

# NEWSLETTER

Association of Consulting Structural Engineers Victoria (Reg No: A0026069J) [www.acsev.org.au](http://www.acsev.org.au)  
Foundation and Footing Society Victoria (Reg No:A0025791G) [www.footingsgroup.org](http://www.footingsgroup.org)



## Professional Engineers Registration Bill 2019 before Parliament

The Professional Engineers Bill has been reintroduced to Parliament and is set for debate the next sitting week in April. The ACSEV Committee has previously responded to the Victorian Government regarding the original bill in 2018 regarding the many concerns as to the need and intended operation of this proposed legislation. The Bill was not approved by the Legislative Council prior to the State Election last year and as such was not introduced.

It is likely to go through the Legislative Assembly where the State Government has the numbers to pass the bill. The Government does not have a majority in the Legislative Council, there is opportunity to influence the Opposition and minor parties and independents.

The Bill is now known as the **Professional Engineers Registration Bill 2019**, with effectively minor changes. It appears the main changes are that the word Professional has been added. There are minor legal changes to clauses (eg. it is not an offence to call yourself an engineer if you are registered under a similar scheme, eg. Queensland).

This is the largest change to our profession in Victoria since the Building Act 1993. The changes in 1993 were considered mostly beneficial to the practicing engineers, these proposed changes do not appear so. Correspondence to and from the Government, the Act and Explanatory Memorandum will be available on the ACSEV website, refer <http://www.acsev.org.au/document.php>.

We note that there is a concerted effort by Professionals Australia, Engineers Australia, and the Institute of Public Works Engineers Australia to support this legislation. ACSEV does not oppose the principle of registration of engineers but still has concerns as to how the registration is implemented, transitioned from the VBA, and its affect on engineers (especially already registered engineers under the Victorian Building Act).

Be aware that current registration as registered building practitioner under the Building Act will only remain current for 5 years under the proposed registration scheme. After this engineers must be registered and must have a Building Engineer Endorsement. If an engineer does not have a prescribed qualification or has gained their registration as a practitioner through equivalent experience they may no longer remain registered after the transition period without upgrading their qualification as they may not be able to become endorsed.

Other concerns include the complaint process being run by Consumer Affairs Victoria and VCAT with minimal engineering representation, the need for multiple registrations eg. civil and structural (and the effect of cross over ie. will you be practicing outside the registered area of expertise)

Most importantly ACSEV still has concerns as to the lack of consultation with the profession and what appears a lack of understanding as to what the actual Bill entails. We find it disappointing that the bill was reintroduced into Parliament using the issues with the Opal Tower Apartments in Sydney as an example, as in New South Wales there is no requirement for engineers to be registered in the building industry. This is not the case in Victoria, where engineers in the building industry need to be registered under the Building Act.

Engineers should consider what the Bill is actually asking of them. We encourage all members to review the Bill and voice their own opinions to their local state government member, especially upper house (State Legislative Council) members  
...Editor



### NEWS

- Engineers Registration bill in parliament
- ACSEV rolling out student awards
- ATEN project getting momentum
- New office bearers for ACSEV and FFSV

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Karl Apted  
[karl@apted.com.au](mailto:karl@apted.com.au)

## 2018-2019

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*“The Committee has been looking at the future of ACSEV and has set up a sub committee to review how we are operating as an Association and make recommendations to the Committee for changes if required”*

## President’s Message

Dear Association members,

This is our first newsletter for 2019, thanks to our editors for compiling the newsletter, it is a larger task than we all realise.

We started the year with our traditional site visit, to the Veridian Glass factory in Dandenong. The meeting bookings were well responded to, but unfortunately the number of persons per tour was limited to 20. We are looking to arrange another inspection and will keep members informed. The tour was informative and gave insight as to how glass was made and coated, from raw materials until finished product ready for shipping. Thank you to David Lyons for organising the tour.

The first technical meeting of the year was held on 20th March, with Cora Xu an engineer from Think Brick Australia providing insights on the changes to AS3700-2018 Masonry Code and effects on the National Construction Code. This was followed by an informative presentation from committee member Joseph Genco, who is also a registered Building Surveyor, regarding the new changes to the NCC2019 to be released shortly and the effects on Regulation 126 Certificates of Compliance under Section 238 of the Building Act. This generated some lively debate.

Of note, as the President of ACSEV, there are 3 main items that have been raised by members (multiple times) requesting advice or assistance, or expressing their concerns. These being Professional Indemnity Insurance issues (particularly policy exclusions), the filling in correctly of Regulation 126 Compliance Certificates, and the proposed Engineers Registration Bill.

These items are further addressed elsewhere in the newsletter, but I would like to note these items are important to our practice as registered building practitioner engineers and they will affect our members, so members should be aware of these issues. ACSEV is also looking at these issues and has and will be making representations to the Victorian Government and the Victorian Building Authority on these issues.

The Committee has been looking at the future of ACSEV and has set up a sub committee to review how we are operating as an Association and make recommendations to the Committee for changes if required. We are progressing further and hope to get back to the membership soon with our findings.

Please can members send any comments they see fit as to how they feel the Association should progress into the future. Please send any comments to [acsev@acsev.org.au](mailto:acsev@acsev.org.au).

I encourage all members of our Association to contact the Committee and Office Bearers with any questions, issues, concerns, or even comments on how we are running the Association on your behalf.

The Committee is also there to help you with any issues you may have. Networking and informal mentoring offered by ACSEV members and the Committee can be of enormous benefit. If you do not know or have concerns about elements of the profession or design queries, additional feedback can be of enormous benefit. There is an extensive amount of knowledge and experience in our Association that can be accessed, just ask. Committee members are always willing to offer their advice.

I look forward to seeing you at our next presentation in April, this will be regarding the insurance claims and litigation.

Karl Apted



Luke Tymensen  
[luke@hcgeotech.com.au](mailto:luke@hcgeotech.com.au)

### 2018-2019

Chairman:	Luke Tymensen
Vice Chairman:	Steve Buratto
Secretary:	Scott Emmett
Treasurer:	Francis Hsieh
Asst Treasurer:	Ramon Leoncio
General Committee:	
	Russell Brown
	Tim Gibney
	Xavier Smolders
	David Tuaine
	Phillip Vawdrey
	Bernie Weberuss

*“It is great to be involved in a project that can bring together academics in Victoria University and Swinburne University along with industry groups such as FFSV and ACSEV as well as industry partners.”*

## Chairperson’s message

Dear Members,

Wow, it feels like it was only Christmas yesterday and yet nearly a quarter of the year has already gone.

