

Engineers for Social Responsibility Inc. 1983 – 2015

The Formation of ESR 1983

There was much consternation from professional groups in the early 1980s about the threat of nuclear war. Gerry (Gerald) Coates, the initiator of Engineers for Social Responsibility, wrote a leading article in NZ Engineering in June 1983 entitled "Nuclear War – and the Loud Silence" and this galvanised many professional engineers into action.

Gerry wrote in this article;

"The nuclear arms race, once stockpiling for defence, has now become a collective paranoia. At the moment there are 50,000 tactical nuclear weapons in the hands of the major powers – equivalent of three tonnes of TNT for every person on earth. --- Engineers, despite having collectively contributed to the arms race, can explain the technical issues involved in taking another path. "Engineers for Social Responsibility" a body currently being formed will allow nuclear disarmament and other issues to be actively discussed. Watch for it. We are all involved and we should each have our say. As Edmund Burke put it 300 years ago ... "no man made a greater mistake than he who did nothing, because he could only do a little."

The inaugural meeting of ESR was held in Wellington on June 14th 1983 when Gerry addressed the meeting on the topic of "The Responsibility of Engineers" published in NZ Engineering September 1983. The following is an excerpt:

"Over the last few years I have been aware of a number of expressions of individual concern by engineers of social consequence; nuclear arms nuclear power, safety of dams and buildings, the so-called think big projects, energy policy and so on. Although often generating a response at the time, they have all been individual statements – protests if you like – yet as other engineers develop similar concerns they are often unaware or forget that an issue has been canvassed before. So my idea was to provide a vehicle for keeping the energy of the individual from flagging in the face of apathy of the majority - to form a body where collective wisdom of engineers could be put to good use, and one person's efforts could be built on for the common good."

Gerry reported that at this meeting 25 attended despite rather limited publicity. A working group was formed comprising Gerry Coates (Acting Co-ordinator), Eddy Goldberg, Bernard Kemp, Arthur Park, Derek Wilshere and David Young. Following the publicity about the formation of ESR Gerry received a huge number of letters of support for his initiative, many of which writers became members.

In ESR Newsletter No 1 dated July 1983, Gerry commented on relations with IPENZ. *"After some consideration it has been decided not to try to become an IPENZ group since this would negate one of the main reasons for the association's formation – the need to be able to speak out rapidly and forcibly when desired. --- However in discussion with the President Eric Ireland he indicated that IPENZ were not perturbed by the association's formation and a mutual climate of support and acceptance is possible. We welcome this attitude."*

Meanwhile in Auckland on 28th June 1983 a group including John Blackshaw, Derek Brickell, John Chapple, Russell Dickson, Phil Le Gros, John La Roche, Peter McAulay, Russell McGeorge, Murray Needs, Don Wilson, Jack Woodward and Alex Aitken met at Derek Agnew's home in Devonport. The meeting decided to form a group called Professional Engineers for the Prevention of Nuclear

War (PEFPNW). A prime consideration at this meeting was “Do we support Engineers for Social Responsibility? Can we remain silent?”

At this time there were many professional groups who had formed to protest about the possibility and stupidity of nuclear war. In New Zealand closely associated with ESR were International Physicians for the Prevention of Nuclear War (IPPNW) and Scientists against Nuclear Arms (SANA.) Other NZ groups included Lawyers, Psychologists, Town Planners, Teachers, Computer people (CPPNW), Architects (AANW), Visual Artists (VAANW) and librarians. In UK Civil Engineers for Nuclear Disarmament (CEND) had been formed with a membership in December 1983 of 150 including 17 Institution of Civil Engineer’s Fellows including eminent designer Sir Ove Arup.

In particular Gerry Coates was invited to attend the inaugural meeting in Wellington of IPPNW by its Secretary Ian Prior, and a long term relationship began with their members such as Eric Geiringer and Russell Tregonning. IPPNW were instrumental in inviting Helen Caldicott who had started Physicians for Social Responsibility in the US to speak in Wellington, and succeeded in filling the Wellington Town Hall to capacity..

After a talk by Gerry Coates in Auckland to PEFPNW on 11th October, it was decided to amalgamate with ESR where already 12 people were members of ESR. A formal vote was taken on 10th November 1983 when there was unanimous support for becoming “ESR Auckland” where priority would be given to activities related to the prevention of nuclear war. A sum of \$140 was paid by PEFPNW to ESR after payment of all Auckland expenses including Gerry Coates airfare to come to Auckland. An Auckland committee with John Chapple as acting Convenor, John La Roche as Treasurer, Derek Agnew, Richard Fenwick, Phil Le Gros and Graham Dickson was formed. A Professional Liaison Group was formed in Auckland between ESR, IPPNW and SANA with Richard Fenwick, Alan Titchener and John Chapple representing ESR. This Liaison group had the task of overseeing the production of Fact Sheets about the dangers of nuclear war written for the NZ scene. It was proposed that these would be published at a rate of about one per month starting with the topics: Water Supply, Civil Defence, Electromagnetic Pulse and Transport. By October 1984 six fact sheets had been prepared and issued.

Gerry Coates and Arthur Park made a submission to the Parliamentary Select Committee for Arms Control and Disarmament (The Beetham Bill) in December 1983 and received a good response to their ideas. Gerry was active in writing letters and articles for newspapers. On 24th November 1983 he wrote an open letter to the Engineering Officers of the HMS Invincible due to visit Wellington next day that was published in the Wellington Evening Post. He expressed concern about their presumably nuclear armed vessel coming to NZ and pointing out the strong movement to promote a nuclear free Pacific. The Dominion newspaper on the same day published a report of the 4,000 people who marched on Parliament in protest to the visit of the Invincible. There was considerable correspondence with other peace groups including CEND in UK. The question of nuclear arms and disarmament was a constant news item in the daily newspapers.

1984 The First National Conference

A membership of over 110 was noted in the February 1984 ESR Newsletter. Branches had been established in Auckland, Wellington and soon, Christchurch. The first ESR National Conference, termed the Inaugural National meeting, was held in Hastings on Sunday 12 February just prior to the IPENZ Conference. Speakers included Gerry Coates, Dr George Preddey, Alistair Gunn, Prof Peter Matheson, Prof Alan Titchener, Owen Wilkes and MP Geoff Braybrook. There were 40 people who attended when Gerry Coates was elected as National Secretary and Eddy Goldberg as Treasurer. The post of President was left vacant pending a suitable nomination.

During the ESR conference Gerry Coates issued a press release referring to an article published in *Ambio*, a Swedish journal of the human environment, saying that nuclear war targeting was as far

afield as New Zealand. This resulted in TVNZ sending a camera crew to Hastings to interview him for the 6pm news, which was welcome publicity. However at the IPENZ conference the following day ESR was called “the lunatic fringe”, a label that was refuted the following year when Alec Stirrat the incoming president in 1984 named ESR as “The conscience of IPENZ.”

Gerry Coates as ESR initially as Coordinator and then as Secretary continued administer the membership and prepare the National ESR Newsletters until 1988, and Wellington was also holding regular meetings. Also at the same time ESR Auckland Branch was issuing its own bi-monthly Newsletters and holding regular meetings at approximately monthly intervals. In April 1984 Gerry Coates visited Sydney at his own expense to attend an inaugural weekend workshop of “The Society for Social Responsibility in Engineering (SSRE).” The group had been formed in 1983 around the same time ESR was formed, and had many of the same aims. Gerry had been corresponding with Doug Everingham, a Queensland MP who had alerted him to SSRE’s existence. Gerry made firm friends with several members including Bob Beatty – an engineer turned journalist – Phil Thornton and Bob Millar. One of SSRE’s aims was to provide technical assistance to groups and to initiate a skills bank to inform the public, government bodies and environmental groups.

Christchurch had also formed a branch of ESR early in 1984 with Mike Stockwell as Convenor and Kathy Garden, John Goffin and Andrew McBeth as the committee. The Wellington Committee comprised Arthur Park as Convenor, Gerry Coates, John Jones, Ian Shearer, David Berwick, Derek Davies-Payne, Mike Jacobsen, Dick Carter, Eddie Goldberg and John O’Grady. In Auckland the committee elected at the March 1985 meeting was George Bonny, John Chapple, Richard Fenwick, Ray Galvin, Mary-Ann Halliday, John La Roche, Ian Linning, Chris Lucas, Don Stuart, Glen Syred, Alan Titchener and Jack Woodward. Alan Titchener was elected Chairman of the Auckland Branch.

The initial logo for ESR was based on a hand holding a calculator, whilst also dangling planet earth from it. Later Gerry Coates re-designed the logo to the one that is still current, showing a symbolic half-globe bookending the ESR acronym, and symbolising the partial view of the world often taken by engineers in their work.

