

IPET NEWS

Sept 2008

The Institute of Professional Engineering Technologists
(Association Not For Gain)

PO Box 1824, Randburg 2125. Tel / Fax (011) 787 9706.
Fax 086 523 1413. E mail engineer@netactive.co.za

"Tackle a Block at a Time".

In this issue:- No 1 Contents (Index).

- No 2 Discrimination Against Engineering Employees.
- No 3 CBE / ECSA & Professional Registration.
- No 4 Conversion Calculator.
- No 5 ECSA CEO Passes Away.
- No 6 The Engineering Skills Catastrophe.
- No 7 Code of Practice - Structural Engineering.
- No 8 200 FAQ's on Civil Engineering.
- No 9 Alternate Bio Diesel Supplies.
- No 10 Low Cost Ethanol?!
- No 11 Electric Cars?!
- No 12 Efficient Passenger Transport.
- No 13 Bullet Proof Street Lights!
- No 14 E Mail Woes & Some Tips.
- No 15. Small Adverts.
- No 16 Adverts, Insurance & CPD.
- No 17 The Joke Column.
- No 18 Free Listing / Advert
- No 19 List of Members in Good Standing.
- No 20 Unsubscribe Option
- No 21 Disclaimer.
- No 22 Membership Information Update Form!

No 2. Discrimination Against Engineering Employees!!

By Viv Nel, Pr Tech Eng.

Annual fees paid by registered engineering practitioners to the statutory body, the Engineering Council of South Africa (ECSA), are only a Tax-deductible expense if paid by the employees Company. Any individual practitioners, who are forced to pay the fee themselves, may not claim this off of their Tax. Many firms, and even Government and Local Authority Departments, expect their registered engineering employees to pay this fee themselves. The fee is a significant expense, especially for the lower paid specialized scope, technician groups as well as technologists who do not earn anywhere near the remuneration of the engineers!

This effectively means that registered engineering practitioners are paying an extra Tax just for being in engineering!

What a great way to encourage people to become involved in engineering!! With the expected Identification of Engineering Work reserving certain work to registered persons, this discrimination will affect even more people!

It is high time that the Minister Trevor Manuel corrects this abusive situation!

No 3. CBE / ECSA & Professional Registration

The Minister for the Built Environment has published draft policy document Notice 337 of 2008 indicating that ECSA would be converted into a professional board that will report to the South African Council for Built Environment (SACBE), who in turn will report to the Minister for the Built Environment.

This has serious implications for all registered professionals since the International Engineering Alliance, EC (UK) and FIPENZ (New Zealand) as well as others have indicated that under the proposed legislation it is not clear that ECSA's membership of the Engineers Mobility Forum (EMF) and other professional recognition agreements would be allowed to continue. These bodies are of the opinion that the proposed changes are so fundamental that the new South African organisation could not automatically be accepted as a direct successor to ECSA.

The impact of this is that the qualifications of engineers, technologists and technicians who register in South Africa after the policy has been enacted may no longer be recognised or accepted outside of South Africa. This may affect SA doing engineering work in African countries where such recognition of international status is essential.

The new structure will also probably cost engineering practitioners much more in yearly fees, as they will be subsidising the other smaller proposed boards.

As reported before IPET made submissions to the Portfolio committee. The Public hearings on 12, 13 and 14th August were disastrous as the Chairperson, Ms. T. Tobias, was reported in the newspapers as being extremely biased and rude to any criticism of the proposal. The usual race card was played and ECSA was accused of not registering previously disadvantaged persons. Some 56% of registrations in the last three years are of previously disadvantaged persons!

Government appears to be hell bent on Parliament accepting the changes in September 2008 .

No. 4. Conversion Calculator

Download a useful conversion calculator and terminology application at
http://www.engnetglobal.com/tips/toolsapp/dl_branded.asp?co=BASE

No 5.

Prof Ravi Nayagar, CEO of the Engineering Council of South Africa, Passes Away.

Prof Ravi Nayagar the CEO of ECSA, passed away on 22 August 2008 after a short illness.

