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# THE HEALTH ENGINEER



THE JOURNAL OF  
N.Z. INSTITUTE OF HEALTH ESTATE AND  
ENGINEERING MANAGEMENT

# **THE HEALTH ENGINEER**

The Journal of the NZ Institute  
Of  
Health Estate and Engineering Management

Volume 3 No 5 Summer 2005

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## **Contents**

- Pages 2 – 3 President’s Column.
- Pages 4 – 7 Advancing to Better Solutions.
- Pages 8 – 10 Buying Electricity
- Pages 11 – 14 Hamilton Conference, reports and photos.
- Pages 15 – 18 ANZEC report, Bill MacDougall
- Pages 19 – 21 Wind Power.
- Pages 22 -23 Report from “Engineer of the Year”.
- Page 24 Review of “The Biomedical Course”.
- Inner back cover – EARB Press release.
- Cover Photo - The carved figures on the bank of the Waikato River beside the Novatel Tanui Hotel, venue for the 2004 Conference

The health and viability of any organization depends on good communications. Our objective is to produce a good quality health engineering magazine. The magazine should inform readers, it should provide a forum for discussion, encourage interest in all aspects of the technical side of health facility management in its widest sense.

## Presidential Comments

Greetings,

Most of the DHBs are now in the grip of CAPEX planning and operational budget setting. It is an intense time of year as we have to look out 18 months and beyond and try to ensure we have thought of everything.

Budgeting for the cost of energy is going to be interesting as our Health Sector Buying Group tender prices are not yet available. Hopefully, we will have a good idea before budgets are frozen.

Four NZIHEEM members ( from Auckland, Canterbury, Waikato and Wellington ) attended the Meridian Energy "Key Corporate Customer Workshop" on 4 February in Wellington. Meridian CEO, Dr Keith Turner and his team presented a very interesting and full day of presentations. Some highlights were that :-

- \*NZ demand is running higher than expectation as a result of higher economic growth.
- \*New generation is coming on line slower than expected.
- \*Winter 2003 indicated that there have been no sustained conservation effects from recent dry winter events.
- \*The Electricity Commission is starting to have an impact on market behaviour, mainly in reducing uncertainty for very large investments which will need to be made.
- \*The generators and Transpower have significant differences of opinion in how the decisions are made for grid upgrading.
- \*Meridian have restructured their customer service systems to define 150 High Value Customers , down from 550.
- \*A new web based on-line demand graph system is almost ready to roll out.
- \* And finally Meridian regards the DHBs and other government owned agencies as key customers in their portfolio.

Another energy related workshop in Wellington recently was the EECA/Solar Industry Association workshop. Unfortunately it seems that unless there are unique circumstances the generation of domestic hot water on a commercial scale by solar systems still seems outside the 3 to 5 year simple payback barriers that most hospitals have to use. However the price of natural gas has already started to rise by more than 100%.

Maybe soon we will see Energy Performance Contracts or BOOT Contracts with Solar Panels displacing natural gas as the energy input.

EECA is supporting domestic installations with interest free loans but the Crown Loan Scheme still costs more than 6% even with it relaxed payback periods. It is confusing as it is not clear whether the government's and EECA's objective is to save energy and move to renewables or to support a fledgling industry. One good sized commercial project would save the value of hundreds of houses domestic hot water use.

The 2005 NZIHEEM Annual Conference in Wellington now has dates and a venue. **The Duxton Hotel. Be sure to put aside the 10 -11 November 2005.** And there will be a Biomedical Workshop on the 9<sup>th</sup> November.

Regional meetings are also being organized for February and March. I hope we will have reports on these next time.

NZIHEEM Member Tony McKee from Hawkes Bay DHB will be winging his way to Germany in March thanks to Aquatherm NZ Ltd sponsorship. In the week he will be away Tony will be visiting the Fusiotherm factory and the ISH Trade Fair. We will look forward to his report on his return.

Keep visiting our website [www.nziheem.org.nz](http://www.nziheem.org.nz)

Cheers,  
Andrew Paterson, President.

### The Plan (Borrowed from February briefings)

In the beginning was the plan.

And then came the assumptions.

And the assumptions were without form.

And the plan was completely without substance.

And darkness was on the face of the workers

And they spoke amongst themselves, saying, "It is a crock of shit and it stinketh".

And the workers went to the planners and sayeth "It is a pile of dung and none may abide the odour thereof"

And the planners went to the supervisors and sayeth unto them "It is a container of excrement and it is very strong such that none may abide by it."

And the supervisors went to the managers and sayeth unto them "It is a vessel of fertilizer and none may abide its strength."

And the managers went to the directors and sayeth "It contains that which aids growth and it is very strong."

And the directors went to the vice president and sayeth "It promoteth growth and it is very powerful."

And the vice president went to the president and sayeth unto him "This powerful new plan will actively promote the growth and efficiency of the division."

And the president looked upon the plan and saw that it was good. And the plan became policy.

# Buying Electricity on the New Zealand Spot Market.

**Author: Andrew Paterson BE(Mech) , DipCM, MIPENZ, MNZIEEM** is Technical Services Manager of Capital & Coast District Health Board at Wellington Hospital. He has responsibility for energy management and has taken a keen interest in the development and functioning of the energy markets in New Zealand. Wellington Hospital has 10MW of generation capacity so is an electricity market participant on both supply and demand sides.

## **7 YEARS OF EXPERIENCE**

Our experience in the spot market is for the 84months ( 7 years ) from December 1997 to Dec 2004.

For 39 months of 84 months (46%) buying Spot was cheaper than buying Hedge ( We had a Cap-Collar Hedge up to Nov 2001). See Fig1.

Cumulative cost of paying Spot was 16% MORE than paying the hedge price for identical 7 years of energy demand.

The effect at Wellington would have been \$443,000 lost over the 7 year bet to Dec 2004.

The whole of 2001 ( Dec2000 through Nov2001) was a very bad experience. In no month was spot cheaper. May, Jun, July, Aug, Sep being catastrophic.

## **EARLY 3 YEARS**

For the first 3 years Nov 97 to Oct 2001 (C&CDHB had a Cap-Collar Hedge )

For 29 of the 36 months (80%) buying spot was less than the hedge.

Cumulative cost of paying Spot was 5% LESS than paying the hedge price for identical energy demand.

The effect at Wellington was \$55,000 saved, so things looked promising. This is what was expected, a 5% hedge risk saving.

## **HSEBG Contract**

This covers the 37 Months from November 2001 to Dec 2004. ( The HSEBG Contract period to date)

For the first 12months of the contract spot was cheaper.