When the Labour Government was elected in July 1984 they announced they would hold an “Economic Summit” for invited delegates in September. Ever mindful that economists often had little understanding of technology Gerry Coates approached the organiser Peter Foster for an invitation, which was not forthcoming from the Minister David Caygill. Nevertheless he wrote a 10 page paper on “The Role of Technology in New Zealand’s Economic Recovery” but even that was not allowed to be distributed to delegates, so he provided a stack at the venue, and 100 copies to the Minister. The theme of the paper was that NZ’s technology policy, unlike Australia’s was only dimly formed, and that choices needed to be made, and encouraging a follow on “Technology Summit”.

A National Science and Technology conference did occur in May 1985 and ESR duly made another submission despite again not being invited to attend. We stressed the importance of technology assessment and of New Zealand having a technology policy.

There was concern for the wider aspects of how engineers could help in relation to social responsibility. On 2 December 1984, a meeting was held at Volunteer Service Abroad in Wellington with VSA Board members Martin Evans and Jane Cookson about how engineers might assist with their expertise in developing countries. Gerry Coates, John O’Grady and John La Roche attended on behalf of ESR. Subsequently a group called Technical Aid Consultancy was established and a register of 63 people, mainly ESR members, offering assistance. However after three years offering services to aid organisations with no requests for help, the organisation was disbanded. In its place Water for Survival was established at an inaugural meeting on 4th August 1988.

The Second National meeting of ESR was held in Wellington on 9th and 10th February 1985 with the theme “Social Responsibility in Engineering – towards 2000”. Inspiring speakers included Dr Jim Falk

from Wollongong University whose keynote talk was “Technology and the Social Matrix”. Other speakers were Keith Johnson (Coalition for Open Government), Ken Piddington (Commission for the Environment) Dick Ryan (Commission for the Future), Rev Ray Galvin (Auckland University), Dr Clive Matthewson (MP), Bob Hodgson (University of Canterbury), John O’Grady, Prof Alan Titchener, Gerry Coates, and Dr John Peet.

On 3 July 1985 SANA (Scientists against Nuclear Arms) and ESR were part of a delegation to the French Embassy in Wellington. They felt that the French were misrepresenting the content of the 1983 report of the combined scientific mission to Mururoa by New Zealand, Australia and Papua New Guinea. The meeting was cordial and lasted two hours during which the delegation was able to make six pertinent points including that the testing had damaged the structural integrity of the atoll and French estimates of radioactive leakage from the atoll were based on false data.

Auckland became responsible for arranging the Third National Meeting of ESR on 8th and 9th February 1986 with the theme “Energy, Environment, Aid and Peace”. Speakers included John Boshier, Molly Melhuish, David Breuer, Cameron McClean, Roderick Agnew, Clare Feeney, Theo Rolland, Kevin O’Sullivan, John O’Grady, Dr Ian Shearer MP, Jack Woodward, Michael Allen, Jerry Elkind, John Bradley, Becke Greene, Manfred Hochstein and Mike O’Sullivan. This final talk by Manfred and Mike was about their research into the underground hydrology at Mururoa. A major achievement was the publication of most of the conference papers in the NZ Environment Magazine, Summer 1986 issue No 52.

ESR made a submission prepared by Gerry Coates to the Defence Committee of Inquiry on “Future New Zealand Strategic and Security Policies in February 1986. It pointed out that the threat of nuclear war was the most overwhelming, and that invasion threats were not credible in the medium term. It also recommended a single unified armed service similar to Canada’s.

The 1986 Auckland National AGM elected Jack Woodward Chairman with Margaret Blakeley as Minute Secretary and Brian Ellis as Secretary. The committee included John La Roche, Richard Fenwick, George Bonny, David Hughes, Chris Patterson, Don Stuart and Alan Titchener. Susan Bryne and Laurie Wesley, staff members at Auckland University later joined the committee. Regular monthly meetings continued at the School of Engineering with impressive speakers. These included Dr Peter Wills talking about “NZ’s Nuclear Connections”, Professor Derek North talking about the “Politics of Peace” and Owen Wilkes discussing “Nuclear Free Zones and US Covert Operations”. Joint meetings with IPENZ Auckland Branch were held, including one entitled “Engineers: Meat in the Sandwich” with speakers Murray Sweetman, Brian Henshall, Alan Bickers and Bob Andrews.

Nuclear Fact Sheets

In September 1986 the Nuclear Fact Sheets had been completed and a booklet with all 17 sheets and three appendices was offered for sale at \$5 per copy from Pat Baskett. They were distributed to Auckland secondary schools, libraries and news media in the Auckland area. A further series “Peace Issues in a Nuclear Age” continued as “Opinion Sheets”. Participating organisations for this series were Architects Against Nuclear Arms (AANA), ESR, International Physicians against Nuclear War (IPPNW), NZ Lawyers for Nuclear Disarmament (NZLD), Pharmacists Against Nuclear Arms (PANA), Psychologists for the Prevention of Nuclear War (PPOW), Scientists against Nuclear Arms (SANA) and Visual Artists Against Nuclear Arms (VAANA). Nine issues of “Peace Issues in a Nuclear Age” were prepared and published between June 1986 and December 1987. Full sets were made available at \$3 per copy.

Richard Fenwick made contact with the UK Engineers for Nuclear Disarmament (formerly Civil Engineers for Nuclear Disarmament). This was followed up by Alan Titchener who was invited to speak about ESR activities in NZ at meetings of the group in Manchester and London while he was in

the UK. Professor Meredith Thring, co-author of *"The engineer's conscience"* and promoter of the Hippocratic Oath for engineers also wrote a very supportive letter on the advent of ESR.

Wellington activities in 1986 also continued with six meetings during the year arranged by the Wellington Committee with Dick Carter as Convenor, Gerry Coates, Chris Collie–Holmes, Arthur Park, Derek Davies-Payne, Paul Hambleton and Eddie Goldberg as the committee. Speakers at these well-attended meetings included Helen Clark (by then an MP and Chair of the Select Committee on Disarmament), Roger Blakeley, Jim Falk, and Cath Wallace.

There was no National Meeting in 1987 but a National AGM was held on 12 May at Christchurch. A Pot Luck meal and talk on Engineering Ethics by Professor Jim Evans of Washington State University concluded the meeting. Jim, who was on sabbatical leave at Canterbury University at the time, and Tom Munsey, a member of the US Army Corps of Engineers, came to visit him because he had heard of ESR. Both returned to Washington to establish with, American Engineers for Social Responsibility in June 1988 and remained firm friends and in contact with Gerry and John Peet.

Also in 1987 ESR and IPENZ set up a joint working group led by Gerry Coates and Peter Vernon to submit to the Royal Commission on Social Policy in August. The submission suggested a set of social goals, and suggested that technology was the central dynamic of society. Unfortunately the Government carried out few actions as a result, and the report of the Commission became a very large doorstop.

In 1987 the administration of ESR was formally transferred to the Auckland Branch, to relief of Gerry Coates who had been singlehandedly doing it until then. All the records and membership data was on dBase, an early spreadsheet program; John La Roche and his wife willingly took on the task.

1988 Conference - Professor Alan Titchener becomes the first President

The Fourth National Conference was held in Taranaki on 13 and 14 February 1988 with the theme "Power and Responsibility in Engineering". Speakers included Dr Roger Blakeley, Gerry Coates, Prof Arthur Williamson, Dr John Hinchcliff, Iain Trousdell, Jeanette Fitzsimons, David Thom, Bob Mahuta, Paul Couchman, Karen Cronin, Bob Beatty, Elaine Beadle, Paul Bieleski, Albrecht Hemming and Dr Maarire Goodall. The conference was judged a great success with Dr John Hinchcliff suggesting a tribunal to handle public complaints about engineering projects, and Bob Beatty an Australian engineer journalist, describing changes in the electricity industry and the need to re-define goals and costs. Bob Mahuta and Maarire Goodall felt Maori were not receiving the benefits of engineering and that politicians and engineers should take account of the Treaty of Waitangi in their work. David Thom described the World Federation of Engineering Organisations environmental ethics and Gerry Coates recommended that IPENZ should revise their present code of ethics to put the public interest first. Although the NZ Environment magazine again offered to publish the conference papers this did not occur because the magazine was in financial difficulties from lack of subscribers.

At the 1988 National AGM Alan Titchener was elected National President, John La Roche National Secretary, and Don Stuart National Treasurer. Regional representatives were, Jack Woodward in Auckland, Gerry Coates in Wellington, Hugh Thorpe for the South Island and John Kuindersma for New Plymouth.