Our last meeting in October was our AGM. At this meeting committee members Simon Anderson and John Southwell, our secretary, stepped down from the committee. We as a committee and from all of our members thank both for their support and work while on the committee.

Steve Buratto presented on “Failure and what it is” and Karl Apted, president of ACSEV spoke about his experience with “Difficult and Problematic Soil Reports”. Both presentations were well received by attendees. The meeting and dinner were both well attended.

All other committee members were re-elected and at our first committee meeting in February and the following positions were set

Chairperson – Luke Tymensen

Vice – Chairperson – Steve Buratto

Secretary – Scott Emmett

Treasurer – Francis Heisch

Assistant Treasurer – Ramon Leoncio

The rest of the committee members

Xavier Smolders

Bernie Weberruss

Dave Tuaine

Phillip Vawdrey

Russell Brown

Tim Gibney

We have progressed with our research project at Victoria University, Werribee. An agreement has been reached and drilling and sampling of the site has been completed. The soils at the site are highly to extremely reactive which is exactly what we are looking for.

It is great to be involved in a project that can bring together academics in Victoria University

and Swinburne University along with industry groups such as FFSV and ACSEV as well as industry partners.

As the project gets close to starting, we will soon be putting out requests for assistance from interested parties to help supply materials or equipment. Please contact me or any other committee member to register your interest.

FFSV has been asked to attend VU’s industry showcase on Friday 22nd March 2019. Scott Emmett, Phillip Vawdrey and I will attend to display our research project in order to gain further interest from industry. This will be a great opportunity to mix with industry and state who we are, what we are about and what we are doing. We will present examples of the soils that have been taken from the site, examples of different void formers like waffles etc and examples of screw piles. Our presentation will be a chance for members of industry to see, touch and talk about what we are doing.

At our committee meeting we discussed bringing Dr Beadel out in March 2020 to present on trees. We would like to make this a major presentation that brings together all professionals and practitioners that are affected by trees to look at better solutions and building practices.

At our first meeting for the year we are going to have presentations from Paul Trentini about drainage and soil movements and Scott Krishchock, a lawyer who will discuss ways to protect ourselves from being litigated. This is a must attend for all in our industry.

See you all at the next meeting,

Sincerely,

Luke Tymensen

## Professor Emeritus Leonard (Len) Kelman Stevens AM 1925 -2018



Professor Len Stevens graduated from The University of Melbourne in 1950 with a Bachelor of Engineering and in 1954 with a Master of Engineering. This was followed by a PhD at Cambridge University researching the plastic design of structures which was completed in 1955. Prior to his studies, Len served as a flying officer with the RAAF in the Pacific during World War 2 (1943-1946). Len was appointed a Fellow of the Australian Academy of Technological Sciences & Engineering (FATSE), a Fellow of the Institution of Engineers Australia and a Member of the Order of Australia in 2005. He has received a number of prestigious awards during his career including; an Honorary Doctor of Engineering from the University of Melbourne in 2002, and the John Connell Gold Medal for his outstanding contribution to the practise of structural engineering in Australia.

Len joined The University of Melbourne in 1955 and began an academic career which formally spanned some 50 years, including 11 years as Head of the Civil Engineering Department and 9 years as Dean of the Faculty of Engineering.

ACSEV habituary Patrick Irwin was a student of Len's when he was Dean of Engineering at the University of Melbourne at the end of the 1970s and early 1980s and recalls: I well remember the stylish and impressive presence of the Professor and his ability to communicate engineering principles meaningfully and with strict technical accuracy. He would make and display sponge foam or wire models to demonstrate structural actions. He recognised our need to feel and visualise structural behaviour, not just to do calculations. This may seem obvious now, but it was rare then. I also sat on a university college committee with Professor Stevens and experienced his humility and common sense in a difficult and challenging political environment. Len demonstrated to us his passion for technical understanding and rigorous engineering methods. A second rate understanding of methods was not acceptable. One came away from his lectures having had a very clear example set to aspire to. This approach is not easily forgotten and I often felt his spirit in the design office many years later.

Len continued his collaboration with the University of Melbourne post retirement undertaking many industry and research projects, supervising PhD students and teaching the principles of structures to first year architectural students until 2017.

Len's early research interests were in steel plastic design and pre-stressed concrete. He was then heavily involved in the development of many design materials and structural standards. In particular, Len was the key leader in transforming the structural standards in Australia from Working Stress Design to Limit State Design which required a great deal of skill, advocacy, and diplomacy

As Emeritus Professor, he chaired the Asia Pacific Economic Cooperation (APEC) Technical Group 1 (1996-1999), attempting to align structural standards in the APEC economies.

Len undertook many important Australian construction enquiries including the collapse of the Westgate Bridge and the devastating Cyclone Tracy. He was also the engineering assessor for the New Parliament House; the Australian Academy of Science's Shine Dome in Canberra; and the Art Centre Spire in Melbourne. In all these projects, Len was selected for his sharp analytical and rational mind that was able to reduce the complex into basic principles using his knowledge, visualisation, experience and engineering judgement.

Len had a significant influence on structural engineering over 50 years, particularly in influencing professional practice through his teaching, research and specialist advice. Above all, he passed on his engineering wisdom to generations of engineers, arguably this was his greatest contribution to the profession. Len is survived by Fay, his wife of 62 years who provided such great support and friendship, together with their three children and families.

