



# IFAN NEWSLETTER

“ Standards make the world go round ”

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## Meeting with Frans Vreeswijk, Secretary General of the IEC

IFAN President Mr Ross Wright, Vice-President Ms Vered Oren and Secretary Ms Andrea Beddard-Smith met with Mr Frans Vreeswijk, General Secretary of the IEC and Ms Gabriela Ehrlich, Global Head of Marketing and Communications at IEC.

Mr Wright started the meeting by thanking Mr Vreeswijk and IEC for offering to host the 2018 IFAN Members' Assembly, which will take place on 25 September 2018.

Mr Vreeswijk spoke about the importance of standards user to the IEC and it was agreed to work closer in the future and to this end they agreed to revise the current MoU between the two organizations and if possible

to arrange a signing to take place during the IFAN Members' Assembly.

Mr Vreeswijk accepted an invitation to open the event and offered IEC speakers for the Open Session which will take place in the morning.

Ms Ehrlich also agreed the IFAN could reprint articles from the IEC e-magazine in the IFAN Newsletter.





# IFAN BOARD MEETING

The IFAN Board held their annual meeting at ISO in Geneva on the 26 and 27 April.

The Guest speaker was Nicolas Fleury, Deputy General Secretary of ISO

Also present was past President Neil Reeve

Mr Ross Wraight, IFAN President welcomed the members of the Board, and guests. The meeting started with an update on ISO activities from Mr Nicolas Fleury. Mr Fleury described some of the recent changes that had taken place including to the ISO Academy which had become a capacity building department which will have a new leader who is due to join in July/August.

Mr Fleury went on to talk about the Pocosa which changes the members relationship with commercial suppliers. The aim is to maximise the role of the members in distributing standards in their area.

On the agenda for the main part of the meeting was IFAN's working and projects groups.

It was agreed that Mr Keith Wilson and Ms Claudia Bach would develop a new mandate for WG17. They agreed to be co-chairs of the revised working group and once the Board as approved the new mandate they will be calling for IFAN members to nominate a representative for their organization.

There were also reports on the work of the IFAN European Group and WG16 Education & Training who are currently revising their popular Guide 4.

This year sees a change to the IFAN Secretariat with IFAN's Swiss Resident Ms Dale Campbell stepping down as she and her family are moving

away from Geneva. Ms Campbell nominated Ms Valerie Grant as successor and the Board approved the nomination and welcomed Ms Grant to IFAN.

The President then thanked Ms Campbell for all her hard work and help to both the Board and to IFAN and wishes her well for the future.

During the lunch break on the first day the Board took the opportunity to personally present Mr Neil Reeve with the Georges Garel Award he had been given at the Members' Assembly in Chicago.

Below the President Mr Ross Wraight presents Mr Neil Reeve with the Georges Garel Award.



Also on the Agenda was the IFAN Strategy and specifically the actions to fulfil the strategy.

After a discussion it was decided to make the actions achievable and to ask that the IFAN Members get involved with this work.

It was noted that IFAN is an organization managed by its members for its members and the more members actively participate then the more they will benefit from their membership.

The need for additional members was raised and the secretary reported on her activity in this area and asked that all the Board as well as the membership passed on any contacts who might be interested in joining.

The membership application forms were revised in 2017 and both word and PDF versions can be found on the IFAN website



Mr David Felinski, Immediate Past President of IFAN at the ISO CASCO 33rd Plenary meeting and workshop in Mexico City on 25-27 April.

Mr Felinski attended as a member of IFAN WG8 Conformity Assessment.

# Standards use under the microscope



In the second in a series of articles, Keith Wilson looks at the investigation of standards and their use in the inquiries into the Grenfell Tower fire, London, 2017

Keith Wilson is a Construction Information Consultant, Vice-Chair of British Standards Society and IFAN Treasurer.

On the 14 June 2017 a catastrophic fire broke out in the 24 storey Grenfell Tower containing 129 flats (apartments). It is believed to have started in a flat on the fourth floor. The cause was an electrical fault in a fridge-freezer in the kitchen. Videos of the fire in progress show its rapid spread up the outside of the building, and subsequent difficulty in containing it. The fire resulted in 72 deaths.

Since my first article, the UK government's Independent review of Building Regulations and Fire Safety ('the Hackett Review') has published its final report, and the Independent public enquiry examining the circumstances leading up to and surrounding the fire ('the Grenfell Tower Inquiry') has started its work.

## 1. Hackett Review

The Hackett Review provided a personal view from its Chair, Dame Judith Hackett. She pointed to the fire being a result of a systems failure, the key components of which were ignorance, indifference, lack of clarity on roles and responsibilities, and inadequate regulatory oversight and enforcement tools. She noted that tall building safety is an issue throughout the world.