The cremation took place on Sunday 14 August at the Brixton Crematorium.

Prof Nayagar joined ECSA in 2004 as the Director of Strategic Development and Transformation and was promoted to CEO on 1st March 2006.

He leaves his wife and two children behind.

IPET's condolences to the family.

No 6.

The Engineering Skills Catastrophe by V Nel, Pr Tech Eng. (Editor).

Figures compiled from ECSA data showed that in the period 1998 to 2004 some 1300 engineers and 2000 technicians and technologists qualified per year. The Governments Joint Initiative for Priority Skills Acquisition (JIPSA) calls for an increase from 1300 engineers to 2400 per year.

When these figures are combined with the chronic shortages of skilled artisans to complete the engineering team it becomes apparent that the effect of insufficient engineering practitioners is set to be bad for many years yet to come.

Figures banded about show that there were some 30 000 registered artisan apprentices in 1975. There were only about 3000 in 2006! The average age of many artisans and technicians is now around 50!

Artisan training collapsed and the inability of the respective Sector Education and Training Authorities (SETAs) to provide meaningful and sustained training as an alternative to artisan training means that the situation is getting worse by the minute.

The engineering team consists of a triangular structure, like a pyramid. So the ideal would be for one engineer, supported by 4 technologists, supported by 16 technicians, supported by 256 artisans! If we could achieve a ratio of 1: 2: 4: 16 we might even start winning!

At a minimum South Africa requires about 2400 engineers, 4800 technologists, 9600 technicians and 38400 artisans a year for the say the next 5 years!

This means 2400 Engineering BSc's from Universities, 4800 B Techs 9600 National Diplomas from Universities of Technology per year.

Since 1999 when approximately 20 000 engineering students registered for engineering studies the total has increased greatly from 2004 to around 58 000.

This has resulted in tremendous strain on the academic environment

Figures of the vacancies of lecturers existing in the training institutions are not easily available at the time of writing this article, however indications are that some 20% of the posts are vacant! This is due to non-competitive salaries and huge workload.

A Higher Education Qualifications Committee (HEQC) study has shown that only 32% of students entering a four year programme graduate within the minimum time. For three-year science programmes the rate is 22%. National Diplomas some 9% only graduate four years after starting the three-year diploma!

The latest "improvements" in renaming and changing the B Tech and National Diploma are debatable.

The B Tech and National Diploma (ND) will change with the B Tech becoming a 3-year degree with no practical. This will be called a B. Eng. The ND will be a 2-year qualification, known as an Advanced National Certificate, again with no practical. An even shorter exit point will be a National Certificate, again with no practical.

Many in industry have indicted that they prefer hands on graduates but the academics don't want to be loaded with practical (Work Integrated Learning), as it is not a funded year. They do not have the spare capacity to find placements for students nor quality assure the training by monitoring employers.

The attempt here to increase the throughput that Government wants may result in even weaker graduates in the future!

It seems the new NQF Act of 2008 will change the South African Qualifications Authority (SAQA) somewhat. The Board will consist of 12 instead of 29 members. Umalusi is named as the QC for General and Further Education and Training and the Council on Higher Education as the QC for Higher Education. SAQA has replaced the learnerships programme by re-introducing apprenticeships and retaining learnerships and internships. All routes have to pass a level

4 test at an accredited test centre. So the start towards the old system with some flexibility should help in the future!

At the specialized scope category of ECSA registration the position is exceedingly disturbing. While estimates vary it appears that there are at least 42 000 passenger lifts and escalators in South Africa, however there are only some 160 registered Lift Inspectors in the country!

On the lifting equipment side, again estimates vary, but it appears that there are at least 1 250 000 machines out there! Overhead cranes account for at least 100 00 while mobile cranes account for 8000 plus. Chain blocks and lever hoists account for more than a million alone! There are only approximately 450 Lifting Machinery Inspectors (LMI's) registered at ECSA. So public and worker safety is definitely in question!

Bursaries for engineering students have not assisted much in the past few years. Many students drop out so this area needs some further investigation.