19 of 37 months ( 50% ) buying spot has been cheaper than buying hedge.

However the cumulative cost of paying Spot would have been 16% MORE than paying the hedge price for identical energy only demand.

It was the autumn that did the damage this time.

The effect at Wellington would have been \$214,000 lost to date if all our energy came from the spot market.

With the remaining three months till end of contract at end March 2004 we expect the financial situation to improve. There is, however, little chance of even a break even ( Spot = Hedge ) on the full term of the HESEBG contract period if recent months are indicative and the Meridian lake hydrology forecast is solid. Spot prices remain too close to the hedge.

## **The Market**

The Major Electricity Users Group (MEUG) has as a 2004 / 2005 Strategic Objective: " Get a truly competitive generation, spot , hedge and retail market".

MEUG Progress and likely 2005 events: ( quoted from 13 January 2005 MEUG Newsletter )

“The weather helped spot prices over 2004. If the weather isn’t kind in 2005 then suppliers are likely to exercise market power as MEUG believe they have in prior years when rainfall was below average, ie if rainfall is poor expect suppliers to argue retail and hedge prices up but when rainfall is good, lower spot prices don’t flow back to consumers.”

Over time the hedge price should always be more expensive than the spot price. The consumer must pay the risk premium in the hedge price. That is the essence of the hedge market.

The problem currently is that over the last 7 years, most of the life of the NZ spot market, the cumulative cost of paying spot has been higher than the hedge. This is contrary to a normal market. Hedge price customers have done well over seven years.

It means either that hedges have been too low or spot prices have been too high. Both have been true.

Fig.1 shows that huge spot price impact in dry years when “real” shortages were “apparently” threatened. These events overwhelmed the operation of the normal spot/hedge market.

Theoretically the Whirinaki 150MW plant will ensure a “dry year reserve” and the Tauranga imported coal handling systems that supply the Huntly coal reserve stock pile may help keep those extreme spot prices down. But taxpayers or consumers will have to pay somewhere.

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### ***The Budget***

In the mean time since Nov98 our hospital’s annual consumption is down by 9.5% as a result of energy management initiatives.

The value of the 9.5% saving is only \$73,000 pa in recent energy price terms.

Energy savings are not accumulating fast enough to beat the price problems and so achieve a balanced budget.

In FY to June 04 the total Electricity Bill for the DHB was 9% less than FY to June 1998, so in spite of the intervening price problems the hospital is still ahead financially on a “normal” (= non-dry ) year basis.

### ***Summary***

New Zealand has experienced three dry or threatening dry winters in 7 years.

The statistics tell us it should be about one in seven.

It has been a bad run for the spot.

Increased coal reserves and new gas fired reserve capacity may reduce the dry year risk, but there will be a cost.

National demand is increasing without much capacity increase. Two capacity expansion projects, Meridian’s Aqua and the Genesis wind farm have been abandoned for RMA reasons.

**Be warned the Spot Market is not for the faint hearted!  
But it may be time to take the bet again.**

**We should be getting better weather and national generation capacity and coal fuel reserve availability has started to be addressed.**

**And predictions for increases in hedge prices of up to 20% make the bet more attractive.**

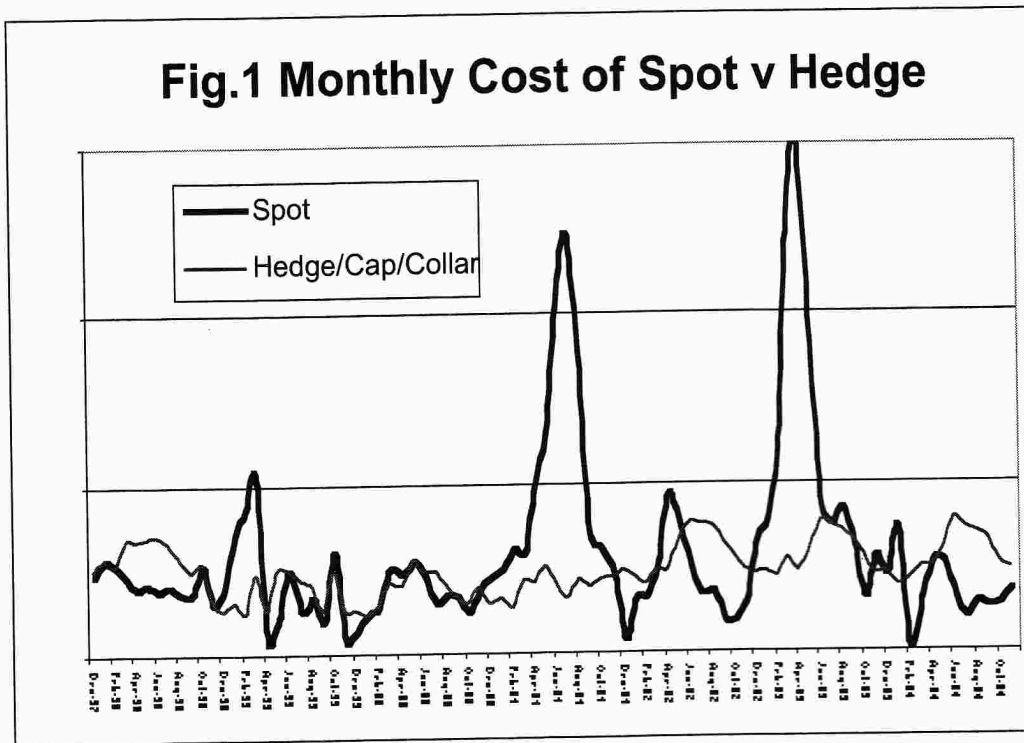


Fig 1. The relative cost of buying all the hospital's electricity at Spot v Hedge prices. The cumulative difference of the totals for each month over 7 years is Fig.2