From March 1988 Professor Alan Titchener undertook to publish newsletters nationally from Auckland. Alan had already been producing the Auckland ESR Newsletters. In his May issue he wrote with disappointment that IPENZ had debated Gerry Coates' article in September 1986 "Engineers as Moral Heroes: Are our Ethics good enough?" but after 2 years IPENZ had still not decided to take any action. Alan commented in May 1988 Newsletter that professional engineering

owes it to the world at large, to re-think its ethics. In this regard he put forward the Hippocratic Oath for Scientists, Engineers and Technologists prepared by the Institute for Social Inventions UK.

Gerry Coates was eventually appointed in 1991 to the IPENZ Ethics Committee – the first new member for several years after the then President of IPENZ Barry Butcher intervened. The terms of reference for the committee included the responsibility to “keep the Code (of Ethics) under review in the light of changing professional and society expectations”. By early 1992 little movement or change had been achieved – particularly around issues relating to obligations to society – despite the support of the President of IPENZ. In 1992 the Gerry wrote to the other committee members saying that, “while in 1991 I would have been prepared to accept a compromise position by tinkering with the old code I think that now we would be backward looking to do that”, and added, “I feel we need to go back to first principles and look at the whole code from a values standpoint – what values current in the 1990s do we think need to be addressed and promoted in a new code?”

This stand was supported by a former IPENZ President Murray Sweetman who was then chairing the Engineering and Environment Committee. He urged that any new code should fit members “for the needs of the next century and demonstrate engineers’ commitment to sustainability and survival of the planet”. The committee was eventually reformed in late 1992 with the continuance of the former chair, Neville Beach and tasked with ensuring that the code would be totally reviewed. An expanded and broader committee was convened with a wider range of ages, gender, disciplines and employment types. IPENZ’s new President, Rob Wilkinson, particularly requested the committee to review the code’s adequacy in addressing “private duties, public interest and the common good”. The new values based code was formally adopted by IPENZ in 1996.

From July 1988 onwards issues of the ESR Newsletters prepared by Alan Titchener of 16 pages or more in length became regular. In the July issue, the inaugural meeting of Water for Survival was advertised and the formation of American Engineers for Social Responsibility was described. Although Water for Survival was independent of ESR, there was always a close relationship with ESR members who contributed generously. The first elected Water for Survival Board of Trustees included Jack Woodward as Chairman, Alan Titchener, Jane Cookson, Barry Glaister and Don Stuart. John La Roche was elected Secretary/Treasurer. Water for Survival went on to raise money from ESR members and others, sending more than \$3 million to developing countries to provide clean water and sanitation to over 500,000 people. In 2003 Water for Survival amalgamated with Oxfam NZ whose work is mainly in the Pacific and Asia region. ESR members continue to remain strong supporters of Oxfam with donations of around \$2,000 annually.

Other ESR newsletters included a report on Dr John Birkbeck’s June talk to ESR on the effects of irradiation of food and that by the retiring Dean of Medicine Dr David Cole at the Graduation ceremony entitled 'Compassion in Engineering'.

The September 1988 issue included a Canterbury Branch Newsletter describing a talk by Garry Moore from Department of Internal Affairs who spoke about the problems of unemployment and he suggested ESR might develop a skills bank to strive to assist others to achieve employment. John Peet, the Canterbury Convenor called for help.

Although there was no National ESR Conference in association with the 1989 IPENZ Dunedin Conference, Alan Titchener and Hugh Elder presented a talk “Ethics: Tool for the Professional Engineer” that generated lively discussion.

A one-day ESR National Conference was held in Wellington on March 11th 1989. Speakers included Teddy Goldsmith editor of the UK environmental journal “The Ecologist” whose keynote address was titled “The Exploding Technosphere”. Philip Simpson, Shane Jones and Gerry Coates described the Gaia Hypothesis and Molly Melhuish talked on the subject “Tunnel vision in Engineering - The Sewerage debate in Wellington.” At the AGM Alan Titchener was re-elected President,

John La Roche National Secretary and Don Stuart National Treasurer. Peter Newton, a past President of Engineers for Nuclear Disarmament in UK sought approval to use the ESR logo to form a UK group called Engineers for Social Responsibility. This was agreed and assistance from NZ was offered.

In the June 1989 Newsletter, Alan Titchener reported on his May talk to Auckland Branch on "Biological Effects of Electromagnetic Radiation." From his extensive reading on the subject, Alan found that the thermal heating effects of microwaves on small animals had been extensively studied in Eastern Bloc countries where doses of $100\text{mW}/\text{cm}^2$ (milliwatts/square centimetre) led to death of small animals. Russia has adopted a standard for public exposure of $0.001\text{mW}/\text{cm}^2$ but in the US for Army and Navy $10\text{mW}/\text{cm}^2$ was the standard. There were no set standards in NZ. This topic was followed up in November 1990 in Wellington by a joint ESR/IPENZ meeting on 'Electromagnetic Radiation – Safe or Suspect that involved a panel of Gerry Coates, Kevin Mackey (Electricorp) and Dr Andrew McEwen (NRL). Another notable event during the 1989 year was a joint meeting with the Association of Women Engineers with inspiring talks by Susan Byrne, Gretchen Kivell and Annette Odell. Klaus Bosselmann spoke in September about the role of the professional in the environmental movement, the first of many talks he has given to ESR meetings.

For a year while Alan Titchener was on sabbatical leave John Fenton filled in as Newsletter Editor.

The 6th National Meeting preceding the IPENZ National Conference in Wellington was held on 11th February 1990 and had the theme "Future Shock – Coping with Technological Change". The keynote address by John Blakeley was entitled "Technology – source and solution to our problems". Other speakers were Peter Horsley from Massey University, Michael O'Driscoll of Waikato University, Jim Higgins of the NZ of Computer Society, and Dr Basil Walker from Ministry of Science & Technology. The concern of many speakers was the effect that technology change and computers was having on employment. Addressing the IPENZ Conference after the conclusion of the ESR conference Jack Woodward and Alan Titchener emphasised the issues facing engineers as technology developed. They expressed their concerns about the IPENZ code which assigned the first duty of the engineer to the client rather than the community as required by the Australian code. At the National AGM, Alan Titchener was re-elected President, Lawrence Carter Secretary and Don Stuart Treasurer. Gerry Coates was awarded Honorary Membership in recognition of his unique contribution in founding ESR. At the meeting John Peet called for the National Executive to become involved in the Campaign for Climate Change, promoted by a small group at the Sustainable Energy Forum. In June 1990, John Peet while visiting USA addressed the second annual meeting of American Engineers for Social Responsibility. At that time AESR had about 170 members.

Gerry Coates was selected by Hon Doug Graham, minister for Disarmament and Arms Control as the official NGO delegate to the Partial Test Ban (PTB) Amendment Treaty negotiations at the United Nations in New York in January 1991. The trip was partially funded through a grant from the Public Advisory Committee on Disarmament and Arms Control (PACDAC) and one from ESR. Gerry and his partner Sally Latham also participated in a week long event at Las Vegas en route, and protested at the Nevada Test site to send a message to the UN PTB meeting the following week. The conference in NY involved participating in meetings and protests with the peace movement delegates who had gathered, as well as in the official meeting of States Parties in the UN itself. The official delegation was led by Don McKay from the Ministry of Foreign Affairs, The outcome of the conference, which ratified the amendment to the PTB, was overshadowed by the gathering likelihood of a US led invasion of Iraq, which occurred within weeks. On our return we visited Tom and Wilma Munsey at their home in Virginia and cemented ESR's relationship with AESR. As we returned via Hawaii news of the Iraq invasion came through, setting off a chain of events that still affect the world today.

The 7th ESR National Conference was held in Auckland on 9th February 1991 with the theme "Implications of a Nuclear Future – Changing face of Engineering in NZ". Dr Bill Wilson of Cancer

Research, Auckland Medical School described the effects of low-level ionizing radiation and was followed by Bob White from Centre for Peace Studies who talked about Pacific Nuclear Issues. Other speakers included Jack Woodward, Rod Alley, Rob Wilkinson, John Boshier, Brian Easton and Des Scott. Summaries of papers were published in the March 1991 Newsletter. At the ESR National AGM Jack Woodward was elected President, Lawrence Carter National Secretary and Don Stuart National Treasurer.

At the AGM of the Auckland Branch Jack Woodward was elected Chairman, Heather Silyn-Roberts Secretary, Don Stuart Treasurer. The Auckland committee comprised Lawrence Carter, John Fenton, Alan Chandler, Sue-Ellen Fenelon, Joanna Fenwick, John La Roche, Hans Muller-Steinhagen, Don Taylor and Alan Titchener. At the AGM Yves Sabatier spoke about his experiences with the nuclear industry in France. He described the many problems which arose during construction and in later operation.