.....Editor

**Association of Consulting Structural Engineers Victoria (ACSEV) [www.acsev.org.au](http://www.acsev.org.au)**

<b>2018/2019 Office Bearers</b>		
President	Karl Apted	karl@apted.com.au
Vice President	Philip Vawdrey	pveng@westnet.com.au
Treasurer	Jenny Norrish	jenny@jnagroup.net.au
Secretary	Anthony Leily	anthony@engpro.net.au
Membership officer	Francis Hsieh	firsttalone@optusnet.com.au
Newsletter Editor	Russel Brown	russellb@ribrown.com.au
General Committee		
	Keith Allilomou	keith.allilomou@gmail.com
	Biju Balakrishnan	biju.balakrishnan@adventconsulting.com.au
	Malcolm Cuthbert	cuthbert@techinfo.com.au
	Len Dalziel	ldalziel@cadesystems.com.au
	Joe Genco	josephg@ggac.com.au
	Robert Nestic	rob@tgaengineers.com
	Minhtri Nguyen	minhtri@live.com.au
	Richard Rees	richardrees.au@gmail.com
	David Lyon	davian@alphalink.com.au
Part time/Country	Richard Fooks	pressedmetal66@gmail.com

**Foundation and Footing Society of Victoria (FFSV) [www.footingsgroup.org](http://www.footingsgroup.org)**

<b>2018/2019 Office Bearers</b>		
<b>Chairman</b>	Luke Tymensen	luke@hcgeotech.com.au
<b>Vice Chairman</b>	Steve Buratto	Steve@buratt.com.au
<b>Secretary</b>	Scott Emmett	
<b>Treasurer</b>	Francis Hsieh	firsttalone@optusnet.com.au
<b>Asst Treasurer</b>	Ramon Leoncio	
<b>General Committee</b>		
	Russell Brown	russellb@ribrown.com.au
	Tim Gibney	
	Xavier Smolders	
	David Tuaine	
	Philip Vawdrey	pveng@westnet.com.au
	Bernie Weberuss	

## What do engineers want from geotechnical reports?

Karl Apted, President of ACSEV

31th October 2018

Karl presented an interesting topic to the tightly packed FFSV Annual General Meeting on 31th October 2018. Karl clearly laid out the minimum technical information expected from a geotechnical report as more often than not, you get what you are paying for. In the residential sector, it becomes even more difficult to assess the capability of a geotechnical practice as there is no registration regime established even after numerous representations from FFSV. All are encouraged to check membership to professional bodies like, FFSV, ACSEV and EA to evaluate consultant's capability.

From an appropriate insurance to equipment, trained technical staff to laboratories, you need to check whether the consultants have the capability to deliver what they offer. Boreholes and it's location are the main engineering information required, reports often lack a good site plan in most cases, many get away attaching a nondescript hand sketch.

Cohesion and friction angles are critical if you are designing a retaining wall and make sure that you get those values from your reports, any guess work will be an unprofessional approach. Also soil classification to AS 2870 doesn't help if you are designing an industrial pavement, where you need parameters such as California Bearing Ratio (CBR).

Karl's presentation was spot on highlighting the lack of technical information in many reports but also shown some professional reports which provides competent technical advice based on soil testing. You need to pick the right consultant to reduce your risk of designing to unknown parameters. Well done Karl and FFSV for joining to provide a quality CPD event! .....Biju.B

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## From Cladding to Concrete: Non-Compliant Building Products and the risk to your business

### Wade Cadman

Account Manager - Professional Risks

Do not accept your Professional Indemnity insurance renewal with a non-compliant building products exclusion!

The Insurance Industry has reacted strongly to the well-publicised issues surrounding composite cladding, cracking concrete, and also a range of other dodgy products. Both the use of Aluminium Composite Cladding (eg Lacrosse Tower) and also the quality of design and construction around load-bearing Concrete (eg Opal Tower) has made Insurers very nervous.

The liability perspective: the Lacrosse decision at court effectively allowed Builders to pass 100% of the responsibility on to their sub-contractors design professionals.

The regulatory perspective: the VBA has begun scrutinising insurance certificates, and in some circumstances refusing to renew practitioner licenses where they have exclusions.

This is where ACSEV members need to be careful!

We are seeing a range of unfair exclusions appearing on policies. We continue to negotiate cover with NO exclusion but find many of your peers approaching us because their current policy or current broker cannot solve this issue with a range of exclusion wordings we have seen tabled below:

No cover for non-compliance with:	Applying to Products:	Applying to Professions
National Construction Code	Aluminium Composite Cladding Only	Building Surveyors and Fire Engineers Only
Building Code of Australia	All Cladding Systems, external wall panelling, façade material, external insulation or finishing system	Including Architects, Project and Construction Managers
Australian Standards		
“Any applicable laws or regulations”	All Building Products	Every Engineering Profession

As displayed, the breadth of insurance exclusions has spread far broader than just ACP with all of the above highlighted exclusion components having direct impact on the role and responsibilities of ACSEV members.

	<p><b>Wade Cadman</b> Account Manager - Professional Risks</p> <p><b>Email</b> <a href="mailto:wadec@abcountrywide.com.au">wadec@abcountrywide.com.au</a></p> <p><b>Phone</b> (03) 9835 1379</p>
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## Professional Indemnity Insurance

We have had a number of queries from members regarding their Professional Indemnity Insurance requirements for registration as a Registered Building Practitioner Engineer (Civil).

We understand that the Victorian Building Authority is not accepting professional indemnity policies with exclusions as part of registration renewals.

The main cause of concern is that most insurers have introduced non compliant building materials exclusions to their policies, intended to relate to Aluminium Composite Panels with styrene or flammable core material (largely due to failures such as the Grenville Tower in London, the Lacrosse Apartments and the Neo200 Apartments in Melbourne).

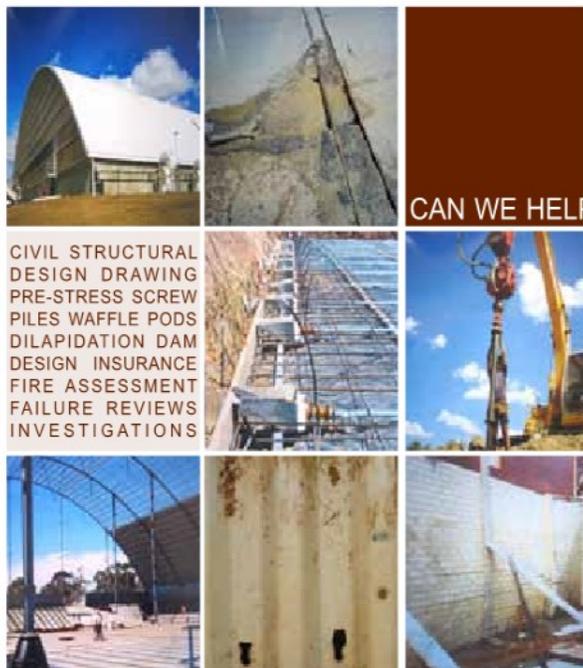
There appear multiple issues, including:

- Most (near all) insurers will not offer a policy without exclusions
- The wording of the exclusions is vague and could be interpreted to cover all non compliant products
- There are exclusions or conditions on reinstatements due to fire related claims or refusal of any fire related claims

We understand that policy premiums can change by up to 300% if you can find an insurer willing to give a policy without conditions. ACSEV is aware of these issues and will be making representation to the Victorian Building Authority.