Importing the skills needed is controversial and fraught with political agendas. Bureaucracy in obtaining work permits etc have, and are, hampering progress. Press reports stated that in 2006 only 194 permits were granted out of the allowed quota of 47600!

The question of language barriers in importing skills is also often overlooked.

The poor quality of the schooling system is largely to blame for the low successful through put (pass rate) at Universities and Universities of Technology. The new "Matric" at school level, which includes Science and Mathematics, as compulsory subjects may actually help.

Early childhood education is the key when it comes too effective learning. The biggest problem, however, is the lack of suitable qualified and competent teachers! Steps to enforce Continuous Professional Development (CPD) have been taken and this should also slowly improve the scene if implemented logically and effectively.

The Skills Development Levy funds collected amounted to some R2.2 Billion in 2007. R714 381 million has been spent, with further commitments of around R100 784 million which gives an overall use of the expected budget of around 81%. This should also contribute to improvements in skills in general, but the funding for engineering is not all that clear!

The Sector Education Training Authorities (SETA's) have proved to be a complete and expensive failure. The results for some R4.6 billion Rand indicate that they should be terminated or very, very drastically changed!

The bringing back of retrenched and older skilled engineering practitioners to assist in mentoring is at last starting to happen but at a very slow pace. There still seems to be a perception out there that one can send a person on a one week training course and he / she will come back with 3 years of experience! Three years of experience takes 3

years under the guidance of experienced mentors! There is no shortcut!!

All the remedies put in place will inevitably take a number of years to show positive results.

When a spade is a spade call it a spade!

No 7. Structural News - a Code of Practice for Structural Engineering in The making.

ECSA is empowered to compile codes of practice relating to the execution of engineering work The codes will provide substance to the Regulations covering the Identification of Engineering Work (IdoEW). The codes are not intended to be technical specifications. Their intention is to lay down the competencies required and to deal with professional standards, procedures, processes and ethics.

IPET has nominated a representative, Past President Willie Lotter, to the ECSA working group on structural engineering and engineering in dolomitic areas. Some of the reasons for structural failures include but are not limited to (in random order);

- Incompetent use of computer packages.
- Faulty design.
- Lack of experience.
- Contract between parties
- Bad communication.
- Irresponsible signing-off of drawings and completion certificates.
- Inadequate remuneration allowed to do the work competently
- Number of hours worked.
- Lack of proper supervision.

To date the 8 person group has already had 3 meetings.

No 8. 200 Questions and Answers on Practical Civil Engineering Works.

This is available as a free download on the links below.

(i) Institution of Civil Engineers (United Kingdom) website

http://www.ice.org.uk/knowledge/document_details.asp?Docu_id=1715&intPage=4&faculty

(ii) World Federation of Engineering Organizations

<http://www.wfeo.org/>

(iii) Imperial College Library

<http://civeselib.wordpress.com/>

(iv). The Barbados Association of Professional Engineers

<http://www.bape.org/>

(v) Turkish Chamber of Civil Engineers

[http://e-](http://e-imo.imo.org.tr/Portal/Web/IMO.aspx?WebSayfaKey=815)

[imo.imo.org.tr/Portal/Web/IMO.aspx?WebSayfaKey=815](http://e-imo.imo.org.tr/Portal/Web/IMO.aspx?WebSayfaKey=815)

(vi). Japan Federation of Engineering Societies

JFES-IAC E-News No. 5 (7/2008)

http://www.jfes.or.jp/activitie/iac_news/jfes-iac_e-news_005.pdf

Note.

*The following five mini articles follow the trend we set in our last newsletter. We hope you find them of general interest!
Ed.*

No. 9. Alternative Diesel Supplies!

*India is a leading world cultivator of *Jatropha* with over a million hectares of plants. Hindustan Petroleum and Chhattisgarh Renewable Energy Development Agency are planning a partnership to extend the acreage by another 15 thousand hectares.*

*The *Jatropha* plant is a long-lived woody shrub, which produces seeds that are used to produce bio diesel. The land used for cultivation may be wastelands, which are not used for food production.*

So there is food for thought! Ed.