ESR's 8th National Conference in Christchurch on 16th February 1992 was organised by John Peet, Tim Davies and Andrew Dakers. The theme was "Economic Growth and Social Responsibility" with speakers Maurice Gray on economic growth and tangata whenua followed by John Hayward, Roger Blakeley, Barbara Stevens, Elizabeth Mackie and Mike Harding. A report on the conference appeared in the ESR May 1992 Newsletter. At the AGM Jack Woodward was re-elected President, Lawrence Carter National Secretary and Don Stuart as National Treasurer. Auckland Committee members were Alan Chandler, Sue-Ellen Fenelon, John Fenton, Joanna Fenwick, Richard Fenwick, John La Roche, Hans Muller –Steinhagen, Heather Silyn Roberts and Don Taylor.

1992 and concerns about Unemployment and Under-employment of engineers

Unemployment among engineers was a continuing concern in both NZ and Australia. In June 1992 ESR joined with the IPENZ Auckland branch to conduct a telephone survey of unemployed and under employed engineers. 956 people responded out of a total membership of 1722 in Auckland Branch. Of those, 90 were unemployed or under employed and 65 felt insecure. The largest numbers of unemployed were in civil engineering (35) and mechanical engineering (20).

Hence the 9th National Conference held at Waikato University on 5th February 1993 had the theme "Engineers and Unemployment" where for the first time senior IPENZ executives had agreed to attend and speak. Jack Woodward as President opened the conference with a summary of the unemployment and some of the causes such as re-structuring of government and local government. John Howse, IPENZ Auckland Branch Chair, described the ESR- IPENZ Survey of unemployment. Alan Bigham aged 47 described his experience of being made redundant and Miles Romanes described how he coped after graduating. Judi Steel an Industrial Chaplain talked about her work at five Auckland companies where many people felt the lack of job security. Other speakers included Murray Wallace President of the Local Government Engineers, Peter Browne a senior engineer at ECNZ, Ted Gibson from the Hospital Board, Brian Underwood a Consultant principal, James Duncan NZ Futures Trust, Dr Rob Aspden President of IPENZ, Prof Dick Earle Massey University, Prof Ray Meyer Auckland University, Lindsey Roke Chief Engineer Fisher and Paykel, Prof Alex Sutherland Dean of Canterbury University, and Rob Wilkinson IPENZ President elect for 1993/94.

At the 1993 Annual General meeting Jack Woodward was re-elected as President, John La Roche as National Secretary and Don Stuart as Treasurer. The Auckland Committee included Richard Fenwick, Heather Silyn Roberts, Alan Titchener, Don Taylor, Alan Chandler, Sue-Ellen Fenelon, Hans Muller-Steinhagen, John Chapman and Neil Mander. Early in the year Alan Titchener was suffering from serious health problems and Neil Mander took over responsibility for preparing Newsletters, a role he has continued for the next 23 years.

Following the theme of the conference regarding underemployment of engineers, members of ESR Auckland put together a submission to IPENZ pointing out the waste of past investment, not just in formal training of engineers but also in accumulated experience and the personal hurt and hardship suffered by those who were out of work. At the time there was a feeling of insecurity by many of those in employment. It was recommended that there should be a wide ranging study leading to a national strategy for economic recovery and a long-term plan that could survive short-term political manoeuvring. There was considerable debate about the unemployment issue in subsequent Newsletters with a very interesting article by John Blakeley entitled "The Unspoken Difficulties in Aiming for High Growth", this being the objective of the main political parties.

ESR's 10th National Conference was held in Nelson on Friday 18th February 1994 with the theme "Values in Engineering". Speakers included Dr David Painter, Les Gilchrist, Keith Morrison, Prof Laurie Richards and Roger Blakeley. Professor Richards from Lincoln University suggested that concentrating technology using material resources was dis-empowering increasing sections of society like those without work and is not a good way to operate. Also covered was the question of whistle blowing when it was felt there should be national legislation to protect those who do this in the public interest. At the AGM held after the conference Dr John Peet was elected President, Andrew Dakers National Secretary and Hugh Thorpe National Treasurer.

There was great sadness when Professor Alan Titchener died on 23 June 1994 in Auckland after being in poor health for some time. Alan contributed enormously to ESR's success and values.

Concern about Landmines and the formation of RedR 1994

Concerns about landmines were the subject of an article by Neil Mander in the March 1994 issue of NZ Engineering. This became an on-going issue that Neil championed, taking up regular liaison with the Campaign Against Landmines. On 18th August Capt. John Armstrong of the NZ Army described the NZ Army's involvement in landmine clearance in Pakistan, Afghanistan, Mozambique and Cambodia. In June 1994 RedR Aotearoa-New Zealand, later shortened to (RedR New Zealand) was established with the objective of making qualified engineers available for relief work in NZ and overseas. John La Roche was elected as founding Chairman and Neil Mander as honorary Director.

The 1995 ESR Conference was held at Massey University on 10th February preceding the IPENZ Conference. The theme was "Engineers in the Public View" with an emphasis on ethics. Neville Beach and Rob Wilkinson addressed the question of Ethics in the Engineering Profession focusing on the question "Is there such a thing as Public Service"? They agreed that engineers need to clearly identify the questions before deciding on a solution – the Manapouri debate being a case in point. David Thom discussed ethical conflicts suggesting our technology is our responsibility and called on IPENZ to review its code of ethics. Heather Silyn-Roberts asked where are we going and how are we going to get there? At the IPENZ Conference following the ESR conference Gerry Coates was presented with the President's award by Graeme Robertson in recognition of his establishing ESR in New Zealand, leading to other groups being established USA and UK.

In a talk to ESR in Auckland on 16 November 1995, David Thom described how the group of 40 prominent New Zealanders led by Dr John Hinchcliff, President of AIT (later AUT University) was formed to a protest about the resumed French nuclear testing in the Pacific. The group visited four major French cities and David's involvement was supported by both ESR and IPENZ.

ESR's 1996 conference was held in Dunedin on 9th February, again in conjunction with the IPENZ conference. The theme was "Coping with Change". Dr George Mullenger from Canterbury University spoke about the historical changes in perception of engineering over the years and the changes in ethics. John Peet discussed global markets and sustainability and finally Rakiihia Tau from Ngai Tahu Trust Board spoke about Ngai Tahu's role as caretakers for future generations. David Painter talked about ethical challenges and Gerry Coates referred to changes in the economic

system and the introduction of user pays policy. At the AGM John Peet was re-elected President along with Andrew Dakers as National Secretary and Hugh Thorpe as National Treasurer. The Auckland AGM in March elected Jack Woodward as Chairman and Don Stuart as Treasurer. David Roche became Secretary and other members of the committee were Lawrence Carter, Alan Chandler, Graham Dickson, Richard Fenwick, John La Roche, Neil Mander, Mike O'Sullivan, Richard Reinen-Hamill, Heather Silyn-Roberts and Don Taylor.

Concern about landmines continued and in April Jack Woodward as Chair of Auckland Branch wrote to the Prime Minister Jim Bolger urging the Government to support the call for landmines to be banned internationally. Lawrence Carter talked to the Auckland meeting on 16th May about his investigations into landmine detection, particularly those containing little or no metal. He had been working on the issue at the University of Bradford and continued this research at Auckland University.

The need to share technology

"Sharing the Future" was the theme of ESR's 13th National Conference in Wellington on 6th February 1997. Gerry Coates in his opening address pointed out that unless we find better ways to share technological progress more equitably the world will become increasingly divided and unsafe. Tom Munsey from American ESR described his work on riverbank stabilisation in Alaska that only put more money in the pockets of the already well off. Jeanette Fitzsimons asked "Does technology intrinsically serve the public good?" Morris Te Whiti Love commented on under-representation of Maori in engineering. Ken Piddington, DoC Director General, suggested that cultural and social sustainability are equally as important as economic sustainability. David Russell, Consumers Institute Director, warned that genetic engineering was likely to be introduced for profit motives rather than consumer benefit. Helen Hughes, recently retired Parliamentary Commissioner for the Environment, recommended that engineers should be advocates for the Resource Management Act for community groups who were bewildered by technology. Brenda Leewenberg, a multimedia consultant felt that computers were liberating technology for all ages and cultures.

At the National AGM after the conference Rob Wilkinson was elected President with Ian Shearer as National Secretary and Norm Major as Treasurer. ESR was delighted that Rob Wilkinson was awarded the MacLean Citation for his exceptional and distinguished service to IPENZ. At the Auckland Branch committee meeting Jack Woodward was re-elected as Chairman, David Roche as Secretary and Don Stuart as Treasurer. The committee were David Austin, Lawrence Carter, Owen Colbert, Graham Dickson, Richard Fenwick, John La Roche, Neil Mander, Jeanette MacDonald, Heather Silyn-Roberts and Don Taylor.