We will keep members advised. Members should also be aware that Registered Practitioner Building Surveyors have also suffered similar issues.

.....Karl Apted



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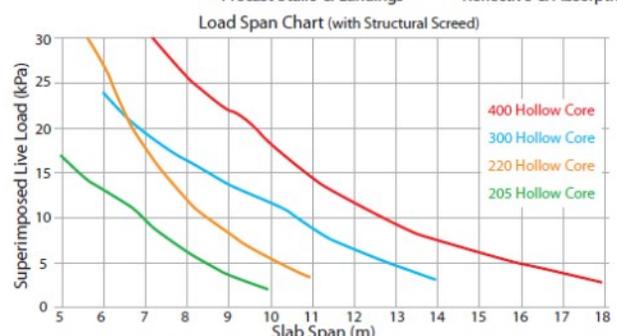
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## ACSEV Student Awards 2019

Preparation for ACSEV student awards for 2019 is well underway with Jenny Norrish, Treasurer talking to Monash University 3rd and 4th year civil engineering students on 3rd of April. The presentation covered the benefits for young engineers to join ACSEV to enhance their networking and professional knowledge base. Jenny also presented the comprehensive CPD program ACSEV is offering to its members.

Dr Amin Heidarpour (Head of structures) organised this presentation and discussed various options for collaborating with ACSEV. A visit of the structural laboratory was also carried out after the presentation to understand the testing capabilities of Monash and to evaluate how this could be utilised for ACSEV driven research.

Monash civil engineering lab is equipped with many modern testing equipment which can take non contact measurements using laser technology. This means, strain and stress measurements can be accurately done without physically placing any measuring gadgets such as strain gauges in the specimen. This opens up a lot of opportunities for research in fire rating of structural materials as you can actually measure the strains when the specimen is heated to higher temperatures. Monash is also interested to involve with ACSEV for future Linked research programs. Thanks to Dr.Amin for the opportunity and congrats to Jenny Norrish for developing and running such an important program for ACSEV.

.....Biju.B



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## NEW MEMBERS WELCOME

Please contact membership officer Francis Hsieh (9561 9431) for more details.

Membership form can be downloaded from [http://www.acsev.org.au/images/signup\\_form.pdf](http://www.acsev.org.au/images/signup_form.pdf)

## Victorian Building Authority-Regulation 126 Certificate of Compliance

The new Building Regulations that came into effect 2<sup>nd</sup> June 2018 have adopted new formats for the certificates. These are available on the VBA website at: <http://www.vba.vic.gov.au/practitioners/resources> under Building Practitioner Resources, Forms, Approved Forms

We have had a number of queries as to filling in of these forms.

We have received the following advice from the VBA:

- Areas marked with asterisk on approved forms are noted as able to be deleted
- Description of works to define design and inspection works can be added to the Building Work inspected (for Building Works Certificate) or to Nature of Proposed Building Work (for Proposed Building Works Certificate)
- Inspection certificates (Certificate of Compliance - Building Works) can only be issued by the Registered Building Practitioner who has performed the inspection. You cannot rely on photographs or another person's inspection.

We acknowledge that there are still other items that are not clear or well understood by practitioners.

Also of note is that the forms are being relied upon to much greater extent by Building Surveyors, and as such they will be insisting they be filled correctly.

Be aware, that any designs prepared using codes not referenced in the National Construction Code are performance solutions and need to be treated as such in certifications.

.....Karl Apted



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## Footing Failure

Steve Buratto



There seems to be much confusion between engineers and especially some experts about what actually constitutes a footing failure. A questionnaire was distributed to almost 300 members during the combined meeting of ACEV and FFSV and sketches of eight defective slab shapes were presented with a simple question of “what constitutes failure in accordance with AS2870?”. Replies were few and the results mixed which confirms the confusion and/or lack of understanding.

AS2870 arose due to a need to form a uniform approach nationwide to reduce litigation, providing experts with a definition of damage. AS2870 contains the word „failure“ only a few times and relates mainly to strength and bearing. There is no mention of what it is exactly, however, it does reference a paper by Paul Walsh which is all about failure and in fact the code is based on this paper. “Load Factors & Design Criteria for Stiffened Raft Slabs on Expansive Clays” – P.F Walsh, 1984

The paper details two failure modes. One is below yield which is considered a serviceability failure and the other above yield which is a distinct structural failure problem. With regards to serviceability data was based only on 55 houses with an average complaint threshold (from owners) of 3.5mm for cracking. Master builders at the time required remedial repairs (or at least investigation) for a crack of 9mm. The paper was written circa 1984 and was mainly based on brickwork performance/distress rather than internal plaster distress. Applying Weibull distribution, a ratio factor (complaint threshold/in service values), using computer modelling turned out to be 3.5 which in turn translates to a 2.5mm crack. Due to conservative values of loads, material properties, concrete strength etc a value of 1.9 i.e.  $9/1.9=4.7$  mm was justified. Fortunately this corresponds to a design target range for brickwork cracking of span/500. (not span/400).

In design, the crack width is not the expected or average, but merely the target. Because of the conservative nature of loads and materials, the target width is much less than 5.0mm if distress occurs at all. Yield failure is where a distinct “failure” problem occurs usually as deformation and repair is required. Even with underpinning of the slab, repairing brickwork, including legal cost at the time it was considered to be not unduly high.