The UK industry must think of buildings as an integrated system, not just as assemblies which perform a single function. For example, in a cladding system thermal insulation, weather proofing, fire safety and integrity (and more) are required and must also perform to the requirements of the building as a system. A cladding system does not only provide weatherproofing.

For standards users, a critical chapter in the report is Chapter 7: Products. Among the recommendations in it are:

- clearer, more transparent and more effective specification and testing regime of construction products, to also cover products as they perform as part of a system,
- statements detailing which systems that products can be used for should be developed and made essential,  
-reducing scope of product substitution without further full testing,
- scope of testing, application of products in systems and their implications must be better communicated,
- triennial testing of safety critical products in high risk residential buildings must be done,
- critical testing must have independent third party certification,
- more reactive testing of products in high risk residential buildings is needed,
- more testing facilities are needed,
- all testing organizations must produce an annual report with summary details of test carried out and passes and fails,
- a simpler and more streamlined set of standards for products to be used in these high risk buildings needs to be developed (currently there are over 500 standards that are referenced in the Approved Documents guidance to the Building Regulations),

- this should ensure that where new standards are needed they can be identified, and conflicting standards can be reviewed
- test methods and standards should be maintained under a periodic review process.

Product labelling and traceability is seen as a current weakness in UK construction. The report recommends that the industry should develop and agree consistent labelling and traceability systems. Work on a Chain of Custody standard for products generally is under way by ISO.

## 2. Association of British Insurers

The Association of British Insurers (ABI) is the trade organization for insurers operating in the UK. In February it published a critical report 'Cladding Approvals', as part of its evidence to the Hackett Review. It is a review and investigation of potential shortcomings of BS8414, the UK standards for the approval of cladding systems commonly used on tall buildings. The short report acknowledges the care and attention that testing organizations give to their work. It does, however cast doubt on the built-up systems testing process, in that a test specimen may not truly represent the situation into which that system will be installed. They also noted that there may be concern at how test data could be interpreted to justify the use of products and materials in a system.

ABI listed five potential concerns with the standard when it is used to test a building system:

- Fuel load relevance to modern materials and lifestyle.
- Breaching of a cladding system by vents and ducts that are not fire-stopped.
- Oxygen provision to materials that can set off a 'chimney effect' in a system.
- Performance of cavity barriers (ie barriers to split up a system into containable units).
- System differences between certification and in-use applications.

In response to this and other evidence, the Hackett Review announced that the government has commissioned BSI to produce a new British Standard that will look specifically at when and how assessments in lieu of tests can be used with respect to BS 8414 test results. Until it is published, BS EN 15725 specifies how to carry out extended application reports on the fire performance of construction products and building elements. The new standard will become critical reading for all in UK construction, and have important cross-sector value in the requirements and recommendations it will contain.

## 3. Grenfell Tower Inquiry

The Inquiry started its work in May 2018. Of interest to standards users, it published reports from five technical experts, two of which I will look at now.

Continued on the next page

## Standards use under the microscope, continued from previous page

Colin Todd's report, 'Legislation, guidance and enforcing authorities relevant to fire safety measures at Grenfell Tower', provides a forensic information review of the regulations and critical standards that were in force at key stages of the building's life, from initial design to the final alterations and repairs. Todd also covers other key events and legislation. His report reveals the ambiguity, uncertainty, complicated language and contradiction which has contributed to assumption and misinterpretation. In the UK, this historical analysis provides an excellent basis for the reviews that are already started and are to come.

Prof. Torero's report provides a detailed physiology of the building under fire - and how a tall building should have responded to a single fire event. It is a highly critical and shocking report, which should cause considerable reflection within the construction professions in the UK. I have quoted three concurrent paragraphs from his summary which help to illustrate my view, and which I think are valuable for all standards users working with products and their combination into systems.

'The tragic consequences of Grenfell Tower highlight the significant shift in complexity that occurs when intricate facade systems are incorporated into high rise buildings. Functional requirements, guidelines and simple standardized tests become insufficient tools to establish adequate performance of systems where performance is a function of the interactions of the building and building envelope.

The inadequacy of these methods of performance assessment/regulation is such that systems that introduce obvious dangers can be incorporated by designers in a routine manner. These systems can be used without necessitating sufficient consideration of the effect that inadequate performance can have on the overall validity of the fire safety strategy. This is despite the explicit understanding that one of the fundamental assumptions backing almost all aspects of a tall building fire safety strategy is that external fire spread shall be prevented.

There is currently no definition of what is the competency required from these professionals, or skill verification approaches that should be used, so as to guarantee that those involved in the design, implementation, acceptance and maintenance of these systems can deliver societally acceptable levels of safety. There is a need to shift from a culture that inappropriately trivializes "compliance" to a culture that recognizes complexity in "compliance" and therefore values "competency", "performance" and "quality". Otherwise the increasing complexity of building systems will drive society in unidentified paths towards irresponsible deregulation by incompetency.'

