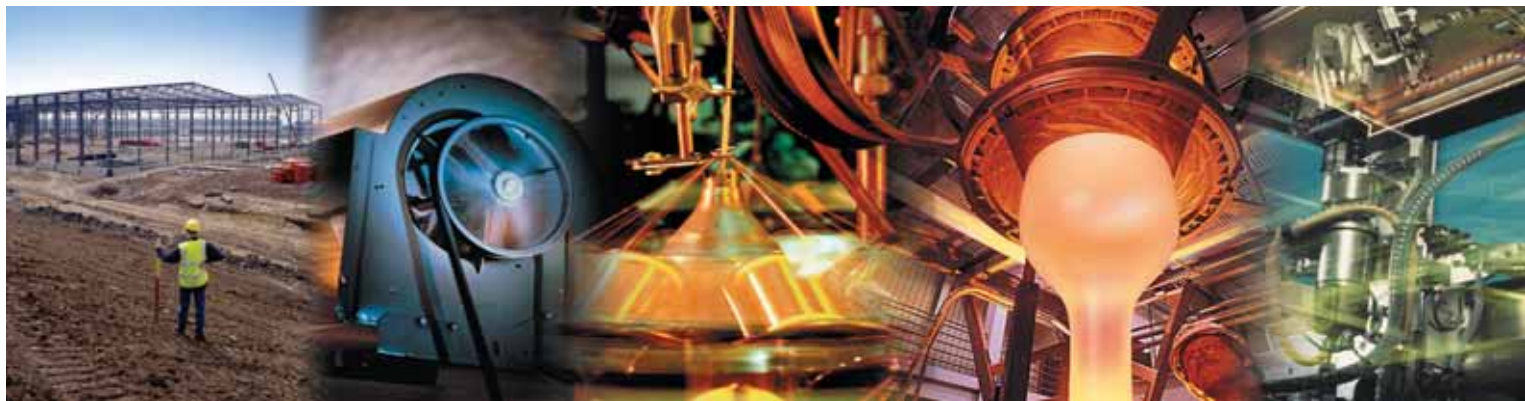
GE Security can deliver the right products for the right price, and back it up with coast-to-coast service. Discover what GE performance can do for you.

Phone 1 800 691-5677 for more information, or visit us on the web at www.gesecurity.com



imagination at work





MANY APPLICATIONS. ONE SWITCH.

The GE Heavy Duty Type TH Switch is designed for applications where safety, high performance and continuity of service are essential. Packed full of features like full cover interlocks and quick-make, quick-break mechanisms, the switch is also UL Listed, CSA certified and suitable for use as service entrance equipment when installed in accordance with the National Electrical Code.

To learn more about GE Heavy Duty Switches or Trade Electric call us or visit us at www.tradeelectric.com.

**Trade Electric... a part of your
company's success.**



TRADE ELECTRIC

Division of Sonepar Canada Inc.

Your Source For GE Distribution



• Passion
for your
business

**Brampton
(Contractor Branch):**
250 Chrysler Drive, Unit 5,
Brampton, ON L6S 6B6
Tel: (905) 595-1270
Fax: (905) 595-1276

Concord
99 Sante Drive
Concord, ON L4K 3C4
Tel: (416) 213-7111
Fax: (416) 213-7136
Toll Free: 1 (800) 661-4903



Distributor

LIZCO SALES

ELECTRICAL POWER EQUIPMENT SPECIALISTS

WE HAVE THE ENERGY

*With CANADA's largest on-site
inventory*

- New/New Surplus/Rebuilt:
 - Oilfilled/Dry Transformers
- New Oilfilled "TLO" Substations
- New S&C Fuses/Loadbreaks
- High and Low Voltage
 - Vacuum/Gas Breakers
 - Air Circuit Breakers
 - Molded Case Breakers
 - Busduct-Busplugs
 - QMQB/Fusible Switches
 - HV Towers
 - Combination Starters
- Emergency Service
- Replacement Systems
- Design Build Custom Systems



1-877-842-9021
www.lizcosales.com

BY	APPROV.	DRAWN BY	DESCRIPTION	3
DES	W	DRAWN DA		5kV META
		CHG BY		SWITCH
		CHG DA		
		APPROV. BY		
		APPROV. DATE	16/01/04	

The Ontario **ELECTRICAL CONTRACTOR**

Volume 44 • Number 2 • Spring 2006

From The President	7
Ontario's Transition To Provincial Licensing	9
A New Direction for Promotions.....	14
Susan Boorman Joins ECAO	17
Estate of Mind.....	18
PCBs in Light Ballasts.....	24
Construction Bid Depository of Ontario... ..	26
National Electrical Installation Standards.....	27
Industry Briefs	29
Toolbox Talks	30
In Memoriam: Norman W. Purdy.....	31
New Products	32
National Trade Contractors Coalition of Canada	34
Index to Advertisers	37



On the cover: Phil Bova, Local Union 353, IBEW and John Wright, Ontario Electrical Construction Co. Ltd. chat with a PM Expo attendee in the newly designed booth.

The Ontario Electrical Contractor is published quarterly for:

ECAO
ELECTRICAL CONTRACTORS
ASSOCIATION OF ONTARIO

170 Attwell Drive, Suite 460, Toronto,
Ontario M9W 5Z5
Tel: 416-675-3226
Fax: 416-675-7736
1-800-387-ECAO (3226)
e-mail: ecao@ecao.org
Web: www.ecao.org

ECAO EXECUTIVE COMMITTEE

President: Brad Vollmer,
Vollmer & Associates, Windsor

Past-President: Dave Mason,
D. J. Mason Electric Co. Ltd., Hamilton

First Vice-President: Fred Black, Stevens &
Black Electrical Contractors, Markham

Second Vice-President: John Raepple,
John Raepple Electric Ltd., Ayr

Treasurer: Bill McKee,
Carleton Electric Ltd., Nepean

Director: Peter Bryant,
Esten Electric Ltd., Sudbury

Executive Vice-President: Eryl Roberts

The Ontario Electrical Contractor is the official publication of the Electrical Contractors Association of Ontario. Its purpose is to provide information and editorial comment on issues that are relevant to the electrical contracting industry.

Editor:

Angela Altass:

Published by:

MediaEDGE
PUBLISHING INC.

5255 Yonge Street, Suite 1000
Toronto, ON M2N 6P4
1-866-216-0860 ext.229
Email: robertt@mediaedge.ca

1 Wesley Ave., Suite 301
Winnipeg, MB R3C 4C6
1-866-201-3096

Fax: (204) 480-4420
www.mediaedgepublishing.com

Vice-President/Publisher
Robert Thompson

President
Kevin Brown

CFO
George Harms

Branch Manager
Nancie Privé

Editor
Cheryl Parisien

Graphic Design Specialists
Adrienne Wilson, James T. Mitchell, Krista
Zimmermann, Zig Thiessen

Account Managers
Les Bridgeman, Nolan Ackman,
Mic Paterson, Hayden Dookheran

All Rights reserved. The contents of this publication may not be reproduced by any means, in whole or in part, without the prior written consent of the Association

©MediaEdge Publishing

PUBLICATION MAIL AGREEMENT #40063602

Return Undeliverable Items to: The Ontario Electrical Contractor, 170 Attwell Drive, Suite 460, Toronto, Ontario M9W 5Z5

THE END

At the end of the cable, you'll find a clue. Put an end to detective work and get on with the electrical work with Partex® Marking Systems from Thomas & Betts.

Wire identification shouldn't be a mystery. Partex® Marking Systems simplify wire and cable identification, no matter how complex the installation. With three marking methods available — single characters, customized markers and do-it-yourself — as well as a complete range of accessories, you can choose the method that best suits your needs.

SPECIAL
INTRODUCTORY OFFER
COMPLETE KIT \$550.00!

Partex® E-Z-Coder Portable Kit

Use anywhere for identification of cables, conduits, cabinets and components. Portable kit contains:

- 36 reels of 500 interlocking single character PVC sleeves including 1 to 9, A to Z and “-”
- 100 short cable tag holders for up to 10 characters (PKH070)
- 100 long cable tag holders for up to 20 characters (PKH110POL)
- 100 Ty-Rap® cable ties (TY5253MX)
- 4 empty reel spaces available to customize kit

For more information, contact your local Thomas & Betts sales representative at 1-877-291-7771.

FREE!

Get a free cap when you purchase the Partex® E-Z-Coder Kit at your local participating electrical distributor. Offer valid while quantities last.



X<> PARTEX
MARKING SYSTEMS

Partex® • E-Z Code® • Ty-Rap®

Thomas & Betts

From the President...



By Brad Vollmer

This issue of the *Ontario Electrical Contractor* deals with all types of industry standards impacting our daily business. The development and promotion of quality, ethical and performance standards is a major function of most trade associations. It is certainly true of ECAO.

The article on the transition to province-wide contractor licensing is a case in point. A coalition of industry partners led by ECAO has established a legislated, universal standard, soon to be adopted by the entire industry, regardless of affiliation. Our industry has leveled the playing field among qualified contractors and, in the process, has raised the quality bar for the entire industry. The article also examines some transitional issues and answers common questions regarding the licensing process.

The issue of fairness and transparency in the tendering process is never far from a contractor's mind. Bid depository is always a debating point in any gathering of trade contractors. Tom Vivian has contributed an article on the first year of the Construction Bid Depository of Ontario (CBDO), including some thoughts on future directions. He argues that we should look beyond the numbers and focus on the guiding principles that set the standard for tendering practices.

In a similar vein, there is also a brief update on the National Trade Contractors Coalition of Canada (NTCCC), which is promoting bid depository, use of unaltered standard contracts and prompt payment.

This issue also re-introduces contractors to the National Electrical Installation Standards (NEIS). The library of installation standards has grown considerably since it was

first introduced by NECA eight years ago and now covers most aspects of electrical work, setting workmanship and performance standards for electrical construction.

Beyond the "standards" theme, this issue also looks at the basics of marketing and promotions. Bob Inglis of Technalysis Inc. is retained by the Joint Electrical Promotion Plan (JEPP) to measure advertising effectiveness. In the course of this year's review, ECAO learned many interesting facts about its members, their business and what their customers want. Bob summarizes the findings in his article, "A New Direction for Promotions".

I am sure you will find useful information and thought-provoking commentary throughout this edition of the *Ontario Electrical Contractor*. In keeping with ECAO's philosophy of being a member-driven organization, I welcome your views and feedback on any of the issues raised here or any other matter you would like to see addressed in your publication.

Brad Vollmer

Our bond is your guarantee



St. Paul Guarantee is the largest surety provider in Canada. We are committed to customer service excellence and forging strong business relationships. You can be confident you are dealing with the experience and expertise required to get the job done.

St. Paul Guarantee Insurance Company

Surety . Warranty . Specialty Insurance . Title Insurance
Contact your broker for more information
www.stpaulguarantee.com





INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS (IBEW) CONSTRUCTION COUNCIL OF ONTARIO

IBEW Construction Council of Ontario
and the IBEW Power Council of Ontario
represents thirteen Local Unions in the
Province of Ontario, serving over 14,000
Electricians, Communication Workers
and Linemen.

IBEW Construction Council of Ontario

John Pender,
*Executive Secretary
Treasurer*

Brett McKenzie,
*Director of Membership
Development/Marketing*

John Grimshaw, President
Sol Furer, Vice-President

61 International Blvd., Suite 209 Etobicoke M9W 6K4
(416) 674-6940 Fax: (416) 674-9541

IBEW Electrical Power Council of Ontario

Jack Dowding,
Executive Chairman

Bruce McNamara,
President

John Gillett,
Vice-President

105 Hamilton

John Grimshaw, B.M.
Vic Prohaska, Pres.

685 Nebo Rd., RR #2
Hannon LOR 1P0
(905) 387-1721

115 Kingston

Bill Pearse, B.M.
Ed Long, Pres.

40 Binnington Court,
Kingston K7M 8S3
(613) 547-4115

120 London

John Jackson, B.M.
Peter Thompson, Pres.

523 First Street,
Suite 3
London N5V 1Z4
(519) 451-0655

303 St. Catharines

Peter Wall, B.M.
Peter LoStracco, Pres.