Obviously, the home-owner does not want to see any distress and some estimates say a 2mm crack is where a home-owner would want repairs. Reducing the design crack width to 1mm increases the footing cost by 5 times and even then may not eliminate what is considered as “failure”. AS2870 does not encourage over design as it wastes resources and provides reasonable levels of risk which optimizes the cost for the entire community. This is thought to benefit the volume builder since the level of repair is spread over many houses and gains more over efficient footings designs than allowing for less distress. However, with the current litigious climate and public exposure through social media this is all changing as it impacts sales. Volume builders now have a heightened sense of responsibility. On the other hand, an individual builder is less likely not to accept liability and therefore the owner is the more likely to litigate. To protect the individual owner, AS2870 provides defined engineering practices and defines distress limits to discourage litigation. However, it seems that we may have gone full circle and AS2870 needs to be clearer. Litigation and insurance premiums and large excesses are making the practice of footing design not worth the risk. AS2870 needs to be amended so that it clearly extends the distress category so that maintenance/remedial works by the builder, that minimises future distress, is acceptable rather than building demolition and reinstatement.

What has changed since 1984? While soil conditions have remained the same and one can argue that a drier climate has had an effect, construction practices have definitely changed. Superstructures have become increasingly rigid with truss rather than conventional roofs being the norm. Fixing of internal stud walls through metal brackets that have limited vertical movements lots, to roof trusses and rigid connection created by plaster cement and cornices have all made the superstructure extremely rigid. Storm water drains are generally installed with porous material before construction even begins and can be extensively damaged during the build leading to abnormal soil moisture conditions. Site surface drainage can be poor during the entire build due to poor surface topography and may remain unchanged even after completion, again leading to abnormal soil moisture conditions. In general rafts have been replaced with waffle slabs. While waffle slabs are considered stiffer and the superstructure performs better when it is a conventional framed roof, internal plaster distress especially to the middle of the building for truss roofs is greater.

While the number of dwellings with distress to external brickwork has decreased due to closer spacing and better location of brick articulation, internal plaster distress has become prevalent.

Structural failure due to yielding is rarely a problem even with abnormal soil moisture conditions. Existing footings can be assessed by measuring slab deflections at the edge. For strength, the deflection of a slab over an edge distance is in the range of 2-3m as per AS2870 and can be compared to the  $Y_m$  value allowed for in the footing design.

When assessing an existing building, differential deflection of the footing must NOT be assessed using table 4.1 AS2870 as this table is for design only. In design deflections should be considered in orthogonal directions (direction of walls and footings) and assessing existing buildings should be done likewise. The table provides parameters in an attempt to minimise distress to walls by providing an acceptable target value for distress- see above. Due to the complex nature of modelling soil mounds and superstructure flexibility, this theoretical distress target value may never occur, especially for centre heave. Indeed the footing can deflect (differentially) above 50mm while not exceeding strength parameters and owners will never notice or know the deflection exists unless distress is evident to the walls. Hence, flexibility of the superstructure is of the utmost importance. The internal plaster distress may be a reflection of the lack of superstructure flexibility rather than footing performance. It is obvious that footing performance must be based on distress category for a superstructure that has been built with adequate flexibility and not on the actual deflection of the footing.

Where to now? Recent court cases may have set a precedent for "failure" as being category 3. Lawyers are hesitant to challenge unless AS2870 is changed. AS2870 needs to be clearer, especially with regards to Category 3 in that Category 3 does not constitute a „failure“ but remedial works are required which could be similar and/or greater than required for Category 2. Appendix B3 of AS2870 states: "...crack widths over 5mm often have no influence on the function of the wall and only presents an aesthetic problem." Further table 2.2 of AS2870 provides an acceptance of category 3 distress for "H1" and "H2" classifications. So why is Category 3 considered failure?

Finally, to alleviate any ambiguity sections 1.3.1 and 1.3.3 of AS2870 must change to include category 3 so that it is aligned with table 2.2 of AS2870. Hopefully recent FFSV and other submissions to Standards Australia though Eric Fox will be the start of the change.

**Victorian Structural College**  
CPD Program 2019

**ENGINEERS AUSTRALIA**

**CLT Design & Construction in Australia**  
Tuesday, 12 March

Timber is undergoing a renaissance in its application within the built environment in Australia.

This presentation will look at the drivers and enablers for timber buildings, focusing on a number of key examples of recent timber builds.

**Wind Tunnel Testing for Structural Optimisation of Buildings**  
Tuesday, 9 April

This breakfast session will involve a site visit to the Labs of MEL consultants hosted by Mr Michael Eaddy. Mr Eaddy will explain the benefits over a CFD analysis, test set-up, testing methodology and interpretation of the results to aid Structural Engineers in their designs.

Co-hosted with the Risk Engineering Society

**Concept Designs of Structures**  
Tuesday, 14 May

The concept design phase of a project involves design re-iterations to ensure an optimum design, constructability and ease of deconstruction that is fit for the purpose to achieve the project specifications.

This event will highlight the methods to achieve this for Multilevel Buildings, Bridges and Water retaining structures.

**Cold-Formed and High Strength Steel in Multi-Level Construction**  
Tuesday, 11 June

This session will provide an introduction to light-gauge steel framing, outline the factors driving the industry's uptake, as well as touch on the NCC requirements relating to fire, acoustic and structural compliance. We will also visit the topic of using innovative, prefabricated high and ultra-high strength steel tubular sections.

**Design and Construction Aspects of Foundations for Onshore & Offshore Wind Turbines**  
Tuesday, 9 July

With wind turbine farms minimising the carbon footprint and increasing renewable energy sources in Australia, this event will highlight key analysis/design and construction aspects, products and innovations with reference to landmark projects in Australia.

**Structural Strengthening using CFRP and Rehabilitation of Structures**  
Tuesday, 10 September

As design loads change or concrete deteriorates, the service life of R/C structures are accordingly affected. This event aims to highlight the techniques and products available to increase durability and service life of the structures, with a focus on Carbon Fibre Reinforced Polymers (CFRP) and rehabilitation of R/C structures.

**AR, VR & BIM in Structural Engineering**  
Tuesday, 8 October

Tools to aid 3D visualisation are gaining rapid momentum in Digital Engineering in Construction. Join this breakfast session to explore the current trends in the AEC industry and how this technology is being used by design engineers and contractors.