### References:

BS 8414-1:2015 + A1:2017. Fire performance of external cladding systems. Test method for non-loadbearing external cladding systems applied to the masonry face of a building. ISBN 978 0 580 97722 0.

BS EN 15725: 2010. Extended application reports on the fire performance of construction products and building elements. ISBN 978 0 580 77468 3.

Building a safer future. Independent review of building regulations and fire safety: Final Report. (2018). Cm 9607. London: HMSO. ISBN 978 1 5286 0293 8. Available at: <http://www.gov.uk/government/publications>. [Accessed 1 June 2018].

Fire Protection Association. Cladding approvals: a review and investigation of potential shortcomings of the BS8414 standard for the approval of cladding systems such as those commonly used on tall buildings. ABI, 22 February 2018.

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Keith Wilson is a Construction Information Consultant, Vice-Chair of British Standards Society and IFAN Treasurer.



# WOMEN IN A MAN'S WORLD



An extract from an article published in the IEC e-Tech magazine that is reproduced here with the kind permission of the IEC.

In this extract, Ada Lovelace [1815-1852] the first computer programmer.

## Women inventors and their influence on today's technologies, by Claire Marchand

Ada Lovelace, née Augusta Ada Byron, revealed a talent for numbers and language at an early age. The daughter of Lord Byron and Anne Isabella Milbanke, Baroness of Wentworth, she was brought up by her mother – Byron left them a few weeks after Ada's birth, never to return – and received a very unconventional education for an aristocratic girl of that era. Her tutors taught her mathematics and science because her mother thought that the rigor and discipline would keep her away from the moody and unpredictable temperament shown by her father. At 17, she met and became friends with Charles Babbage, a mathematician and inventor who served as her mentor. Through him, she began studying advanced mathematics at London University. Babbage had invented the difference machine – an ancestor of the computer that could perform mathematical calculations – and had made plans for the analytical engine, designed for more complex calculations. Asked to translate an article on the latter from French into English, Lovelace not only did what was

required but also added her own thoughts and ideas on the invention. Her notes were three times as long as the original paper and her work was published in an English science journal in 1843.

Her notes described how codes could be created for the device to handle letters and symbols along with numbers. She also devised a method for the machine to repeat a series of instructions, the looping process used by computer programmes today.

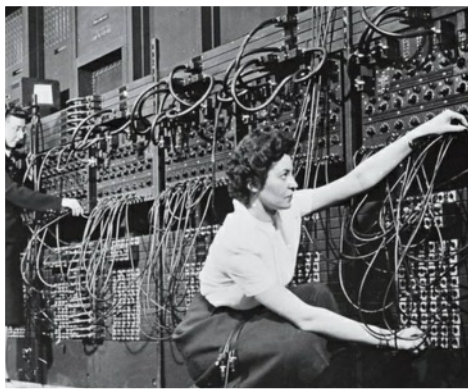
Her husband, William King, Earl of Lovelace, whom she married in 1835, was always very supportive of her scientific endeavour.

Lovelace's contributions to computer science remained a well-kept secret for more than 100 years. In 1953, her notes were republished in a book by B.V. Bowden, *Faster than Thought: A Symposium on Digital Computing Machines*. In 1980, the US Department of Defense honoured Lovelace, giving the name Ada to a new computer language.

Women's contributions to science, technology engineering and mathematics (STEM) have often been overlooked and left out of history books. When asked to name inventors, people tend to cite Thomas Edison, Graham Bell, Benjamin Franklin or Albert Einstein. Gender stereotypes die hard. Some women were fortunate enough to have their work recognized during their lifetime; many others received only posthumous recognition. This has changed in recent years and light is finally being shed on their essential work.

The full article 'Women in a man's world' can be read in the IEC E-Tech magazine [here](#)

Future editions of the IFAN Newsletter will contain further articles from the IEC's E-tech.



## Women in a man's world continued with: ENIAC - the refrigerator ladies And Grace Hopper - First Lady of Software

In 1943, two men, John Mauchly and J. Presper Eckert, along with the United States Army, began designing and engineering a system called the Electronic Numerical Integrator and Computer (ENIAC), part of a secret World War II project. They explored the possibility of an electronic calculator made from wiring and vacuum tubes and detailed their plans in a paper entitled *The Use of High-Speed Vacuum Tube Devices for Calculation*. To complete their project, they needed people, math majors, to programme the machine.

Six mathematicians, all women, were chosen. They learned to program without programming languages or tools, because none existed. They used only logical diagrams and the work they did calculating ballistic trajectories was extremely complex. When the project was completed, ENIAC could run missile trajectories in seconds.