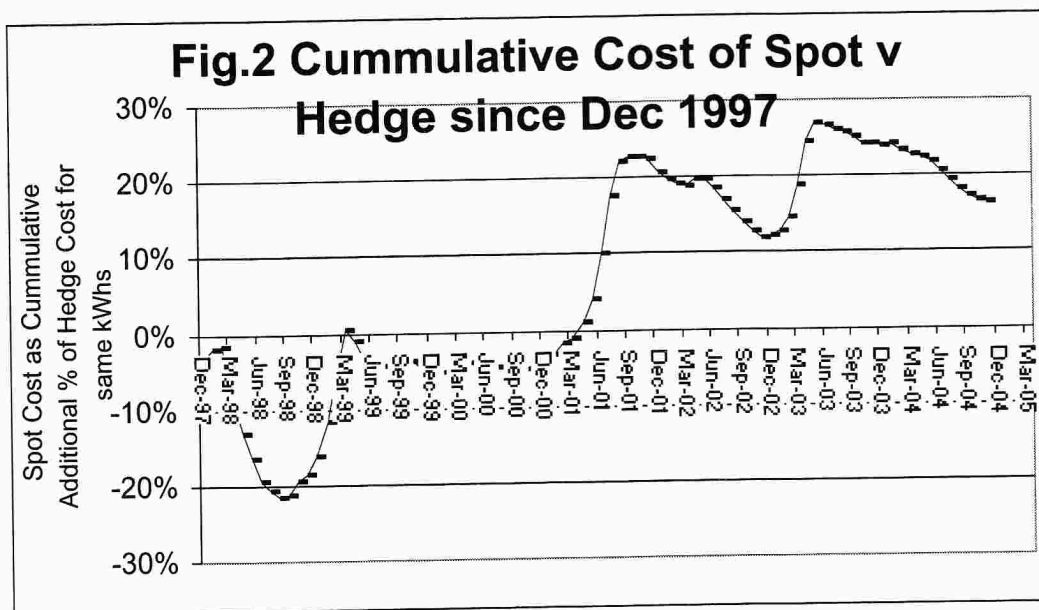


Fig.2 For the first 3 years to March 2001 spot was 5% cheaper than a hedge, reflecting a risk margin. But the two and a bit dry years 2001,2002,2003 had a bad effect. It will take many "normal months", totally 8 years, before the cumulative situation shows spot to be the best bet over the whole 8 years! As at December 2004 the 7 year spot was 16% more expensive than the 7 year hedge cost.

## HAMILTON CONFERENCE 2004 MEMOIRS

Colin Gauld, NZIHEEM Vice-President

The 2004 NZIHEEM conference was held in the garden city of Hamilton. With beautiful weather for the duration and with the venue being adjacent to the river, it made for a positive and pleasant environment. The well organised event was thanks to NZIHEEM members from Waikato Hospital in particular Kevin Bardsley.

Heading into a theme of “*Sharing Knowledge for a Cost-Effective Solution*”, the conference was formally opened by Dr Jan White, CEO, Waikato DHB and Chair of DHB CEO Group. Mr Warren Warfield became the first keynote speaker. Warren, a consultant with a lot of project experience including hospitals (e.g. Auckland), provided a very interesting session on teamwork and “happenings” during projects.



Photo above – Dr. Jan White, CEO Waikato DHB opening the conference

The morning session continued with Mr Mike Ellis from Adelaide, the 2004 ANZEX delegate and secretary to the Australian Institute of Hospital Engineering. The remainder of the morning session included - Dr Murray Williams a specialist anaesthetist also from Waikato DHB who has had a lifelong interest in mechanics and electronics thus taking an active part in the design of new buildings especially operating theatres - and Mr Devon Diggle, Senior Advisor Assets & Capital for Ministry of Health. Devon has also accepted invitations to talk at a couple of Regional meetings which is very much appreciated.

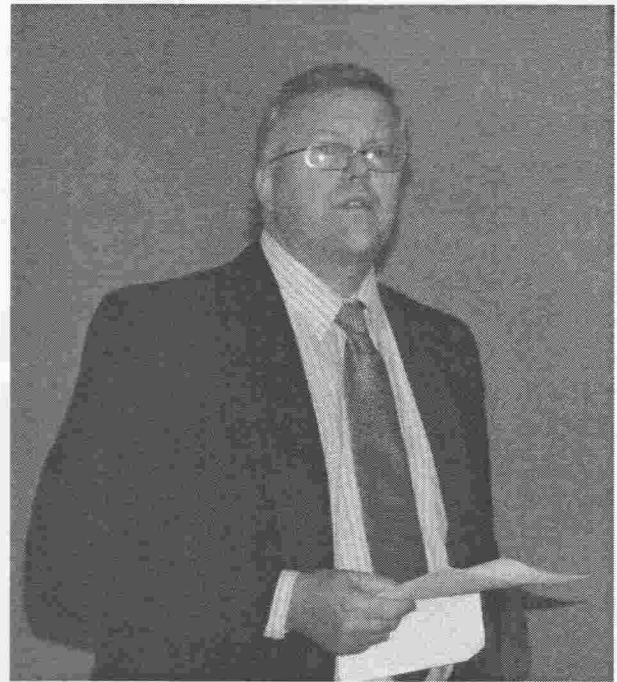


Photo above – Mr Warren Warfield, Consultant Keynote speaker - “Seeking the cost effective solution”

Site visits were the order of the afternoon with option A being Power Beat International at Hamilton Airport and option B at Innovation Park. The latter was my pick and we were talked around the campus by the CEO whom provided a novel approach to the business. The AGM followed and the evening was punctuated by an enjoyable Exhibitors Evening with many sought after spot prizes.

Day two commenced with splitting into Facilities and Biomedical streams. As an engineer, I sat through facilities session and several interesting and entertaining speakers. First for the day was Mr Conan Begley from Meridian. With cost of energy being a major concern with engineering managers, the information was pertinent.





Photo above — Mr. C. Begley, Meridian Energy, delivering his paper entitled The State of the Industry

Mr Darryl Carey was next up. Darryl is known to many facilities managers and his hospital experience came through in the presentation on cost effective design. Mr Ian Wolstencroft's title of 'If you want an easy life, don't involve the staff' set the theme for an enjoyable listening period with Ian's vast experience and valuable lessons.

For the same period as above, the Biomedical stream listened to Mr T Straker, Chemtronics presenting Health Devices - Strategic Asset Management; and Mr Mark Forster King's Visual Communication in Clinical Skills Training

Something new was attempted for both streams for the next session. It was called Q&A - Problem Solving. This involved discussion amongst the members on topical subjects affecting hospitals and to take the opportunity of having so many experienced hospital technical persons in one room. I personally found it valuable and we should continue this forum and develop it.

The afternoon continued with the split with the Facilities stream listening to Keyport including Mr Alan Day and then Mr Stuart Smith from Beccas, both of whom have extensive interest and experience in hospital plant design. Baxter and Drager filled the Biomedical sessions.