P.O. Box 68
Thorold
L2V 3Y7
(905) 227-7303

353 Toronto

Joe Fashion, B.M.
Barry Stevens, Pres.
George Smith, Rec. Sec.

1377 Lawrence Ave. E.
North York M3A 3P8
(416) 510-3530

402 Thunder Bay

Glen Drewes, B.M.
Kirby Kapush, Pres.

910 Cobalt Cres.
Thunder Bay
P7B 5W3
(807) 623-5759

530 Sarnia

Mick Cataford, B.M.
Ron Chivers, Pres.

701 Ontario Street
Sarnia
N7T 1M3
(519) 344-4154

586 Ottawa

James Barry, B.M.
Douglas Parsons, Pres.

1178 Rainbow Street
Ottawa K1J 6X7
(613) 741-5664

773 Windsor

Sol Furer, B.M.
Ed McDowell, Pres.

4050 N. Service Rd. E.
Windsor N8W 5X2
(519) 948-2221

804 Kitchener

Mark Kuehl, B.M.
Jim McInnis, Pres.

3 Forwell Road
Kitchener
N2B 1W3
(519) 742-8319

894 Oshawa

John Gillett, B.M.
Lance Knowles, Pres.

380 Lake Rd.
Units 1-3
Bowmanville L1C 4P8
(905) 623-7931

1687 Sudbury

Bruce McNamara, B.M.
Scott Goodyear, Pres.

2413 Lasalle Blvd.,
Suite 1
Sudbury P3A 2A9
(705) 566-1687

1739 Barrie

Tom Leduc, B.M.
Neil Lummiss, Pres.

P.O. Box 905
178 Tiffin St.,
Unit 1
Barrie L4M 4Y6
(705) 734-9590

International Office

Phil Flemming, I.V.P.

1450 Meyerside Dr.,
Suite 300
Mississauga
L5T 2N5
(905) 564-5441

ONTARIO'S TRANSITION TO PROVINCIAL LICENSING

Since 2001, an electrical industry coalition made up of the Electrical Contractors Association of Ontario (ECAO), the Ontario Electric League (OEL) and the Electrical Safety Authority (ESA) has been developing and promoting a provincial contractor licensing framework for Ontario. The proposal addresses concerns with the current municipal licensing scheme of electrical contractors and master electricians throughout the province.

The 2003 Provincial Auditor's Report noted electrical safety concerns resulting from deficiencies in trade and contractor licensing, giving political traction to the coalition's efforts and ESA's role in developing a solution. The Provincial Auditor recommended that the Ministry of Government Services (MGS) and the ESA work with stakeholders to develop consistent provincial standards for ongoing licensing and training of electricians to improve public safety.

In 2004 the Government of Ontario amended the *Electricity Act, 1998*, with the passage of Bill 70, to enable the establishment of a statutory framework for province-wide licensing of electrical contractors and master electricians in the compulsory electrical trades, to be administered by the ESA.

Why introduce a province-wide licensing system?

Until 2005 there was no uniform provincial system to license electrical contractors or master electricians, resulting in a lack of consistent oversight of electrical safety, education and training for those in the electrical contracting industry.

Several municipalities license electrical contractors on the basis of the contractor being or employing a master electrician. These municipalities recognize each other's licenses through their participation in the Electrical Contractors Registration Agency (ECRA) reciprocal recognition program. ECRA is the registration body for master electricians and electrical contractors and is responsible for administering a pre-master's course and the associated examinations of master electricians.

Other municipalities license electrical contractors and possibly master electricians to their own unique standards, and some municipalities have no local business licensing requirements at all.

This disparity between municipalities causes duplication and added costs for industry and confusion for consumers. Potential gaps in public safety and consumer protection arise because work may be performed to different standards across the province.

What are the benefits of a provincial licensing system?

Among its many benefits, the new system streamlines and integrates the electrical contractor and master electrician licensing with other regulatory processes such as inspections and compliance activities related to Ontario's Electrical Safety Code. Its objective is to improve public safety and eliminate duplication by creating a consistent, effective and recognizable framework of contractor licensing and enforcement across Ontario. It also removes the burden on electrical contractors to obtain multiple municipal business licenses to work in different areas of the province, while addressing elements of the underground economy in the electrical contracting sector.

How will the transition to province-wide licensing occur?

ECRA, which is currently an agency of ECAO, will be transferred to ESA early in 2006. On July 1, 2006 the new ECRA of ESA will officially open for business and commence receiving applications and issuing master and contractor licenses, which will be recognized across the province. Following a six-month transition period, province-wide licensing by ECRA of ESA will come into full force effective January 1, 2007 and will be the only electrical contractor license recognized in Ontario.

Key Dates to Remember:

July 1, 2006 – ESA will begin accepting applications for electrical contractor and master electrician licenses July 1, 2006.

January 1, 2007 – Full enforcement of this regulation begins January 1, 2007. All electrical contractors and master electricians are required to hold a provincial license issued by ECRA/ESA.

The new licensing system is designed to take advantage of years of experience gained with the ECRA master electrician system as it has been applied among the municipalities involved in the reciprocal recognition program. The keystone remains qualification of the individual as a master electrician. Next comes licensing of the electri-

cal contracting business which is owned/operated by, or employs a master electrician.

What is new to province-wide licensing is the creation of a third level of license called the Provisional Electrical Contractor License. This level is meant for those qualified contractors who have operated their businesses in areas of the province that do not require an exam-based Master License in order to operate an electrical contracting establishment. It is a "grandfathering" license which affords qualified contractors five years to meet the Master criteria.

Transitional licensing process

The interim transitional ECRA board is working closely with ESA staff to develop an "applicant-friendly" and efficient transition process, particularly for those already licensed through the current ECRA/municipal system. This involves making the best use of relevant data already in the system and accounting for prepaid municipal license fees. At the time of writing this update (mid-February) the major issues had been identified and systems were being crafted to smooth the transition.

Regardless of the processes in place, or which type of license a contractor applies for, one thing will not change. All electrical contractors will have to be registered in the new system between July 1, 2006 and November 30, 2006.

ECRA/ESA license application forms will be available online by June. Beginning July 1, 2006, applications for electrical contractor (EC) and master electrician (ME) licenses will be accepted at ECRA/ESA's customer service centre in Cambridge.

What if I have a municipal/ECRA recognized master electrician/electrical contractor license?

If you currently have a municipal/ECRA recognized master electrician/electrical contractor license, you will be required to apply for a provincial license between July 1 and November 30, 2006. However, you will not be required to rewrite the qualifying master electrician exam.

In the meantime, continue to renew your license with the municipality until June 30, 2006. Do not allow your current municipal license to lapse, otherwise you may be required to rewrite the qualifying master electrician exam.

Where a municipality has ceased or ceases to issue such licenses prior to June 30, 2006, you will not be required to re-write the qualifying master electrician exam if you held a valid master electrician license with that municipi-

pality on the day before they ceased licensing.

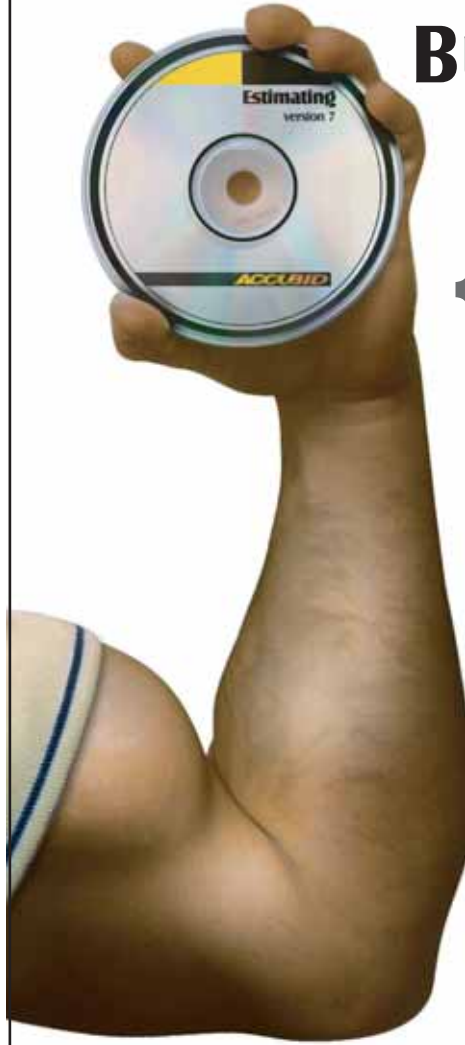
Apply to ESA for a license no later than November 30, 2006, but prior to the expiry date of your current municipal license, to ensure continuity of coverage and that you have the required provincial license in place by January 1, 2007. The ECRA/ESA license fee will be prorated based on the number of months remaining on your current municipal license.

I have never required a master electrician/electrical contractor license before. What are my options?

Electrical contractors who operated in a municipality that did not require an exam-based master electrician/electrical contractor license have two options in order to qualify under the provincial licensing regulations.

The first option is to apply for a Provisional Electrical Contractor License (see page 12 for qualifications). This option will give the electrical contractor a five-year period in which to meet the requirements to be or employ a Master Electrician.

The second option is to challenge the Master Electrician exam and either obtain a Master Electrician License through a municipality before July 1, 2006 or through ESA after July 1, 2006. Exams are offered by ESA at various locations throughout the province. The ECRA Pre-Master Exam Course is available through ESA to assist Master Electrician candidates in passing their exam. The course is voluntary but strongly recommended for those seeking to challenge the exam. A listing of exam/course locations, dates and application forms are available on the ECRA/ESA website at www.esaecra.info.



Now available!

Accubid Estimating Version 7

Building On Strength

{ with enhanced }

- Multi-user support
- Integration
- Reporting
- and much more

Accubid continues to deliver the power and flexibility you need to produce accurate and detailed estimates quickly and easily. Version 7 includes a number of exciting new features and enhancements to increase your accuracy and productivity.

Designed by contractors for contractors, Accubid estimating programs work the way you do. That's what makes Accubid the industry leader, preferred by more contractors than any other estimating software*.

For a live demo, in person or over the Internet, call 1-800-ACCUBID (222-8243).

➤ **Unconditional money-back guarantee**

➤ **Also available: ChangeOrder 7**

total solutions for contractors

1-800-222-8243

www.accubid.com

ACCUBID

* Source: CFMA 2002 and 2004 Information Technology Survey for the Construction Industry.

LICENSE REQUIREMENTS

ECRA/ESA Master Electrician License Requirements for New Applicants

To be eligible for an ECRA/ESA master electrician license the applicant shall:

1. Be at least 18 years of age
2. Demonstrate at least three years' experience:
 - a) As a construction and maintenance electrician, a domestic and rural electrician or an industrial electrician carrying out work under a valid certificate of qualification (C of Q)
 - b) Working for an electrical contractor as a licensed professional engineer, and be registered with the Professional Engineers of Ontario
 - c) Working for an electrical contractor in the capacity of a certified engineering technician or a certified engineering technologist, and be registered with the Ontario Association of Certified Engineering Technicians and Technologists
3. Have passed the master electrician qualifying examination within the 12-month period preceding the date of the license application
4. Not owe ESA any money for which payment arrangements have not been made.