On 21 August 1997, Auckland Branch held one of its largest meetings when a panel of speakers discussed the problems immigrant engineers were having in securing employment to an audience of over 200 including many unemployed immigrant engineers. Over 9,000 qualified immigrant engineers and technicians had been granted residence in NZ over the previous 5 years. Jenny Hart an IPENZ Board member said that IPENZ was now aware of the problem and had produced a leaflet with guidelines and suggestions for those who had recently arrived in NZ. One reason was that employers find it difficult to employ immigrant engineers over local engineers. Richard Fenwick had conducted a survey of immigrant engineers studying for postgraduate diplomas. He found only 5 out of 49 had temporary employment and most had spent up to a year seeking employment, some making over 100 applications. There were many recommendations that came out of this meeting.

During the year ESR gave financial support to assist the Campaign against Land mines and Lawrence Carter gained a \$14,500 grant from World Vision towards his research into landmine detection.

The 1998 ESR conference was held in Auckland on 12 February. President Rob Wilkinson welcomed Bob Harvey, Mayor of Waitakere City who opened the conference by discussing how Waitakere City

had promoted sustainable communities. The Rev. Douglas Mansill from Mt Roskill South emphasised the need to be a builder of community and to understand the Maori concepts of Mana Atua or life enhancing forces. Jack Woodward described “Public Good and The Good Society” where all citizens must have personal liberty and basic well-being with racial and ethnic equality to achieve a rewarding life. He contended capitalism seems to militate against this and seems to promote the argument that there is no need for government or communal activity. Jeanette MacDonald wondered if engineers have much real experience in their own communities and Owen Colbert addressed the question of “What makes a community?” Ngaire Kingsbury was concerned about the environment being sacrificed for financial growth and Dick Hubbard described the formation and development of Businesses for Social Responsibility. Rob Wilkinson concluded by suggesting that we should “Always make a big decision whilst holding the hand of one’s grandchild”. At the National AGM Rob Wilkinson was re-elected as President, and Norm Major as National Treasurer. A secretary would be appointed. For the first time Hamilton reported that it was forming a branch under the convenorship of Norm Stannard.

At the Auckland AGM on 19th March Lawrence Carter was elected Chairman and David Roche Secretary. The committee comprised Jack Woodward, Mohammad Afzal, Paul Austin, Owen Colbert, Richard Fenwick, John La Roche, Jeanette MacDonald, Neil Mander, Heather Silyn-Roberts and Don Stuart. Special tributes were made to retiring Chair Jack Woodward.

ESR made a submission on Owen McShane’s report on the Resource Management Act review. The submission concluded that the questions to focus discussion and terms of reference were slanted and biased. The effects –based management of the biophysical environment is a damaging contradiction.

In the November Newsletter Lawrence Carter provided an up-date on his landmine detection research. He had attended two conferences in Europe where it was estimated that there are around 60 to 70 million landmines in the ground in more than 60 countries. Landmines kill and maim indiscriminately as well as causing economic hardship. Lawrence’s research to find a method of detecting buried non-metallic landmines is progressing well and a \$100,000 grant from the NZ Government has been a great help.

Concerns about Sustainability

The 1999 ESR Conference was held in Wellington on 7th February at the IPENZ Conference room with the theme “Sustainability and New Economics”. President Rob Wilkinson welcomed the first speaker Dr Steve Thompson, CEO of the Foundation for Research Science and technology. Steve commented that there are only limited resources to sustain our lifestyles and world population. Pollution from industry is ineffectively controlled and there are too many people to provide them all with full-time employment. He suggested higher pollution and resource use taxes with incentives to use consumer goods more sparingly. Dr Sharon Beder from Wollongong University in Australia spoke about “Ecological Economics” and the instruments that should be used for pollution control. John Peet spoke about a “New Economics of Sustainability and Justice”. We have imposed on us by government the world view based on the theory of individual self-interested utility maximisation. But what actually happens in practice is that the most freedom goes to the most powerful. Economic growth based on GNP is flawed because it treats crime, divorce and other social breakdown as economic gains. Ian Shearer and Molly Melhuish described “Energy for Economic, Environmental and Social Sustainability”. The outlook for NZ sustainability in the energy sector is not good.

At the National AGM held after the conference Rob Wilkinson was re-elected President with Stephen Thompson as National Secretary and Ian Shearer as National Treasurer. The Auckland Branch AGM re-elected Lawrence Carter as Chairman with David Roche Secretary and Sean Finnigan Treasurer.

The committee was Jack Woodward, Heather Silyn-Roberts, Neil Mander, John La Roche, Richard Fenwick, Paul Austin, Jeanette MacDonald, Ahmed Daoud and Mohammed Afzal.

In October 1999 David Thom repeated his Fleming Award Lecture “Can Technology Save the World” to ESR Auckland Branch. He looked at the environmental problems facing humanity including cleaner production and technological reorientation if humans are to achieve sustainable development. He argued that richer countries must help the poorer countries to relieve poverty and help environmental protection.

During 1999 Auckland Branch made a number of submissions. Lawrence Carter's submission was on the sale of radio spectrum, Jack Woodward's on Better Roads better Transport, John La Roche on the Forests Amendment Bill and Jack Lello's on amendments to the Resource Management Act. During the year Owen Colbert and Roy Shackleton established an ESR Website.

With changes to the IPENZ Conference in 2000 (now termed Congress) to be held in Christchurch in March, it was decided not to hold an ESR Conference in conjunction and instead to hold the National meeting in Auckland on 16th March 2000. At that meeting Rob Wilkinson retired as President, when John La Roche was elected as President, David Roche as National Secretary and Sean Finnigan as National Treasurer. Jack Woodward was elected an ESR Honorary Life member in recognition of the enormous contribution he had made to ESR since its founding.

Heather Silyn-Roberts agreed to Chair the Auckland committee comprising Jack Woodward, John La Roche, Neil Mander, Ahmed Daoud, Jeanette MacDonald, Roy Shackleton, Derek Pringle, David Bishop and Adrian Ferguson.

The working group for Unemployed Immigrant Engineers made progress with Work and Income NZ offering to provide subsidies to employers to help immigrants demonstrate their technical skills.

At the July 2000 meeting ESR member Sir John Ingram gave an inspiring address entitled “Treaty Settlements – Answers or Questions?” Sir John had served seven years on the Waitangi Tribunal and refuted some of the commonly held non-Maori criticisms of the process. The just settlement of Maori claims has a major role to play to achieve better health, education and jobs for Maori and also to overcome the very real resentment held for past wrongs, particularly the alienation of land.

At the November meeting Dr Jim Salinger addressed the question “Is climate changing?” Jim was a lead author in the IPCC Third Assessment Report and had been leading various programmes on climate variability in New Zealand.

Valuing Human Capital

The 15th ESR Annual Conference was held in Auckland on 8th and 9th March 2001 at the IPENZ Rooms in Dominion Road. “Valuing Human Capital”, the theme of the conference was introduced by IPENZ President Tony Gibson talking about his vision for engineering in New Zealand. In discussion after Tony left, the meeting strongly endorsed the idea of promoting an engineering vision as described, but there was concern that the vision over-emphasised material wealth. In the following session Kepa Morgan, Liz Godfrey and Barry Fisk discussed the inclusion of minority groups in the profession. Kepa Morgan identified for young Maori the lack of historical role models, historical problems with the Public Works Act and the confrontation of Maori with the engineering student's haka party. Much greater promotion to young Maori of the benefits of a career in engineering is needed.

Liz Godfrey said that while 20% of students entering Auckland University were women, only about 3 to 4% become members of IPENZ. Many women after graduating go into non-traditional engineering careers such as software development because they do not find the engineering environment friendly to them. They often see engineering as a grey-suited male-dominated organisation. Barry Fisk, Regional Commissioner for Work and Income described the huge inflow of

immigrant engineers into NZ, followed by a large outflow to Australia. This was a failure of the immigration system and also the engineering profession for not integrating these people. Katherine Peet looked at “Humanising Work” and a different way of looking at employment, unemployment and what is going on in society. She was concerned that a few bean counters make decisions on behalf of us all. She suggested a whole new approach where citizens were encouraged to express their hopes and aspirations through their work. Shayne Matheson, Director of Top Drawer Consultants asked what made participants feel valued as an employee? Retaining employees made good business sense. Westpac Bank had estimated the cost of replacing an employee with 8 years’ experience was \$40,000 and for a senior manager \$60,000. She felt strongly that business needed to develop a social conscience and quoted Fisher and Paykel and Hubbard foods as excellent examples to follow.

At the National AGM held after the conference John La Roche was re-elected President, David Roche as National Secretary and Sean Finnigan as National Treasurer.