No 10. Low Cost Ethanol.

A Massachusetts bio fuel and enzyme company Verenum as well as BP have formed a partnership which will hopefully see Verenum using microbes called ethanologens to produce low cost ethanol from cellulose. This should prove more economical than using conventional yeasts to break down or ferment high cellulose materials such as so called energy grasses.

Now if we could convert Kikuyu Grass??!! Ed.

No 11. Electric Cars?!

Well just in case you think there are only a few, and they are pipe dreams, we list below some cars that are or were available in the past year and a few that are to be available soon.

The Sports Car Roadster by Tesla Motors in the USA.

The E6 Sedan by BVD Chinas' biggest battery maker.

XS 500 Miles Sedan by Miles.

IMiev passenger car by Mitsubishi.

R1e Two seater by Subaru.

Super Concept Car by Hybrid Technologies.

Mini's by PML and BMW in California USA only.

Mercedes (by 2010)

Nissan (2010 -2012)

REVA in the UK (Probably running around London).

Tango Car (driven by Film Star George Clooney in the USA).

Tata of Mumbai, India (next few years)

Wrightspeed X1, which has faster acceleration than a Porsche!

The success of these depends on efficient battery technology and costs!

Watch out for the around South African Solar Powered Car Challenge in late September early October!

No 12. Efficient Passenger Transport.

Tokyo Metro has 195 Kms of track and operates 179 stations. The metropolitan government run Toei

network has 109 Kms of track with 106 stations in addition to ordinary railroads.

Tokyo Metro opened a 13th line, which links Shibuya with Ikeburo and Saitama to the north west of the capital.

This expensive exercise, which started in 2001, apparently cost 250 billion Yen. Posters at the stations state that CO2 and other green house gases are far less per person on the trains than driving in cars. Energy consumption per passenger Km by road transport in rush hour Tokyo is about 23 times that of the railway!

So maybe the Gautrain will be environmentally effective as well! Ed.

The Iraqi Electricity Ministry and the US Military are installing some 6000 lights. The Military are installing 1000 that are bullet proof. These cost about \$6200 each while the non-bullet-proof version costs about \$2000 each.

Security is the main drive in this exercise, which aims at making it harder for insurgents to disable large sections of illumination.

No 14. E Mail Problems & Tips For Some Subscribers.

To the subscribers who do not get our bulk mailed E News, we offer some tips!

Subscribers of the two Telkom email servers must simply activate their anti spam programs on their mother pages. The step-by-step process is very user friendly; except that when you choose your parameters, simply accept their suggested values.

Absamail and other ISPs have similar rules. Check out your supplier if you experience lack of E news from us.

Members who supplied E mail addresses which end in **Spoornet, Transnet, Eskom and government (Gov) etc are warned** that our E Newsletter and any E mail going to a group is usually stopped as it is suspected that it is spam. These members must either make arrangements with their ISP and IT people to let these through or supply a personal private E-mail address. Those with no E-mail must please visit a friend who does have access to the Internet and / or regularly visit an Internet Café and go online to see our Web site where the E News is published. Costs are usually from around R10 for half an hour and get cheaper per minute after that.

The time to upgrade is here!! Ed.



Photo of Hitachi 10000 Series train.

No 13. Bullet Proof Street Lights in Iraq!.

The Los Angeles Times reports that although Baghdad may not have enough electricity to supply users more than half the day, street lights may soon be solar powered.

No 15. Small Adverts.

IPET is prepared to place very small text only adverts in the Newsletter if they are deemed to be of direct interest and value to members. The Editor and Executive's decision on any particular advert is final. The adverts may not exceed 100 words and are, for the time being, free. Adverts that just advertise companies and / or their products are excluded from this offer. Other adverts, for which payment will be required, may be entertained in the future.