ECRA/ESA Electrical Contractor License Requirements for New Applicants

To be eligible for an ECRA/ESA electrical contractor license the applicant shall:

1. In the case of an individual, be at least 18 years of age
2. Be a master electrician, or employ at all times at least one designated master electrician
3. Have a place of business in Ontario

4. Have public liability and property damage insurance coverage of at least \$2,000,000

5. Be registered with the Workplace Safety and Insurance Board, if the applicant is required to register under the *Work Place Safety and Insurance Act, 1997*

6. Not be in default of filing a return with the Minister of Finance or of paying any tax, penalty or interest assessed under the *Retail Sales Tax Act* or the *Corporations Tax Act*, if applicable, for which payment arrangements have not been made

7. Not owe ESA any money for which payments arrangements have not been made.

ECRA/ESA "Provisional" Electrical Contractor License Requirements

To be eligible for an ECRA/ESA "provisional" electrical contractor license, the applicant shall:

1. In the case of an individual, be at least 18 years of age
2. Have a place of business in Ontario
3. Demonstrate at least five years' experience in:
 - a) Operating an electrical contracting business in a part of Ontario where a license to operate such a business was not required on June 30, 2006
 - b) Operating an electrical contracting business in a part of Ontario where a license to operate such a business was required on June 30, 2006 and the person held the required license on that date, but where it was not a condition for obtaining that license that the person either hold a master electrician license or employ a person with a master electrician license
 - c) Carrying out electrical work that falls within the scope of the *Electrical Safety Code*

4. Demonstrate being in compliance with the requirements of Rule 2-004 of the *Electrical Safety Code* for at least five years

5. Have public liability and property damage insurance coverage of at least \$2,000,000

6. Be registered with the Workplace Safety and Insurance Board, if the applicant is required to register under the *Work Place Safety and Insurance Act, 1997*

7. Not be in default of filing a return with the Minister of Finance or of paying any tax, penalty or interest assessed under the *Retail Sales Tax Act* or the *Corporations Tax Act*, if applicable, for which payment arrangements have not been made

8. Not owe ESA any money for which payments arrangements have not been made.

To qualify under this provision, application must be made to ECRA/ESA between July 1, 2006 & November 30, 2006.

Licensing, Exam and Course Fees

Master Electrician
(ME) License\$75.00*

Renewed annually on ME's birth date

Electrical Contractor
(EC) License\$365.00*

Renewed annually on ME's birth date or business start date

Provisional EC License\$365.00*

Renewed annually on business start date for a maximum of four years up to November 30/10

Master Electrician Exam\$125.00*

Pre-Master Training Course ...\$517.00*

Voluntary preparatory course

** Plus GST*



The small UPS that soars

c o n f i d e n c e

Never before has a UPS looked so good. Never before has a UPS been so powerful, yet so slim. And never before has a UPS had such a combination of features and benefits. The new, elegantly black Powerware 9355 combines style and small footprint with high performance and

reliability like never before. Time to install some new confidence in your system? 9355: 10 & 15 kVA, Hot Sync redundancy, ABM™ for up to 50% longer battery life.

To learn more, call 1-800-461-9166 or visit us at www.powerware.ca.

EAT•N

Powerware

A NEW DIRECTION FOR PROMOTIONS

By Bob Inglis

Starting in 1997, the Joint Electrical Promotion Plan's (JEPP's) promotion was aimed at decision-makers in the service/maintenance and renovation/retrofit sectors, i.e., maintenance managers in factories, and commercial property managers. These target groups were chosen because, in the mid-1990s, new construction was in the doldrums. In 2005, Mr. Rob Colgan of the National Electrical Contractors Association (NECA) presented to the JEPP Board the findings of some U.S. research. This was done among different target groups from those used in Canada, and suggested a different approach to promoting the use of union contractors/electricians from the previous campaigns in both the U.S. and here – different target groups and different messages. Had we been going about it the wrong way for years?

JEPP decided to put its normal promotional campaign on hold for 2005, and conduct research to find out:

- The relative importance, in terms of share of ECAO members' revenue, of various types of work.
- Who is primarily responsible for the choice of electrical contractor for each type of work.
- What ECAO members believe are the customers' main priorities.
- What the most important customers say are their main priorities.

Phase 1: Who Took Part?

Phase 1 was research among ECAO members, asking them to report the sources of their 2004 Ontario revenue by type of project. ECAO distributed questionnaires to all its members, and heard back from those representing an estimated 25 per cent of total ECAO members' revenue (based on contributions to JEPP).

As shown in Figure 1, we got questionnaires from a broad spectrum of small, medium and large contractors, with most of those taking part in the study earning 2004

Fig 1: Total Revenue Ranges

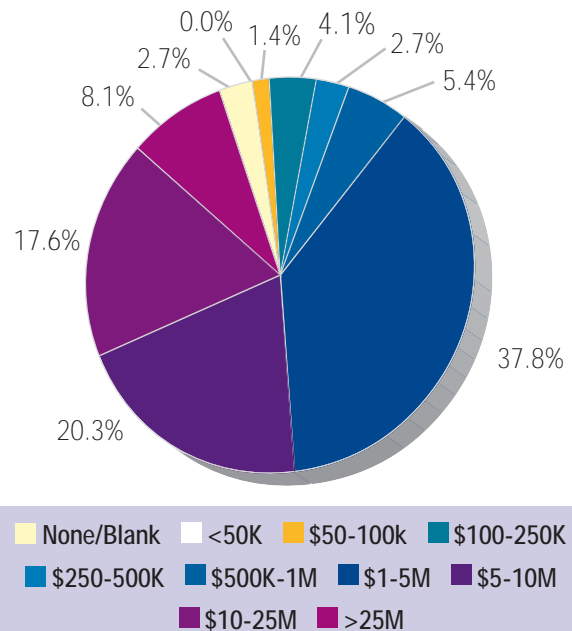


Fig 2	Design-Build	New Constr. Ex. Design-Build	Renovation/ Retrofit	Service/ Maintenance	Totals
A - High-Rise Res.	0	41,100,000	1,590,000	280,000	42,980,000
B - Other Residential	70,000	18,320,000	770,000	931,442	20,191,442
C - Industrial	10,744,325	112,027,883	36,145,532	34,051,442	197,669,181
D - Commercial	15,401,442	80,306,442	33,186,442	22,900,974	152,295,298
E - Institutional	976,442	77,926,442	20,180,000	7,582,000	106,684,883
F - Power/Utility	16,650,000	30,705,288	277,932	15,355,000	63,488,221
G - Communications	875,000	6,430,288	18,080,000	6,577,932	32,013,221
Totals	44,717,208	366,816,343	110,229,906	87,678,789	615,322,245

Fig 3: Total Revenue Split by Type of Work

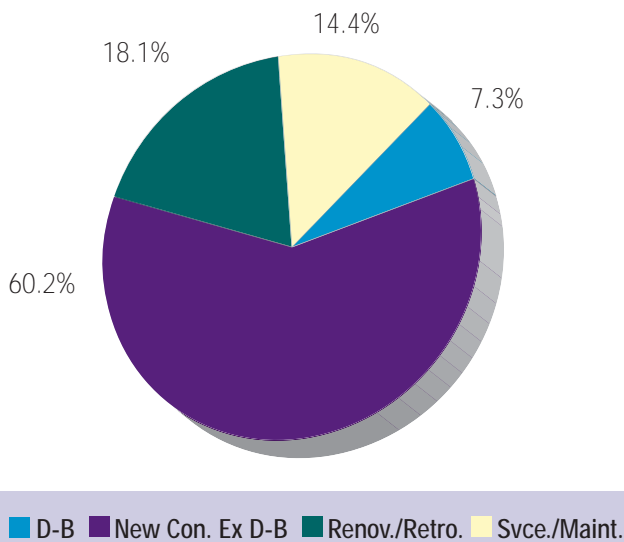
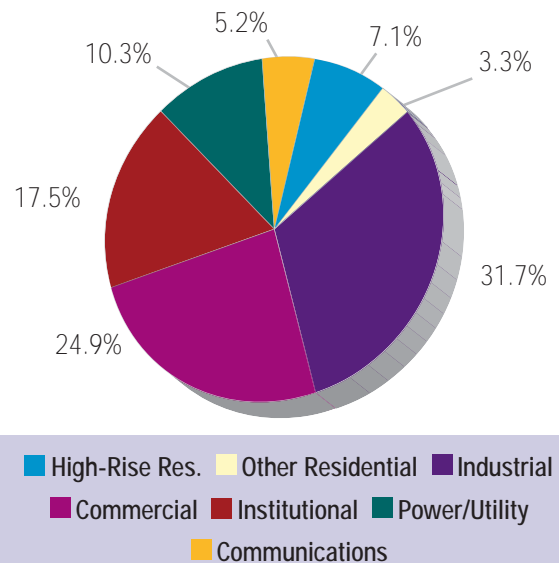


Fig 4: Total Revenue Split by Type of Building



Ontario revenues of at least \$1 million. According to Eryl Roberts, executive vice-president of ECAO, the demographics of the participating contractors seem to reflect those of the entire ECAO membership based on the revenue data collected.

Where's the Money Coming From?

Figure 2 shows the totals as reported by the respondents. Some people gave us totals only, without allocating revenues by type, so the components may not add to the totals shown.

The percentages in Figures 3 and 4, however, show clearly that new construction on all types of buildings now accounts for about two-thirds of ECAO members' total revenue, and that the Industrial/Commercial/Institutional (I/C/I) sector, including all types of work, accounts for about three-quarters.

Clearly, the target groups for JEPP promotion should now be those who choose the electrical contractor for new construction in the I/C/I sector. But who are they?

We asked ECAO members that question as well, and the answer came back, "general contractors and building owners." Counting "public officials" as being the same as "building owners" in the institutional sector, these two were the most important kinds of decision-makers for nearly all types of new construction, and also figured prominently in renovation/retrofit. The only type of work for which general contractors were NOT named as being among the most important decision-makers was service/maintenance.

And what do these key customers look for in deciding which electrical contractor to use, or which ones to invite to submit bids? That was the focus of Phase 2 of our research.

Phase 2: What are they Looking For?

Aha, you thought we were finished with Phase 1, but we aren't. Not quite. We also asked ECAO members to rate how important their customers would find 14 different attributes, using a scale from one to 10. We defined the scale as follows: "One means you think your customers would say they couldn't care less. Ten means you think they would say this is so important to them that they would stop dealing with an electrical contracting firm if it fell short of their expectations even once, and only by a little." After the importance ratings, we asked respondents to indicate which three attributes they thought their customers would rate as the very most important, as a tie-breaker (lots of people gave more than three attributes their highest rating). Phase 2 of the research asked general contractors and building owners – pre-screened as making the choice of electrical contractor for new construction projects in the I/C/I sector – to rate the importance of the same attributes using the same scale, and we asked them the same tiebreaker.

Figure 5 shows the percentage of each group – ECAO members, general contractors and building owners – who selected each of the top seven attributes as one of the three most important. For the most part, ECAO members were fairly well in tune with key customers' priorities – better than some other Technalysis clients we can think of. That is, the attributes ECAO members thought their customers

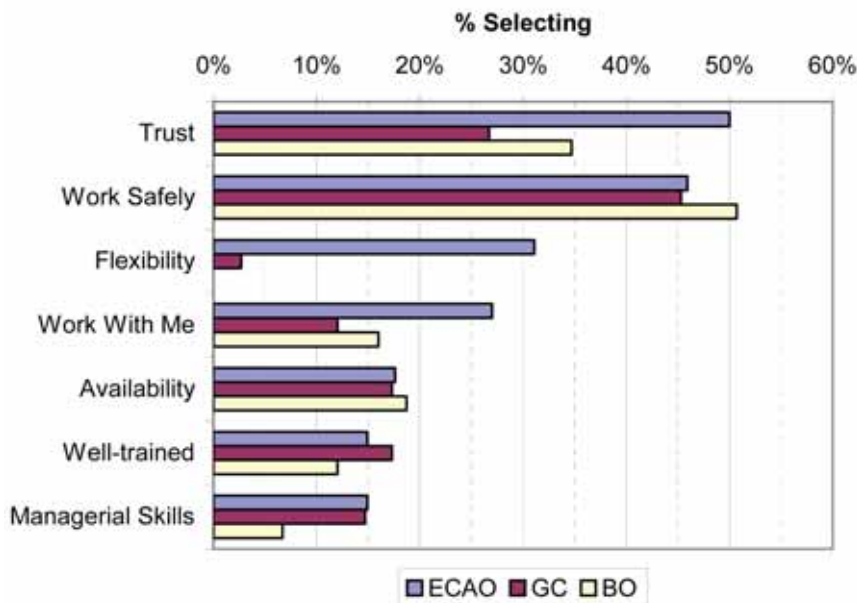
would find the most important did in fact rank high on the customers' priority lists, and the ones that ECAO members thought their customers would find relatively unimportant – not shown here – did come far down

the list. (We note that, in terms of the actual ratings, both key customer groups rated every single attribute higher than ECAO members thought they would.) The biggest miss was on flexibility – the full attribute wording

was: “They are flexible. They don’t nickel and dime me to death for every little thing.” This was ranked third by ECAO members, but finished near the bottom of the list among both general contractors and building owners. “They work safely” was expected to be important. ECAO members placed it second, behind only “I can trust them. I don’t have to worry about being hustled.” In fact, it was far more important than any other attribute to key customers. Even making an allowance for “politically correct” answers (would you give “works safely” anything but a high importance rating, when asked by an interviewer) it seems clear that key customers find safety a crucial element in selecting an electrical contractor.