Lawrence Carter gave an excellent talk to the April meeting about his involvement with landmine research in Italy at the Joint Research Centre for the European Commission. He traced the historical development of landmines to the deadly proliferation after WW2. Traditional detection techniques using metal detectors and probes are highly dangerous to the operators and require intense concentration.

Neil Mander reported major progress of RedR NZ in the September 2001 Newsletter with members completing assignments in East Timor and Kosovo and another working in Gujarat, India. There are over 70 people on the register and training courses are operating well.

The first class of a six-weekly training course for immigrant engineers commenced in November 2001 with 20 engineers attending. The first hour of each course was devoted to English language training, report writing minuting of meetings and telephone skills. Also covered was CV writing and preparation for interviews. Later courses covered professional advice on building codes, Resource Management Act, Occupational Health and Safety, Software programmes for engineering design, engineering qualifications in NZ, the Treaty of Waitangi and the NZ legal system. Most of the lectures were given free of charge by members of ESR, IPENZ and other specialists.

The 16th Annual ESR Conference was held at the Duxton Hotel in Wellington on Saturday 23 March 2002 with the theme “Real Technology – innovation that benefits Humanity”. Gerry Coates in his introduction asked why in an age of plenty are some things done and other things not done? Many people in the world do not have clean drinking water. There are some things we need like housing but other things that we don’t need like nuclear weapons. Dr David Bibby looked at the main driving forces for technology and where we should be putting our investment for the longer term. Humans are having an impact on global climate that is definite and detrimental. Fisheries in the North Atlantic have been destroyed by over fishing. He felt that while the world’s population is still increasing it will reach a peak this century and then start to fall. Paul Gandar considered “Humanity’s Needs”. He looked at “Power” and who makes decisions with the inescapable presence of technology all around us, some of it positive and some negative. Jeanette Fitzsimons referred to New Zealand’s horrific teen-age suicide rate among those with the best food water and safety. Technology is driven by commercial imperatives to meet the needs of those who can pay the most. But most of humanity still lacks adequate food, water safety and shelter. Ian England looked at technology planning and matching needs with providers. Technology has made huge advances in computer technology but cultural behaviour changes only slowly.

Dr Barbara Simpson felt that although there was a mantra about meeting the customer’s needs, in reality customers do not create the need, it is the marketers trying to sell. Knowledge is depicted as a commodity to be bought, sold and managed. Dr Wren Green talked about “The ideal innovative future: A creative vision”. Old technologies were based on take, make and waste, whereas now we

need cyclic thinking in harmony with natural cycles of Earth. Lyall Lukey noted that ESR does not mind its own business, but looks after wider issues. He suggested that the small, smart and agile will survive. We should shift our own thinking and that of our firms and co-workers away from problems and issues towards opportunities.

At the ESR AGM John La Roche retired as President and Lawrence Carter was elected. Jeanette MacDonald was elected as Treasurer but David Roche wished to retire as Secretary and this position was left open. David was thanked especially for his seven years as Secretary. At the AGM Neil Mander was elected as a life member acknowledging his enormous contribution to ESR as Newsletter Editor since November 1992 as well as his other contributions to the Landmine Campaign and RedR.

At the Auckland AGM Heather Silyn-Roberts was re-elected as Chairperson with Jeanette MacDonald as Treasurer and the committee of Jack Woodward, Ahmed Daoud, Derek Pringle, Adrian Ferguson, Lawrence Carter, John La Roche, Sean Finnigan, Roy Shackleton and Neil Mander. Adrian Ferguson agreed to become National and Auckland Branch Secretary.

During 2002 Norm Stannard was busy arranging a series of meetings in Hamilton including a talk by Professors Brenda and Robert Vale entitled "Building a future without Utilities", a Water for Survival meeting addressed by Dharamvir Singh from India, and Steve Tritt from Mighty River Power talking about alternatives to fossil fuels. In Auckland Heather Silyn-Roberts gave an inspiring talk about engineers and their writing. Too often engineers use passive phrases or distorted passive English. In September Jack Woodward spoke about his experiences developing micro-hydro stations in Papua New Guinea.

Building a Sustainable Future

The 17th National Conference was held in association with the IPENZ Conference at Waikato University on Saturday 29 March 2003 when the theme was "Building a Sustainable Future". Morgan Williams, Parliamentary Commissioner for the Environment opened the conference with his talk "Sustaining What? Our lifestyles, our natural capital our economic system". He confirmed the importance of strong sustainability as opposed to the weak model as proposed by Treasury to the incoming government in 2002. Sustainable development involves redesigning the processes that deliver human needs and wants. Dr Roger Spiller of the NZ Centre for Business Ethics and Sustainable Development talked on "Making a difference through research and education about ethical and sustainable business". He recommended the use of triple bottom line reporting for corporate organisations. Rogers's organisation had promoted a business ethics award in recent years.

Ron McDowell from the International Centre for Sustainability Engineering and Research at Auckland University pointed out that we need to do things differently, production, consumption and organisation. Frank Scrimgeour, Professor of Economics at Waikato University talked on "Building Sustainable Business". The need is to develop sustainable thinking and behaviour as part of the ongoing life of a firm. Norm Stannard talked about "Technology for sustaining Human Ecology" with examples. Rae Julian Director of the Council for International Development talked about "Barriers to Sustainable Development". In many countries politics take precedence over humanitarian concerns such as the Australian refusal to implement the Kyoto Protocol.

Following the conference Dr David Painter was elected President with Lynn Torgerson as National Secretary and Bridget O'Brien as National Treasurer. At that meeting John La Roche was awarded Honorary life membership of ESR.

At the Auckland AGM on 10th April, Lawrence Carter was elected Chairman, Nadine Wakim as Secretary and Su Tang as Treasurer. The committee included Jack Woodward, John La Roche,

Neil Mander, Jeanette MacDonald, Derek Pringle, Rohan Jayawardene, Max Thomson, Hans Oberst and Abbas Bigdeli. After the meeting Sean Finnigan gave a fascinating talk on solid waste management in Sri Lanka where he had been working on a NZ Aid project.

On 21st August 2003 Gerry Coates gave the 20th Anniversary lecture to Auckland branch describing the establishment of ESR. When he graduated from University there was a prevailing attitude that engineers were a bunch of philistines and tended to be anti-culture. He felt challenged by this and once he had established his own consulting company he was able to speak his own mind rather than always being politically correct. During his year as IPENZ President in 2003-04, his project was sustainability. He felt that ESR had come a long way in 20 years but it has lost its radical edge over IPENZ as they have caught up on such things as sustainability. ESR is still regarded as a group that IPENZ cannot control.

In August 2003, the IPENZ Special Interest Group for Immigrant Engineers was formed with a committee of 16 immigrant engineers including two women engineers. On behalf of ESR, John La Roche was elected a member of their committee along with John Fitzmaurice from IPENZ. The committee became active in arranging day-long workshops on employment and career counselling, choosing excellent speakers from engineering consultants and other sources.

The 17th ESR National Conference was held on 27th March 2004 in Christchurch with the theme "Resource Wars – the Role of the Professional Engineer". John Peet opened the conference talking about "Resource scarcity, the big hard questions". Gerry Coates followed discussing "Ethics and resource scarcity". Then George Hooper talked about influencing political decisions and Arthur Williamson talked about a systems approach to energy and resource flows. Carol Boyle looked at effective and efficient resource use and Susan Krumdieck described the rise of a sustainable civilisation from the ashes of the oil empire. Gerry Coates – who is of Ngāi Tahu descent – was concerned about the Foreshore and Seabed Act and the responsibility of the Labour government to observe the spirit of the Treaty of Waitangi. Following the conference David Painter was re-elected President with Lynn Torgerson as National Secretary and Bridget O'Brien as National Treasurer. The Committee included Fiona Cox, Hugh Thorpe, Andrew Dakers, Richard Fenwick, Tony Oliver and John Peet.

The Auckland Branch AGM was held on 18th March when Lawrence Carter was re-elected Chairman, Su Tang as Treasurer and Nadine Wakim as Secretary. The committee included Abbas Bigdeli, Rohan Jayawardene, John La Roche, Hans Oberst, Derek Pringle, Max Thomson, Jack Woodward and Neil Mander.

On 19th March 2005 the 19th conference of ESR was held at Oakridge House, Unitec in Auckland where the theme was "Making Engineers Socially Responsible". After an opening address by Gerry Coates, Rosalind Hursthouse from the Department of Philosophy at Auckland University defined social responsibility and ethics. Heather Silyn-Roberts described socially responsible education in engineering and Andrew Dakers talked about "Engineering Ecosystems responsibility". At the National AGM David Painter was re-elected as President with Lynn Torgerson and Bridget O'Brien continuing as Secretary and Treasurer respectively.