[www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

## YOUR CONTACT DETAILS CHANGED???

Please let us know

Please contact  
Membership Officer:

**Francis Hsieh**

494 Springvale Road, Glen Waverley, VIC 3150

[fristtalone@optusnet.com.au](mailto:fristtalone@optusnet.com.au)



Just so you don't keep believing in the conspiracy theory and things that fall on you from above have a good reason without comment from us we would like comments from you. Have a look at the photographs attached and tell us what you think went wrong. Please write to us on what you think went wrong, inadequate wind coefficient?, poor welding?, fatigue?, galloping due to truck induced gust? imported bolts? ..or is it just bad luck? We want to hear from you. Please send your email to [russellb@ribrown.com.au](mailto:russellb@ribrown.com.au)

## Viridian Glass factory site visit



*"Take some high quality sand (the kind you'd imagine on your dream beach), soda ash, limestone, saltcake and dolomite and melt at white heat to a high consistency and you've got glass"....well that will be the understatement you might have heard over centuries. Making a glass takes a bit more than just melting sand, at least this was apparent to all who have attended a site visit at **Viridian Glass factory in Dandenong**, the last remaining such plant in southern hemisphere.*

We all gathered at Viridian Glass factory on 20th February, being the lucky 20 as the numbers were limited. After registration and a small induction on safety, we have been ushered into the starting point of any glass making activity, collecting the raw material or "batch". Even though sand is the major ingredient, Viridian recycle a lot of defective/broken glass using wastages from their own production line. Also the QA starts at selecting the right material as people say garbage in garbage out. Viridian does a lot of tests to make sure that they got the material right before it goes to the batching plant. Batching is all done through modern computer controlled systems where every process is mapped into a colourful screen which you can control sitting in a climate controlled office, each component is measured out rigorously and blended to ensure the mix stays consistent and within the tight tolerances.

The batch finally enters the gas fired furnace (1550 °C) through conveyer belts and sits on the top of already molten glass briefly before they melt and combine. The furnace can't be stopped after the first ever batch and has to continue till the plant shuts down for rebuilding, probably 15-20 years later! The reason being, you need molten glass to receive any fresh batch therefore to keep the molten glass, you need to keep the furnace burning.

The molten glass after removing all the bubbles, is cooled to 1000°C and floated over very fluid molten Tin float bath. The highly viscous molten glass will not mix with the fluid Tin and spreads evenly to form a flat surface. This is the technique for producing the float glass, literally the glass is floated over liquid Tin. The ribbon of glass such produced is cooled off to lower temperatures under controlled conditions and then cut off to required sizes and despatched.

An informative site visit, thanks to David Lyon for organising it. Viridian has also committed to one more site visit and please get in touch with the committee if you missed the first one. ACSEV will organise one more if there is sufficient interest. ....Biju.B

## Australian Technical Evaluation Network (ATEN) – Scoping Project

Joseph Genco, Director, GGA Consultancy Pty.Ltd.

### Background

There is currently a shortage of independent verifiable information on the suitability of building construction products for intended use, particularly for new products. There are also many issues with the use of non-conforming building products as highlighted by recent reports

Evaluating all relevant performance aspects of a building product in terms of fitness for intended use is very complex. Currently, there is no single independent institution in Australia that has this capability in terms of necessary expertise as well as testing infrastructure.

A scoping study for ATEN is currently being carried out with the support from Victoria Government Future Industries Funds. The consortium for the scoping study is led by Swinburne University of Technology with collaboration from Victorian Building Authority (VBA), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Association of Consulting Structural Engineers Victoria (ACSEV), and National Association of Steel-framed Housing (NASH).

### What is ATEN ?

It is proposed that the Australian Technical Evaluation Network (ATEN) comprises of a consortium of building specialists and testing laboratories set up to evaluate building construction products and systems in terms of fitness for intended use, using the National Construction Code performance requirements as criteria for acceptance. Its aim is to build confidence and support for the Australian building regulatory system.

ATEN is proposed to be structured to fit in with the current Australian building regulatory landscape after a study of international best practice including the European Union and Japan conformity evaluation systems. It is intended that Product suppliers or building authorities can approach ATEN with a product, its specification and intended use. ATEN will offer advice on the relevant NCC performance requirements that the product has to conform to and how to get the product tested and evaluated. After receiving the relevant reports, ATEN will issue an appraisal report on the suitability of the product for intended use.

### Progress

A working group has been established with 4 meetings held so far in order to ascertain the issues that need to be addressed by the scoping study. In undertaking the scoping study it has been determined that the following key functions need to be determined; proposed structure, governance rules, scheme rules including different levels of appraisal, protocols for technical evaluations, templates for appraisals, database for products/systems, industry use of the process, implementation and potential urgency for implementation.

A limited industry workshop was held on 7th February at Swinburne University, where we had the benefit of Dr.Ing Karsten Kathage (Vice President of DiBt and President of EOTA) provide insight on the EU and more specifically the German approach to conformity assessment. Some issues raised at the workshop included; timeframe for implementation, cost to industry, Mandatory vs Voluntary, Installation not part of ATEN assessment, Who is to assess ATEN assessment, What products need assessment, Strength and weakness of current system.

As can be seen at this stage we have exposed key strategic criteria that needs to be addressed and are working our way through them.

### For further information contact

Swinburne                      Professor Emad Gad; [egad@swin.edu.au](mailto:egad@swin.edu.au)  
   Professor Lam Pham; [lpham@swin.edu.au](mailto:lpham@swin.edu.au)  
ACSEV representative:      Russell Brown; [russellb@ribrown.com.au](mailto:russellb@ribrown.com.au)

## USEFUL LINKS



Timber advisory	<a href="http://www.timber.org.au">www.timber.org.au</a>
Concrete institute of Australia	<a href="http://www.concreteinstitute.com.au">www.concreteinstitute.com.au</a>
Cement Australia	<a href="http://www.cemaust.com.au">www.cemaust.com.au</a>
Concrete Masonry Association of Australia	<a href="http://www.cmaa.com.au">www.cmaa.com.au</a>
Cement Concrete and Aggregates Australia	<a href="http://www.concrete.net.au">www.concrete.net.au</a>
Australian Steel Institute	<a href="http://www.steel.org.au">www.steel.org.au</a>
Victorian Building Authority	<a href="http://www.vba.vic.gov.au">www.vba.vic.gov.au</a>
Australian Stainless Steel Development Association	<a href="http://www.assda.asn.au">www.assda.asn.au</a>
Forest & Wood Products Australia	<a href="http://www.fwpa.com.au">www.fwpa.com.au</a>
The Australian Timber Database	<a href="http://www.timber.net.au">www.timber.net.au</a>
Wood Naturally Better	<a href="http://www.naturallybetter.com.au">www.naturallybetter.com.au</a>
Galvanizers Association of Australia	<a href="http://www.gaa.com.au">www.gaa.com.au</a>
Australian Building Codes Board	<a href="http://www.abcb.gov.au">www.abcb.gov.au</a>
Australian Glass & Glazing Association	<a href="http://www.agga.org.au">www.agga.org.au</a>
Foundations and Footing Society of Australia	<a href="http://www.footingsaustralia.org.au">www.footingsaustralia.org.au</a>
Engineers Australia	<a href="http://www.engineersaustralia.org.au">www.engineersaustralia.org.au</a>

### ACSEV Membership fees 2018-2019

ACSEV membership fees are collected for the financial year starting from July. Please pay your fees before June 30th 2018. Paying your fees on time will greatly help the committee to run a smooth operation.