Bob Inglis is president of Technalysis Inc., a marketing research firm that has specialized in the business-to-business sector since 1982. Technalysis has done several research studies for the Joint Electrical Promotion Plan.

Fig 5: One of the Three Most Important



Fulham lights your world ...completely.

Combine Fulham's **Lamps**, leading edge **Electronic Ballasts** for **Fluorescent** and **HID** or **Electronic Transformers** and the impossible becomes possible.

- NightHorse:** Electronic HID Ballast
- FireHorse:** Electronic Emergency Ballast
- RaceHorse:** Universal Voltage, Specifier Grade, Electronic Ballast
- Pony:** Energy Star, Electronic Ballast, small, competitive price to magnetics
- Lamps:** Compact Fluorescent and T2 Lamps in any size, shape, and color imaginable
- WorkHorse:** 8 Electronic Ballasts, operate 860 combinations of fluorescent lamps
- LongHorse:** 7 Remote Electronic Ballasts, operate 628 combinations of fluorescent lamps
- Electronic Transformers:** For MR11 and MR16 lamps, saves energy, promotes longer lamp life

Put the *WORK HORSE* to work for you.

fulham
www.fulham.com
1-800-2-fulham



SUSAN BOORMAN JOINS ECAO



ECAO is pleased to announce that Susan Boorman joined the staff on January 2, 2006 as manager, human resources. Prior to joining ECAO, Susan was apprenticeship coordinator for the Toronto Joint Apprenticeship Council. During her 22-year career with the JAC, Susan was responsible for senior administration, participated on many committees such as the Electrical Provincial Advisory Committee, networked extensively with industry partners on apprenticeship issues and assisted in developing and enhancing the JAC's overall apprenticeship training program.

Susan's role as manager, human resources will be to promote training for the Electrical Contractors through the ECAO Human Resources Committee and to bring a consistent link to the membership on a broad range of issues from WSIB to changes in Electrical Apprenticeship.

Susan's background in the electrical industry and her first-hand experience working with industry committees will certainly be an asset to the overall revitalization of the Electrical Contractors Association of Ontario.

Good for construction.

When you turn to Goodmans, you find a law firm that knows the business and the law. From drafting complex design build agreements to litigating multi-party disputes including tendering, breach of contract, negligence and construction lien claims, Goodmans is regularly retained to act on a full range of construction related matters. With exceptional lawyers backed by a dedicated team, you'll discover what our clients already know – that good people really are good for business. To deal directly with Goodmans Construction Law Group, call Howard Wise at 416.597.4281.

Goodmans^{LLP}

Barristers & Solicitors / Toronto / Vancouver / Hong Kong / goodmans.ca



ESTATE OF MIND

By Stanley Tepner

When is a simple signature worth \$15,000? Babe Ruth's autograph on a baseball might fetch \$15,000 nowadays. A rare copy of *Alice in Wonderland* signed by author Lewis Carroll could be worth \$15,000 in some markets. And collectors are known to have paid \$15,000 or more for memorabilia signed by all four members of the Beatles: John, Paul, George and Ringo.

But when might your own signature be worth \$15,000? I am going to show you a simple strategy that could preserve \$15,000 when it otherwise would be lost, along with a host of other great estate planning ideas that you can act upon today.

Think of estate planning (EP) as a set of strategies used to direct property to the proper beneficiaries, to minimize tax liabilities and other costs, and to arrange for property management in the event of one's physical or mental disability.

My wife and I do a complete EP update every three to four years, and the exercise puts our minds at ease that our EP is optimal and up-to-date. Many readers will already have sophisticated plans in place. Others are just beginning to consider the importance of EP. The ideas you will read here are applicable to most individual situations (there are more complex EP issues that need to be addressed by business owners, which will be the topic of a future article).

- ① **Review all your registered retirement plans, pension plans and insurance policies to ensure that your desired beneficiaries, including alternate beneficiaries, are properly named as beneficiaries.** Don't rely on trustees and insurance companies to maintain perfect records; verify these records periodically. It is particularly important to update beneficia-

ries if your life circumstances have changed due to marriage, divorce, births, deaths, and so on. There have been too many situations where huge amounts were paid out to unwanted beneficiaries.

- ② **Review your wills to ensure they are properly structured with respect to your desired distribution of assets, and the minimization of taxation in the hands of your heirs.** If your asset base is large enough, you may want to alter the terms of your will to allow for the creation of one or more *testamentary trusts*. A testamentary trust is a trust that is created under a will and that becomes active after the grantor dies. Instead of transferring assets directly to a beneficiary, where the income from these assets would be added to the existing income of the beneficiary, the assets are transferred to the testamentary trust, which is like creating a second taxpayer, with a separate graduated tax rate, for the beneficiary. The annual tax savings using this strategy can be enormous for one or more beneficiaries.

Take this example of a married couple, each of whom has a \$1,000,000 investment portfolio generating \$60,000 of fully taxable income annually (assume each spouse is in the top marginal tax bracket). If one spouse dies and leaves the \$1,000,000 estate to the surviving spouse, the latter will have \$2,000,000 and taxable investment income of \$120,000 annually. The incremental \$60,000 will be taxed at the maximum tax rate. If the deceased spouse's will allowed for the creation of a spousal testamentary trust, the \$1,000,000 would go directly to the trust and be taxed at graduated rates. The annual tax saving to the surviving spouse for life would be in the \$10,000-\$15,000 range. A good estate tax lawyer can help you properly structure your wills to incorporate the creation of testamentary trusts.

- ③ **Review all powers of attorney and living wills** to ensure that you will be properly looked after when you can't look after yourself.
- ④ **Contact each person you have named as executors, trustees, attorneys or guardians**, in the above-noted documents, to ensure they are still willing and able to perform these duties.
- ⑤ **Review all your personal and group insurance policies (life, disability, critical illness and long-term care)** to determine that you have the right amount of coverage and you are *getting the best "bang for the buck"* from the policies you own. Shop around to see if you can replace an expensive policy with a less expensive policy of equal quality.
- ⑥ With the guidance of income tax experts, **consider the deployment of any planning structures that could be used to split, reduce or defer capital gains taxation**; for example, creating an *"estate freeze"* can limit your estate's exposure to capital gains tax while deferring the taxation of future appreciation to future generations of family members.
- ⑦ If you own American-based assets, such as property in the U.S., or shares of American companies, **evaluate what you can do to avoid or reduce U.S. estate taxes.**
- ⑧ If you are a resident of Ontario, **take steps to avoid future probate taxes.** Business owners should consider drafting multiple wills; one will for business interests, which would likely not be subject to probate taxes, and a second will for the remainder of the assets (the probate tax rate in Ontario is approximately 1.5 per cent of the value of these assets).

Another simple probate-avoiding technique is of particular importance to married or common-law couples who have RRSPs or RRIFs. Ordinarily, the members of the couple name each other as beneficiary of their registered plan, and when one spouse dies, the assets automatically transfer to the survivor's registered plan, free of income taxes or probate taxes. But in the tragic instance where the spouses pass away at the same time, or within 30 days of each other, there won't be a named beneficiary to receive the proceeds of the registered plan; the deceased's estate will become the beneficiary, and the funds received will be subject to probate taxes.

Continued on page 23

FLIR Quality...

Now Under \$8,000^{CDN}



Canada's most inexpensive Infrared Camera.

Buy before May 1 and receive a FREE One Day Training Course.



The Global Leader in Infrared Cameras
 Servicing Canada for 45 years

1-800-613-0507 Ext. 25
 IRCanada@flir.com

www.flir.ca





HAVE YOU PLUGGED INTO

Leisure, entertainment and office equipment rewards are yours with the IED Rewards Program⁽¹⁾. From power tools to the latest in home theatres, computers, digital cameras and more, the possibilities are endless.

The program is simple. We reward our loyal customers for purchasing participating suppliers' products from an IED Distributor. You earn one point for every dollar purchased at IED Distributors⁽²⁾ across Canada. Your points are updated monthly and you can begin receiving rewards for as little as 1500 points⁽³⁾.

(1) Points earned on purchases from participating IED Distributors and participating suppliers only. (2) Rules on website apply.
(3) Points can be converted to charitable donations to ensure compliance with individual corporate policies.





TO YOUR IED REWARDS?

What could be easier? To sign up, log on to www.ied.ca and click on the IED Rewards Program logo, click on register and then follow the prompts. Sign up with the IED Rewards Program and plug into **BIG REWARDS!**



IED LIMITED PARTNERSHIP II • WWW.IED.CA
CANADA'S LEADING ELECTRICAL SUPPLY NETWORK





M.G.B. ELECTRIC INC.

Electrical Power Equipment Specialists since 1979

Used / refurbished equipment

- Liquid filled power transformers (up to 50 MVA, 230kV)
- Dry type power transformers (10MVA, 25kV class)
- Complete substations (indoor, outdoor)
- Switchgear – all makes
- Circuit breakers – 600V @ 230kV
- Medium voltage starters
- Load break switches
- Parts (fuses, CT's, PT's, relays, etc...)



New Equipment

Complete unit substations / indoor & outdoor
Custom made switchgear built to your specs
Outdoor aluminium structures (to 69kV)



Medium voltage switchgear (25kV, 125kV BIL)

- Load break switches
- Breakers
- Utility metering compartments
- PT / CPT drawers



Low voltage switchgear

- up to 600V, 6000A, 85 KA

Bus ducts

- MVAC to 4000A 15kV, 95kV BIL
- LVAC to 600V, 6000A
- DC to 1200V 3000A

Sheet metal shop & painting

Custom made fabrication

- Steel, stainless steel, aluminium, copper
- Doors – panels – connection & junction boxes
- Indoor & outdoor enclosures
- Aluminium utility metering brackets



1-800-265-5608 / (450) 772-5608 / FAX: (450) 772-6150 / 24H: (514) 854-1766

51 St-Pierre, St-Pie, QC, J0H 1W0 / mgb@mgbelectric.com / www.mgbelectric.com

Continued from page 19

This can be avoided by *naming one or more alternate beneficiaries of an RRSP or RRIF*. If the primary beneficiary does not survive to receive the proceeds from the registered plan, the alternate beneficiaries would, and would skirt having to pay probate taxes in this instance (the estate would still be liable for income tax on the distribution of the plan assets, in most cases). For example, if both members of a couple had \$500,000 in their RRSPs and passed away concurrently without naming an alternate beneficiary, the probate tax on their combined \$1,000,000 defaulted to the estate, at 1.5 per cent, would be \$15,000.

Just like getting Babe Ruth's autograph, a simple signature on a beneficiary designation form is all it takes to put in place a strategy that could preserve \$15,000 for this couple's estate. Now, how much would you pay for a signed copy of the Beatles' record, *Taxman*?

If you are interested in getting more information about these actionable ideas, CIBC Wood Gundy has created a series of educational estate planning reports which can be mailed or e-mailed to you, if you drop me a line. The titles are:

- *Financial & Estate Planning Checklist*
- *Will Planning to Meet Your Estate Needs*
- *Giving Someone the Power to Act on Your Behalf*
- *Executor Duties*
- *Estimating the Costs of Settling Your Estate*
- *Maximize Your Estate by Reducing it for Probate Purposes*
- *Preserve the Value of your Estate*
- *Estate Friendly Investing Through Life Company Products*
- *Life Insurance: Part of a completed Estate Plan*
- *Estate Planning and Wealth Preservation*
- *Preserving the Family Cottage for Future Generations*

Stanley M. Tepner, MBA, CA, CFP, TEP, is a First Vice President and Investment Advisor with CIBC Wood Gundy in Toronto. He can be reached by telephone at 416-229-5566 or 1-800-488-8688 or by e-mail at stan.tepner@cibc.ca. The views of Stanley Tepner do not necessarily reflect those of CIBC World Markets Inc.