At the Auckland AGM on 21 April, Lawrence Carter was re-elected Chairman with Carl Chenery as Secretary and Su Tang as Treasurer. Committee members included Abbas Bigdeli, Rohan Jayawardene, Derek Pringle, John La Roche, Neil Mander, Max Thomson and Ross Rutherford.

Auckland meetings in 2005 had a focus on the future of electricity supply and included notable talks by Dr Keith Turner CEO of Meridian Energy who spoke about "A Renewables Future for NZ" and Dr Ralph Craven CEO of Transpower who talked about the role of the National Grid in Securing New Zealand's Electricity future".

Although a National conference had been suggested for 2006, this did not eventuate. The National AGM was held in Christchurch on 24 April 2006 when the previous office holders were re-elected with David Painter as President. In Auckland Lawrence Carter continued as Chairman with Carl Chenery as Secretary and Su Tang as Treasurer. The committee was Jack Woodward, Fei Chen, Daniel Tombleson, John La Roche, Thomas Neitzert, Neil Mander, Derek Pringle and Max Thomson.

Auckland continued with regular monthly meetings and inspiring talks including one from Jack Woodward describing the building of a micro-hydro project for the village of Faseu in Papua New Guinea. Other talks were from Warren Snow on reclaiming Auckland's resources by setting up resource recovery centres and Ema Reid and Ray Brown who talked about Wind Turbine development and installation.

Engineers and Peak Oil

The 20th ESR National Conference was held in Auckland at Oakridge House Unitec on 24 March 2007 with the theme "Engineers and Peak Oil". After an opening address by Richard Fenwick, Tim Jones Convenor of the Sustainable Energy Transport Working Group set out to define peak oil. John Blakeley gave a summary of the Australian Senate Inquiry on Peak Oil and looked at the various alternative fuels including natural gas, LPG and hydrogen, synthetic fuels, oil from shale, and biofuels. He pointed out the many risks associated with all the various options and recommended congestion charges to ease peak traffic, encouragement of walking and cycling, integrating transport into land use planning and making more use of rail for long distance freight. Gerry Coates recommended getting by on much less oil and that economists seemingly could not deal with finite resources. It is urgent that we convert transportation and energy to renewable modes and to change our living patterns. Elizabeth Yeaman a senior advisor for renewable energy at the Energy Efficiency and Conservation Authority (EECA) described the various types of biofuels and how they could be produced.

Jeanette Fitzsimons as Co-leader of the Green Party, said that Climate Change must be included in any discussion about Peak Oil. She asked how we became so dependent on oil. She recommended accelerating the development of biofuels and that rail needs to become a significant transport mode for both passengers and freight. There was much useful discussion at the workshops after each session. ESR and engineers need to challenge the existing social and technological structures. We need to stop focusing on isolated technical solutions and engage in social debate to transform values to a more sustainable position. We should enter into a debate with economists to get pricing correct. We need a scientific commission or some other body with power.

At the National AGM following the conference, David Painter retired and Thomas Neitzert was elected President with Aaron Clarkson as National Secretary and Su Tang as National Treasurer. Auckland Committee members included Lawrence Carter, Jack Woodward, Neil Mander, Max Thomson, Neil Jacka, John La Roche and Archer Davis.

"Responding to Oil Depletion and Climate Change" was the theme for the 2008 ESR conference held at Unitec in Auckland on 26 July. ESR President Thomas Neitzert, opened the meeting. Simon Tegg, a master's student at Victoria University and SEF member pointed out that oil production had declined and rising consumption is likely to create unstable geopolitical situations. Garry Law from the Environmental Defence Society, described the Kyoto Protocol with its ambition to limit greenhouse gases. John Blakeley's topic was "Energy, Climate Change and Carbon Neutrality". He looked at New Zealand's contribution to greenhouse gases and the actions that needed to be taken to reduce our emissions, particularly in the transport sector. Arthur Williamson, long-standing member of ESR and SEF, talked about the possibilities of carbon capture and sequestration as a means to reduce carbon dioxide. Archer Davis as a group manager at North Shore City Council described the planning issues related to energy depletion. Long-term financial forecasts are needed

to optimise investments. Tim Jones, Convenor of the Sustainable Energy Forum talked about the national responses linking energy and transport emissions. While all the political parties recognise the need to reduce emissions, only the Green and Maori parties have done more than pay lip service to the issue. Cameron Pitches from the Campaign for Better Transport talked about his organisation's achievements including the re-opening of the Onehunga branch railway line. James Samuel talked about Transition Towns, a movement that started in UK in 2005 to support local communities to adapt to change.

At the 2008 National AGM held in Auckland on 13 March, Thomas Neitzert was re-elected President and Su Tang Treasurer. There were no nominations for Secretary. At this meeting Dr John Peet was awarded Life membership of ESR for his long service and many initiatives that have benefitted ESR. The election of the Auckland committee followed with Jack Woodward, Neil Mander, Max Carter Lawrence Carter Robbie Lawton and John La Roche being elected. Sasha Jattasingh was later co-opted onto the committee.

Again there was a full programme of monthly meetings in Auckland with many notable talks. One by Dr Robert Howell talked about "Ethics and Climate Change" and the ethical economic and governance systems that will be required. In September Dr Susan Krumdieck spoke about the role of Transition Engineering and the Transition Town movements.

The 2009 Annual General meeting was held in Auckland on 19th March 2009 when Thomas Neitzert was re-elected as President, John La Roche National Secretary and Cathy Lai as National Treasurer. The Auckland Committee was Jack Woodward, Lawrence Carter, Max Thomson, Neil Mander and Avishek Kumar. At this meeting the Constitution was amended to enable ESR to become a registered Charity. Gerry Coates addressed the meeting with the topic "What is it that you don't understand about the meaning of the word finite"? He described the carbon cycle and carbon as a natural part of life and that becoming carbon neutral means stopping using fossil fuels starting from now. We are like Alice in Wonderland expecting the markets to fix the problem. There is no acknowledgement that oil is finite. We need to prioritise oil uses into essential, transitional and dispensable. Gerry quoted a number of case studies related to aviation and recommended that engineers need to lead rather than follow and there is urgent need for change.

Following Gerry's talk, ESR and the Sustainable Energy Forum made a joint submission on amending the Government Policy Statement on Land Transport Funding 2009-2018/2019.

Notable talks during 2009 included a talk about electric vehicles by Hayden Scott-Dye and harnessing the ocean's energy by Dr John Huckerby of the Aotearoa Wave and Tidal Energy Association. Maori Students at Auckland University encouraged by Kepa Morgan talked about sustainable housing solutions for Maori.

The 2010 AGM was held in Auckland on 19 March when Thomas Neitzert retired as President and Dr Susan Krumdieck was elected President, Shannon Page as National Secretary and Lynn Torgerson as National Treasurer. Thomas Neitzert was elected as Auckland Chairman, Secretary John La Roche, Treasurer Avishek Kumar and the committee Jack Woodward, Lawrence Carter, Neil Mander, Cathy Lai and Ian Milne.

Following the formal meeting John Peet gave the talk "Why do engineers/scientists and economists/policy analysts seem to be talking past each other?" John said it was quite clear that the root cause of unsustainability is our approach to economics. John finished his talk with the advice "That as socially responsible engineers we have a big challenge ahead, not least helping policy makers to understand the desirability – and necessity of welcoming the need for great change and taking serious action to respond – and create a better world for our grandchildren"

Signs of Change Conference 2010

“Signs of Change” was a two-day e-conference organised by Susan Krumdieck on 15th and 16th November 2010. Electronic connections between terminals in Christchurch, Auckland, Palmerston North, Wellington and Dunedin with internet connections to Kerikeri and Invercargill enabled all participants to see each other and converse. There were 250 participants from many walks of life. Susan Krumdieck opened the conference with the message “Change or become Irrelevant”. Other Christchurch speakers were Shane Orchard and Margaret Jeffries on community participation, Jody Beck on next generation agriculture markets, Rhys Taylor on Sustainable living, and John Warren on energy mapping in Canada. The second session from Wellington included Stephen Drew on smart electricity grids for the future, Leanne Pelabon and Elizabeth Woodford on Mana Recovery and mental well-being, Karen and Bob Schumacher on Kiwi the catalyst for change and Rob Bishop on energy efficiency improvements at the Reserve Bank. In Auckland Robin Alison spoke about Earthsong eco neighbourhood, James Samuel on Transition Towns, Rachel Brown on the Sustainable Business Network and Warren Snow on solving Auckland’s waste crisis. Finishing the first day back in Christchurch Hugh Thorpe discussed Waterway habitat restoration, Peter Mann on Sustainability at Yealands winery, Robert Chambers and Graeme Mould on log homes and Steve Earnshaw on the Farmers market at Timaru.