When ENIAC was unveiled to the press and the public in 1946, the six women – Kay McNulty, Betty Jennings, Betty Snyder, Marlyn Wescoff, Frances Bilas and Ruth Lichterman – remained invisible. What's more, most of them didn't receive recognition for their work during their lifetime. They appeared in photos documenting the project but were, for many years, mistaken for models posing next to the machines. Some called them the "refrigerator ladies"!

### Grace Hopper (1906-1992)

"Amazing Grace" for some, the "First Lady of Software" for others, US Navy Rear Admiral Grace Murray Hopper was a leading figure in computer science and programming from the 1940s to the 1980s.

Born in New York, she graduated from Vassar College in 1928 with a bachelor in mathematics and physics. She then went to Yale where she earned a master's degree in mathematics in 1930 and a PhD in 1934. Née Grace Murray, she married New York University Professor Vincent Foster Hopper in 1930 and retained his name after their divorce in 1945.

From 1931 to 1943, Hopper occupied various positions, from mathematics assistant to associate professor, at Vassar. In 1940 she applied to the US Navy but was refused. She persisted and in 1943 joined the US Navy Reserve, enlisting in the Women Accepted for Volunteer Emergency Service (WAVES). A year later she was assigned to the Bureau of Ordnance Computation Project at Harvard where she was part of the Mark I computer programming staff headed by Howard Aiken. The Harvard Mark I, or IBM Automatic Sequence Controlled Calculator (ASCC) was a huge electromechanical computer (16 meters long, 2,4 meters high weighing 4 500 kg), that was used to compute data for the scientists working on the Manhattan Project, the R&D undertaking that produced the first nuclear weapons. The Mark I also computed and printed mathematical tables, as inspired by Charles Babbage's analytical engine.

Programmers can thank Hopper for making their life and work easier. When she began her career, all computer programmes were written in numerical codes by people with a mathematical background. To make computer coding more accessible, she devised a human-friendly programming language that used English words that were then translated into machine codes. She met with much resistance but persisted in her endeavor, and in 1952, the first "compiler" was born.

In the late 1950s, Hopper was part of the team that developed COBOL, the Common Business-Oriented Language used by businesses and governments. In the following years, many computer companies had developed their own – not always compatible – version of COBOL. In the late 1960s, Hopper was Director of the Navy Programming Languages Group and as such, developed validation software for COBOL and its compiler in an effort to standardize COBOL for the entire Navy. In the 1970s, she was responsible for the implementation of standards for testing computer systems and components, including COBOL. Since the 1980s, the National Institute of Standards and Technology (NIST) has taken over this role.

On a more anecdotal note, Hopper is said to have coined and helped popularize the terms



"bug" and "de-bugging", after a moth was removed from inside her computer.

Hopper has received a great number of awards, including the first "Computer Science Man of the Year Award" in 1969. She retired in 1986, at 79, with the rank of US Navy Rear Admiral. In 1997, the US Navy named a new guided-missile destroyer in her honour: USS Hopper.

Lovelace, Hopper and the ENIAC women all contributed greatly to the development of today's computer programming languages. Hopper's efforts to standardize COBOL in particular, have shown the need for interoperable languages. In 1987, the IEC and ISO established ISO/IEC JTC 1: Information technology, a Joint Technical Committee that has brought about a number of very successful and relevant information and communication technologies (ICT) International Standards in many fields: IC cards (smart cards), automatic identification and data capture (AIDC) technologies, information security, biometrics, cloud computing, multimedia (MPEG), database query and programming languages as well as character sets, to name just a few. In particular, its Subcommittee ISO/IEC JTC 1/SC 22 deals with programming languages, their environments and system software interfaces.

# CALENDAR

Below are details of IFAN meetings

## JULY

- ICES 2018 Conference, Joint International Conference with 5th ACISE (Annual Conference on Industrial and System Engineering) and World Standard Cooperation Academic Day: Strengthening Industry and Engineering, Science, and Management Education through Standardization Learning, 3,4,5 July 2018, Yogyakarta, Indonesia
- IFAN European Group meeting to be held in the offices of CCMC, Brussels on the 25<sup>th</sup>.
- IFAN WG16 Education and Training in the offices of CCMC on the 26<sup>th</sup>

## SEPTEMBER

- IFAN Board meeting, ISO, 24<sup>th</sup>
- IFAN Members' Assembly 25<sup>th</sup>
- ISO General Assembly Open Sessions 26-28<sup>th</sup>

All meetings are in Geneva.

## OCTOBER

- IEC General Meeting 15-26 in Busan Korea.
- IEC Regulator Forum on Renewable energy. Busan, South Korea, 23 & 24 October 2018



### IFAN Members' Assembly

The 45<sup>th</sup> IFAN Members' Assembly will be held on Tuesday 25<sup>th</sup> September 2018, kindly hosted by the IEC.

In the morning will be the Open Session and the MA will be in closed session in the afternoon.

Please reserve the date in your schedules