We are the Leaders in Lockout Procedures.

Brady is the world leader in hazardous energy control products and services. Our New Lockout/Tagout Brochure is loaded with useful information and over 100 innovative new products such as:

- **Brady Locks**
- **All Purpose Cable Lockout**
- **Mini Cable Lockout**
- **Group Lock Boxes**
- **Universal Valve Lockout**

**SPECIFY
BRADY**



**To receive more information about our New Brady Safety Padlocks...
Call: 1-800-263-6179 or Fax: 1-800-387-4935**

BRADY®

AE0036

PCBs IN LIGHT BALLASTS

...They're still out there

Fluorescent light ballasts may become hot, give off smoke, and rupture before failing. When this happens, a thick black fluid, made up mostly of asphalt, may leak out.

In older ballasts, the fluid may also contain polychlorinated biphenyls (PCBs) from the capacitor within the ballast.

How to identify PCBs

PCBs have not been used in capacitors since July 1980. Manufacturer catalogue numbers and/or date codes are marked on ballasts, ballast housings or capacitors. Use the list at the end of this article to identify the most common light ballasts containing PCBs.

The fluid from ballasts containing PCBs will remain liquid at room temperature. If no PCBs are present, the fluid will probably solidify. If you are unsure, assume PCBs are present and use proper precautions.

The dangers of PCBs

The use of PCBs is restricted because of their threat to the environment. PCBs accumulate in the environment and may enter the food chain. Humans are regularly exposed to tiny amounts of PCBs through food, air or water, but this level of exposure is unlikely to have harmful effects.

Repeated or sustained exposure to considerable quantities causes a skin condition similar to adolescent acne. Liver damage is also possible. Exposure to small amounts of PCBs from damaged light ballasts is unlikely to have this effect.

PCBs are suspected of causing cancer in humans, but this has not been confirmed. When PCBs reach high temperatures (e.g., in a fire), they may decompose into more toxic substances such as polychlorinated dibenzodioxins and dibenzofurans. Repeated exposure to some of these substances is a cancer risk to humans.

Replacing a failed ballast

Precautions are necessary when servicing a light ballast containing PCBs because PCBs may accumulate in the body. There is also an uncertain risk of cancer from exposure to them.

The ballast usually stops overheating soon after it fails. A small amount of liquid may drip on the light fixture, equipment or floor below. After the fluid has cooled, it should be cleaned up. If necessary, dislodge any solidified asphalt that may be present using a spatula or paper towel. Wipe down surfaces with rags, using solvents such as Varsol, kerosene or paint thinner. Finally, the affected area should be washed with detergent and water.

Gloves made of butyl or nitrile rubber, neoprene, polyvinyl alcohol, Viton or Teflon should be worn to protect the skin. To protect the environment, the ballast, rags and other waste materials contaminated with fluid should be placed in a sealed container (e.g. plastic bag), labeled "PCB" and disposed of. In situations where ballasts will be generated as waste on a continuing basis, they should be collected in drums and treated as PCB waste. *Saskatchewan Environment and Resource Management (SERM) regulates the disposal of PCBs.*

Replacing ballasts

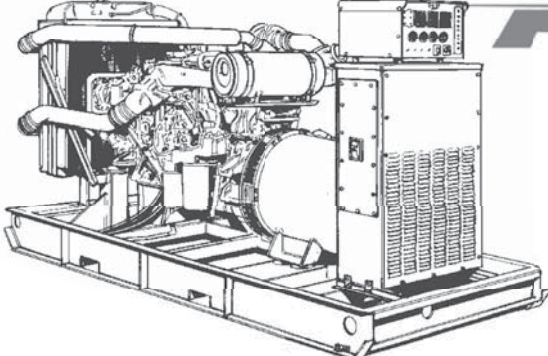
Generally, ballasts should only be replaced when they fail. In rare situations, complete replacement may be needed depending on:

- rate of ballast failure
- location of ballasts and work stations
- health complaints with unknown cause
- number of ballasts to replace

Company	PCB Identifier Code
Aerovox Incorporated Canada	Two possibilities: 1. Four-number code on capacitor label. The first two numbers are the year and the last two are the month (e.g., January 1980 = 8001). PCBs are present up to and including June 1978 (7806). 2. Six-digit letter and number code stamped on capacitor. PCBs are present if the fifth digit is "F".
Advance Ballasts (supplied by Phillips)	Three- or four-digit number code on the ballast cover. The first one or two numbers indicate the month and the last two numbers are the year. PCBs are present up to and including 1978.
Allanson Division of Jannock Ltd.	Two-letter code on ballast plate. The first letter is the month, starting with "A" for January and the second letter is the year, starting with "A" for 1969 (e.g., February 1972 = BD). PCBs are present up to and including December 1980 (LL).
Canadian General Electric	Two possibilities: 1. Seven-letter and number digit code on ballast name plate. PCBs are absent if one of the two final letters is "E" and likely present if it is "T". 2. Four-number code on ballast housing. The first two numbers, when reversed, are the year (e.g., 1976 = 67) and the last two numbers are the month. PCBs are present up to and including March 1978 (8703).
Westinghouse Canada	Same as for Canadian General Electric (above).
Magnatex Polygon	Letter and number code on the ballast. The last four numbers represent the year and the month. PCBs may be present up to and including June 1980 (June 1980 = 8006). PCBs are present in capacitors made in 1978-79 unless there is a green "NO PCB" sticker on the ballast label.
Magnatex Universal Manufacturing (USA)	Three-digit letter and number code on ballast cover. The first letter is the month (A = January) and the last two numbers are the year. PCBs are present up to and including December 1978 (L78). PCBs are absent if "N" follows the code.
Phillips Electronics	Coding system changed in 1980. Units made after early 1979 are marked as being free of PCBs. Treat units not marked "PCB free" and those that have digit code ending with 79 or earlier as containing PCBs
Sola Canada	Three-digit letter and number code on ballast label. The first letter is the month (A = January) and the last two numbers are the year. PCBs are present up to and including December 1979 (L79).
Sola Electric (USA)	Eight-digit letter and number code on ballast name plate. The first two numbers are the year. Assume PCBs are present up to and including December 1979.
Other Manufacturers	Assume PCBs are present if the unit is not marked "PCB Free" or not clearly dated 1980 or later.
High Intensity Discharge Lamps	Allanson Division of Jannock Ltd. puts "N" before the code if PCBs are absent. Others are usually marked "PCB" or "No PCB". Assume PCBs are present if the label is not marked otherwise. Holophane Canada Inc. puts "BAA" before its three-digit code number on capacitors with PCBs. Sola Canada marks PCB capacitors with a code beginning "ACA".

The information in this article is not intended for legal applications. For all purposes of interpretation and application of the law, consult the relevant legislation. Copyright Saskatchewan Labour. Reprinted with permission. <http://www.labour.gov.sk.ca/safety/bulletins/pcb-light-ballasts.htm>

Fully Serviced Automatic Generator Systems



GENERAC
POWER SYSTEMS, INC.

TOTAL POWER

Generating Peace of Mind

- Diesel, Natural Gas, Bi Fuel and LP Gensets
- Industrial Commercial Residential
- Power Solutions from 6kW to 6000kW
- Automatic Transfer Switches
- Accessories

Tel.: (905) 670-1535 Fax: (905) 670-1317
Email: sales@totalpowerltd.com Web: www.totalpowerltd.com

THE CBDO

WHERE WE'VE BEEN

AND WHERE WE ARE GOING

By Tom Vivian

The growth of the Construction Bid Depository of Ontario (CBDO) over the last year can be categorized by a series of contradictions: steady, static, invigorating, enervating, satisfying, frustrating. I believe this can be attributed to the fact that those giving their opinion on the use of a bid depository, solicited or not, are rarely neutral, offering strong support or arguments against it.

Our promotional and educational efforts in re-establishing the use of the Bid Depository System in Ontario have certainly adopted the strategy of the tortoise rather than the hare with very good reason. We don't see this as a sprint for instant results but an arduous marathon that will deliver a more long-lasting victory.

The foundation for this goal was certainly laid through the following regional successes. Grand Valley/

Kitchener started the ball rolling early in 2005 with a closing under our newly established 10th edition rules and regulations. Barrie and Kingston have cemented a relationship with Defense Construction Canada resulting in closings under the 10th edition. Ottawa has continued to thrive with Public Works closings. On that note, we are working together with officials from Public Works on revamping their tending rules and procedures when calling for the use of a bid depository. The intent is to provide a province-wide consistency in their application. A Brock University, Aquatic Centre and a series of Catholic Elementary School closings have contributed to a resurgence of bid depository use in the Niagara and Hamilton regions. Toronto and the GTA have re-established relationships with school boards and municipalities resulting in successful 10th edition closings. London, which adopted the 10th edition mid-way through the year, managed closings under the ninth edition and is poised for future closings under the 10th. Along with those mentioned above, other local bid depositories across the province will require a continued promotional and educational effort to build on the momentum of our early success.

In a further effort to secure a strong foothold for future growth of the CBDO, we, along with the support from the Mechanical Contractors Association of Ontario, ECAO, Ontario Sheet Metal and Air Handling Group, Master Insulators Association and IBEW, have been intensely lobbying the provincial office of the Hon. David Caplan, Minister of

Public Infrastructure Renewal (PIR). PIR is currently rolling out a \$30 billion initiative, "ReNew Ontario," which has as its goal the value-based renewal of infrastructure work earmarked over the next four years. In fact, along with representatives from some of the aforementioned supporting groups, we met with the Minister in August to discuss our involvement in this initiative. Further follow-up involves contact with Ontario Infrastructure Projects Corporation (OIPC), the independent agency commissioned by the Ministry to carry out this plan.

The number of closings, and what happens during these closings, are the most visible aspects of the bid depository system but are not the only measure of its success. CBDO's growth is important but we should be careful not to overlook or minimize the bid depository's value as a "watchdog" and "champion" for better tendering practices everywhere.

The CBDO is proud of its efforts and successes over the past year, regardless of which yardstick is used, and is focused on providing an enduring vehicle which will provide efficiency, fairness and transparency to construction tendering in Ontario for many years to come.

Tom Vivian has been involved in the construction and property management industries for the last 20 years. He is currently manager, region I of the Construction Bid Depository of Ontario and sits on their board of directors as secretary-treasurer. To obtain further information on the CBDO and/or to provide comments, email Tom at cbdo@bellnet.ca.



G. W. (Gary) Lehman, P. Eng.

Project Management
Strategic Planning
Marketing
Training

9 Algonquin Avenue
Toronto, Ontario
M6R 1K6

(416) 531-4519
Cell (416) 606-7801
Email gwlehman@sympatico.ca
ECAO Office: (416) 675-3226
Email glehman@ecao.org

WORKMANSHIP AND PERFORMANCE STANDARDS FOR ELECTRICAL CONSTRUCTION

National Electrical Installation Standards (developed by the National Electrical Contractors Association (NECA) in the United States in partnership with other industry organizations) are the first performance standards for electrical construction recognized in North America. They go beyond the basic safety requirements of the Canadian Electrical Code in Canada and the National Electrical Code in the U.S. to clearly define what is meant by installing products and systems in a “neat and workmanlike” manner. All *NEIS* are submitted for approval by the American National Standards Institute (ANSI).

Referencing *NEIS* saves spec-writing time, and provides unprecedented control over workmanship and long-term performance. As an enforceable part of the contract documents, *NEIS* significantly reduce misunderstandings among engineers, electrical contractors, owners, and facility managers.

With *NEIS*, the electrical installation you design not only meets code – it meets the shared expectations of everyone involved. Customers get a top-quality job, and you and your firm enjoy a reputation for long-term reliability.

NEIS standards are available for a variety of categories.