On the second day from Christchurch Matt Morris talked about ECO student flats, Karen Upton about compost, Arthur Williamson Themocell Solar Water Heating, and Dave Irwin on education for sustainability. Dunedin then contributed with Catherine Irvine on the Otago Farmer’s market, Dugald MacTavish on confronting the growth paradigm and Tim Bishop on the challenge of sustainable habitat construction. In Wellington Karl Check talked about KiwiRail getting back on track, Paul Kennett on living happily on 1 tonne CO₂ per year, Jason Penny on the emergence of the bicycle, Amanda Yates on Performance Gardening and Jan Logie and Nick Preval on City Strategies for renewal energy. The final session in Christchurch was Kyan Krumdieck and Aaron Packard on 350 Aotearoa political agenda, Stephen Muir on cycle trailers, Elizabeth Harris on Preventive Health Care and Chris Freear on the Rail Trail tale. In Palmerston North Harvey Jones talked about the development of a local currency.

The Christchurch earthquakes of 2010 and 2011 had a devastating effect on the region and no meetings of the National Executive were held in Christchurch. The National Annual General Meeting was held in Auckland on 17th March 2011. Neil Mander was elected President with John La Roche National Secretary and Ian Milne as National Treasurer. The Auckland committee was Jack Woodward, Lawrence Carter, Cathy Lai, Ross Rutherford, John O’Grady, Adam Taylor and Nigel Williams.

During 2011 ESR Auckland committee made submissions on the Auckland Council Draft Annual Plan and a submission on the security of Fuel supply by Nigel Williams to Auckland Council. A letter was sent to the UN Secretary General and the Japanese Ambassador expressing concern at the handling of the Fukushima Daiichi Nuclear Power Plant crisis. Another letter was sent to the Parliamentary Foreign Affairs Select Committee supporting the iCAN proposal for abolishing nuclear weapons.

Monthly meetings were held throughout the year with excellent talks from Peter Kammler on energy options for the future and Dr Grant Covic from Auckland University talking about his research into inductive power transfer. Dr James Hansen addressed a large audience about Climate Change on 12 May and Jason Ingham, Lisa Moon and Jocelyn Dickie talked about the performance of masonry buildings in the Christchurch earthquakes. Ian Montanjees discussed the advantages of using white roofs to mitigate global warming and Ross Rutherford and Nigel Williams described transport for a high energy cost future.

The 2012 National AGM on 15 March 2012 was again held in Auckland. Neil Mander was re-elected President with John La Roche National Secretary and Ian Milne National Treasurer.

The Auckland committee was Jack Woodward, Lawrence Carter, Cathy Lai, Ross Rutherford, Adam Taylor, Nigel Williams and Bevan Mullions. After the meeting Dr Regan Potangaroa compared disaster relief work in Haiti with that in Christchurch. During the year ESR was very concerned about the IPENZ report "Realising our Hidden Treasure" and made a submission disagreeing with many of the principles in the report. A submission on Auckland Waste Management and Minimisation plan was made to Auckland Council.

Again a full calendar of monthly meetings was held in 2012 with talks on dealing with Yellow Cake in Africa and Agent Orange in Vietnam by Dr Ron McDowell, managing change for sustainability by Dr Lesley Stone, "Nuclear: Down the Drain or up in smoke" by Nigel Williams and "Souvenirs from our last true wilderness" by engineering student Sarah Hall about her visit to the Antarctic Peninsula. David Reid talked about Power from the Sun and a large solar project in Tonga and Graeme Fleming described dealing with agricultural pollution in Lake Taupo.

At the 2013 AGM in Auckland Neil Mander was re-elected President and John La Roche National Secretary. The Auckland committee was Thomas Neitzert, Lawrence Carter, Ross Rutherford, Ian Montanjees, Adam Taylor, Jack Woodward, Cathy Lai, Peter Whitmore. Thomas Neitzert later agreed to become Treasurer.

During the year there was growing concern about the impacts of Climate Change and the lack of Government action. It was decided as an urgent task to prepare a series of position papers on climate change similar to the Nuclear Fact Sheets prepared in 1986. The meetings programme during the year reflected this emphasis starting with a talk by Professor Klaus Bosselmann "Living in the Anthropocene: The Rule of Nature". He called for a law to protect planetary stewardship that would define ecological boundaries and sustainability as well as defining what government is legally allowed to do or not do. Bernd Gunderman talked about "Adaptive Urbanism" and how it will be necessary to adapt to sea level rise. Jim Salinger talked about climate change and its impact on New Zealand and Sir Alan Mark discussed the campaign to persuade Parliament to undertake a risk assessment of the economic and energy security risks facing the country. Steve Goldthorpe talked about "Energy vs Climate – Defining the Problem" and Ross Rutherford gave an excellent talk entitled "Identifying and dealing with our transport and energy risks". Dr Mary Sewell gave a most enlightening talk on Ocean Acidification and other CO₂ problems. Peter Whitmore was involved with the Auckland Coal Action Group and on behalf of ESR made a submission to the Waikato regional Council on a Fonterra proposal to establish a coal mine at Mangatawhiri.

At the 2013 Annual General meeting Neil Mander retired and Ross Rutherford was elected President. John La Roche and Thomas Neitzert continued as National Secretary and Treasurer respectively. The Auckland Committee was Neil Mander, Lawrence Carter, Peter Whitmore, Rachel Lees-Green, Jack Woodward and Cathy Lai. At the AGM it was reported that 11 Climate Change sheets were ready for publication with another four being prepared. After a bulk printing of 1,000 copies, Lawrence Carter undertook the task of posting copied to all MPs, larger local councils and all secondary schools with more than 400 pupils.

Although a full meetings programme with talks was arranged during the year with excellent speakers, there was concern about falling attendances at meetings. A change from Thursday evening at 7-30pm to Wednesdays at 6-00pm was made to see if this helped, but it was decided by the committee that new directions were needed and a questionnaire was sent to members asking for their views.

Meetings held in 2014 included Catherine Ions Magallanes speaking on "Climate Reality 2014" following a leadership programme that she had attended in Chicago in 2013 representing ECO (Environment and Conservation Organisations). The April talk was on electric vehicles in NZ and in June Professor Nic Smith spoke to his topic "Can a clinician learn anything from an engineering-based computer model?" relating to his mathematical modelling work on the human heart.

John Blakeley spoke about Professionalism and Professional Responsibility in July, and in August the "Island President" film about the Maldives Islands and sea level rise was shown. Ross Rutherford addressed a combined ESR Transportation group meeting in September. In November Steve Goldthorpe spoke about Carbon Capture and Storage.

Registrations

ESR became an Incorporated Society on 16 April 1987, Registration Number 347697. On 30 June 2008 it became a Charitable Entity, Registration Number CC41628.

Looking Ahead

Current President, Ross Rutherford has postulated that there is no doubt about the need for organisations like ESR to be prepared to think independently and to stand up for what it believes is important and socially responsible. The debate about the role of ESR in 2015 and beyond has begun. Key issues include how ESR should best communicate with its members, IPENZ, all engineers, the young, the decision makers and the general community.

The aim is to ensure that ESR can continue to be relevant and effective in a fast changing world. That will require change, but in a way that enables ESR to remain true to its ideals and objectives.

Personal Comments

Although ESR has deliberately remained independent of IPENZ, we have always considered IPENZ as the professional body responsible for professional engineers. Many of our members have held top positions in IPENZ. ESR members who are past Presidents include Gerry Coates, David Thom, Gretchen Kivell, Rob Wilkinson, John Blakeley and Sir John Ingram (since resigned as a member). Jack Woodward is an IPENZ Distinguished Fellow. The Mana bestowed by these highly respected members and other distinguished academics like Alan Titchener, John Peet, Richard Fenwick, Lawrence Carter, Heather Silyn-Roberts, David Painter, Bob Hodgson, Susan Krumdieck and Thomas Neitzert, has brought to ESR enormous benefit in maintaining our respected reputation.

In preparing this history I must pay tribute to the quality of Newsletters produced initially by Gerry Coates and Alan Titchener, but then for the past 23 years by Neil Mander. Newsletters have not only provided an excellent record of ESR's activities, but also recorded many of the inspiring talks and deep philosophical ideas proposed at regular meetings and annual conferences.

I apologise that I have been able to capture only a very little of these papers and records in the history. We have full sets of Newsletters in our records and they are all well worth time to re-read.

However technology has changed from paper to electronics and Facebook. Instant communication to anywhere seems to be the order of the day and it's time for some of us older members to move on. For me personally, ESR and my associated activities such as Water for Survival have been the most rewarding part of my life. Thank you Gerry for establishing ESR.

John La Roche March 2015

I am grateful for comments from Gerry Coates, Ross Rutherford and Jack Woodward who have added important information and "enhanced" my written English.