Both streams regrouped to hear Mr Giles, WDHB Surgeon talk about Communication - The Manual Labour of the 21st Century. The mechanical aspect of hearing proved to be most interesting and well presented. BIEMS (via Mercury Computers) finalised all the sessions with a simplified albeit esoteric look at multi dimensional reporting and OLAP.

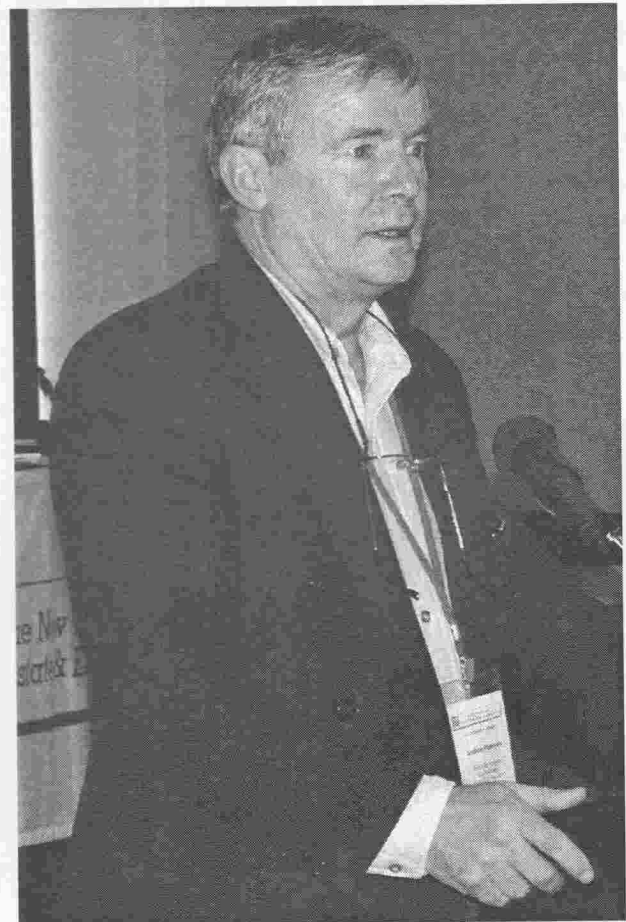


Photo above — Andrew Paterson, President summarizing and closing the conference

Mr Andrew Paterson, NZIHEEM President, concluded with a summary and closing. This was not entirely the end though, the Annual Dinner followed during which the BOC Engineer/Biomed of the Year award was presented to Mr David Watson, Services Engineer, Canterbury District Health Board. David had been involved with various successful projects including a Digital Subtraction Angiogram Suite, expansion of the second largest NZ BMS, a new maintenance management system database,

and energy management with savings of \$180,000 in the previous financial year.

The report I received from the Partners

Conference photo album



Photo above - Mike and Denise Ellis from Adelaide, ANZE delegate, in a pensive mood?

Programme was that it was enjoyed by all, in particular the budget blowing session at Tirau. Finally, my thanks to the sponsors: Drager Medical, Keyport, Philips and Baxter.

Photo below — Delegates partners group

Photo below left — Kevin and Judie Flower learning about Fusiotherm.

Photo below right - Annette Bardsley, Allison (obscured) and Tony Blackler, Jim Logan, Pauline and Paul McCartney and Kevin Flower



## CONFERENCE SITE VISIT

### WAIKATO INNOVATION PARK

Waikato Innovation Park is New Zealand's growth hub for Ag-Biotech businesses. This is where leading primary sector science, technology and research meet the catalyst of entrepreneurship and the growth accelerants of resourcing, collaboration, and a global pipeline of opportunities.

Waikato Innovation Park has been established from a public/private partnership to enhance Waikato economic growth by strengthening innovation in the region's world leading agritech and Ag-Bio sectors.

The park is located on 17 hectares of land next to the world famous Ruakura Research Centre - home to a number of Crown Research Institutes - and close to the University of Waikato campus.

The Waikato is already the country's leading location for science research, with approximately 1000 research scientists working in Hamilton, giving the city one of the highest ratios of scientists per capita in the world. A quarter of the research undertaken in New Zealand occurs in Waikato organisations.

The University of Waikato is a strategic partner with Waikato Innovation Park. This relationship gives park tenants ready access to specialist resources such as laboratories, IT systems, research capabilities, student support, and university programmes.

#### TECH SPRINGBOARD

The Tech Springboard programme is an intensive 14-week programme for early stage ventures which is mentored and supported by some of New Zealand's most successful technology commercialisers. Tech Springboard helps participants test a technology-based idea, develop a robust business model and prepare for investor presentations.

#### TECHNOLOGY INCUBATOR

Waikato Innovation Park's technology incubator gives high potential businesses the

best possible environment for growth. Businesses receive intensive growth treatment, supported by mentors and advisory services, access to capital, as well as excellent operational support.

#### COMMERCIALISATION OFFICE

A range of specialised professional skills support Waikato Innovation Park tenants from the commercialisation office. Ready access to patent attorneys, venture capitalists, accountancy and business services strengthen business growth and investor confidence.



The Innovation Park building, crescent shaped, the far section having just been completed.

#### COMMERCIAL TENANCIES

A Waikato Innovation Park address is a valuable asset for Ag-Bio and technology businesses. Tenancy flexibility allows park-based companies to grow their space as they need to, with the ultimate potential to design and build their own premises on the 17 hectare park. Here they benefit from enhanced opportunity- capture, collaboration, economies of scale and profile.

#### AG - BIO New Zealand

Ag-Bio New Zealand is managed from the park, providing non resident businesses with many of the advantages enjoyed by park-based businesses. Ag-Bio New Zealand is very successful, encouraging active networking of sector related businesses to foster collaboration, capability building, and innovation within the region and industry.

## ANZEX TRIP – Brisbane 2004

It was my honour and privilege to be appointed as the 2004 New Zealand delegate for the ANZEX exchange scheme. The background to this scheme is to allow sponsorship for up to a two-week visit to Australia to attend and participate in the Annual Conference and to visit hospitals and health care facilities along the way and the undeniable fact is that a great spin off to the technical experience gained is the networking, contacts and new friends to be made.

In this regard my wife Lyn and I feel very fortunate to have been received into, at that time strangers homes, and to be welcomed and made to feel comfortable by people whom we now regard as friends.

Before detailing our enjoyable and interesting trip I would just like to take the opportunity of thanking the coordinators and organisers of our trip who went the extra mile in ensuring that we were looked after and “passed along through” the many contacts and home stays on the way.