<input type="checkbox"/>	<b>MEMBER</b>	<b>\$185.00</b>	<input type="checkbox"/>	<b>MEMBER (Country)</b>	<b>\$145.00</b>
<input type="checkbox"/>	<b>ASSOCIATE</b>	<b>\$185.00</b>	<input type="checkbox"/>	<b>ASSOCIATE (Country)</b>	<b>\$145.00</b>
<input type="checkbox"/>	<b>RETIRED</b>	<b>\$70.00</b>	<input type="checkbox"/>	<b>GRADUATE (6 years or less)</b>	<b>\$90.00</b>
<input type="checkbox"/>	<b>STUDENT</b>	<b>NIL</b>	<input type="checkbox"/>	<b>LIFE MEMBER</b>	<b>NIL</b>

## Technical meetings/Seminar 2019

Date	Topic	Speaker	Action	Dinner Venue	Meeting Venue
January, 2019	No meeting				
20 Feb, 2019	Viridian Glass factory			Site Visit	Dandenong
20 Mar, 2019	NCC 2019 Changes, Masonry industry perspective How to fill Design Certificate? (Reg 128)	Cora Xu Joe Genco	BB /RB	Box hill Golf Club	Box hill Golf Club
17 Apr, 2019	Insurance/Litigation	-	RB	Box hill Golf Club	Box hill Golf Club
15 May, 2019	AS 3600:2018		JN	Box hill Golf Club	Box hill Golf Club
19 Jun, 2019	Workshop on Steel Handbook		JN/RB	Box hill Golf Club	Box hill Golf Club
17 July , 2019	Pervious pavements			Box hill Golf Club	Box hill Golf Club
21 Aug, 2019	ACSEV and FFSV Joint Meeting			Box hill Golf Club	Box hill Golf Club
18 Sep, 2019				Box hill Golf Club	Box hill Golf Club
16 Oct, 2019	A.G.M			Box hill Golf Club	Box hill Golf Club
08 Nov, 2019 (Friday)	Annual Dinner		Sub Comm.		
December, 2019	No meeting				

### Engineering Training Institute of Australia (ETIA) CPD Seminars

ACSEV and FFSV have been approached and have agreed to do a cross marketing approach with the Engineering Training Institute Australia (ETIA) and/or you may know it better by the name **Paul Uno** who is the driving force behind same and does most if not nearly all of the presentations where his expertise permits.

The reason for the joint marketing between ACSEV/FFSV and ETIA is that the 37 topics which are available will allow our members to be able to go to courses run in a professional manner, add to CPD points and from most of the feedback that we get from people who've been to these courses, gain excellent knowledge.

It should be noted that they are not run in competition with our workshops which generally bring together practitioners from all walks of a given area, such as concrete, brickwork etc. and the diversity of our speakers is meant to broaden our knowledge and not to focus so much on the codes and what is good practice but to expand upon that at our workshops.

Thus, if you are an engineer that's become a little rusty in a couple of your areas due to your workload focusing you in a small area of expertise we highly recommend these courses as a refresher to what you may have forgotten.

## Renewables is a damned or damnation

Wow we did get a few interesting emails on this one and the only problem is I've lost the emails so I don't know who to send it on to. For those of you who did send in and request it please send it again and this time I'll get my assistant to help and make sure that it's done.

In the meantime I warn you again it has enough formula in there to end up with an audience of one or two but it is truly worth the read.

.....R.Brown

### Become an ACSEV member

The Association of Consulting Structural Engineers Victoria (ACSEV) is a professional association of structural engineers that provides technical and professional support to its members. ACSEV aims to facilitate better communication and goodwill between structural engineers, particularly those in small practices, and to advance the knowledge and professionalism of all members through technical training and regular contact with experienced engineers.

Our members specialise in structural engineering design related to the building industry on projects including commercial buildings, industrial developments, residential developments, domestic housing, institutional buildings, retail developments, bridges and various other structures.

Membership is offered at various levels to students, new graduates and industry associates, with full membership status available to qualified and experienced structural engineers eligible for either Building Practitioner (Vic) registration (EC - Engineer Civil) or membership of Engineers Australia.

Membership form can be downloaded from [www.acsev.org.au](http://www.acsev.org.au)



### Homeowners win compensation battle

So you think you've got problems just have a look at the photographs of this house...wow. There is a battle for someone to pay to fix it. Can you imagine trying to live in it or worse trying to resell it? What a shame. Please click <https://cyprus-mail.com/2019/03/03/limnes-homeowners-win-compensation-battle/>

## SUBMISSIONS WANTED

### FEATURE PROJECTS ADVERTISING FEATURES TECHNICAL ARTICLES

Do you have a response for our newsletter?

Acsev newsletter is made possible by member generated content

**We need your submission, Can you help?**

Submit all content to [Acsev.newsletter@gmail.com](mailto:Acsev.newsletter@gmail.com)

Submission is acceptance that the contributor is responsible for all submitted content and is authorised to allow ACSEV to publish.

## Engineers Fees

A sample of ACSEV members were surveyed in 2017 with regards to fee scales. The results printed do not include GST. GST must be added to the above rates. In addition, vehicle costs should be charged at the RACV scale. Members are not bound by this schedule. The range given is middle and some consultants may charge more or less dependant up on project difficulty or skill level required and size of project.