General

- **NECA 1-2000**, *Standard Practices for Good Workmanship in Electrical Contracting (ANSI)*
- **NECA 100-1999**, *Symbols for Electrical Construction Drawings (ANSI)*
- **NECA 200**, *Recommended Practice for Installing and Maintaining Temporary Electric Power at Construction Sites (ANSI)*
- **NECA 90-2004**, *Recommended Practice for Commissioning Building Electrical Systems (ANSI)*

Lighting

- **NECA/IESNA 500-1998**, *Recommended Practice for Installing Indoor Commercial Lighting Systems (ANSI)*
- **NECA/IESNA 501-2000**, *Recommended Practice for Installing Exterior Lighting Systems (ANSI)*
- **NECA/IESNA 502-1999**, *Recommended Practice for Installing Industrial Lighting Systems (ANSI)*
- **NECA 503-2005**, *Standard for Installing Fiber Optic Lighting Systems*

Limited Energy

- **NECA** *Guide to Installing Communications Systems*
- **NECA/FOA 301-2004**, *Standard for Installing and Testing Fiber Optic Cables (ANSI)*
- **NECA 303-2005**, *Standard for Installing Closed-Circuit Television (CCTV)*
- **NECA 305-2001**, *Standard for Fire Alarm System Job Practices (ANSI)*
- **NECA 410-2005**, *Standard for Installing and Maintaining Liquid-Filled Transformers*
- **NECA/BICSI 568-2001**, *Standard for Installing Commercial Building Telecommunications Systems (ANSI)*

Power Distribution

- **NECA 400-1998**, *Recommended Practice for Installing and Maintaining Switchboards (ANSI)*
- **NECA 402-2001**, *Recommended Practice for Installing and Maintaining Motor Control Centers (ANSI)*

- **NECA/EGSA 404-2000**, *Recommended Practice for Installing Generator Sets (ANSI)*
- **NECA 405-2001**, *Recommended Practice for Installing and Commissioning Interconnected Generation Systems (ANSI)*
- **NECA 406-2003**, *Recommended Practice for Installing Residential Generator Sets (ANSI)*
- **NECA 407-2002**, *Recommended Practice for Installing and Maintaining Panelboards (ANSI)*
- **NECA 408-2002**, *Recommended Practice for Installing and Maintaining Busways (ANSI)*
- **NECA 409-2002**, *Recommended Practice for Installing and Maintaining Dry-Type Transformers (ANSI)*

Utilization Equipment

- **NECA 202-2001**, *Recommended Practice for Installing and Maintaining Industrial Heat Tracing Systems (ANSI)*
- **NECA 230-2003**, *Standard for Selecting, Installing, and Maintaining Electric Motors and Motor Controllers (ANSI)*

Wiring Methods

- **NECA 101-2001**, *Standard for Installing Steel Conduit (Rigid, IMC, EMT)*
- **NECA 102-2004**, *Standard for Installing Aluminum Rigid Metal Conduit (ANSI)*
- **NECA/AA 104-2000**, *Recommended Practice for Installing Aluminum Building Wire and Cable (ANSI)*
- **NECA/NEMA 105-2002**, *Recommended Practice for Installing Metal Cable Trays (ANSI)*
- **NECA 111-2003**, *Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC) (ANSI)*
- **NECA 331-2004**, *Standard for Building and Service Entrance Grounding and Bonding*
- **NECA/MACSCB 600-2003**, *Recommended Practice for Installing and Maintaining Medium-Voltage Cable (ANSI)*
- **NECA/NEMA 605-2005**, *Installing Underground Nonmetallic Utility Duct*

Give your workforce the tools they need to do the job right, take control of the level of performance you expect and benefit from the enhanced reputation for your company. NECA's NEIS standards are available in Canada through the Canadian Electrical Contractors Association. Visit their website at www.cecac.org to get a detailed description and place your order, or call 1-800-387-3226.



DAMAGE PREVENTION

SCAN BEFORE YOU CUT

888-457-8120

Graffscan

Locate Embedded Objects In Concrete

www.graffconcrete.com



Brooklin
CONCRETE INC.

CELEBRATING 50 YEARS
1952 - 2002

Ontario's premier supplier of Electrical & Communications precast products.

Custom & standard designs
CADD design formats via cdROM or email

1-888-407-6443 newmarketsales@brooklin.com
Brooklin . Newmarket . Huntsville . Haliburton

Industry Briefs

FLIR Systems will be holding free half-day infrared seminar open houses showing how infrared technology can save companies time and money.

Led by a team of infrared experts who collectively have more than 50 years' experience developing infrared applications, the seminars will include demonstrations of the latest IR cameras and show how thermal imaging systems are used to find problems, manage reliability, avoid shutdowns and improve plant safety in predictive maintenance, on-line process monitoring and other industrial applications. Topics covered will include: the latest in thermal imaging technology, the newest in high-quality affordable infrared cameras, and the ABCs of selecting the best IR

camera to meet specific application requirements.

"We're very excited to be rolling out this series of events," says David Francoeur, director of marketing, FLIR Systems. "We've continued to make great progress in adapting technological advances into products for market and are constantly striving to inform the public about not only the latest product and technology innovations but the real-world application experiences as well. These open houses allow us to share the latest breakthroughs with the public as well as get feedback for future direction."

FLIR's InfraForums provide an excellent venue for keeping current with IR camera technology and application trends. Following is a list

of upcoming seminars to take place in Ontario. Seating is limited. Visit www.flirthermography.com/news/seminars.asp or e-mail seminar@flir.com for further information.

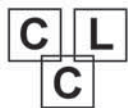
June 8 Ottawa, ON
Best Western Baarons

September 15 Ottawa, ON
Best Western Baarons

September 19 London, ON
Ramada Hotel London

September 21 Mississauga, ON
Holiday Inn

September 22 Oshawa, ON
Best Western



Celco Controls Ltd.
Solutions in Automation

We have built panels for many industries including Steel, Pulp & Paper, Mining, Refrigeration, Medical Chemical, Utilities, Automotive, Agriculture, Oil & Gas, Water Treatment, and Commercial Applications.

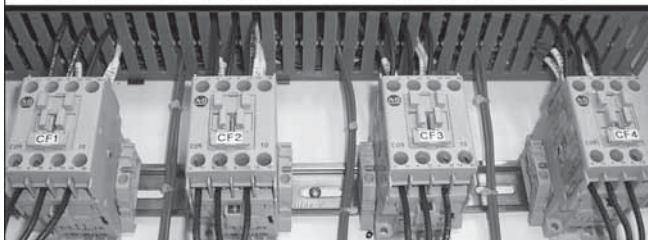
Call us for your Custom Panel requirements.

- > Custom Pump Control & Starter Panels
- > Custom MCC Wiring
- > Installation of panel mounted Instrumentation
- > PLC Cabinets
- > HMI Cabinets
- > Control Operator Desks (Floor & Wall Mount)
- > Remote I/O Cabinets
- > Junction and Termination Panels
- > Lighting Controllers



Toll-Free 1-866-99-Celco

www.celcocontrols.com



Skipwith
& Associates
Insurance Agency Inc.



Voted #1
Insurance Agency

*Proud associates of the ECAO,
Specializing in the design and
development of employee group
benefit and pension programs from
1 employee to 2000,
We concentrate on service*

Head Office
13330 Marsh Hill Road,
Port Perry, ON L9L 1Z5
Bus: (905) 985-8648
Toll Free: (800) 661-9023
Fax: (905) 985-0848
E-mail: skipwith99@aol.com

Barrie Office
8 Revelstoke Crt,
Barrie, ON L4N 8X7
Bus: (705) 734-6279
Toll Free: (866) 529-2988
Fax: (705) 734-9725
E-mail: ddecaire@skipwithassoc.ca



010: BATTERIES AND BATTERY ROOMS

Why this is important

A battery cannot be turned off. There is always potential across the posts of a battery, regardless of any controls.

Batteries can cause thermal burns when current passes through your body and chemical burns if you are exposed to the acid.

The explosion from a battery can flatten a building.

Definitions

You should know some basic definitions.

Cell – The basic electrochemical unit consisting of an anode and a cathode. The nominal voltage of a lead acid cell is 2.0 volts and a nickel cadmium cell is 1.2 volts. The starting battery in your car or truck is a six-cell battery and your flashlight may require two D cells.

Jar – The container which holds a cell or group of cells. Typical jars will have one, two, three, four or six cells.

Battery – Two or more connected together electrically. The cells may be connected in series, parallel or both to provide the required operating voltage and current. A typical UPS system will have one or more 240-cell batteries. The nominal voltage of this battery is 480 VDC.

Flooded Cell – A cell design characterized by an excess of free electrolyte. The products of electrolysis (gasses) and evaporation can freely exit the cell through a vent. Flooded cells typically have clear jars and the electrolyte is a liquid similar in appearance to water.

Valve-regulated, sealed lead acid cell (VRLA) – A cell that is sealed and fitted with a vent, which opens to release

excess pressure as required. This is the typical design of a car battery.

New batteries

Inspect every jar before removing from the shipping pallet. Jars can be damaged during shipping. Hoisting a cracked jar may result in leaking electrolyte or failure of the jar. The result is a major clean-up of corrosive materials.

Refer to the manufacturer's instructions for lifting and maneuvering the jars. Use only approved materials and methods in assembly. Failure to follow the installation instructions may void the warranty.

Use hoists and slings to lift cells into place. Small VRLA jars can weigh over 100 pounds. Flooded cells can weigh over 400 pounds each. Do not try to manhandle these cells.

As you assemble the cells, especially a large multi-cell battery such as for a UPS, periodically leave an inter-cell connector disconnected. This will limit the overall potential across the most positive and most negative posts. At high potentials, a battery can provide a lethal shock.

Battery rooms

Never work in a battery room or on a battery alone.

Follow the site check-in/check-out procedures for working in battery rooms.

Before working on any battery or in a battery room, identify the location of safety showers and eye wash stations.

Locate neutralizing agents (baking soda) and a spill containment kit and review its use.

Ensure you have an open exit route at all times. Do not allow yourself to be trapped with no escape route.

Wash your hands after working on a battery. Avoid wiping your eyes, nose or mouth with your hands while working on a battery.

Do not smoke or have open flames in or near a battery room or around jars. Most jars that you may work around vent hydrogen gas.

Verify the operation of the exhaust fan(s) in the battery room. These fans are designed to prevent the buildup of hydrogen gas, which is an explosion hazard.

Wear the PPE required for the task at hand. This may include gloves, aprons and face shields, but safety glasses are always required.

Use insulated tools. Cells have high fault currents. A single two-volt cell may supply over 5,000 amps when the positive and negative posts are shorted together. The generated heat is more than enough to melt metal and cause burns.

Use insulated blankets and other materials to shield the battery connections should you have to perform work over the battery.

This Tool Box Talks article is reprinted with permission from 100 Safety Training Toolbox Talks for Electrical Construction Work, 2003, National Electrical Contractors Association (US). The complete set of 100 Toolbox Talks is available in Canada through the Canadian Electrical Contractors Association (CECA). Visit the CECA website at www.ceca.org to place your order or call 1-800-387-3226.



In Memoriam

Norman W. Purdy



Norman W. Purdy, former executive vice president of the Electrical Contractors Association of Ontario, passed away on December 10 in his 85th year.

He played a significant role in the association's efforts to bring forth legislation to establish province-wide standards for licensing electrical contractors, master electricians and electricians in Ontario.

He leaves behind his wife, Mildred, and children Gordon, Betty, Nancy, Robert and Norman Jr. He was a grandfather of 10 and the great-grandfather of four.

Air King
Ventilation Products®

AK80LS

80 CFM, 0.6 Sones

AK110LS

110 CFM, 1.5 Sones

- Powerful Ventilation
- Low Sound Levels
- Attractive Grills
- Cost-Effective Operation



Air King Limited
800 250 8767
www.airkinglimited.com

IMPULSE TECHNOLOGIES

Toronto
800.667.5475



Calgary
877.785.3579

The Number 1 Source For All Your Wire And Cable Needs.
For Quality Products And Service Trust Your IMPULSE!



Traffic, Alarm, Electronic, Communication, Industrial/Residential

General Cable

Domtech
Electrical Wire and Cable

Electro
Cables



Harbour

Thomas & Betts

New Products

T3 Electrical/Mechanical Fastening System

The Ramset T3 Electrical/Mechanical Fastening System is 10 times faster than anchoring, five times faster than powder and there are no license or training requirements. It is also quiet, making it suitable for work in tenant-occupied buildings.