My first hospital visit was when Klaus Schrader, who is the Energy Manager for the Central Sydney Area Health Service, picked me up and took me to the Royal Prince Alfred Hospital, Sydney. The RPA is about an 800+ bed hospital and I was surprised to see that it is still undergoing major reconstruction as I had taken the opportunity of visiting it 4 years ago after the 16<sup>th</sup> IFHE Congress in Darling Harbour. At that time they seemed well ahead of my District Health Board in terms of collocating clinical services and were already dealing with the same sort of issues that we were due to encounter at Auckland District Health Board.

To date they have spent about \$110 million and one of their problems is that a lot of the buildings on the site are protected, so to overcome this, they have to at least retain the façade at the front and quite a lot of the older buildings as well.

The result is that when the buildings are linked to each other, it can be a real mission matching floor levels due to differing stud heights. There is one classic triangle with a building built in 1890, boxed on to a building built in 1910 and at the third leg of the triangle is a newly constructed 2002 building.

I then met Rowley Hilder, Director of Biomedical Engineering. Rowley is in the enviable position in that his section of eight biomedes are not a cost centre and therefore do not have to oncharge their time. For how much longer he can adopt this sane approach he was not sure but this is definitely one man to follow up on to find out his secret.



Photo above :-

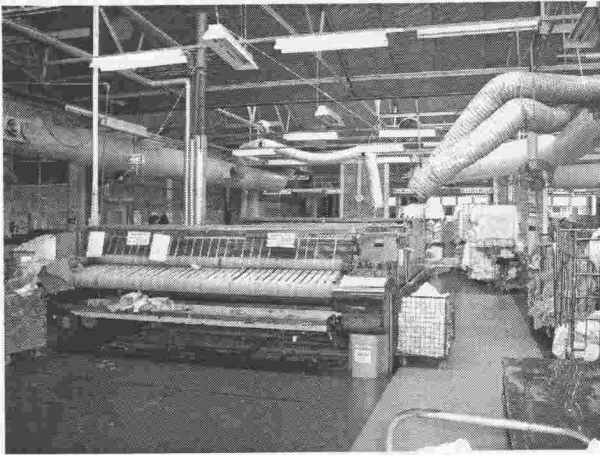
All three buildings have different floor heights with ramps and stairs joining them.

The afternoon was spent at the Concord Hospital, originally a military hospital for Australian soldiers and rehab of about 640 beds.

The Concord Hospital, sometimes called “Thomas Walker Hospital” is situated on quite substantial and amazing grounds which were donated to the people of Sydney by Thomas Walker. Despite the best efforts of various politicians and entrepreneurs since his death to carve up the land and use it for housing developments, they can’t do anything about it because back in the 1850’s he put together a fairly water-tight covenant deed that it was for the people of Sydney for their health and not to be used for anything else.

Mervin Pane, is the hospital engineer at Concord – not a bad chap for an Englishman!

Klaus's passion in his working life is the laundry area at Concord. Two tunnel washers with 16 washing machines in each, matching dryers, conveyor belts and ironing machines, as a biomed who doesn't often get to see support areas "behind the wall", it was an enlightening experience. Although there was a lot of assembly line type automation and it must be a nightmare to schedule downtime for maintenance it was also a very labour intensive operation and I was amazed at the number of staff working in such a sweltering environment.



Naturally as soon as a camera appears everyone ducks for cover but there was a large number of people there – honest!



The laundry runs two 8-hour shifts, 5 days a week and its very hot (steamy).

Due to a number of previous management decisions overruling engineering advice regarding removal of the dual pipeline system, the water used in the laundry system cannot be piped as grey water to the hospital. As the water is about 40DegC when it comes off the rinse cycle and is very dirty it has to be put into a holding tank to reduce the temperature then through filters before being discharged into the sewage system. To add insult to injury the hospital actually has to pay not only for metered consumption but also for disposal. They can't even use it for irrigation as the Council wasn't happy with the chlorine and detergent in it, so they've just got to pour the stuff down the drain now – seems criminal given the current drive to conservation. A prime example of some of the short term thinking which abounds with short term contract managers, perhaps??

On the journey up to Newcastle we took the opportunity to visit the Clements factory where Warren Kay hosted us before travelling on to the John Hunter Hospital, where Harry Cowen and Cliff Pollock, the current president of the Newcastle branch, showed us around. The hospital is about 600 beds and the main corridor through it is 370metres long. The design seemed quite unique to me in that I have never experienced a hospital where the intensive care areas – Critical Care, Neuro, even Paediatric are all located adjacent to each other and indeed almost share a common entrance. This allowed them to realise economies of scale by sharing facilities, equipment and even staff.

Another first for me was a device, almost like a motorised forklift. The forks slid under any bed which could then be raised slightly and moved around with ease and mobility. Naturally being manufactured in Australia it was called a "Gzunda" and although looking perhaps slightly industrial, was a simple and effective way of easily incorporating a powered device to move heavily laden beds around, particularly over carpet.

Probably the only hiccup of the trip occurred when we travelled through to Kempsey to stay with Jim Meldrum. My wife is convinced it was due to the Hunter Valley wine trip Harry had just taken us on, before confirming the arrangements with Jim, but I doubt it myself.

There we were waiting for Jim at the Information Bureau at Kempsey.

While Jim was waiting for us at the Information Bureau at Port Macquarrie.

Sounds similar – an easy mistake to make and I put it down to my accent and nothing at all to do with red wine !!

Jim took no chances with our next stop with Dave and Kelly in Gold Coast by delivering us personally to their doorstep. After we settled in, Dave and Kelly took us to the Southport Hospital – acute emergency receiving hospital and the Robina Hospital - psychiatric.

Again, a mixture of old and new with an incredible amount of construction, relocation and refurbishment going on. It amazes me to see that the trend in New Zealand is mirrored in Australia. There is so much capital redevelopment going on in every hospital I visited and yet operational budgets are inadequate with clinical services being reduced.

Dave has only been in the health sector for about a year and a half, his background is in the hotel trade and he is battling a bit with the politics of hospitals. I wish him luck and can only request that if he figures them out to let us all know.

At the Prince Charles Hospital we met up with Ted Wan who took us also to the Royal Brisbane – they have a very well staffed engineering and biomed department. They seem to have covered all the bases and just created a position for everything – from capital equipment procurement through to hazard recalls - in a relatively hierarchical structure which is at odds with the flat structure introduced at ADHB, where it is difficult to know at times who is doing (and responsible) for what. They still have physicist staff attached to them, so they've got someone who organises physics checks and senior section staff who actually organise the day to day work. They very much see themselves as the technical advisors to Queensland Health and have a very high profile in developing technology strategies.