EXPERT WITNESS	\$300-\$400
DIRECTOR/PARTNER	\$250-\$350
SENIOR ENGINEER	\$200-\$250
ENGINEER:	\$130-\$200
SENIOR DRAFTSPERSON:	\$130-\$170
DRAFT PERSON:	\$100-\$130
OFFICE ADMIN	\$90 -\$110

## Opal Tower report vague over responsibility



After a month long discussions and speculations over who is at fault over the failure of Opal Tower Sydney, NSW government have released their independent report prepared by Professors Mark Hoffman, John Carter and Stephen Foster . A full copy of the final report is available at <https://www.planning.nsw.gov.au/finalopalreport>. The report is not pinpointing either the developer or the builder, but reports multiple design and construction faults.

We might have a discussion session on it in the next couple of meetings to see if we can all learn something. It is interesting to note that there is no practitioner registration system existing in NSW in the residential sector and the government is now planning to establish registration of structural engineers. NSW government also recommend the creation of a new Building Structure Review Board to establish and publish the facts relating to major structural damage of buildings arising from structural design and construction, to investigate their causes and to recommend regulatory changes as needed.

.....Editor

## A new and innovative concept being investigated-(ATEN)

Russell Brown attended a meeting on 7 February 2019 representing ACSEV. The meeting was to get feedback from those who have a major stake in the construction industry, ranging from housing to high rise buildings and major infrastructure. The workshop gained feel for what would be a method of moving forwards and there were some excellent speakers on the main areas of infrastructure.

The cornerstone speaker was Karsten Kathage. He is the president of EOTA, an organisation in Germany similar to the one that might be pursued here in Australia. They have compulsion in their testing and certification. This doesn't mean that it can't be used if you don't have a certificate and as a consequence many parties involved in it may reject its use.

The German system is one of the very few that is compulsory. There is far more throughout Europe that are non-compulsory but are deemed to be good practice, and as a consequence a large number of products go through the German system as once it's being done it's done. On the other hand if you've only got a product that is going to be used in England you would probably only get certificates sufficient to help market the product (or the methodology) in England.

An excellent meeting and I do hope that the ATEN gets a scoping done, noting that the scoping was originally for 12 months with ACSEV contributing approximately 200 hours to the project scheme i.e. in kind with no money, we now have to do it in six months.

To that end, in the coming months we will be sending a questionnaire to members of ACSEV and we will be hoping to get over 150 responses so that we can work through an industry led approach as opposed to an individual approach from some of the corporations. I hope we progress this as quickly as possible and I'm sure ACSEV committee member Joseph Genco will be speaking to us over the next couple of months re-same.

.....R. Brown



## The Brown Report

Well the year 2018 was interesting. We heard some politicians who spoke to us about the registration bill but the Labor Party did not appear to get the numbers to run it through the upper house and as a consequence it kept getting deferred until Parliament closed and will thus only be decided dependent upon the forthcoming election in November. Depending upon the result it may still be a similar Parliament to the one we've got, which would mean lower house says yes, upper house says maybe or no (as is the case now).

I think the important thing to remember is that there is no one that I've spoken to that is fundamentally against registration, in fact most people seem to think the more of it the better. The problem being it hasn't been well done. It has not gone out to proper and true scrutiny, it has in fact ignored the consultants that I know of and if we talk about big firms there's maybe 15 of them and if we talk small firms there is maybe 150 of them. To the best of my knowledge no one spoke to the 150 and very few of the big firms.

More importantly the bigger firms don't tend to handle housing, low-rise apartment buildings, shops, factories etc., i.e. the bread-and-butter and the major turnover re volume, yet the small firms who do handle this are the ones that need to be registered.

The Victorian Building Authority is not the Victorian Construction Authority. I think this fundamental shift is the reason why Engineers Australia feels as though it has an obligation to represent engineers. The problem is that it represents the bigger construction firms a lot better than the small firms within the industry, even though 60% (or more) of the wealth in Australia is in our housing stock. This could of course be our own fault; it's difficult when running a small practice to find time to contribute to Engineers Australia. Most of us don't have a secretary or an assistant who does the loose ends and you then really have to wait until you've just about retired before you turn around and say well I would like to contribute.

Yes you've worked it out, this is leading up to being an ad to join ACSEV and FFSV. We really have quite a few fairly senior design engineers from the bigger firms on board and yes we do have quite a large number of one-man bands. We also tried to put on features and functions that are useful on a daily basis to practitioners. Over the years ACSEV and FFSV have been instrumental in getting Australian Standards to change some of the codes that we use on a regular basis (AS2870 springs readily to mind) and the research that Swinburne has done resulting in the doctorate by Dominic Lopes, and the papers that have been written with regards to the structural adequacy or otherwise of raft slabs and waffle pods taking into account the advanced knowledge that we now have from research that we have all contributed towards, and it continues. In addition to the doctoral students that have graduated, of which I believe we have a total of three, there have been numerous masters students that have benefited and quite a few of them are out in the field and appreciate us and on the odd occasion do attend as they leave their children and their over worked situation behind we look forwards to them joining us before they turn 50.

On a more obscure front we had two very interesting projects occur in 2018 resulting in some reasonably strange outcomes. One from the Building Appeals Board where a decision was made that I think is contrary to the Australian Standards and I do not believe there was a reason given for such a decision (ring RIB only). In addition there has been an investigation of a building that has suffered badly from a plumbing leak and the concern is that the plumbing workmanship is well outside of acceptable standards written up in Australian Standards ie plumbing is in electrical trench, but as it is existing and no one has lost their life we have certificates from the various authorities indicating that it is (to paraphrase) satisfactory. I am hoping to publish as an article in future editions but will have to run it through somebody with a legal brain to see if in fact we can.

I have at long last found the article (Renewables Manufacture - now and future?) from Emil Zyhajlo relating to the mathematics behind how you probably can't get enough renewable energy quickly enough without bankrupting the state. The paper is a good read. Please contact Russell's office via email [info@ribrown.com.au](mailto:info@ribrown.com.au) to request a copy.

On a more egotistical note (as if we are not thought of as that way already) numerous people have complimented me on the manner in which the newsletter is going out and the massive improvement in its quality and presentation. I humbly apologise for nodding my head as if I had a great deal to do with it, it has all been attributed to our assistant editor Biju Balakrishnan who dedicates many hours to creating the newsletter. Like all things it's a work in progress; Biju keeps improving it.