The lower recoil reduces operator fatigue and the T3 eliminates exposure to concrete dust (silicosis). It has an interchangeable nosepiece and shoots a variety of new fasteners. The dust shield significantly reduces maintenance and prolongs tool life. An easy off switch locks into place to extend the life of the 3,000 shot battery. A QuickConnect fuel system replaces conventional powder loads and drives more than 1,000 pins.



The T3 is versatile and can fasten into concrete, hollow block, pan deck or steel without changing power or colour loads.

For additional information contact Mike Clune, national sales manager, ITW Construction Products, by telephone at 905-471-7403 ext. 315 or by e-mail at mclune@itwconstruction.ca.

Accubid Releases Version 7

Accubid has announced the release of Version 7 of its family of estimating solutions – Accubid Pro BidWinner, BidWinner Plus, and PowerBid. Version 7 builds on the strong foundation of Version 6, adding a number of exciting new features and enhancements to increase contractor accuracy and productivity, including:

- Enhanced multi-user support
- Enhanced integration – with pricing services, accounting systems, and Accubid's own project management programs
- Streamlined price updating
- Enhanced reporting features
- Multi-job support

"With Version 7, we are building on strength," says Giovanni Marcelli, president and CEO of Accubid

Systems. "Accubid estimating programs have always provided contractors with expediency, accuracy, stability and reliability and this new release simply adds to that."

Though Accubid takes pride in having been recognized as the industry leader in both the 2002 and 2004 CFMA Technology Surveys for the construction industry, Giovanni insists that Accubid will not rest on its laurels.

"We will continue to work hard to increase the power and accuracy of our estimating programs without sacrificing expediency, stability or reliability," he explains.

Each of Accubid's Version 7 estimating solutions works seam-

lessly with Pocket Bid, Accubid's handheld estimating solution for the Pocket PC. Using Pocket Bid, which is sold separately, contractors can perform a complete estimate, from takeoff to extension to final pricing, right on the job site.

For further information telephone 1-800-222-8243, visit www.accubid.com or e-mail sales@accubid.com.





High Intensity Discharge Lighting

In order to satisfy the growing demand for high quality industrial lighting, Intermatic recently announced its new line of high intensity discharge (HID) lighting, providing electrical contractors and distributors with brighter solutions for an even wider range of lighting needs.

The quality and performance customers have come to expect from Intermatic energy control products can now be found in its professional-grade line of outdoor lighting. Intermatic timer switches, control panels and photocells can be utilized for total lighting management of most residential, commercial or industrial HID applications. With comprehensive coverage of the industry's leading part numbers, Intermatic offers a full range of wall packs and floodlights.

All Intermatic HID fixtures are UL/CUL listed for wet locations and come with a limited one-year warranty. All fixtures include a brand name lamp. Visually appealing and informative packaging is designed to help electrical contractors and distributors easily select the appropriate unit for the lighting task at hand. Each unit also includes full photometric and lamp data.

Intermatic HID lighting fixtures can withstand the harshest elements while providing constant and reliable operation. Intermatic HID categories include:

- HID wall packs – metal halide and high pressure sodium versions from 35 to 400 watts
- HID floodlights – metal halide and high pressure sodium versions from 35 to 400 watts
- HID dusk-to-dawn lights – mercury vapour and high pressure sodium versions from 150 to 175 watts
- HID quartz floodlights from 150 to 500 watts
- HID canopy lights – 150 watt high pressure sodium versions

- HID wall fixture with photocell – 70 watt high pressure sodium fixture.

For additional information call 815-675-7068 or visit www.intermatic.com.



ONE SOURCE

For All Your Electrical Test & Measurement Instruments

- ▶ Cable Testers
- ▶ Clamp-On Meters
- ▶ Current Measurement Probes
- ▶ Data Loggers
- ▶ Digital Multimeters
- ▶ Electrical Test Tools
- ▶ Electronic Benchtop Instruments
- ▶ Environmental Testers
- ▶ Ground Resistance Testers
- ▶ Hipot Testers
- ▶ Leakage Current Meters and Probes
- ▶ Megohmmeters
- ▶ Power Quality Analyzers, Meters and Loggers
- ▶ Power Supplies



(800) 343-1391
www.aemc.com



NATIONAL TRADE CONTRACTORS COALITION OF CANADA (NTCCC)

On December 22, 2005, Industry Canada approved the National Trade Contractors Coalition of Canada (NTCCC) as a federally incorporated not-for-profit organization. The official objects of the Corporation are: "To facilitate communication and cooperation amongst national trade contractor associations within Canada's construction industry."

In late 2004, representatives of several national trade contractor associations initially met to determine whether or not it would be worthwhile to form "some sort of relationship" for purposes of communication, resource sharing, cooperation, collaboration, etc. During the first meeting on December 13, 2004 it was quickly determined that there was a desire, on the part of most national trade associations, to form a working relationship where before there was none amongst national trade associations per se.

Discussions ensued and by the second meeting two months later, it became evident that the creation of a formal coalition was something that could only be of extreme importance to trade contractors generally. Many items of joint interest were identified and it was agreed that, in time, the newly formed National Trade Contractors Coalition of Canada (NTCCC) would address these issues. However, for purposes of being practical and effective, the Coalition decided to focus its immediate attention on three priority issues specifically:

1. Helping our respective members get paid promptly for work performed.
2. Promoting the use of Bid Depositories across Canada.
3. Promoting the use of "unaltered" standard contract documents.

Several meetings have taken place throughout 2005/06 with national trade association officials representing contractors engaged in such disciplines as electrical, mechanical, masonry, thermal insulation, automatic sprinkler, roofing, scaffolding, architecture woodwork, HVAC, and steel contracting.

Over the past several months the coalition has: secured startup and program funding received from its constituent trade associations; formed an official working relationship with the Trade Contractors Council of the Canadian Construction Association and the Construction Sector Council; and established committees and task forces dealing specifically with bid depository promotion targeting tender calling authorities; and created "getting paid" strategies/initiatives through the development of a national awareness/educational program. It also held a special Strategic Planning Session on November 14, 2005 to help with the ongoing operations and future initiatives of the coalition. Future meetings will also address the potential of Federal Prompt Payment/Trust Legislation.

The purpose of the National Trade Contractors Coalition of Canada is not to duplicate the efforts of, or to replace, any other existing organization. On the contrary, a group of national trade contractor associations organized under the umbrella of a coalition will be an additional (and strong) voice supporting some of the efforts of other contractor organizations like the Canadian Construction Association, the Construction Sector Council, the Canadian Apprenticeship Forum, and others. A unified national trade contractor association voice will add substantial and credible weight to some of the new and ongoing initiatives of the aforementioned organizations. At the same time however, the coalition has the ability to state its own opinions and taking its own unilateral initiatives on issues that affect, or can potentially affect, the respective trade contractor members of the constituent member organizations.

A group of national trade contractor associations organized under the umbrella of a coalition will be an additional (and strong) voice supporting some of the efforts of other contractor organizations.

Once the coalition satisfactorily completes its work on the three stated priority issues, it intends to continue work on other items of mutual interest such as: apprenticeship training, management education delivery, exchanging information on and/or sharing of association products and services, or presentation to the design community on such matters

as quality drawings/specifications, change order procedures, pre-purchasing of equipment, shifting of design responsibility, etc. The list goes on.

Even though the coalition is in its formative stages of development, it has already gained a notable awareness within Canada's construction community and by major buyers of construction services. Its existence has created an exciting "buzz", a synergy within, and an understanding of, its potential impact on the industry.



Do You Recognize These CGE MCC Model Numbers?

**CR7092C
CR2000**

We Do!

We Supply CSA Approved
FACTORY ORIGINAL:

- Renewal Parts
- Replacement Plug-in Units
- Retrofits
- Add-on Sections
- New MCC Installations



W.A. Electric Controls Ltd.
280 Perry St., Peterborough, ON, K9J 2J4
Phone: (705) 742-2688 • Fax: (705) 742-1514
Email: waec@waelectric.ca
Website: www.waelectric.ca

SAFETY MANAGEMENT SOLUTIONS

STRATEGIC AND IMMEDIATE ADVICE



THE OCCUPATIONAL HEALTH AND SAFETY GROUP

Cheryl A. Edwards, Ryan J. Conlin, Philip E. Bender, Landon P. Young

4 DECADES OF OH&S EXPERIENCE ASSISTING EMPLOYERS WITH:

- OH&S due diligence • Inspectors at the door • Advice to Boards of Directors
- Managing consequences of serious accidents • WSIB claims management
- Opinions on complex legal issues • Contractor management

**Stringer
Brisbin
Humphrey**
MANAGEMENT LAWYERS

TORONTO

110 Yonge Street, Suite 1100 • Toronto, Ontario M5C 1T4
T: 416.862.1616 • F: 416.363.7358 • TOLL-FREE: 1.866.821.7306

BARRIE

65 Cedar Pointe Drive, Unit 806A • Barrie, Ontario L4N 5R7
T: 705.727.0808 • F: 705.727.0323 • TOLL-FREE: 1.866.878.6253

www.sbhlawyers.com

Is your Membership Publication getting you

frustrated?

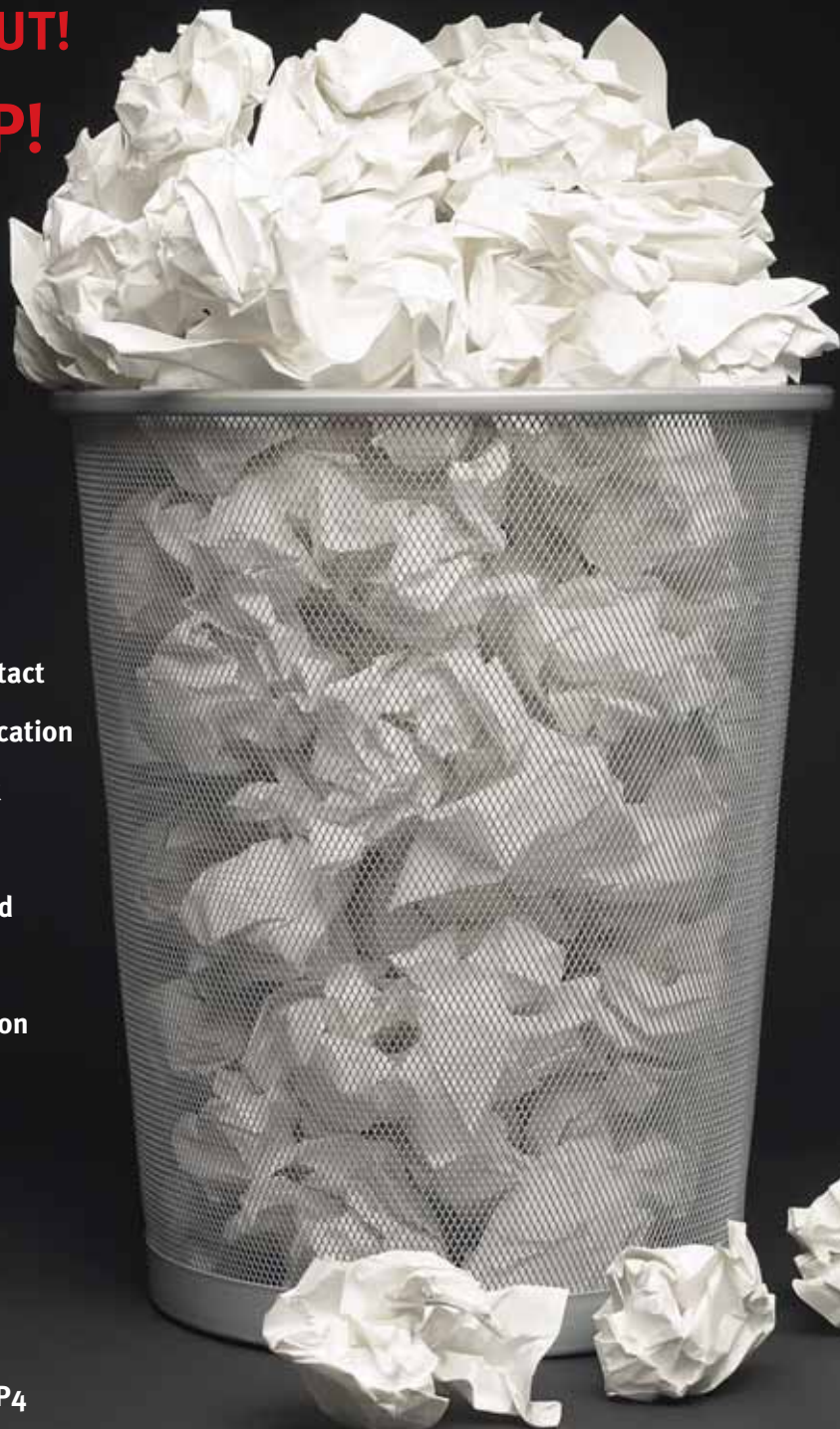
At MediaEDGE we realize how frustrating your publication project may be.