No 16. Professional Indemnity Insurance

This is available from;

Engineering and Technology Professional Cover Consultants cc (underwritten by Manwood Underwriters and Nova Risk Partners Pty Ltd)

PO Box 50070 Wierda Park, 0149

Tel 012 653 1819, Fax 086 660 8306, Cell 083 458 5309,

E-mail djj@africa.com

And also from;

Marsh SA, Marsh Vikela (Pty) Ltd

88 Grayston Drive, Sandton, 2196

Tel 011 506 5466, Fax 086 636 5359.

E Mail Vanessa.kleber@marsh.com.

And Also;

Professor William James and Chris Brooker are scheduling 3-day training

workshops on the latest versions of SWMM5 and PCSWMM.NET

for planning, design and management of simple and complex urban drainage systems.

Dates and locations, all of which will qualify for official CPD

accreditation, are as follows:

Gauteng	October 22-24, 2008
Durban	October 29-31, 2008
East London	November 12-14, 2008
Cape Town	November 19-21, 2008

Find full information by clicking on the appropriate workshop links at

www.chi-workshops.com

Fees: R4700 (US\$600)

Full-time students are entitled to 50% discount.

15% discounts for early bird registration (1 month ahead or

more) and two or more attendees from the same organization.

No 17 The Joke Column.

Warning / Disclaimer.

Sensitive readers are warned that the following may erroneously be taken to contain sex, violence, strong language, gender, race, ethics etc. Readers are warned not to read or have any of the following read to them. Recommended readers age is limited to 120 and 121 years of age. A further requirement is you must have a sense of humour.

Circumcision At Your Age?

Two men are sharing a hospital room.

"What are you in for" the first man asks?

I'm getting a circumcision", "his roommate replies.

"Damn," exclaims the first man, "I had that done when I was born and couldn't walk for a year!"

The Irish Wish.

An Irishman sitting at the bar sees a lamp at the end of the table. He walks over to it and rubs it. Out pops a genie. It says I will give you three wishes."

After thinking a while the Irishman says, "I want a beer that's never empty."

"Poof" and there appears a bottle of beer that does not get empty! After a few drinks the genie asks about the next two wishes.

"The man says, "" I want two more of those!"

The Olympics.

The Irish Female Breast Stroke Competitor complained after the race that the others had used their arms!

Supermarket.

The new supermarket near our house has an automatic water mister to keep the produce fresh. Just before it goes on, you hear the sound of distant thunder and the smell of fresh rain.

When you approach the milk counter, you hear cows mooing and smell the scent of fresh hay.

When you approach the egg rack, you hear hens clucking and the air is filled with the pleasing aroma of bacon and eggs frying.

The vegetable department features the smell of fresh buttered corn.

I am afraid to buy toilet paper there any more!

How is Business?

Tough! Said the tanner.

"Looking up!" said the astronomer.

"Down in the dumps!" said the garbage collector.

"Picking up!" said the weightlifter.

Ä bed of roses!" said the florist.

Sure Bet.

"When I die, I want to be cremated and have my ashes scattered at Sun City", said the guys wife.

Why!! Asked the husband.

"It's the only way you will ever visit my grave every week!."

That's Life.

The trouble with mental notes is that the ink fades so fast.

No 18. Free Listing / Advert.

The Institute of Professional Engineering Technologists
(A Voluntary Engineering Association - Not For Gain)
P O Box 1824
Randburg
2125

Tel / Fax / Answering Service 011 797 9706.

E mail engineer@netactive.co.za

Web site www.ipet.co.za

Date 2008/08/31

FREE LISTING / ADVERT FOR YOU AND / OR YOUR FIRM!

If you wish to advertise your services, those of the firm you work for and / or your business / company, then complete the form below and post it back to us. ***Faxes and attachments to E-mails will not be accepted. We require the signed originals.***

The supplied information will be placed on our Web site as a free advert for your engineering service / business.

This service is free to paid up members only. As it is a free service, IPET reserve the right to edit the information provided (to suit the Website space available etc) and to withdraw the service at any time. No guarantee is given that the information provided will necessarily be correct or on the Web site at any particular time.