In addition there are a number of technicians who plan maintenance tours through the state, to service the smaller hospitals. As far as I could make out they travel to a number of these remote areas and, almost working out of the back of their vehicles, carry out basic repairs and arrange for replacement equipment to be hot swapped by courier from

the base site where the faulty equipment can be repaired.

**55<sup>th</sup> IHEA National Conference 12th – 15th October**

Very well organised professional conference with an extensive Partners Programme and a raft of interesting and topical papers – far too many to list here

In particular Kevin Moon's presentation on Influenza Pandemic Planning was a standout, scared the bejeebers out of me and certainly raised a number of questions about health sector (and society's) ability to cope with, according to Kevin, the next inevitable outbreak of a pandemic on the scale of the Black Death.

Wednesday evening was the trade night. Thirty eight trade stands –well laid out in a 'snake' arrangement which you always had to walk through to get in and out of the conference itself. Good exposure for the trade stands.



Some of the partners enjoying a well earned break from the rigours of travel.

Saturday was a wind up cruise sponsored by Tyco on the river. Brisbane is lovely from the river. The day was a bit over-cast which is just as well as I still got sun burnt. As the bus was leaving we managed to lose the Australian delegate to New Zealand, Mike Ellis. He didn't quite get off the boat in time although his wife Denise and everyone else did. There seemed to be a bit of history here as a similar event had happened previously when Denise got left behind. Made a mental

## The Health Engineer

note that it probably doesn't bode well for their future trip to New Zealand. It would be embarrassing if I lost them here.



Saturday Cruise – a time to relax

On the Monday after the conference we headed out to Toowoomba which is inland of Brisbane, just over the dividing range as they call it. As it is quite high altitude, the weather was totally different and when we arrived, were met with as dense a fog and mist as I can remember since leaving Glasgow 25+ years ago. It was foggy, damp, wet (not miserable because everyone was so enthusiastic about the rain – how could it be miserable?). Everyone we saw was comparing notes, some had 17mm of rain in their barrel and somebody else had 35mm. It had been so dry for about the last five or six months, they were all really rapt that it was raining (oh joy for an Aucklander!).

We had an extensive tour of St. Vincent's private hospital, conducted by Andy Gay whom we had met at the conference. It's about 195 beds and what a neat hospital it is! I was very impressed by his department (although the biomed area was in the process of being moved and was in a bit of a mess with all the attendant clutter) and Andy in particular – what a switched-on dude, very clever and well organised. He's just in the process of implementing PDA handheld devices on their BEIMS system for his ten staff, of which only two are biomed. They have a reasonable amount of contracted out work on the biomed side – Datex Ohmeda, CIG, to name a couple, do contracted planned maintenance for them. Very clear, simple structure. No internal charging – another man to follow up on his

secret. He knows how much he spends on maintenance contracts, staff, etc – that's rolled up into a department cost which he can apportion, if necessary at a high level to the major clinical services. He knows his total operational cost and his maintenance costs which he benchmarks against other similar hospitals. All at a high level – no individual small RC charges. Simple, easy, efficient by allowing the effort to go into productive work and not accountancy, and very impressive!



Part of the New Zealand contingent BOC Hospital Engineer of the Year award winner Peter Cuncarr with Jim Nesbitt (BOC), Lyn and myself

Highlights of the trip – the people, and the effort that the co-ordinators had put in to ensuring that our visit went smoothly. I really feel comfortable now in contacting and asking for advice from the engineers and technicians I have met and have no doubt that this will aid me in doing my job more effectively.

## CONFERENCE REPORT

**Peter Cuncarr** was the 2003 BOC/NZIHEEM Engineer of Year recipient. His prize was the trip to the IHEA Annual Conference in Brisbane in the 12-15<sup>th</sup> October 2004.

Here is his report on the conference held at the Mercure Hotel in Brisbane, Australia.

I suppose I should start this article asking what has the award of Engineer of the Year done for me, the Technical Services department and Capital and Coast District Health Board?

Reflecting back over the last 12 months of having the title Engineer of the year has made me realize that others do appreciate the work and dedication that we as Engineers put into the job.

Following the award it was quite pleasing, to say the least, to receive several e-mail messages, phone calls and passing comments from peers, colleagues and other medical/nursing staff.

Also from a department and a company perspective it has put Capital and Coast District Health Board and Technical Services on the map as a team that is making a difference and adding value to the company.

The Engineer of the Year Award in my eyes is not just a single personal achievement but a team effort. Without being part of a forward thinking team my achievement may not have happened, so from me a big thanks to the my colleagues in Technical Services for there indirect input and support over the last eight years.

The 55<sup>th</sup> National Conference in Brisbane was the added value of the award received from BOC gases. Without sponsorship of the award the visit to the conference would not have happened.

I would like to thank BOC gases for the sponsorship of the award, this award gave me last year and other Engineers in the future, the opportunity to attend overseas conferences.

Reflecting back on the conference, personally it gave me a great deal of satisfaction both technically and socially.

The conference was excellent and professionally organised and run by the Queensland Branch of the Institute of Hospital Engineers Australia.

There were many interesting papers presented at the conference, but I particularly enjoyed the papers from:-

- Dolly Oleson, "Introduction to rethinking the way we do business".

Dolly has been in the infection control area and is a well-known presenter in her field.

What I found satisfying was the role she played in the design of health facilities over the years, working along side the design consultants/engineers facilities managers, etc.

Her approach to the design concept was to assess the real risk, not the perceived risk, in order to engineer the right solution. Generally over engineered solutions are designed on a perceived risk basis. The paper was very satisfying as an Engineer to see all the right disciplines working together so that systems are being built for the real risk.

- Bill MacDougall, Clinical Engineering-maintaining key Services

Bill's paper was of great interest as we at Capital and Coast health Board will be going through similar experiences in the next few months as the New Regional Hospital has now started. We can share some of his frustrations and understand the extra work loads that are put on the existing operational staff, having to maintain quality services and also assist in the New Hospital design and implementation.

Dr Phil Jauncey, Psychology and Counseling

This presentation was well received by all. This session to me brought in a different atmosphere to the day. Dr Phil's manner was professional and entertaining. He was that good he even sold copies of his book "Managing yourself and others" secrets of successful management, that's what you call psychology!

Dr Phil shared many varied and interesting experiences of his career working in professional sporting area and how he motivated teams and individuals.