We also realize that this can be a lot of work and costly for you to produce.

DON'T PULL YOUR HAIR OUT!

MediaEdge CAN HELP!

We've built our reputation on helping associations take the frustration out of producing their membership publication. Working behind the scenes we have the people and the **experience** to save you time and improve your bottom line. With a **top-notch** sales team and a **brilliant** editorial and creative crew we will create a striking and professional look for your publication. The sales team will stay in close contact with potential advertisers making sure your publication is good for your bottom line. Our editors will work with you to build your story ideas, write features covering issues important to your membership and make sure your message is **clear and concise**. Whether you're starting from scratch, or building on an existing publication, our designers will make sure the final product looks absolutely **fantastic**.



MediaEDGE
PUBLISHING INC.

Publisher: Robert Thompson

5255 Yonge Street, Suite 1000, Toronto, ON M2N 6P4

Tel.: 1-866-216-0860 Ext: 229, Email: robertt@mediaedge.ca

www.mediaedgepublishing.com

Index to Advertisers

Barristers & Solicitors, Construction Law

Goodmans LLP 17
Toronto, ON

Breakers

Lizco Sales 4
Tillsonburg, ON

Cable Management

Cablofil Outside Back Cover
St. Louis, MO

Canadian Electrical Distributors & Suppliers Support

Independent Electrical Distributors
..... 20-21
Mississauga, ON

Concrete Cutting

The Graff Company Ltd. 28
Brampton, ON

Concrete Products

Brooklin Concrete Inc. 28
Newmarket, ON

Consultants

G.W. Lehman & Associates 26
Toronto, ON

Contracting Software Products

Accubid Systems Ltd. 11
Concord, ON

Control Components

W.A. Electric Controls Ltd. 35
Peterborough, ON

Control Systems

Celco Controls Ltd. 29

Demolition

The Graff Company, Ltd. 28
Brampton, ON

Electrical Test & Measurement Instruments

AEMC Instruments 33
Dover, NH

Electronic Ballasts Suppliers

Fulham Company Ltd. 16
Hawthorne, CA

Electrical Power Equipment

M.G.B. Electric Inc. 22
St. Pierre, QC

Electrical Wholesalers

Trade Electric/Sonepar Canada 3
Concord, ON

Equipment & Systems

W.A. Electric Controls Ltd. 35
Peterborough, ON

Fire Alarm Systems

Edwards (Part of GE Security)
..... Inside Front Cover
Owen Sound, ON

Fuses – High Voltage

Lizco Sales 4
Tillsonburg, ON

Generators

Sommers Motor Generator
Sales Ltd. 38
Tavistock, ON

Total Power Ltd. 25
Mississauga, ON

Government Relations Consultants

The Lyons Group 38
Toronto, ON

Infrared Cameras

Flir Systems Inc. 19
Burlington, ON

Insurance

Federated Insurance
..... Inside Back Cover
Toronto, ON

Skipwith & Associates Insurance Agency Inc.

..... 29
Port Perry, ON

St. Paul Guarantee 7
Toronto, ON

Law Firms

Macleod Dixon LLP 37
Calgary, AB

Lawyers – Labour, Employment/ Management

Stringer Brisbin Humphrey,
Management Lawyers 35
Toronto, ON

Lighting Control Systems

Cristal Controls 37
Quebec City, QC

Management Lawyers

Stringer Brisbin Humphrey,
Management Lawyers 35
Toronto, ON

Manufacturers

Thomas & Betts 6
Montreal, QC

Nursecall

Edwards (Part of GE Security)
..... Inside Front Cover
Owen Sound, ON

Power Quality

Eaton Power Quality Limited 13
Toronto, ON

Oil & Dry Transformers

Lizco Sales 4
Tillsonburg, ON

Scrap Metal Recycling

Langille's Scrap and Cores 38
Brooklyn, ON

Security

Edwards (Part of GE Security)
..... Inside Front Cover
Owen Sound, ON

Sprinklers

Edwards (Part of GE Security)
..... Inside Front Cover
Owen Sound, ON



Cristal
CONTROLS

Innovation
in Electronic Energy Control

Cristal Lighting control
Ask for our new Powerline
Relay & Software

Ideal for retrofit projects

Tel.: 1.800.681.9590 ext 222
or at cristal@cristalcontrols.com

Knowledge is power

Macleod Dixon LLP's team of legal professionals
has the knowledge and experience necessary to take
your power projects from concept to reality.


Macleod Dixon LLP
Calgary Toronto Moscow Almaty/Atyrau Caracas Rio de Janeiro
 Local Expertise. International reach.

For more information on Macleod Dixon LLP
visit our website at: www.macleoddixon.com or contact
 Elisabeth (Lisa) DeMarco 416.203.4431 elisabeth.demarco@macleoddixon.com
 Rob Frank 416.202.6741 robert.frank@macleoddixon.com

cinemastage

Your Audio/Video Experts

CINEMA STAGE INC. WORKS WITH ELECTRICAL CONTRACTORS

Work with a union friendly supplier and increase your scope of work on any project that involves audio/visual, sound/PA/Clock/video/systems, projection screens, tv monitors, plasma & lcd information systems, digital signage, innovative dimming, and electronic touch panel control.

We provide design, supply, and specialized installations in conjunction with Electrical Contractors.

Provide more service for your clients, call us...

1-800-387-6205

SOMMERS

SOMMERS GENERATOR SYSTEMS
1-800-690-2396 • www.sommersgen.com
sales@sommersgen.com

- Diesel Generators 5Kw to 2000Kw
- Natural Gas Generators 6Kw to 880Kw
- Sound attenuated Weather Proof Enclosures
- Sommers / Winco Portable Generators and HomeStandby Systems
- Full Line of Automatic & Manual Transfer switches
- Rental Fleet from 20Kw to 500Kw Sound attenuated



WINCO



24hr. emergency service
Dealers across Canada • Reliability Since 1936

Index to Advertisers

Switching – High Voltage

Lizco Sales 4
Tillsonburg, ON

Thermal Heaters/Portable Printers

W.H. Brady Inc. 23
Richmond Hill, ON

Turnkey Installations

Hergert Electric/Cinemastage... 38
Barrie, ON

Unions & Associations

IBEW Construction Council
of Ontario 8
Toronto, ON

Ventilation Manufacturers

Air King Ltd..... 31
Brampton, ON

Wire & Cable Products Distributors

Impulse Technologies Inc..... 31
Mississauga, ON

X-ray & Radar Scanning

The Graff Company Ltd..... 28
Brampton, ON

LYONS GROUP

We combine experience along with innovative approaches to working, interacting, communicating and problem solving with government and the private sector in all its forms.

Visit our website at www.LyonsGroup.ca

Jeffery Lyons
jlyons@lyonsgroup.ca

Kristin Card
kcard@lyonsgroup.ca

CASH FOR SCRAP

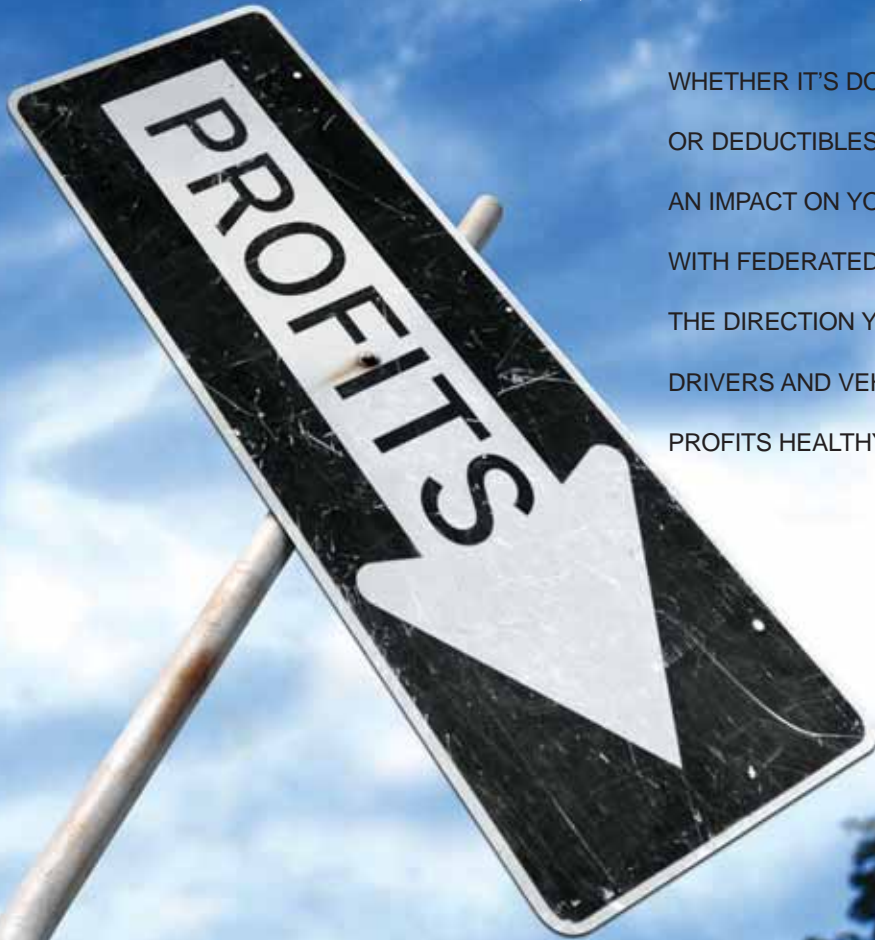
Buyers of Wire, Transformers, Motors,
Copper, Aluminum, and Steel

Pick-up anywhere in Ontario

Langille's Scrap and Cores
161 Westney Road South, Ajax, Ontario L1S 3C3
Tel: (416) 984-3513 Fax: (905) 655-9172

www.scrapandcores.com

Accidents impact business



WHETHER IT'S DOWNTIME, LOST BUSINESS, OR DEDUCTIBLES, EVERY ACCIDENT HAS AN IMPACT ON YOUR BOTTOM LINE. WORK WITH FEDERATED INSURANCE FOR ALL THE DIRECTION YOU NEED TO KEEP YOUR DRIVERS AND VEHICLES SAFE AND YOUR PROFITS HEALTHY.

Call today and ask about [The Right Road](#) – your fleet management resource. Exclusive and free to our clients, it contains everything you need to drive fleet safety home within your organization. [Phone: 1-800-665-1934.](#)

Take The Right Road




Follow The LEADER

In Wire
Cable Tray



Safe-T-Edge™

Minimizes the risk of fraying
and protects installers from
sharp wire ends



Fast Assembly System (FAS)

Reduces installation time by
reducing bolted connections



Optimized Wire Design

Reduces weight while
increasing load capacity

Cablofil saves you time and money. Ever since we invented the wire cable tray industry more than 30 years ago, we have focused on developing products that save both time and money. We provide engineering services to support this effort and are dedicated to helping our customers design the most efficient cable management systems possible.

Cablofil is a **world leader** with the largest production capacity of any wire cable tray manufacturer. Our 78,000 square foot facility in Mascoutah, Illinois was specifically built to serve the U.S., Canadian, Mexican and Latin American markets. Today more than **80,000 miles** of genuine Cablofil wire cable tray has been installed worldwide.

CABLOFIL®

INNOVATORS IN CABLE MANAGEMENT

Let us show you how Cablofil can save
time and money compared to your
current system. Send us your
project information at
www.cablofil.com.