Since your information will be available to the public at large, you are asked to consider this aspect when supplying the information. As the public will have access to all the information supplied we need your signature and /or that of your authorised employer / business or company representative that placing the supplied information on our Web site is approved and accepted.

I

.....

confirm that I am the authorised person to approve the use of the information I provide in the form below and that this information may be used in a free listing / advert on the IPET Website. I understand that, as this website is open to the public, the information published on it may not be treated as private and confidential. I agree that no claims of any sort against IPET or any of its officials or members pertaining to the information supplied and its placement on the Web site or any consequent actions or liability of any sort whatsoever, will be lodged by me and / or the authorised employer / business or company.

Print Name.....Signed.....

Title of authorised **signature** (Owner, Director, Financial Officer, Public Officer etc)

.....

Dated.....

To assist in completing the form a partial list of Disciplines, Categories, and Specialities is given at the end of the form. The form for completion is overleaf.

Information for placement on IPET Websites.

Last Name	Initials	Business Name	Postal Address 1	Postal Address 2 (Town / City)
Postal Code	Province	Telephone Number	Fax Number	E mail
Engineering Discipline	Engineering Category	Engineering Specialty	Business Registration Number.	VAT Number
IPET Membership Number	Engineering Council of SA (ECSA) Registration Number <small>(supplied to registered individual engineering practitioner)</small>	Any Other Registration Number if applicable <small>(supplied by ECSA to the individual registered person - not to companies)</small>	Engineering Specialty	Other Information

Kindly sign and date this page as well.

Print Name.....

Signature.....Date.....

This list below is supplied as an aid to completing the form.

It is not necessarily complete as there may be other information that should be added to the list.

Engineering Discipline	Engineering Category	Engineering Specialty
Agricultural	Consulting	Generation
Aeronautical	Construction	Distribution
Civil	Commissioning	Roads
Dams	Design	Storm water & drainage
Chemical	Erection	Sewerage
Electrical	Inspection	Bridges
Mechanical	Maintenance	Reticulation
Metalurgy	Manufacturing	Telecommunication
Mining	Operation	Broadcasting
Specialised Scope; Lift Inspector	Quality Control	Township
Specialised Scope; Lifting Machinery Inspection (LMI)	Repairs	Protection
	Training	Other, Etc
	Transport	
	University	
	Water	

**No 19. List of Members in Good Standing.
You must refer to our Website for the latest list.
It is not reproduced in this newsletter!**

If your name does not yet appear there, then kindly check that you have paid your annual fee. If you have then submit proof of payment with your name and IPET number to our office so we can trace records and update lists where required.

**No 20.
Unsubscribe Option.**

As a member of IPET you should want to receive the E News. If however u do not want to receive the E News as an E Mail then you have the option to unsubscribe.
To unsubscribe send an email with ""IPET unsubscribe"" in the text to engineer@netactive.co.za

Number 21. O. & O. E.

The Institute of Professional Engineering Technologists, its agents, volunteers, workers and members cannot be held responsible for errors in, amendments to, or any damages whatsoever arising from information published in good faith. Opinions expressed by contributors are not necessarily shared by IPET.

QRT

See Next Page for Update Form.

Number 22. Update Form.

QSL

IPET Information Update Form 2008
P O Box 1824
Randburg
2125
Tel / Fax / Answering Unit 011 787 9706

If you need to correct your contact information please use this form. Kindly complete this form in large black font especially for E-mail addresses.

Return the completed form by post or Fax. **E Mailed Update Forms are not accepted.**

Update Forms are also available on our website www.ipet.co.za

All information will be treated as confidential and will not be shared with any other party unless you have sent the signed Free Listing / Advert form which offers free listing on our Website.

Last Name	Initials	Title (Mr / Mrs / Ms /Etc)
Postal Address		
Work Telephone	Work Fax number	Cell Phone
Home Telephone	Home Fax	E Mail address (in large black font please)!
Your IPET Membership Number (Last 4 digits)	Your ECSA Registration Number (If applicable)	
Your signature that info is correct		Date