Apart from the above papers there was plenty of stimulating topics which I think we have all debated in recent years. For Example Duct



## The Hospital Engineer

Summer 2005

Cleaning in HVAC ducts, very debateable topic as this can be an extremely costly exercise.

The other benefits of a conference are the networking, visits to sites and the social side of things. Networking is to me one of the best ways of gaining knowledge, sharing the experiences good or bad, so that we can all learn from each other's mistakes and prevent others from making the same mistakes.

Sites visited were the Royal Brisbane Hospital and Medical Design Innovations. Both of the visits were arranged by Stuart Marshall and James Nesbitt, from BOC gases

Both visits were of great value to me to see how other hospitals operate and at what level, and also to see the medical manufacturing side of things from MDI on the engineering aspects and design of medical gas pendants

The social side of the conference was very pleasing with the trade's night. Plenty of effort from the sponsors was evident from the excellent displays on the nights of the conference. Well done to all those who participated and took the time out to be on the stands for all the delegates.

It was also good to see a couple of familiar faces John Dransfield from Perth and Glen Reynolds from Adelaide hospitals both of whom visited our hospital as ANZEX delegates in recent years.

Others that I would like to acknowledge is Dale Klenner of Townsville, Queensland Health and Cliff Pollock of Hunter Health and his partner, for enjoyable nights and company in the bar and casino.

I would like to acknowledge Andrew Paterson for the nomination presented to the NZHIEEM for my work over the last eight years without his input I would not have received the award, thanks Andrew.

Also special thanks to Jim Nesbitt mine host for the trip, thanks Jim for all your support and company on the trip.

Most of all thanks to BOC Gases Ltd for the sponsorship for the award from myself and the NZHIEEM, without their input this would not have happened.

My last words to you all is to support each other and the award, as it is a fantastic thing to be part of, I wish you all, the very best for the new year.

Peter Cuncarr  
Maintenance Engineer  
Technical Services  
Wellington Hospital  
Capital & Coast DHB

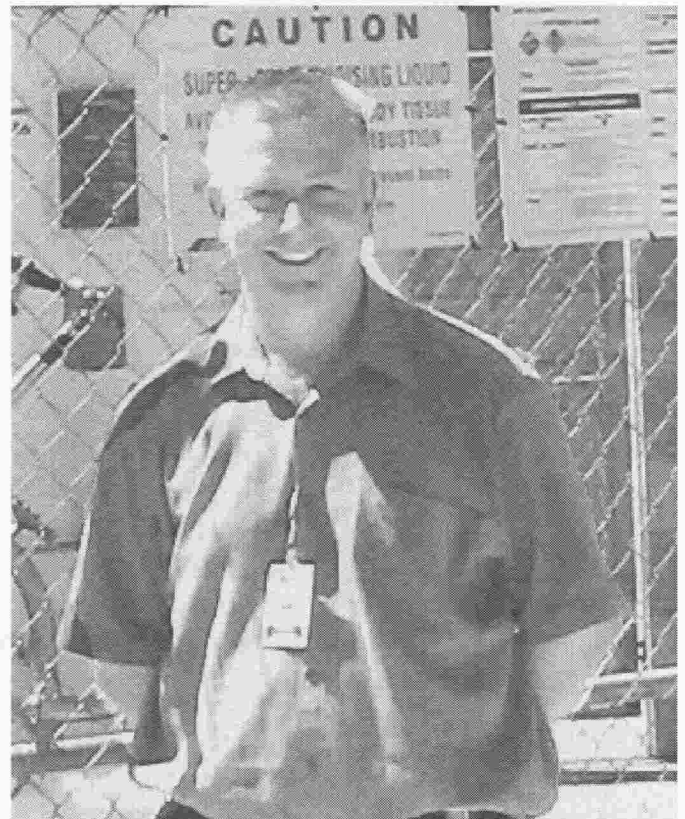


Photo :- Peter Cuncarr, Maintenance Engineer at Wellington Hospital winner of the 2003 BOC Engineer of the year award.

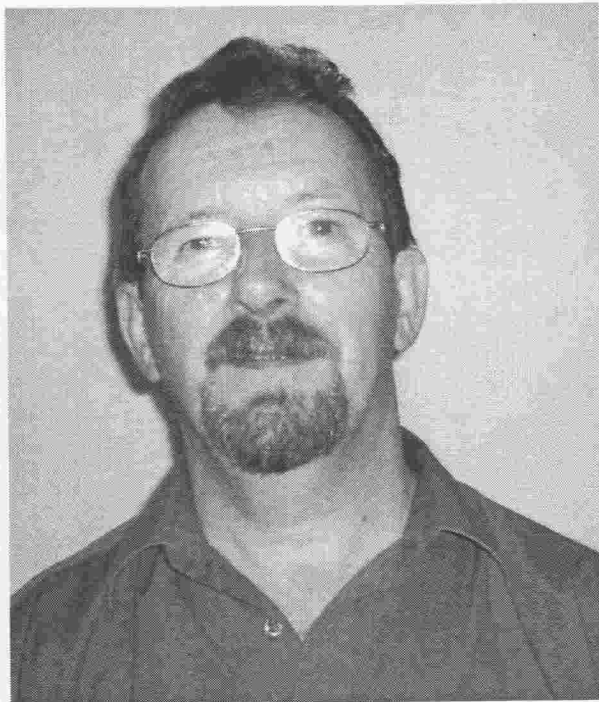
**The 2004 winner of the NZIHEEM/BOC Engineer/Biomed of the year is Mr Dave Watson, Engineer of the Canterbury District Health Board.**

## Review of The Biomedical Course:

By Kevin Flower

Biomedical Engineer, Taranaki District Health Board

Having now completed the course, passed with a reasonably good mark, and received a certificate for my efforts, was it worth it?



I decided to attempt the course as soon as I heard about it which was actually long before it became available. There was no "need" to do the course; my employer probably didn't know it existed. But I did know; and I wanted to find out how much I knew about my job really.

The "Anatomy, Physiology and Infection Control module" (APIC), was fascinating since most of my "clinical" knowledge had been picked up on the job. Anatomy and Physiology are pretty interesting subjects anyway and the coursework was fairly well presented. There was enough information to keep my interest throughout this part of the course and the questions became a useful check of gained knowledge.

The Infection Control part was useful but a little less informative. There was enough information to discover why Infection Control was a good thing but very little on how to implement it. There was a strong implication that "your organisation will have an infection control policy" and that the how to's should come from that.

The "Medical Equipment Principles module" involved another heap of reading that then raised a lot of questions about the material presented. At first I thought it was because the information was wrong and in a way it is. But that is from the view of many years of experience of many different breeds of equipment. The course presents each equipment type based around one particular make and model for each and often presents **that** equipment's peculiarities as the norm. Practically, of course, this isn't so; but a person of the experience level that this course is designed for is unlikely to know this and probably would not find the conflicts I did. The information presented is sound and factual and challenges the mind.

To answer the question "was it worth it?"

I learned heaps. I confirmed that a lot of my "knowledge" was correct and got to correct some of the bits that proved a little suspect. I got the satisfaction of knowing I now have an "official" biomedical qualification and a very nice little certificate to prove it.

It was very worth it.

PRESS RELEASE

**SPOTLIGHTING COMPETENT ENGINEERS**

"Recognising and promoting the competence, management abilities and innovation of experienced technical engineers and designers is the job of the Engineering Associates Registration Board. The task of checking the qualifications of technical engineers has been made easier for employers, employment consultants and clients with the launch of the database of Registered Engineering Associates (REA) on the web. The new database can be viewed at [www.engineering-associate.org.nz](http://www.engineering-associate.org.nz)" said John Edgar, Registrar, Engineering Associates Registration Board.

REA is the NZ credential that recognizes superior practical technical engineering competence. It has widespread acceptance around the world.

Government moves to recognize and support higher levels of technical competence have been signaled in the new Building Act.

"The REA qualification is recognized by an Act of Parliament and was strongly supported by employers in the 'old' infrastructure related Government Departments (Works, Railways, Electricity, Telecom etc). REA is still a popular qualification throughout NZ, and with the growth of concerns about competence that arose from the leaky homes debacle, it is time that we stopped hiding the REA under a bushel- explained Board Chair Ian Shearer.

For more information contact John Edgar, Registrar, phone (04) 472 3324 or e-mail [registrar@engineering-associates.org.nz](mailto:registrar@engineering-associates.org.nz)

ENDS

Members of NZIHEEM should note that the Institute is represented on the ENGINEERING ASSOCIATES REGISTRATION BOARD. Those members with the old NZCE or an equivalent qualification who are not Registered Engineering Associates should seriously think about attaining this qualification. It is fully transportable; it is not tied to one industry such as an ITO qualification; it recognizes competence in all the engineering disciplines such as mechanical, electrical, electronics, civil, tele-communications etc.

Some of the academic Qualifications Accepted by the Board under Clause (b).

NEW ZEALAND

**New Zealand Certificate in Engineering or in Draughting.**

**First Class Marine Engineer's Certificate.**

Associate Member Institute of Structural Engineers.

Bachelor of Engineering.

Bachelor Mineral Technology, University of Otago.

Bachelor of Science (Depending upon subjects passed).

Mine Surveyors Certificate.(NZ or UK).

New Zealand Certificate in Building.

New Zealand Certificate in Geology, - Registration in Soil Mechanics only.

New Zealand Certificate in Science - Physics (Electronics options).

NZCS - Water Treatment. Grade A Certificate, Water Treatment, Works & Development Services

NZIE / IPENZ Parts I & II (or equivalent).

Registered Surveyors Certificate.

## REGIONAL ROUNDUP

### NORTHERN SOUTH ISLAND – TIMARU

Eight members representing Timaru, Ashburton, Christchurch, Greymouth and Nelson attended this years meeting held in Timaru.

Last years Hamilton national conference was discussed and the general opinion was that it had been well worth attending and very well run. A brief run-down on what's been happening around the represented regions was given by those attending.

Russell Dickson reported that Nelson Base Hospital is now benefiting from the local land-fill gas which had previously been flared off for the past 6 years. Meridian Solutions had funded the costs of piping the gas to the hospital site and now a 1.5 MW boiler is fuelled with the gas. Alan Bavis spoke briefly about the new 18,000 sq m Christchurch Womens Hospital built on the Christchurch Hospital site and the impact this will have on his maintenance team when it opens in late March. Tony Blackler also spoke of the impact the new hospital will have on Technical Services with all the new clinical equipment involved. Ian Ward from Timaru Hospital reported that at long last he was at the point of replacing some of the old hospital laundry equipment. The need for this had been highlighted by the increased laundry volumes.

After a delicious afternoon tea Graham Dart from SGS gave a very interesting and informative presentation on the codes of practice and legislative regulations of pressure vessels, cranes and passenger ropeways and what our obligations are as the controllers representative. Some of these documents appeared to be very long winded and that reading and comparing the two documents could be confusing but Graham emphasised that regulations take precedent over codes of practice.

At the conclusion of the meeting we joined with our partners for liquid refreshments at the Speights Ale House, well worth the visit just to take a look at the memorabilia decorating the walls. In the evening we went to 'Bennys Again' for a very enjoyable meal. The evening finished at Ian and Sue Wards home for coffee and to catch the conclusion of the first Aussie vs New Zealand one dayer that New Zealand came very close to winning. In all a very good day catching up with members from other regions. Our thanks to Ian Ward for a very well organised day.

Murray White



*Back Row:* Ian Ward, Dave Watson, Russell Dickson, Murray White, Gary Sara

*Front Row:* Allison Blackler, Sue Ward, Gill Dickson, Tony Blackler, Patsy Sara, Alan Bavis

*Behind the Camera:* Gillian Blackler

## NORTH OF NORTH ISLAND - AUCKLAND

A NZIHEEM regional meeting, attended by eight people, was held at Greenlane Hospital in Auckland on 23 February 2005. Thanks go to Ian Harper (Auck DHB) for hosting the event and for Kevin Bardsley (Waikato DHB) for organising it.

The meeting was informative with many topics discussed: The annual 2005 conference in Wellington. The NZIHEEM web site, which has benefited from having two co-opted web masters to enhance and keep updated. The Newsletter magazine, always good to receive but submissions continually wanted. ANZEX nominations for 2006 where the conference will be in Adelaide. Also interest or nominations for the Executive. The BOC award, which has come of age and a genuine prestigious award; people should be thinking about submissions now. Further, lots of technical issues were discussed e.g. Electrical appliance testing, Biomedical, HSNO, AMP, drinking water standards.

The next meeting is planned for Waikato at 13:00 on Wednesday 10 August (TBC).

Colin Gauld

## Lower North Island - Hawera



Richard Glover

Andrew Paterson

Kevin Flower

Max Christensen

Chris Partington

Jim Logan

Phil Goodman

Photo by Richard Whitehead

Not shown - Richard Guy & Richard Whitehead